UNITED STATES DEPARTMENT OF AGRICULTURE

100% Juice and Growth, Body Composition, and Risk of Obesity: A Systematic Review with Meta-Analysis

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Fisher JO, Abrams SA, Andres A, Byrd-Bredbenner C, Deierlein AL, Eicher-Miller HA, Odoms-Young A, Palacios C, Bahnfleth C, Kim JH, Higgins M, Nevins J, Butera G, Terry N, Obbagy J. *Complementary Feeding and Growth, Body Composition, and Risk of Obesity: A Systematic Review*. November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2025.SR18

Mayer-Davis E, Leidy H, Mattes R, Naimi T, Novotny R, Schneeman B, Kingshipp BJ, Spill M, Cole NC, Bahnfleth CL, Butera G, Terry N, Obbagy J. *Beverage Consumption and Growth, Size, Body Composition, and Risk of Overweight and Obesity: A Systematic Review*. July 2020. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2020.SR0401

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Plain language summary

What is the question?
The question is: What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity? The populations of interest for this question include infants and young children up to age 24 months, children, adolescents, adults, older adults, and individuals during pregnancy and postpartum.

Why was this question asked?
This systematic review with meta-analysis was conducted by the 2025 Dietary Guidelines Advisory Committee as part of the process to develop the *Dietary Guidelines for Americans, 2025-2030*.

How was this question answered?
The Committee conducted a systematic review with meta-analysis to answer this question with support from the USDA Nutrition Evidence Systematic Review team. This review updated an existing review that was conducted by the 2020 Dietary Guidelines Advisory Committee.

What is the answer to the question?

- A conclusion statement cannot be drawn about the relationship between 100% juice consumption by infants and young children, up to age 24 months, and outcomes related to growth patterns, body composition, and risk of obesity during childhood because of substantial concerns with consistency and precision in the body of evidence.
- 100% juice consumption by children and adolescents is not associated with growth, body composition and risk of obesity. This conclusion statement is based on evidence graded as moderate.
- 100% juice consumption by adults and older adults is not associated with body composition. This conclusion statement is based on evidence graded as moderate.
- 100% juice consumption by adults and older adults may not be associated with weight gain. This conclusion statement is based on evidence graded as limited.
- A conclusion statement cannot be drawn about the relationship between 100% juice consumption during pregnancy and adequacy of gestational weight gain because there is not enough evidence available.
- A conclusion statement cannot be drawn about the relationship between 100% juice consumption during postpartum and postpartum weight change because there is not enough evidence available.

How up-to-date is this systematic review?
Conclusion statements from this review are based on articles published between January 2000 and May 2023.

Abstract

Background

This systematic review was conducted by the 2025 Dietary Guidelines Advisory Committee as part of the process to develop the *Dietary Guidelines for Americans, 2025-2030*. The U.S. Departments of Health and Human Services (HHS) and Agriculture (USDA) appointed the 2025 Dietary Guidelines Advisory Committee (Committee) in January 2023 to review evidence on high priority scientific questions related to diet and health. Their review forms the basis of their independent, science-based advice and recommendations to HHS and USDA, which is considered as the Departments develop the next edition of the *Dietary Guidelines*. As part of that process, the Committee conducted a systematic review with meta-analysis with support from the USDA Nutrition Evidence Systematic Review (NESR) team to answer the following question: What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity? This review is an update to an existing review that was conducted by the 2020 Dietary Guidelines Advisory Committee.

Methods

The Committee conducted a systematic review with meta-analysis using the methodology of the USDA NESR team. The Committee first developed a protocol. The intervention/exposure was 100% juice consumption in infants and young children up to age 24 months, children, adolescents, adults, older adults, and individuals during pregnancy and postpartum. The comparators were consumption of a different amount of 100% juice (including no consumption and versions diluted with water), water, and solid (e.g., whole fruit), and the outcomes were measures of Growth (in infants and young children up to age 24 months, children, and adolescents) including: height, length/stature-for-age, weight, weight-for-age, stunting, failure to thrive, wasting, BMI-for-age, weight-for-length/stature, body circumferences (arm, neck, thigh), head circumference; Body composition (in infants and young children up to age 24 months, children, adolescents, adults, older adults) including: skinfold thickness, fat mass, ectopic fat, fat-free mass or lean mass, waist circumference, waist-to-hip-ratio; Risk of obesity (in children, adolescents, adults, older adults) including: BMI, underweight, normal weight, overweight and/or obesity, weight loss and maintenance (in adults and older adults); Pregnancy and postpartum-related weight change (in individuals during pregnancy or postpartum) including: gestational weight gain and postpartum weight change. Additional inclusion criteria were established for the following study characteristics: a) use randomized or non-randomized controlled trial, prospective or retrospective cohort, nested case-control, or Mendelian randomization study designs, b) be published in English in peer-reviewed journals, c) be from countries classified as high or very high on the Human Development Index, and d) enroll participants with a range of health statuses. The review excluded intervention studies less than 12 weeks in duration (in children, adolescents, adults, and older adults).

NESR librarians conducted a literature search in PubMed, Embase, CINAHL, and Cochrane to identify articles published between January 2000 and May 2023. Two NESR analysts independently screened all electronic results and the reference lists of included articles based on the pre-determined criteria. The results of this search were combined with included articles from the existing review.

NESR analysts extracted data, from each included article, with a second analyst verifying accuracy of the extraction. Two NESR analysts independently conducted a formal risk of bias assessment, by study design, for each included article, then reconciled any differences in the assessment. Additionally, for studies conducted in infants, children, and adolescents, NESR analysts and biostatisticians converted eligible results to a common effect size and completed meta-analyses, assessments of heterogeneity, and assessments of non-reporting bias, according to the synthesis plan. The Committee qualitatively synthesized the evidence, from all included articles identified in the updated literature search and from the existing review and also considered results from meta-analyses, with attention given to the overarching themes or key concepts from the findings, similarities and differences between studies, and factors that may have affected the results. The Committee developed conclusion statements and graded the strength of evidence based on its consistency, precision, risk of bias, directness and generalizability.

Results

Infants, children, and adolescents

Conclusion statement and grade: A conclusion statement cannot be drawn about the relationship between 100% juice consumption by infants and young children, up to age 24 months, and outcomes related to growth patterns, body composition, and risk of obesity during childhood because of substantial concerns with consistency and precision in the body of evidence. (Grade: Grade Not Assignable)

Summary of the evidence:

- Four articles examined 100% juice consumption and growth, body composition, and risk of obesity. All 4 were prospective cohort studies.

- The articles were synthesized as part of another systematic review on complementary feeding and growth, body composition, and risk of obesity.*

Conclusion statement and grade: 100% juice consumption by children and adolescents is not associated with growth, body composition and risk of obesity. This conclusion statement is based on evidence graded as moderate. (Grade: Moderate)

Summary of the evidence:
- Twenty-nine articles met the inclusion criteria for this review. One was from a randomized controlled trial and 28 were from prospective cohort studies. Sixteen of these articles were included in meta-analyses. Four articles were from studies conducted in infants and young children up to age 24 months; only one of these was included the meta-analysis.
- Most articles reported a null relationship between 100% juice and the outcomes of interest; sizes of effects were mainly consistent across studies. Meta-analysis results showed consistency in the direction and magnitude of findings across analyses and low heterogeneity.
- There were some concerns with risk of bias, especially related to confounding and missing data in observational studies.
- The evidence applies to the U.S. population but may not apply to diverse subgroups based on race and/or ethnicity. There were a small number of studies in infants and young children, which limited the ability to draw conclusions about the relationship of 100% juice to growth, body composition, or risk of obesity outcomes in this population.

<u>Adults and older adults</u>

Conclusion statement and grade: 100% juice consumption by adults and older adults is not associated with body composition. This conclusion statement is based on evidence graded as moderate. (Grade: Moderate)

Summary of the evidence:
- Eleven articles examined 100% juice and body composition. Three articles were from randomized controlled trials and 8 articles were from prospective cohort studies. Evidence in adults and older adults was synthesized together.
- Results from trials were consistent, with all trials finding no effect of 100% juice consumption on body composition. The observational data were also consistent, with all studies finding no association between 100% juice consumption in adults and body composition.
- Most of the randomized controlled trials had small sample sizes. Observational studies used varying metrics to measure 100% juice consumption, making comparison of effect sizes and confidence intervals difficult.
- There were some concerns with risk of bias, related to lack of information on randomization or concealment in trials and confounding and missing data in observational studies.
- The evidence applies to the U.S. population but may not apply to diverse subgroups based on weight status, race and/or ethnicity, and socioeconomic position.

Conclusion statement and grade: 100% juice consumption by adults and older adults may not be associated with weight gain. This conclusion statement is based on evidence graded as limited. (Grade: Limited)

Summary of the evidence:
- Fifteen articles met the inclusion criteria for this review. Four were from randomized controlled trials and 11 were from prospective cohort studies. Evidence in adults and older adults was synthesized together.
- Results from trials were consistent, with most demonstrating no effect of 100% juice consumption on weight. Observational data were less consistent for weight.
- All trials had short durations (12 weeks to 3 months) and had small sample sizes. Trials were inconsistent in the type of juice assessed. Observational studies used varying metrics to measure 100% juice consumption, making comparison of effect sizes and confidence intervals difficult.
- There were some concerns with risk of bias, especially related to confounding and missing data in observational studies.
- The evidence applies to the U.S. population but may not apply to diverse subgroups based on weight status, race and/or ethnicity, and socioeconomic position.

<u>Individuals during pregnancy</u>

Conclusion statement and grade: A conclusion statement cannot be drawn about the relationship between 100% juice consumption during pregnancy and adequacy of gestational weight gain because there is not enough evidence available. (Grade: Grade Not Assignable)

Summary of the evidence:
- One article met the inclusion criteria for this review in individuals during pregnancy.
- The 2025 Committee was not able to draw a conclusion because there was not enough evidence available.

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* Fisher JO, Abrams SA, Andres A, et al. *Complementary Feeding and Growth, Body Composition, and Risk of Obesity: A Systematic Review*. November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2025.SR18

Individuals during postpartum

Conclusion statement and grade: A conclusion statement cannot be drawn about the relationship between 100% juice consumption during postpartum and postpartum weight change because there is not enough evidence available. (Grade: Grade Not Assignable)

Summary of the evidence:
- One article from a prospective cohort study met the inclusion criteria for this review in individuals during postpartum.
- The 2025 Committee was not able to draw a conclusion because there was not enough evidence available.

Introduction

To prepare for the development of the *Dietary Guidelines for Americans, 2025-2030*, the U.S. Departments of Health and Human Services (HHS) (**Appendix 1**) and Agriculture (USDA) identified a proposed list of scientific questions based on relevance, importance, potential federal impact, and avoiding duplication, which were posted for public comment.[*] The Departments appointed the 2025 Dietary Guidelines Advisory Committee (Committee) in January 2023 to review evidence on the scientific questions. The Committee's review of the evidence forms the basis of the Scientific Report of the 2025 Dietary Guidelines Advisory Committee,[†] which includes independent, science-based advice and recommendations to HHS and USDA and is considered during the development of the next edition of the *Dietary Guidelines*.

The proposed scientific questions were refined and prioritized by the Committee for consideration in their review of the evidence. As part of that process, the following systematic review question was prioritized: What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity? The Committee conducted a systematic review with meta-analysis to address this question, with support from USDA's Nutrition Evidence Systematic Review (NESR) team. This review is an update to the systematic review conducted by the 2020 Dietary Guidelines Advisory Committee (**Table 1**), and the conclusion statements developed as part of that existing work can be found in **Appendix 2**.

Table 1. Review history

Date	Description	Citation
July 2020	Original systematic review conducted by the 2020 Dietary Guidelines Advisory Committee published	Mayer-Davis E, Leidy H, Mattes R, Naimi T, Novotny R, Schneeman B, Kingshipp BJ, Spill M, Cole NC, Bahnfleth CL, Butera G, Terry N, Obbagy J. Beverage Consumption and Growth, Size, Body Composition, and Risk of Overweight and Obesity: A Systematic Review. July 2020. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2020.SR0401
May 2023	Systematic review protocol for the 2025 Dietary Guidelines Advisory Committee published online	Hoelscher DM, Anderson CAM, Booth S, Deierlein A, Fung T, Gardner C, Giovannucci E, Raynor H, Stanford FC, Talegawkar S, Taylor C, Tobias D, Obbagy J, Cole NC, Kingshipp BJ, Nevins J, Webster A, Becker B, Higgins M, Butera G, Terry N. 100% Juice and Growth, Body Composition, and Risk of Obesity: A Systematic Review with Meta-Analysis Protocol. May 2023. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://nesr.usda.gov/protocols
October 2023	Revisions to the systematic review protocol for the 2025 Dietary Guidelines Advisory Committee published online	Hoelscher DM, Anderson CAM, Booth S, Deierlein A, Fung T, Gardner C, Giovannucci E, Raynor H, Stanford FC, Talegawkar S, Taylor C, Tobias D, Obbagy J, Cole NC, Kingshipp BJ, Nevins J, Webster A, Becker B, Higgins M, Butera G, Terry N. 100% Juice and Growth, Body Composition, and Risk of Obesity: A Systematic Review with Meta-Analysis Protocol. May 2023. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://nesr.usda.gov/protocols

[*] Dietary Guidelines for Americans: Learn About the Process. 2022. Available at: https://www.dietaryguidelines.gov/work-under-way/learn-about-process

[†] 2025 Dietary Guidelines Advisory Committee. 2024. Scientific Report of the 2025 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Health and Human Services and Secretary of Agriculture. U.S. Department of Health and Human Services. https://doi.org/10.52570/DGAC2025

Date	Description	Citation
February 2024	Revisions to the systematic review protocol for the 2025 Dietary Guidelines Advisory Committee published online	Hoelscher DM, Anderson CAM, Booth S, Deierlein A, Fung T, Gardner C, Giovannucci E, Raynor H, Stanford FC, Talegawkar S, Taylor C, Tobias D, Obbagy J, Cole NC, Kingshipp BJ, Nevins J, Webster A, Becker B, Higgins M, Butera G, Terry N. 100% Juice and Growth, Body Composition, and Risk of Obesity: A Systematic Review with Meta-Analysis Protocol. May 2023. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://nesr.usda.gov/protocols

Methods

The Committee used NESR's methodology to conduct this systematic review. NESR's methodology is described in detail in its methodology manual,[*] as well as in the Committee's Scientific Report.[†] This section presents an overview of the specific methods used to answer the systematic review question: What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity?

This systematic review is an update to an existing NESR systematic review completed by the 2020 Dietary Guidelines Advisory Committee,[‡] which included evidence published from January 2000 to June 2019. This update synthesized all of the eligible studies from January 2000 to May 2023 to develop and grade conclusion statements according to the methods described below. This means that all of the eligible articles from the existing review and the newly published articles were re-synthesized as one body of evidence.

In addition, this review is related to another systematic review conducted by the 2025 Committee to answer the scientific question: "What is the relationship between complementary feeding and growth, body composition, and risk of obesity?"[§] That review examined complementary foods and beverages, including 100% fruit juice, consumed by infants and young children (birth up to age 24 months). Articles in infant and young children populations are included in this report in the context of the overall review of evidence from infancy through adolescence. Conclusion statements specific to infants and young children are reported in the complementary feeding review.

Develop a protocol

A systematic review protocol is the plan for how NESR's methodology will be used to conduct a specific systematic review and is established by the Committee, *a priori*, before any evidence is reviewed. The protocol is designed to capture the most appropriate and relevant body of evidence to answer the systematic review question. Development of the protocol involves discussion of the strengths and limitations of various methodological approaches relevant to the question, which then inform subsequent steps of the systematic

[*] USDA Nutrition Evidence Systematic Review Branch. USDA Nutrition Evidence Systematic Review: Methodology Manual. February 2023. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://nesr.usda.gov/methodology-overview

[†] 2025 Dietary Guidelines Advisory Committee. 2024. Scientific Report of the 2025 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Health and Human Services and Secretary of Agriculture. U.S. Department of Health and Human Services. https://doi.org/10.52570/DGAC2025

[‡] Mayer-Davis E, Leidy H, Mattes R, et al. Beverage Consumption and Growth, Size, Body Composition, and Risk of Overweight and Obesity: A Systematic Review. July 2020. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2020.SR0401

[§] Fisher JO, Abrams SA, Andres A, et al. *Complementary Feeding and Growth, Body Composition, and Risk of Obesity: A Systematic Review*. November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2025.SR18 review process. The protocol describes all of the methods that will be used throughout the systematic review process. Additionally, the protocol includes the following components, which are tailored to each systematic review question: the analytic framework, the inclusion and exclusion criteria, and the synthesis plan. The Committee used the analytic framework and the inclusion and exclusion criteria from the existing review and made adjustments to the protocol, as needed. Differences in the inclusion and exclusion criteria between existing and updated reviews are documented in **Appendix 3**.

The protocol was posted online (https://nesr.usda.gov/protocols) for the public to view and comment on. Revisions to the systematic review protocol were made during the review process. These amendments are documented in **Table 2**.

Table 2. Protocol revisions

Date	Protocol revision	Description
July 2023	The inclusion and exclusion criteria for the outcome of gestational weight gain were revised to include only those studies that examine adequacy of total gestational weight gain (i.e., in relation to recommendations based on pre-pregnancy BMI). Studies that examine gestational weight gain during certain time periods or trimesters of pregnancy or total gestational weight gain not in relation to recommendations will be excluded.	This revision was made to focus on the most clinically meaningful measure of gestational weight gain. The revision was made before evidence synthesis.
September 2023	The inclusion criteria for study duration for weight loss and weight loss maintenance was reduced from ≥6 months and 12 months, respectively, to ≥12 weeks.	This revision was made so that study duration criteria is consistent across all growth, body composition, and risk of obesity outcomes. Longer-term studies on weight loss and weight loss maintenance will be prioritized in evidence synthesis. The revision was made before evidence synthesis.
September 2023	The exclusion criteria for outcome were revised to specify that studies that only report unintentional weight loss (i.e., a component of frailty) will be excluded.	This revision was made to clarify the intent of the outcome criteria but does not represent a change in how the criteria were applied. The revision was made before evidence synthesis.
December 2023	The quantitative synthesis was revised to remove meta-analyses for studies assessing 100% juice intake in adults and older adults.	This revision was made to focus on meta-analyses that are most relevant and likely to inform dietary guidance. The revision was made after synthesis of studies assessing 100% juice intake up to adolescence and before synthesis of studies in adults and older adults.
December 2023	The quantitative synthesis was updated to clarify the number of studies required to consider conducting a meta-analysis.	This revision was made to clarify that two studies are necessary, but not necessarily sufficient, to conduct a meta-analysis.

Develop an analytic framework

An analytic framework visually represents the overall scope of the systematic review question and depicts the contributing elements that were examined and evaluated. It presents the core elements of each systematic review question, including the **P**opulation (i.e., those who experience the intervention/exposure and/or outcome), **I**ntervention and/or exposure (i.e., the independent variable of interest), **C**omparator (i.e., the alternative being compared to the intervention or exposure), and **O**utcome(s). The Committee identified key confounders based on their knowledge of nutrition and health research and experience as subject matter experts. Key confounders are participant characteristics, such as demographics, health status, and diet and lifestyle behaviors, and/or other factors related to both the intervention/exposure and the outcome of interest that may impact the relationships of interest. Key confounders were considered during review and evaluation of the evidence, particularly during the risk of bias assessment of non-randomized and observational studies.

Figure 1 is the analytic framework for the systematic review. The intervention or exposure of interest was 100% juice consumption in infants, young children, children, adolescents, adults, older adults, and individuals during pregnancy and postpartum. The definition of 100% juice included 100% fruit juice, 100% vegetable juice, or a combination of the two, but did not include juice drinks with added sugar. The comparators were consumption of a different amount of 100% juice (including no consumption and versions diluted with water), 100% juice vs. water, and 100% juice vs. solid (e.g., whole fruit). The outcomes were Growth (in infants, young children, children, adolescents) including: height, length/stature-for-age, weight, weight-for-age, stunting, failure to thrive, wasting, BMI-for-age, weight-for-length/stature, body circumferences (arm, neck, thigh), head circumference; Body composition (in infants, young children, children, adolescents, adults, older adults) including: skinfold thickness, fat mass, ectopic fat, fat-free mass or lean mass, waist circumference, waist-to-hip-ratio; Risk of obesity (in children, adolescents, adults, older adults) including: BMI, underweight, normal weight, overweight and/or obesity, weight loss and maintenance (in adults and older adults); Pregnancy and postpartum-related weight change (in individuals during pregnancy or postpartum) including: gestational weight gain and postpartum weight change. The key confounders are race and/or ethnicity, socioeconomic position, and anthropometry at baseline (all populations); sex (infants, young children, children, adolescents, adults, older adults); age, physical activity, and diet quality (children, adolescents, adults, older adults, pregnancy, postpartum); smoking (adults, older adults, pregnancy, postpartum); milk feeding practices (human milk, infant formula, or both), birth size, and gestational age (infants and young children); parity (pregnancy, postpartum); diabetes mellitus in the current pregnancy (pregnancy); hypertensive disorders in the current pregnancy (pregnancy); and human milk feeding (postpartum).

Figure 1. Analytic framework for the systematic review question: What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity?

Population	***Intervention / exposure***	***Comparator***	***Outcome***	***Key confounders***
Infants and young children (up to 24 months)	100% juice consumption	Consumption of a different amount of 100% juice (including no consumption and versions diluted with water) 100% juice vs. water 100% juice vs. solid	Growth (in infants, young children, children, adolescents) • Height, length/stature-for-age • Weight, weight-for-age • Stunting, failure to thrive, wasting • BMI-for-age, weight-for-length/stature • Body circumferences (arm, neck, thigh) • Head circumference	• Sex • Race and/or ethnicity • Socioeconomic position • Anthropometry at baseline • Milk feeding practices (human milk, infant formula, or both) • Birth size • Gestational age
Children and adolescents (2 up to 19 years)			Body composition (in infants, young children, children, adolescents, adults, older adults) • Skinfold thickness • Fat mass, ectopic fat • Fat-free mass or lean mass • Waist circumference, waist-to-hip-ratio Risk of obesity (in children, adolescents, adults, older adults) • BMI • Underweight • Normal weight • Overweight and/or obesity • Weight gain • Weight loss and maintenance (in adults, older adults)	• Sex • Age • Race and/or ethnicity • Socioeconomic position • Anthropometry at baseline • Physical activity • Diet quality
Adults and older adults (19 years and older)				• Sex • Age • Race and/or ethnicity • Socioeconomic position • Anthropometry at baseline • Physical activity • Diet quality • Smoking
Individuals during pregnancy and postpartum			Pregnancy and postpartum-related weight change (in individuals during pregnancy or postpartum) • Gestational weight gain • Postpartum weight change	• Age • Race and/or ethnicity • Socioeconomic position • Anthropometry at baseline • Physical activity • Diet quality • Smoking • Parity • Diabetes mellitus in the current pregnancy (pregnancy) • Hypertensive disorders in the current pregnancy (pregnancy) • Human milk feeding (postpartum)

Synthesis organization:

I. ***Population:*** Infants and young children; Children and adolescents; Adults; Older adults; Individuals during pregnancy; Individuals during postpartum

   a. ***Outcome:*** Growth; Body composition; Risk of obesity; Weight loss and maintenance; Pregnancy and postpartum-related weight change

Develop inclusion and exclusion criteria

The inclusion and exclusion criteria provide an objective, consistent, and transparent framework for determining which articles to include in the systematic review (**Table 3**). These criteria ensure that the most relevant and appropriate body of evidence is identified for the systematic review question, and that the evidence reviewed is:[*]

- Applicable to the U.S. population of interest
- Relevant to Federal public health nutrition policies and programs
- Rigorous from a scientific perspective

Table 3. Inclusion and exclusion criteria

Category	Inclusion Criteria	Exclusion Criteria
Study design	• Randomized controlled trials • Non-randomized controlled trials[†] • Prospective cohort studies • Retrospective cohort studies • Nested case-control studies • Mendelian randomization studies	• Uncontrolled trials[‡] • Case-control studies • Cross-sectional studies • Ecological studies • Narrative reviews • Systematic reviews • Meta-analyses • Modeling and simulation studies
Publication date	• January 2000 – May 2023[§]	• Before January 2000; after May 2023
Population: Study participants	• Human	• Non-human
Population: Life stage	• At intervention or exposure and outcome: o Infants and young children (up to 24 months) o Children and adolescents (2 up to 19 years) o Adults and older adults (19 years and older) o Individuals during pregnancy o Individuals during postpartum	• At intervention or exposure and outcome: o N/A

[*]USDA Nutrition Evidence Systematic Review Branch. USDA Nutrition Evidence Systematic Review: Methodology Manual. February 2023. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://nesr.usda.gov/methodology-overview

[†] Including quasi-experimental and controlled before-and-after studies

[‡] Including uncontrolled before-and-after studies

[§] This review update date range encompasses the original systematic review date range, which included articles published from January 2000 to June 2019

Category	Inclusion Criteria	Exclusion Criteria

Population: Health status	• Studies that exclusively enroll participants not diagnosed with a disease[*]
	• Studies that enroll some participants:
	  o diagnosed with a disease;
	  o diagnosed with a disorder that affects feeding/eating or growth (e.g., autism spectrum disorder, attention-deficit/hyperactivity disorder, eating disorder);
	  o with severe undernutrition, failure to thrive/underweight, stunting, or wasting;
	  o born preterm,[†] with low birth weight,[‡] and/or small for gestational age;
	  o who became pregnant using Assisted Reproductive Technologies;
	  o with multiple gestation pregnancies;
	  o receiving pharmacotherapy to treat obesity;
	  o pre- or post-bariatric surgery;
	  o and/or hospitalized for an illness, injury, or surgery
		• Studies that exclusively enroll participants:
		  o diagnosed with a disease;[§]
		  o diagnosed with a disorder that affects feeding/eating or growth (e.g., autism spectrum disorder, attention-deficit/hyperactivity disorder, eating disorder);
		  o with severe undernutrition, failure to thrive/underweight, stunting, or wasting;
		  o born preterm,[†] with low birth weight,[‡] and/or small for gestational age;
		  o who became pregnant using Assisted Reproductive Technologies;
		  o with multiple gestation pregnancies;
		  o receiving pharmacotherapy to treat obesity;
		  o pre- or post-bariatric surgery;
		  o and/or hospitalized for an illness, injury, or surgery[**]

Intervention/ exposure	• 100% juice consumption • Multi-component intervention in which the isolated effect of the intervention of interest on the outcome(s) of interest is provided or can be determined despite multiple components	• Infant milk, infant formula, toddler formula/milks • Other beverage types, such as nutritional beverages (e.g., protein shakes, smoothies) • Studies focusing on specific nutrients added to beverages instead of a beverage as a whole (i.e., studies where beverages are the delivery mechanism for a nutrient) • Beverages that are not commercially available (e.g., experimentally manipulated beverages) • Supplements • Alcohol • Soups • Multi-component intervention in which the isolated effect of the intervention of interest on the outcome(s) of interest is not provided or cannot be determined due to multiple components

[*] Studies that enroll participants who are at risk for chronic disease were included

[†] Gestational age <37 weeks and 0/7 days

[‡] Birth weight <2500g

[§] Studies that exclusively enroll participants with obesity were included

[**] Studies that exclusively enroll participants post-cesarean section were included

Category	Inclusion Criteria	Exclusion Criteria
Comparator	• Consumption of a different amount of 100% juice (including no consumption and versions diluted with water) • 100% juice vs. water • 100% juice vs. solid	• No comparator
Outcome(s)	Growth (in infants, young children, children, adolescents) • Height, length/stature-for-age • Weight, weight-for-age • Stunting, failure to thrive, wasting • BMI-for-age, weight-for-length/stature • Body circumferences (arm, neck, thigh) • Head circumference Body composition (in infants, young children, children, adolescents, adults, older adults) • Skinfold thickness • Fat mass, ectopic fat • Fat-free mass, lean mass • Waist circumference, waist-to-hip ratio Risk of obesity (in children, adolescents, adults, older adults) • BMI • Underweight • Normal weight • Overweight and/or obesity • Weight gain • Weight loss and maintenance (in adults, older adults) Pregnancy- and postpartum-related weight change (individuals during pregnancy or postpartum) • Adequacy of total gestational weight gain (i.e., in relation to recommendations based on pre-pregnancy BMI) • Postpartum weight change	• Gestational weight gain only during certain time periods or trimesters of pregnancy • Absolute total gestational weight gain (i.e., not in relation to recommendations based on pre-pregnancy BMI) • Weight loss that is specifically classified as unintentional weight loss (e.g., a component of frailty)
Study duration*	• Intervention length ≥12 weeks (in children, adolescents, adults, and older adults only)	• Intervention length <12 weeks (in children, adolescents, adults, and older adults only)
Publication status	• Peer-reviewed articles published in research journals	• Non-peer-reviewed articles, unpublished data or manuscripts, pre-prints, reports, editorials, retracted articles, and conference abstracts or proceedings
Language	• Published in English	• Not published in English
Country†	• Studies conducted in countries classified as high or very high on the Human Development Index the year(s) the intervention/exposure data were collected	• Studies conducted in countries classified as medium or low on the Human Development Index the year(s) the intervention/exposure data were collected

* Study duration criteria were developed to enable focus on a stronger body of evidence.

† The classification of countries on the Human Development Index (HDI) is based on the UN Development Program Human Development Report Office (http://hdr.undp.org/en/data) for the year the study intervention occurred or data were collected. If the study

Search for and screen studies

NESR librarians, in collaboration with NESR analysts and the Committee, used the analytic framework and inclusion and exclusion criteria to develop a comprehensive literature search strategy. The literature search strategy included selecting and searching the appropriate bibliographic databases, translating search using syntax appropriate for the databases being searched, and employing search refinements, such as search filters. For existing reviews, search strategies were updated, as appropriate, for each database. The full literature search is documented in **Appendix 4**.

The results of all electronic database searches, after removal of duplicates, were screened independently by 2 NESR analysts using a step-wise process by reviewing titles, abstracts, and full-texts to determine which articles meet the inclusion criteria. Manual searching was conducted to find peer-reviewed published articles not identified through the electronic database search. These articles were also screened independently by 2 NESR analysts at the abstract and full-text levels.

Extract data and assess the risk of bias

NESR analysts extracted all essential data from each included article to describe key characteristics of the available evidence, such as the author, publication year, cohort/trial name, study design, population life stage at intervention/exposure and outcome, intervention/exposure and outcome assessment methods, and outcomes. One NESR analyst extracted the data and a second NESR analyst reviewed the extracted data for accuracy. Each article included in the systematic review underwent a formal risk of bias assessment, with 2 NESR analysts independently completing the risk of bias assessment using the tool that is appropriate for the study design.[*†‡]

Synthesize the evidence

The Committee described, compared, and combined the evidence from all included studies to answer the systematic review question.[§] Synthesis of the body of evidence involved identifying overarching themes or key concepts from the findings, identifying and explaining similarities and differences between studies, and determining whether certain factors impact the relationships being examined, which includes potential causes of heterogeneity across all included evidence.

Extracted data and risk of bias assessments for all included studies were tabulated to visually display results and facilitate synthesis. During synthesis, the Committee considered the effect direction, magnitude, and statistical significance of the results reported across the articles included in the body of evidence. The evidence was synthesized qualitatively without meta-analysis of effect estimates, statistical pooling or conversion of data, or quantitative tests of heterogeneity, and quantitatively (see **Quantitative synthesis plan**).

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does not report the year(s) in which the intervention/exposure data were collected, the HDI classification for the year of publication is applied. Studies conducted prior to 1990 are classified based on 1990 HDI classifications. If the year is more recent than the available HDI values, then the most recent HDI classifications are used. If a country is not listed in the HDI, then the current country classification from the World Bank is used (The World Bank Country and Lending Groups, available from: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-country-and-lending-groups)

[*] Sterne JAC, Savović J, Page MJ, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. *BMJ* 2019; 366: l4898.doi: 10.1136/bmj.l4898

[†] Sterne JAC, Hernán MA, Reeves BC, et al. ROBINS-I: a tool for assessing risk of bias in non-randomized studies of interventions. *BMJ* 2016; 355; i4919; doi: 10.1136/bmj.i4919

[‡] Higgins JPT, Morgan RL, Rooney AA, et al. A tool to assess risk of bias in non-randomized follow-up studies of exposure effects (ROBINS-E). *Environment International* 2024 (published online Mar 24); doi: 10.1016/j.envint.2024.108602.

[§] USDA Nutrition Evidence Systematic Review Branch. USDA Nutrition Evidence Systematic Review: Methodology Manual. February 2023. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://nesr.usda.gov/methodology-overview

The synthesis plan for this review was designed with the end-use in mind, to inform the Committee's advice to HHS and USDA regarding dietary guidance across life stages. The first level of synthesis organization was by population. Then, within each of the population groups, the evidence was organized by similar outcome based on the available evidence.

The Committee examined evidence in infants, children, and adolescents together in this report. In addition, the Committee separately reviewed the evidence in infants and young children, up to age 24 months, independent of older children and adolescents as part of the systematic review on complementary feeding and growth, body composition, and risk of obesity.* Details from articles in infant and young children populations are provided in this report in the context of the overall review of evidence from infancy through adolescence. A description and synthesis of the evidence on 100% juice consumption and growth, body composition, and risk of obesity specific to infants and young children is provided in the complementary feeding systematic review.

Quantitative synthesis plan

The primary objective of the quantitative synthesis (i.e., meta-analysis) was to estimate the average effect of the consumption of 100% juice by infants, young children, children, and adolescents on growth, body composition, and risk of obesity. Further, the meta-analysis explored whether the association between the consumption of 100% juice and growth, body composition, and risk of obesity varied across population subgroups (e.g., by age and weight status at intervention/exposure), and whether differences in other study-specific variables (e.g., whether results were adjusted for total energy intake) impacted the size or direction of the association. Finally, a dose-response analysis was planned, but not conducted due to limited evidence.

The outcomes for the quantitative synthesis were growth, body composition, and risk of obesity. The Committee planned to conduct meta-analyses on the following relationships:

- Intake of 100% fruit juice at baseline and
    - growth (weight, weight-for-age; BMI-for-age, weight-for-length/stature; body circumferences (arm, neck, thigh); failure-to-thrive) at follow-up or change over time
    - body composition (skinfold thickness; fat mass; fat-free, lean mass; waist circumference, waist-to-hip ratio) at follow-up or change over time
    - risk of obesity (BMI; overweight and obesity; underweight; normal weight) at follow-up or change over time
- Change in intake of 100% fruit juice and
    - growth (weight, weight-for-age; BMI-for-age, weight-for-length/stature; body circumferences (arm, neck, thigh); failure-to-thrive) at follow-up or change over time
    - body composition (skinfold thickness; fat mass; fat-free, lean mass; waist circumference, waist-to-hip ratio) at follow-up or change over time
    - risk of obesity (BMI; overweight and obesity; underweight; normal weight) at follow-up or change over time

However, due to limited data, only analyses of intake of 100% fruit juice at baseline and growth could be completed (see **Meta-analysis** synthesis for details). The Committee also planned to evaluate these relationships separately in subgroup analyses of infants and young children (up to 24 months) and children and adolescents (2 up to 19 years); however, insufficient data were available to conduct these subgroup analyses by age group.

* Fisher JO, Abrams SA, Andres A, et al. *Complementary Feeding and Growth, Body Composition, and Risk of Obesity: A Systematic Review*. November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2025.SR18

Data preparation

Studies were combined statistically if they were sufficiently homogenous in study design, intervention/exposure, comparator, and effect size measure. To maximize the data available for inclusion in the meta-analysis, NESR analysts converted results to a common effect size based on the outcome (**Table A 14**). Based on the available data, NESR analysts also transformed measurement units for both the exposure and the outcome to analyze results on the same scale. Finally, NESR analysts selected the effect size, categorical comparisons, and/or measurement units that allowed the largest number of effects to be included in the analysis, as well as the most fully adjusted results. NESR analysts did not combine outcomes measured at a single time point with outcomes measuring change over time (e.g., BMI z-score and change in BMI z-score), or exposures that were reported continuously with results reported categorically (e.g., 8 ounces/day and any intake vs. no intake), as the results were not similarly scaled.

For cohort studies reporting continuous exposure data, results were scaled to 8-ounce (oz) servings/day. If studies did not specify a serving size, NESR analysts assumed the standard serving size of 8-oz servings/day. For cohort studies reporting categorical exposure data, analysts selected the most common comparison(s) across studies (e.g., ≥1 serving 100% fruit juice/d vs never/rarely) to be included in the analysis. Comparisons that were not sufficiently similar were not included. If reported details were insufficient to permit transformation, NESR analysts contacted study authors to obtain useable data. If data transformations and/or contacting authors was unsuccessful, studies were excluded from the meta-analysis.

Where possible, data that were not adjusted for total energy intake (TEI) were used because TEI mediates the relationship between 100% fruit juice intake and growth, body composition, and risk of obesity.

Data were prepared using the software R (version 4.3.0).[*]

Meta-analyses

For each relationship of interest, the main analysis included all effect sizes reported for that relationship. Studies were examined separately by study design (trials, cohort studies). Regression coefficients (i.e., beta values), transformed to equivalent units, were used as the effect size for continuous outcomes because they were more commonly reported than mean differences. In all cases, the average effect size and 95% confidence interval (CI) were calculated using random-effects models with the restricted maximum-likelihood (REML) estimator.[†] Statistical significance was set at a two-sided alpha of 0.05. When multiple acceptable measures of the intervention/exposure and/or the outcome were reported within a study, data were analyzed using multi-level meta-analysis to account for the multiplicity.

All meta-analyses were conducted using the metafor package[‡] (version 4.4-0) in the R**Error! Bookmark not defined.** software environment (version 4.3.1).

Planned meta-regression analyses (e.g., dose-response, funding source, reasons for risk of bias) were not conducted because data were not available, or because the main and subgroup analyses showed consistent results with little heterogeneity.

Assessment of heterogeneity

NESR analysts developed forest plots by study design, type of intervention/exposure, and type of outcome. Heterogeneity was assessed visually by inspecting the forest plots for overlap of CI across the individual effect

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[*] R Core Team (2023). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL https://www.R-project.org/.

[†] Langan, D, Higgins, JP, Jackson, D, Bowden, J, Veroniki, AA, Kontopantelis, E, et al. A comparison of heterogeneity variance estimators in simulated random-effects meta-analyses. Research synthesis methods 2019; 10(1): 83-98. doi: 10.1002/jrsm.1316

[‡] Viechtbauer W. Conducting Meta-Analyses in R with the metafor Package. Journal of Statistical Software 2010; 36(3): 1–48. doi: 10.18637/jss.v036.i03

sizes. Additionally, the following measures of statistical heterogeneity were reported: tau^2, I^2 (95% CI), and the 95% prediction interval (PI). When data were available, NESR analysts completed planned subgroup analyses and reported appropriate tests of between-groups differences. Sensitivity analyses were conducted as needed.

Assessment of non-reporting bias

No analysis had at least 10 unique studies or data points so no quantitative assessment of non-reporting bias was completed; non-reporting bias was instead addressed qualitatively.

Develop conclusion statements and grade the evidence

After the Committee synthesized the body of evidence, they drafted conclusion statements. A conclusion statement is one or more summary statements carefully constructed to answer the systematic review question. Each conclusion statement reflects the evidence reviewed, as outlined in the analytic framework (e.g., PICO elements) and synthesis plan, and does not take evidence from other sources into consideration. Conclusion statements do not draw implications and should not be interpreted as dietary guidance. The Committee reviewed, discussed, and revised the conclusion statements until they reached agreement on wording that accurately reflected the body of evidence.

The Committee then graded the strength of the evidence underlying each conclusion statement. They did this using NESR's predefined criteria, based on 5 grading elements: consistency, precision, risk of bias, directness and generalizability of the evidence. Study design and publication bias were also considered.[*]

- Consistency: Consistency considers the degree of similarity in the direction and magnitude of effect across the body of evidence. This element also considers whether differences across the results can be explained by variations in study designs and methods.
- Precision: Precision considers the degree of certainty around an effect estimate for a given outcome. This element considers measures of variability, such as the width and range of confidence intervals, the number of studies, and sample sizes, within and across studies.
- Risk of bias: Risk of bias considers the likelihood that systematic errors resulting from the design and conduct of the studies could have impacted the accuracy of the reported results across the body of evidence.
- Directness: Directness considers the extent to which studies are designed to directly examine the relationship among the interventions/exposures, comparators, and outcome(s) of primary interest in the systematic review question.
- Generalizability: Generalizability considers whether the study participants, interventions and/or exposures, comparators, and outcomes examined in the body of evidence are applicable to the U.S. population of interest for the review.

The Committee assigned a grade to each conclusion statement (i.e., strong, moderate, limited, or grade not assignable). The grade communicates the strength of the evidence supporting a specific conclusion statement to decision makers and stakeholders. A conclusion statement can receive a grade of Strong, Moderate, or Limited, and if insufficient or no evidence is available to answer a systematic review question, then no grade is assigned (i.e., Grade Not Assignable) (**Table 4**). The overall grade is not based on a predefined formula for scoring or tallying ratings of each element. Rather, each overall grade reflects the expert group's thorough consideration of all of the grading elements, as they each relate to the specific nuances of the body of evidence under review.

[*] Spill MK, English LK, Raghavan R, Callahan E, Güngör D, Kingshipp B, Spahn J, Stoody E, Obbagy J. Perspective: USDA Nutrition Evidence Systematic Review Methodology: Grading the Strength of Evidence in Nutrition- and Public Health-Related Systematic Reviews. Adv Nutr. 2022 Aug 1;13(4):982-991. doi: 10.1093/advances/nmab147

Table 4. Definitions of NESR grades

Grade	Definition
Strong	The conclusion statement is based on a strong body of evidence as assessed by consistency, precision, risk of bias, directness, and generalizability. The level of certainty in the conclusion is strong, such that if new evidence emerges, modifications to the conclusion are unlikely to be required.
Moderate	The conclusion statement is based on a moderate body of evidence as assessed by consistency, precision, risk of bias, directness, and generalizability. The level of certainty in the conclusion is moderate, such that if new evidence emerges, modifications to the conclusion may be required.
Limited	The conclusion statement is based on a limited body of evidence as assessed by consistency, precision, risk of bias, directness, and generalizability. The level of certainty in the conclusion is limited, such that if new evidence emerges, modifications to the conclusion are likely to be required.
Grade Not Assignable	A conclusion statement cannot be drawn due to either a lack of evidence, or evidence that has severe limitations related to consistency, precision, risk of bias, directness, and generalizability.

Recommend future research

The Committee identified and documented research gaps and methodological limitations throughout the systematic review process. These gaps and limitations are used to develop research recommendations that describe the research, data, and methodological advances that are needed to strengthen the body of evidence on a particular topic. Rationales for the necessity of additional or stronger research are also provided with the research recommendations.

Peer review

This systematic review underwent external peer review in a process coordinated by staff from the National Institutes of Health (NIH). NIH staff identified potential peer reviewers through outreach to a variety of professional organizations to select academic reviewers from U.S. colleges and universities across the country with a doctorate degree, including MDs, and expertise specific to the questions being reviewed. All peer reviewers were external to the *Dietary Guidelines* process, and therefore, current Committee members or Federal staff who supported the Committee or the development of the *Dietary Guidelines* were not eligible to serve as peer reviewers.

The peer review process was anonymous and confidential in that the peer reviewers were not identified to the Committee members or NESR staff, and in turn, the reviewers were asked not to share or discuss the review with anyone. Peer reviewers were made aware that per USDA, Food and Nutrition Service (FNS) agency policy, all peer reviewer comments would be summarized and made public, but comments would not be attributed to a specific reviewer.

Peer review occurred after draft conclusion statements were discussed by the full Committee at its third, fourth, fifth, and sixth public meetings. NIH staff assigned and distributed the reviews to at least 2 peer reviewers based on area of expertise. Following peer review, the Committee reviewed and discussed comments and made revisions to the systematic review, as needed, based on the discussion.

Health equity considerations

The Committee was charged by HHS and USDA to review all scientific questions with a health equity lens to ensure that the next edition of the *Dietary Guidelines* is relevant to people with diverse racial, ethnic, socioeconomic, and cultural backgrounds. The Committee made a number of health equity considerations throughout the NESR systematic review process. The Committee's Scientific Report[*] includes a more detailed discussion of their approach to applying a health equity lens to their review of evidence, but examples include consideration of key confounders relevant to health equity and assessment of generalizability of the evidence.

Results

Literature search and screening results

Articles included in this systematic review were identified from literature searches conducted to identify all potentially relevant articles for 5 systematic reviews assessing the relationship between beverage consumption (100% juice, dairy milk and milk alternatives[†]; beverage patterns[‡]; low- and no-calorie sweetened beverages[§]; and sugar-sweetened beverages[**]) and growth, body composition, and risk of obesity. The literature search (**Appendix 4**) yielded 36,223 search results after the removal of duplicates (see **Figure 2**). Dual-screening resulted in the exclusion of 33,121 titles, 2,552 abstracts, and 463 full-text articles. Reasons for full-text exclusion are in **Appendix 5**. Two additional articles with data on 100% juice and relevant outcomes were identified from the manual search, and 4 articles were identified as part of the complementary feeding and growth, body composition, and risk of obesity systematic review.[††] In total, the body of evidence examining 100% juice included 52 articles:

- Infants, children and adolescents: 29 articles[1-29]
- Adults and older adults: 21 articles[30-50]
- Individuals during pregnancy and postpartum: 2 articles[51,52]

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[*] 2025 Dietary Guidelines Advisory Committee. 2024. Scientific Report of the 2025 Dietary Guidelines Advisory Committee: Advisory Report to the Secretary of Health and Human Services and Secretary of Agriculture. U.S. Department of Health and Human Services. https://doi.org/10.52570/DGAC2025

[†] Raynor HA, Deierlein AL, Gardner CD, et al. *Dairy Milk and Milk Alternatives and Growth, Body Composition, and Risk of Obesity: A Systematic Review* U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review; 2025. https://doi.org/10.52570/NESR.DGAC2025.SR03

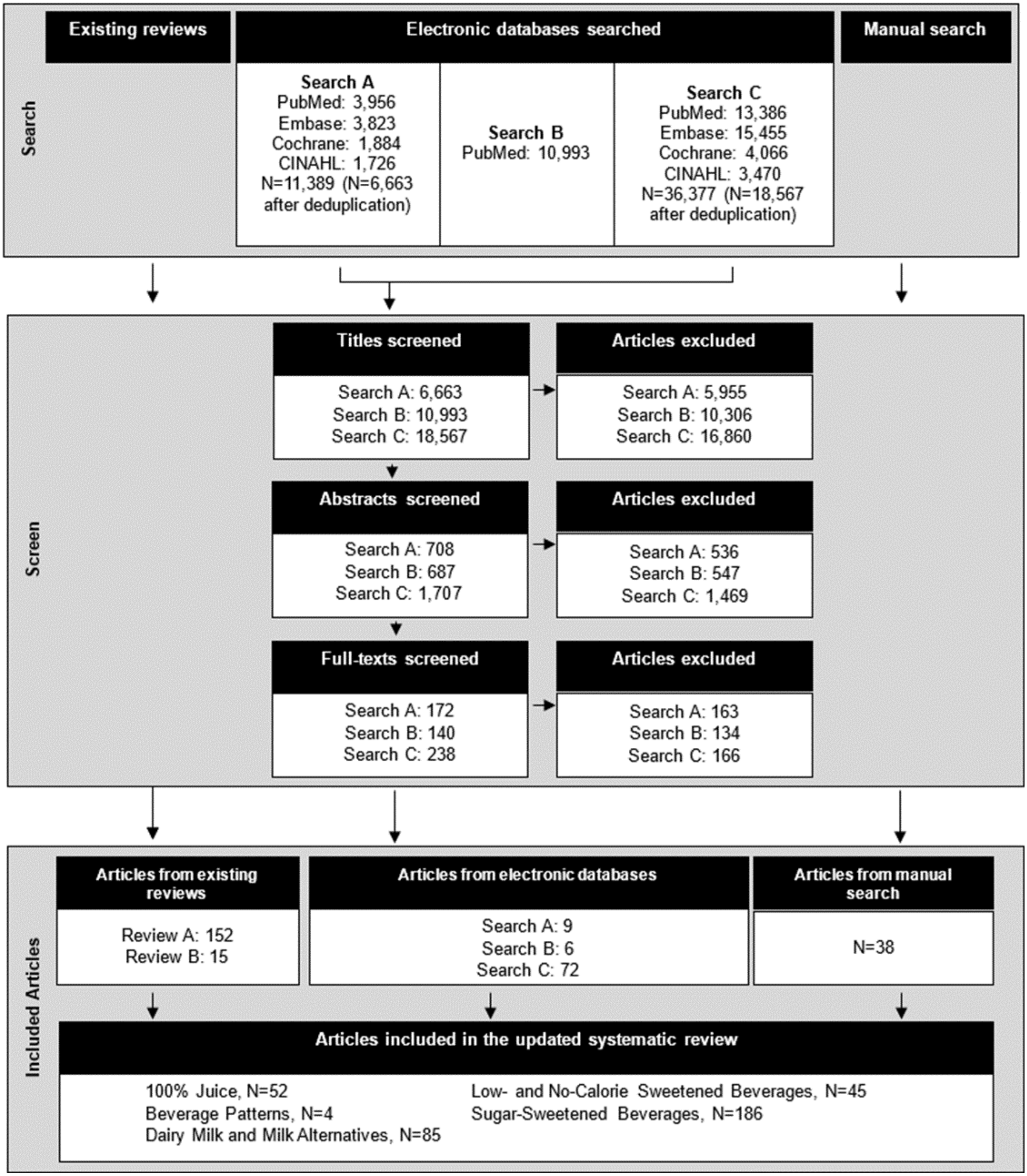
[‡] Raynor HA, Deierlein AL, Gardner CD, et al. *Beverage Patterns and Growth, Body Composition, and Risk of Obesity: A Systematic Review* U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review; 2025. https://doi.org/10.52570/NESR.DGAC2025.SR02

[§] Raynor HA, Deierlein AL, Gardner CD, et al. *Low- and No-Calorie Sweetened Beverages and Growth, Body Composition, and Risk of Obesity: A Systematic Review* U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review; 2025. https://doi.org/10.52570/NESR.DGAC2025.SR04

[**] Deierlein AL, Raynor HA, Andres A, et al. *Sugar-Sweetened Beverages and Growth, Body Composition, and Risk of Obesity: A Systematic Review with Meta-Analysis.* November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2025.SR23

[††] Fisher JO, Abrams SA, Andres A, et al. *Complementary Feeding and Growth, Body Composition, and Risk of Obesity: A Systematic Review*. November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2025.SR18

Figure 2. Literature search and screen flowchart



Infants, children, and adolescents

Description of the evidence

The body of evidence examining the relationship between 100% juice consumption and growth, body composition, and risk of obesity in infants and young children (up to 24 months), children, and adolescents included 29 articles, which are summarized in **Table 11**. Conclusion statements and grades are detailed in **Table 6** and risk of bias assessments are found in **Table 12** and **Table 13**. As noted above, details from the 4 articles on infants and young children up to age 24 months are provided below in the context of the overall review of evidence from infancy through adolescence. A description and synthesis of the evidence on 100% juice consumption and growth, body composition, and risk of obesity specific to infants and young children is provided in another systematic review conducted by the Committee on complementary feeding.[*]

Population

Of the 29 articles in infants, young children, children, and adolescents, 1 article was from a randomized controlled trial (RCT) and 28 articles were from prospective cohort studies (PCS). Most studies were conducted in the United States; however, there were also studies from the United Kingdom,[3,8,14] Australia,[28] Canada,[9] Denmark,[29] and Germany.[16]

The RCT[13] was conducted in the U.S. and enrolled 136 adolescent middle school students (mean age: 13 years) in a 6-month study; 86% of participants were from minority racial and/or ethnic groups and mean BMI was approximately at the 85th percentile. Socioeconomic position (SEP) was not reported.

The 28 articles from PCS were from 24 independent cohorts; 3 articles were a secondary analysis of data from an RCT.[7,18,28] Sample sizes ranged from N=21[18] to N=15,418 participants,[12] with 21 articles involving sample sizes less than 1000 participants. Lengths of follow-up ranged from 8 weeks[18] to 10 years.[26] Most articles included children ages 2 to 12 years at baseline; 10 articles included children with a mean baseline age of 2-5 years and 11 were conducted in children 6-12 years at baseline. Four articles were identified in infants and young children, up to 24 months,[1-4] and 3 articles included study populations with a mean baseline age greater than 12 years.[20,21,25]

Six of the 28 PCS articles did not report race and/or ethnicity data, and 12 articles did not report information on SEP. Of those that did provide information on race and/or ethnicity, 15 articles were from studies in predominantly White populations, 6 articles reported that >50% of participants were from racial and/or ethnic minority groups, and 1 article reported that most participants had at least one parent from Australia or New Zealand. Nine articles were from studies conducted in middle- to higher-SEP populations, while 7 articles were from studies conducted in lower-SEP populations.

Intervention/exposure and comparator

The intervention or exposure of interest for this systematic review question was 100% juice, which included 100% fruit juice, 100% vegetable juice, or a combination of the two, but did not include juice drinks with added sugar. Eligible comparators were consumption of a different amount of 100% juice (including no consumption and versions diluted with water), 100% juice vs. water, or 100% juice vs. solid (i.e., a whole fruit or vegetable).

The RCT[13] enrolled participants into a 6-month resistance training intervention in which they were randomized to consume either 100% fruit juice, water (control), or milk (analyses not included in this review). Participants in

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[*] Fisher JO, Abrams SA, Andres A, et al. *Complementary Feeding and Growth, Body Composition, and Risk of Obesity: A Systematic Review*. November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2025.SR18

the juice group chose between apple, orange, or grape juice and consumed 4, 6-ounce servings per day; the control group consumed an equal amount of water.

All PCS articles examined varying levels of 100% juice intake as their exposure and comparator of interest. Nine articles assessed juice intake through dietary recalls, while 10 articles used food frequency questionnaires, 6 articles collected exposure data via parent survey or interview, and 3 articles used weighed food and beverage records. Seventeen articles compared juice intake continuously and 11 articles categorically compared different intake levels of juice (e.g., tertiles of juice servings per week). The units used to measure juice intake varied across articles (e.g., servings, ounces, grams, cups, kilocalories), as did the time scale for consumption (e.g., intake per day or week).

Outcomes

The RCT[13] assessed the effect of 100% juice compared with water on growth, body composition and risk of obesity outcomes, including BMI percentile, fat mass, fat-free mass, percent fat, waist circumference, and weight. Outcomes were described by group in the full sample as well as by sex.

In the PCS, 16 articles reported growth outcomes (e.g., BMI z-score, height, weight),[1-3,6-8,10,15-17,19,21-23,28,29] 7 articles reported body composition outcomes (e.g., percent body fat, waist circumference),[7,11,14-16,28,29] and 14 articles included risk of obesity outcomes (e.g., BMI change, risk of overweight).[5,9,12,18-21]Shefferly, 2016}[4,23-27] Seven articles included outcomes based on self- or parent-reported height and/or weight, which was used to calculate BMI[5,9,10,20,21,25] or weight-for-age z-score.[2] All other articles reported outcomes measured by study personnel.

Studies included in meta-analyses

Overall, 16 articles from 14 PCS provided usable data for meta-analyses.[3,7,8,10,12,16,17,19-25,28,29] Because only one RCT[13] met the inclusion criteria, it was not included in the meta-analysis. Articles were excluded from the meta-analysis for the following reasons: analysts were unable to estimate an effect size,[6,15,18,26] the reported exposure or outcome was not analyzed due to too few studies,[1,2,4,5,9,11,14,27] or the outcome did not meet the inclusion criteria for meta-analysis.[17]

The population characteristics of the articles included in the meta-analyses were similar to the full body of evidence—including countries where studies were conducted, racial and/or ethnic and socioeconomic diversity of included samples, mean duration of follow-up, and analytic sample sizes.

Contribution of the studies in infants and young children, up to age 24 months, at the time of exposure assessment, to the meta-analyses were relatively minimal due to the small number of studies and/or lack of data compatibility. Ultimately, 1 article[3] in this population was included for meta-analysis. Among studies that assessed the exposure in children age 2 years or older, the mean age was similar to that among all studies included in the systematic review. Compared to the full systematic review, the meta-analyses included relatively fewer studies of children with any weight status at baseline,[7,10,12,19,21 22,25,28,29] as opposed to studies that were limited to children with overweight or obesity, or studies that were limited to children without those conditions.

All articles included in meta-analysis examined 100% juice intake at baseline; there were not enough articles examining change in 100% juice intake to conduct a meta-analysis. All articles reported measures of BMI z-score,[3,7,12,16,17,23,24] change in BMI z-score,[10,19-22,25,28,29] or change in weight.[8,19,21]

Synthesis of the evidence

Articles in infants, children and adolescent populations were synthesized together. Since energy intake is an important covariate when interpreting studies on the relationship between 100% juice consumption and growth, body composition, and risk of obesity, articles were organized by whether or not they adjusted for TEI. Both approaches were considered within the evidence synthesis. Sixteen articles adjusted for TEI, with 5 of these presenting both adjusted and unadjusted results.[5,10,19,28,29] With the exception of 1 article,[10] adjusting for TEI did not change the statistical significance of the findings.

Most articles (19 of 29) reported only null findings in the association between 100% juice and growth, body composition and risk of obesity outcomes. Among articles with statistically significant findings, there were more inverse associations than direct associations, though many statistically significant associations were in studies that did not adjust for TEI. In several articles, findings were not consistent when stratified by sex or by racial and/or ethnic group.

Randomized controlled trial

The RCT[13] found no differences between the 100% juice group and the water control in any outcomes (BMI percentile, fat mass, fat-free mass, percent fat, waist circumference, and weight) after the 6-month intervention in the full study population. Results stratified by sex were presented, but due to small sample sizes the study was underpowered to detect any sex-specific findings.

Prospective cohort studies

Growth outcomes

Sixteen PCS articles reported a range of outcomes related to growth, most commonly change in BMI z-score,[6-8,10,15-17,22,28,29] and also BMI z-score at follow-up,[3] change in BMI percentile,[21] weight[19,21,23] or weight-for-age z-score,[2,22] and change in height[21,23] or height-for-age z-score.[21,22]

Eight of the 11 articles with BMI z-score outcomes did not find a relationship between 100% juice intake.[3,6-8,15,17,28,29] These articles covered a range of ages, but mainly had small sample sizes. Among the articles that reported statistically significant results, Libuda et al[16] found that greater increase in 100% juice intake was related to greater increase in BMI standard deviation score over five years, but only in girls (mean age at baseline: 12 years). Similarly, in another much larger study (N=14,918) with a mean baseline age of 12 years, fruit juice intake was associated with greater change in BMI z-score (based on self-reported height and weight) in girls over 3 years of follow-up; this relationship only reached statistical significance after adjusting for TEI.[10] In a much younger population, Shefferly et al[22] found a greater change in BMI z-score from age 2 years to 4 years for children drinking ≥1 serving of juice per day, compared with those consuming less than 1 serving per day; this relationship was no longer significant when follow-up was measured from age 4 to 5 years. The one paper with change in BMI percentile outcomes did not find an association with 100% juice intake.[21]

Only 1 of the 5 articles with weight or weight z-score outcomes found an association with juice intake.[2] Gaffney et al[2] found that a higher intake frequency of 100% juice (greater than 1 feeding of juice per 2 days versus none) from 6 to 12 months was significantly associated with higher weight-for-age z-score at 12 months. Three studies included height-related outcomes,[21-23] two of which found an association with juice intake. However, the direction of the relationship was inconsistent, as were the results stratified by sex. Sakaki et al[21] found that higher orange juice intake was associated with greater change in height-for-age z-score in girls after 2 years of follow-up (calculated using self-reported height), but not in boys. In the same study, increasing juice intake was nonlinearly associated with greater change in self-reported height, but only in boys. Shefferly et al[22] found that increasing juice consumption from age 2 to age 4 years was inversely associated with change in height-for-age z-score; this relationship was no longer significant when change was measured from 4 to 5 years of age.

Body composition outcomes

None of the 7 PCS articles reporting body composition outcomes found an association with 100% juice intake.[7,11,14-16,28,29] Sample sizes were relatively small for cohort studies, ranging from N=49 to N=682, with all but 1 having less than 400 participants. The most commonly reported outcome was percent body fat[7,11,16,28];

only 2 articles assessed waist circumference[15,29] and there was 1 article each for fat mass,[14] fat mass index quintile,[14] and sum of skinfolds.[29]

Risk of obesity outcomes

Fourteen PCS articles reported outcomes related to risk of obesity. The most commonly assessed outcome was change in BMI, which was included in 8 articles.[5,19-21,23-26] Only 1 of these found an association between juice intake and change in BMI: Sakaki et al[20] found that higher consumption of total fruit juice and orange juice was associated with greater BMI reduction over 2 years in girls, but not in boys. There was no association between non-orange fruit juices and BMI change in girls. However, BMI measurements in this study were not age- or sex-specific.

Two articles assessed BMI after 2 years[12] or across 5 years of follow-up.[9] Both found a relationship between 100% juice intake and BMI; however, results were not consistent across racial and/or ethnic groups or when stratified by sex. Guerrero et al[12] found that higher 100% juice consumption was significantly associated with lower age- and sex-specific BMI from age 4-6 years but only in White participants; results were not significant for Black, Asian, or Hispanic participants. Dubois et al[9] analyzed adolescent monozygotic boy and girl twin pairs and found that higher juice intake was associated with lower BMI over 5 years in the overall study sample (N=304), but results were not significant in any sub-analyses, including stratifications by sex and BMI concordance.

Three articles examined risk of obesity and/or obesity in children ages 5 and under.[4,22,27] Vandyousefi et al[4] found that consumption of any 100% fruit juice during the first year of life was associated with higher odds of obesity at 2 to 5 years when compared to no consumption of 100% fruit juice. In a cohort of over 10,000 participants, Welsh et al[27] found an increased risk of overweight in those with higher juice intake after 1 year of follow-up, but only if participants had overweight at baseline (mean baseline age: 3 years). Results were non-linear: while there was a relationship for those consuming 2 to < 3 servings of juice per day, there was no association with the highest tertile of juice consumption (≥3 servings per day). Shefferly et al[22] found an increased risk of overweight, but not obesity, at age 4 in those consuming ≥1 serving of juice per day compared to those consuming < 1 serving per day (intake assessed at age 2). There was no association with juice intake and risk for overweight or obesity from age 4 to 5 years, by juice intake at age 4. Only 1 study looked at the relationship between 100% juice intake and weight gain; no association was found, but study duration was short (8 weeks) and sample size was very small (N=21).[18]

Meta-analysis

Six observations (i.e., effect sizes) from five cohorts[7,16,17,23,24] were included in meta-analyses of 3,564 children to examine the relationship between 100% juice intake at baseline, measured continuously, and BMI z-score at follow-up (**Table 5**, **Figure 3**, **Figure A 1** through **Figure A 11**). The pooled effect estimate was approximately zero, and the 95% CI for the mean included zero for all analyses. Heterogeneity, as measured by tau^2, I^2, and 95% PI, was very low. Results were consistent across the main and subgroup analyses. The relationship did not differ by TEI adjustment or by weight status at baseline. The results did not vary by age, although there were no studies that examined this relationship among infants and young children up to age 24 months at baseline.

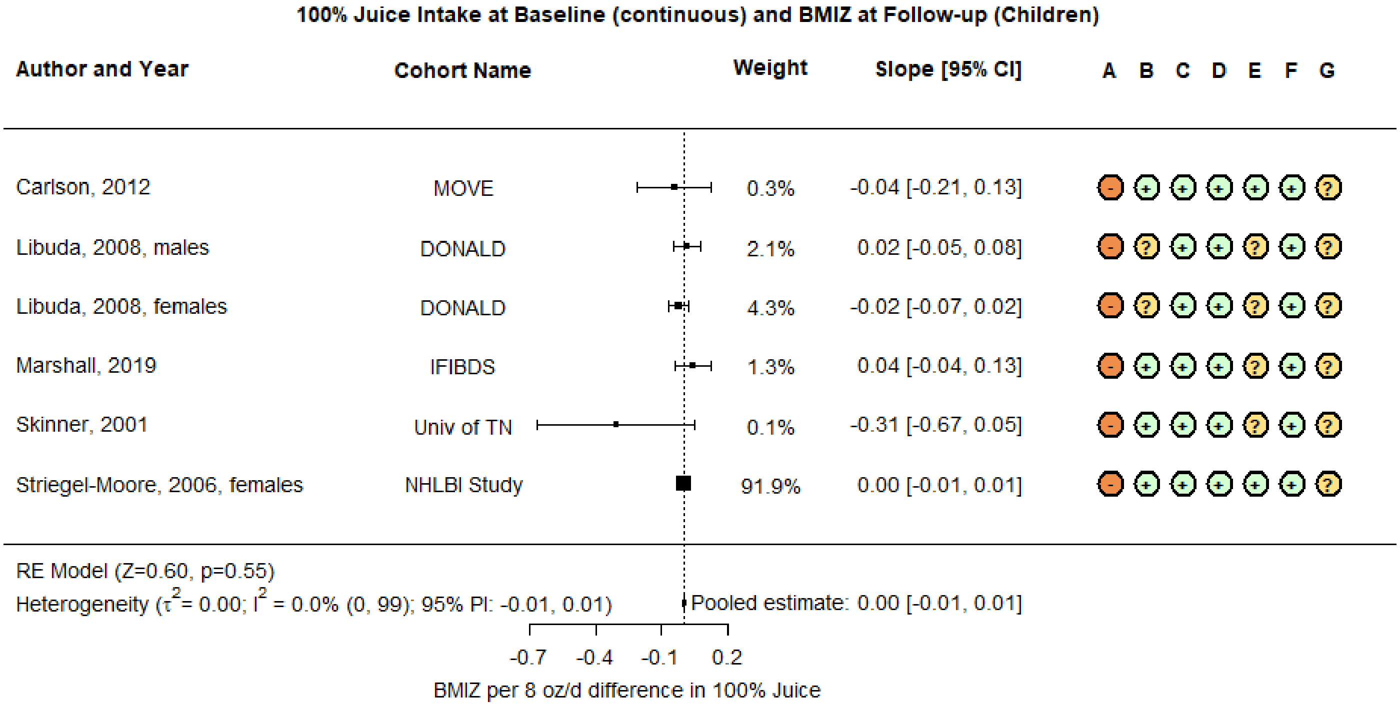

Figure 3. Meta-analysis of 100% juice intake at baseline, measured continuously (8 oz/d), and BMI z-score at follow-up.*

Results were similar for the remaining analyses of the relationship between 100% juice intake at baseline and BMI z-score, change in BMI z-score, and change in weight, which are summarized in **Table 5**, and in **Appendix 6**. Pooled estimates were consistently near zero, with low heterogeneity in both the main analyses and subgroup analyses. When the I^2 measure was high, the 95% CI of the I^2 was wide, suggesting uncertainty in the I^2 estimate. Some subgroup analyses were difficult to interpret due to the small number of studies, particularly when intake was measured categorically. Additionally, there were not enough studies to complete quantitative analyses of the risk of reporting bias (i.e., funnel plots or tests of funnel plot asymmetry).

Due to the limited number of results in each exposure-outcome group, as well as the consistency in findings across analyses, dose-response analyses and other planned meta-regressions were not conducted.

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*Risk of bias due to **A**: confounding; **B**: selection of participants into the study; **C**: measurement of the exposure; **D**: post-exposure interventions; **E**: missing data; **F**: measurement of the outcome; **G**: selection of the reported result; +: Low risk of bias; ?: Some concerns of risk of bias; -: High risk of bias; BMI: body mass index; CI: confidence interval; RE: random effects; CI: confidence interval; d: day; oz: ounce; RE: random effects; vertical dotted line shows null effect

Table 5. Summary of meta-analyses

Exposure and outcome	Summary statistics	Sample size
Intake at baseline (continuous, per 8 oz/d) and BMI z-score at follow-up	**Main analysis** Pooled slope: 0.00 (-0.01, 0.01), p=0.55, tau^2=0.00, I^2: 0% (0, 99), 95% PI: -0.01, 0.01	6 observations from 5 articles,[7,16,17,23,24] including 3,564 children
Intake at baseline (categorical, any level of intake vs none/rarely) and BMI z-score at follow-up	**Main analysis** Pooled slope: -0.06 (-0.12, -0.00), p=0.04, tau^2=0.00, I^2: 0% (0, 0), 95% PI: -0.12, -0.00	2 observations from 2 articles,[3,12] including 16,140 children
Intake at baseline (continuous, per 8 oz/d) and change in BMI z-score	**Main analysis** Pooled slope: -0.00 (-0.00, 0.00), p=0.67, tau^2=0.00, I^2: 49% (0, 100), 95% PI: -0.01, 0.00	7 observations from 5 articles,[10,19,20,28,29] including 24,952 children
Intake at baseline (categorical, <1 vs ≥1 svg/d) and change in BMI z-score	**Main analysis** Pooled slope: -0.02 (-0.06, 0.01), p=0.25, tau^2=0.00, I^2: 0% (0, 83), 95% PI: -0.06, 0.01	4 observations from 3 articles,[21,22,25] including 15,845 children
Intake at baseline (continuous, per 8 oz/d) and change in weight	**Main analysis** Pooled slope: -0.00 (-0.04, 0.04), p=0.98, tau^2=0.00, I^2: 18% (0, 70), 95% PI: -0.06, 0.06	4 observations from 3 articles,[8,19,21] including 13,292 children

Conclusion statement and grade

The 2025 Dietary Guidelines Advisory Committee developed and graded a conclusion statement for the systematic review question: “What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity?” based on review of the totality of evidence in infants, children, and adolescents (see **Table 6**).

The Committee also examined the evidence in infants and young children, up to 24 months, independent of older children and adolescents as part of the systematic review on complementary feeding and growth, body composition, and risk of obesity. For that review,[*] the Committee *did not* draw a conclusion statement about the relationship between 100% juice consumption by infants and young children, up to 24 months, and outcomes related to growth, body composition, and risk of obesity due to substantial concerns with consistency and precision in the body of evidence. Because of this decision, the conclusion statement below primarily refers to children and adolescents (2 up to 19 years) due to the lack of evidence in infants and young children, up to 24 months.

Table 6. Conclusion statement and grade for 100% juice consumption and growth, body composition, and risk of obesity in children and adolescents

Conclusion Statement	**100% juice consumption by children and adolescents is not associated with growth, body composition and risk of obesity. This conclusion statement is based on evidence graded as moderate.**
Grade	Moderate
Body of Evidence	1 RCT; 28 prospective cohort studies (16 in meta-analyses)
Consistency	Few concerns with consistency in findings across studies
Precision	Some concerns due to small sample sizes
Risk of bias	Some concerns with risk of bias, primarily due to confounding and missing data
Directness	Few concerns with directness across studies
Generalizability	Some concerns with generalizability to the US population, including few studies in infants and young children

Assessment of the evidence

The body of evidence underlying the conclusion statement above includes articles from 1 RCT and 28 PCS (16 included in meta-analysis). The evidence was graded based on an assessment of 5 grading elements, as described below. In addition, publication bias was also a consideration; however, it was not deemed a serious concern for this body of evidence because most studies reported only nonsignificant findings while others reported significant findings or a mix of significant and nonsignificant.

Consistency

Most articles reported a null relationship between 100% juice intake and growth, body composition, and risk of obesity outcomes, especially those that adjusted for TEI. Results were somewhat mixed in studies that did not adjust for TEI and in the infants and young children and adolescent populations, but the majority of articles still showed no relationship. Meta-analysis results showed consistency in the direction and magnitude of findings

[*] Fisher JO, Abrams SA, Andres A, et al. Complementary Feeding and Growth, Body Composition, and Risk of Obesity: A Systematic Review. November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2025.SR18

across analyses and low heterogeneity, confirming a lack of relationship between juice consumption and both weight and BMI.

Precision

The RCT sample size was small (N=34 to N=38 per group) and post-hoc analyses of the primary outcomes determined that they were underpowered. Multiple observational cohorts also had smaller sample sizes (N<100), though many were in the thousands. For meta-analysis, there were few unique samples, but all analyses included a relatively large number of individuals. In the observational studies, the units used to measure juice intake varied, as did the time scale for consumption, which made comparison of effect sizes and confidence intervals difficult.

Risk of bias

Risk of bias assessments for each article are detailed in **Table 12** (RCT) and **Table 13** (PCS). None of the 28 PCS articles accounted for all key confounders. There were also substantial concerns due to missing data (large study cohorts with high attrition or exclusion) and selection of the reported results, as none of the articles had a predefined data analysis plan.

Directness

The RCT was not designed to directly assess this research question and many of the PCS had broader research objectives; however, articles included in this review still provided adequate data for directly assessing the relationship of interest.

Generalizability

Most included studies were conducted within the United States. Age ranges across childhood were well represented, although there were relatively few studies in adolescents. This body of evidence had greater diversity in race and/or ethnicity and SEP than other beverage types included for systematic review. Even so, the vast majority of articles reporting race and/or ethnicity information were from studies in predominantly White populations. Nearly half of the articles did not provide SEP information, but of those that did, there was a near-even split between those conducted in middle- to higher-SEP populations and those in lower-SEP populations. One substantial concern with generalizability was the small number of studies in infants and young children, limiting the ability to draw conclusions about the relationship of 100% juice to growth, body composition, or risk of obesity outcomes in this population.

Adults and older adults

Description of the evidence

This review included 21 articles examining 100% juice consumption in adults and body composition and risk of obesity. Four articles were parallel RCTs[30,40,48,49] and 17 articles were PCS[31-39,41-47,50]; meta-analysis was not conducted in this population. The following sections summarize the body of evidence used to answer this systematic review question, and the overall conclusion statements and grades are detailed in **Table 7** and **Table 8**. Evidence for 100% juice consumption in adults and body composition and risk of obesity is summarized in **Table 14,** and risk of bias assessments are detailed in **Table 15** (RCT) and **Table 16** (PCS).

Population

Studies were conducted in populations from the following countries: Brazil,[30,50] Canada,[36] Denmark,[39] Iran,[41] Italy,[33] Spain,[37,38,42], and the U.S.[31,32,34,35,40,43-45,47-49] One study was conducted in populations from multiple countries in Europe.[46]

The 4 RCT articles had a mean baseline age ranging from approximately 25 to 50 years. One trial enrolled only females,[30] 2 trials had >70% female enrollment,[48,49] and one trial enrolled men and women but did not report the percentage of each.[40] Analytic sample sizes ranged from N=26 to N=76. Three trials[40,48,49] had inclusion criteria for BMI ≥25 kg/m^2 or ≥30 kg/m^2 and 2 had inclusion criteria related to low or no habitual juice consumption at baseline.[30,40] Two trials did not report data on race and/or ethnicity,[30,40] one trial enrolled Black and White adults,[49] and one trial enrolled an ethnically diverse sample.[48]

The 17 PCS articles were from 13 independent cohorts with a mean baseline age ranging from approximately 25 to 67 years. Four of these articles were from studies conducted in females only.[31,32,45,47] Sample sizes ranged from N=248 to N=52,987. Nine articles did not report data on race and/or ethnicity,[32,33,36-39,41,46,47] 5 articles were in primarily White participants,[31,42-45] and 3 articles were from ethnically diverse cohorts.[34,35,50] Eight articles did not report data on SEP,[32,33,35-37,39,46,47] 3 articles were from primarily well-educated samples,[43-45] and 6 articles were diverse in terms of participant education level.[31,34,38,41,42,50]

Intervention/exposure and comparator

The trials included a variety of interventions and were inconsistent in the type and amount of juice consumed. Aptekman et al[30] compared 500 milliliters (mL)/day of orange juice to a usual diet control. Hollis et al[40] compared 480 mL/day of grape juice to a usual diet control. Silver et al[49] compared 127 grams of grapefruit juice before breakfast, lunch, and dinner to water and solid grapefruit. Shenoy et al[48] compared different amounts (none, 8-ounce, 16-ounce) of low-sodium vegetable juice. Study durations for all interventions were 12 weeks[40,48,49] or 3 months.[30]

Most observational studies examined 100% fruit juice as the exposure of interest. Four articles examined a combination of 100% fruit and vegetable juice.[32,34,38,39] The length of follow-up ranged from 2 to 20 years. All but 2 articles[34,36] measured juice intake with food frequency questionnaires. About half of the articles examined juice intake as a continuous variable (e.g., servings per day, kilocalories per day) and several articles examined juice intake as a categorical variable (e.g., tertiles); 2 articles examined juice intake continuously and categorically.[35,38]

Outcome

In adults, outcomes included measures of body composition and risk of obesity. The most commonly reported outcomes were weight (14 articles) and waist circumference (9 articles), with most studies using measures obtained from trained study staff. Seven observational studies used self-reported measures of weight at baseline and/or follow-up.[32,39,43-47]

Synthesis of the evidence

Three of the 21 articles were in participants with a mean age ≥60 years[33,37,42]; therefore, the evidence in adults and older adults was synthesized together. Since energy intake is an important covariate when interpreting studies on the relationship between 100% juice consumption and body composition and risk of obesity, articles were organized by whether or not they adjusted for TEI. Both approaches were considered within the evidence synthesis. In general, most studies found no statistically significant association between 100% juice consumption and outcomes related to body composition and risk of obesity.

Randomized controlled trials

Shenoy et al[48] reported favorable weight outcomes after 12 weeks among 100% vegetable juice consumers compared to the control group. The other 3 trials examined 100% fruit juice consumption[30,40,49]; all of these had null findings related to body composition or risk of obesity.

Prospective cohort studies

Eight articles from 7 PCS reported body composition outcomes.[35-39,42,46,50] All studies found no association with 100% juice intake and waist circumference. Drapeau et al[36] also examined body fat percentage and sum of skinfolds but found no association with juice intake. All but 1 article[36] accounted for TEI.

Eleven articles from PCS reported measures related to risk of obesity.[31-34,36,41-45,47] Of these, 7 articles found that increased consumption of 100% juice was related to greater weight gain.[31,32,41,43-45,47] Four articles did not account for TEI.[36,43,44,47]

Conclusion statements and grades

The Committee developed and graded conclusion statements for the systematic review question: "What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity?" based on their review of evidence in adults (see **Table 7** and **Table 8**).

Table 7. Conclusion statement and grade for 100% juice consumption and body composition in adults

Conclusion Statement	**100% juice consumption by adults and older adults is not associated with body composition. This conclusion statement is based on evidence graded as moderate.**
Grade	Moderate
Body of Evidence	3 RCT; 8 articles from prospective cohort studies
Consistency	Few concerns with consistency across the body of evidence
Precision	Substantial concerns with precision due to the small number of studies and varying metrics across them
Risk of bias	Some concerns with risk of bias, primarily due to confounding and missing data
Directness	Some concerns with directness due to variation in the type of juice measured
Generalizability	Substantial concerns with generalizability to the US population due to weight status in the trials and limited racial and/or ethnic and socioeconomic diversity in the cohort studies

Assessment of the evidence

The body of evidence underlying the conclusion statement includes 3 articles from RCT and 8 articles from 7 independent cohorts. The evidence was graded based on an assessment of 5 grading elements, as described below. Publication bias was also a consideration but was not a serious concern for this body of evidence because publications included both large and small studies, and studies in this body of evidence were consistent in reporting non-significant findings.

Consistency

The RCT data were consistent, with all trials finding no effect of 100% juice consumption in adults and body composition. The observational data were also consistent, with all studies finding no association between 100% juice consumption in adults and body composition.

Precision

There was a small number of trials with sample sizes ranging from N=26 to N=76 participants. Trials were inconsistent in the type of juice assessed and accounting for TEI. Observational studies used varying metrics (e.g., serving size, continuous/categorical exposures) making comparison of effect sizes and confidence intervals difficult.

Risk of bias

Trials did not report adequate information on their methods for randomization or concealment and did not provide a preregistered data analysis plan. Most observational studies did not account for at least one key confounder and had risk of bias related to missing data.

Directness

Although the trials were designed to directly answer the research question, the studies examined different juice types. The observational studies had no notable issues with directness but tended to have broader research objectives.

Generalizability

Trials were limited to individuals with overweight or obesity at baseline and were targeting weight loss. Only 2 trials reported data on race and/or ethnicity or SEP, limiting the ability to assess generalizability. Many observational studies enrolled only women or were from samples of predominantly White adults, limiting the generalizability to other groups.

Table 8. Conclusion statement and grade for 100% juice consumption and risk of obesity in adults

Conclusion Statement	**100% juice consumption by adults and older adults may not be associated with weight gain. This conclusion statement is based on evidence graded as limited.**
Grade	Limited
Body of Evidence	4 RCT; 11 prospective cohort studies
Consistency	Substantial concerns with consistency in the direction of findings
Precision	Substantial concerns due to varying metrics across studies
Risk of bias	Some concerns with risk of bias, primarily due to confounding and missing data
Directness	Some concerns with directness due to variation in the type of juice measured
Generalizability	Substantial concerns with generalizability to the US population due to weight status in the trials and limited racial and/or ethnic and socioeconomic diversity in the cohort studies

Assessment of the evidence

The body of evidence underlying the conclusion statement includes 4 RCT and 11 PCS. The evidence was graded based on an assessment of 5 grading elements, as described below. Publication bias was also a consideration but was not a serious concern for this body of evidence because publications included both large and small studies, and multiple studies only reported non-significant findings.

Consistency

The RCT data were consistent, with most trials finding no association between 100% juice consumption in adults and weight. The observational data were less consistent for weight.

Precision

There was a small number of trials, all with short duration (12 weeks to 3 months) and small sample sizes. Trials were inconsistent in the type of juice assessed (one examined vegetable juice) and accounting for TEI. Observational studies used varying metrics (e.g., serving size, continuous/categorical exposures) making comparison of effect sizes and confidence intervals difficult.

Risk of bias

Trials did not report adequate information on their methods for randomization or concealment and did not provide a preregistered data analysis plan. Most observational studies did not account for at least one key confounder and had risk of bias related to missing data.

Directness

Although the trials were designed to directly answer the research question, the studies examined different juice types. The observational studies had no notable issues with directness but tended to have broader research objectives.

Generalizability

Trials were limited to individuals with overweight or obesity at baseline and were targeting weight loss. Observational studies that reported data on race and/or ethnicity were in predominantly White participants with middle- to higher SEP. One study enrolled participants with lower SEP.

Individuals during pregnancy and postpartum

Description of the evidence

This review included 1 article examining 100% juice consumption during pregnancy and gestational weight gain[51] and 1 article examining 100% juice consumption during postpartum and postpartum weight change.[52] The overall conclusion statements and grades answering the systematic review question are detailed in **Table 9** and **Table 10**. Evidence for 100% juice consumption during pregnancy and gestational weight gain is summarized in **Table 17**, and evidence for 100% juice consumption during postpartum and postpartum weight change is summarized in **Table 19**.

Both articles were prospective cohort studies conducted in the U.S. in predominantly Hispanic women with a mean baseline age of 27 to 29 years. Guilloty et al[51] examined the relationship between dichotomous juice intake (<1/day vs. ≥1/day) measured from a FFQ between 20- to 28-week gestation and adequacy of gestational weight gain based on Institute of Medicine (IOM) 2009 guidelines. Alderete et al[52] examined the relationship between change in juice intake (per half 8-ounce serving per day) measured using two 24-hour diet recalls and researcher-measured postpartum weight change from 1- to 6-months postpartum.

Synthesis of the evidence

Guilloty et al[51] found no relationship between 100% juice intake during pregnancy and gestational weight gain. Alderete et al[52] found no relationship between 100% juice intake during postpartum and postpartum weight change. Both studies did not account for more than 1 key confounder and did not have a preregistered data analysis plan (see risk of bias assessments in **Table 18** and **Table 20**).

Conclusion statements and grades

The Committee developed conclusion statements for the systematic review question: “What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity?” based on their review of evidence in individuals during pregnancy and postpartum. Conclusion statements could not be drawn for these populations due to a lack of evidence.

Table 9. Conclusion statement and grade for 100% juice consumption and gestational weight gain

Conclusion Statement	**A conclusion statement cannot be drawn about the relationship between 100% juice consumption during pregnancy and adequacy of gestational weight gain because there is not enough evidence available.**
Grade	Grade Not Assignable
Body of Evidence	1 article
Rationale	There was only one eligible article examining 100% juice consumption and gestational weight gain.

Table 10. Conclusion statement and grade for 100% juice consumption and postpartum weight change

Conclusion Statement	**A conclusion statement cannot be drawn about the relationship between 100% juice consumption during postpartum and postpartum weight change because there is not enough evidence available.**
Grade	Grade Not Assignable
Body of Evidence	1 article
Rationale	There was only one eligible article examining 100% juice consumption and postpartum weight change.

Summary of conclusion statements and grades

The Committee answered the systematic review question, "What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity?", with the following conclusion statements.[†] The grades reflect the strength of the evidence underlying the conclusion statements.

Infants and young children[‡]

A conclusion statement cannot be drawn about the relationship between 100% juice consumption by infants and young children, up to age 24 months, and outcomes related to growth patterns, body composition, and risk of obesity during childhood because of substantial concerns with consistency and precision in the body of evidence. (Grade: Grade Not Assignable)

Children and adolescents[§]

100% juice consumption by children and adolescents is not associated with growth, body composition and risk of obesity. This conclusion statement is based on evidence graded as moderate. (Grade: Moderate)

Adults and older adults

100% juice consumption by adults and older adults is not associated with body composition. This conclusion statement is based on evidence graded as moderate. (Grade: Moderate)

100% juice consumption by adults and older adults may not be associated with weight gain. This conclusion statement is based on evidence graded as limited. (Grade: Limited)

Individuals during pregnancy and postpartum

A conclusion statement cannot be drawn about the relationship between 100% juice consumption during pregnancy and adequacy of gestational weight gain because there is not enough evidence available. (Grade: Grade Not Assignable)

A conclusion statement cannot be drawn about the relationship between 100% juice consumption during postpartum and postpartum weight change because there is not enough evidence available. (Grade: Grade Not Assignable)

[†] A conclusion statement is carefully constructed, based on the evidence reviewed, to answer the systematic review question. It does not draw implications and should not be interpreted as dietary guidance.

[‡] Fisher JO, Abrams SA, Andres A, et al. Complementary Feeding and Growth, Body Composition, and Risk of Obesity: A Systematic Review. November 2024. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2025.SR18

[§] The 2025 Dietary Guidelines Advisory Committee developed and graded this conclusion statement based on review of the totality of evidence in infants, children, and adolescents. Due to the lack of evidence in infants and young children, up to 24 months, and issues with its consistency, precision, risk of bias and generalizability, the conclusion statement primarily refers to children and adolescents (2 up to 19 years).

Research recommendations

The Committee identified the following research recommendations that describe the research, data, and methodological advances that are needed to strengthen the body of evidence on 100% juice consumption and growth, body composition, and risk of obesity.

1. Future studies should report multiple measures of growth and risk of obesity to strengthen the evidence base (e.g., age- and sex-standardized measures of weight, incidence of obesity).
2. Increase the amount and representation of research being conducted. More studies in older adults, and more research in individuals during pregnancy and postpartum, are needed. Representation of minoritized racial and/or ethnic groups and in people of varying socioeconomic position is currently lacking.
3. Measure consumption of 100% juice with greater specificity, such that 100% juice can be assessed separately from beverages such as juice drinks or juice with added sugar.
4. Future publications from observational studies should better control for confounding factors, such as race and/or ethnicity and socioeconomic position, that may impact the relationship between 100% juice consumption and growth, body composition, and risk of obesity.
5. Specify and separate 100% fruit juice from 100% vegetable juice, in order to clarify the effects of different types of 100% juice.

Table 11. Evidence examining the relationship between 100% juice consumption in infants, children, and adolescents and growth, body composition, and risk of obesity[a]

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Amaro-Rivera, 2019[1] Prospective Cohort Study, Puerto Rico WIC Clinic, Puerto Rico Analytic N=68 (Excluded participants lost to follow-up) Participant Characteristics • Race/ethnicity: 100% Hispanic • Maternal education: ≤High school: 32.5%, >High school: 67.5% • Other SEP measure(s): WIC participation: 100% • Maternal age: Parent's age: <30 y: 55.8%, ≥30 y: 44.2% • Milk feeding practices: Exclusively BF for ≥1 mo: 51%, Ever FF: 70.1% • Child sex (female): 47% • Gestational age: NR	**Exposure:** 100% juice intake (continuous; 1 y change DQIS juice component score) **Comparator:** Fruit juice intake (continuous; DQIS juice component score) Exposure assessment method and timing: • Interviewer-administered questionnaire completed by caregivers. Diet Quality Index Score based on FFQ; Amounts consumed: NR • 0-5 mo, 8-11 mo, 12-36 mo **Study beverage intake:** • 32.5% consumed juice at 1-5 mo **Outcomes and assessment methods:** • At 11-36 mo (Median: 21 mo, 11-23 mo: 61.0%, 24-36 mo: 39.0%) • Weight status assessed using WHO age- and sex-specific WLZ growth charts. Relative risk for WLZ at follow-up (≥1 vs <1). Underweight defined as WLZ ≤-2 SD. Healthy weight status defined as WLZ >-2 and <1 SD. Risk of overweight defined as WLZ 1-<2. Overweight or obesity defined as WLZ ≥2 SD.	**Risk of Overweight/Obesity**, Log-binomial regression, RR (95% CI) 100% Juices score increase: 1.15 (0.98, 1.34)	**TEI adjusted**: No **Confounders accounted for:** • SEP, sex, milk feeding practices, baseline anthropometry **Confounders NOT accounted for:** • race/ethnicity, gestational age **Additional model adjustments:** WLZ at baseline **Limitations:** • Not all key confounders accounted for • High attrition (~74%) • Wide age range for outcome (11-36 mo) **Funding sources:** University of Puerto Rico Central Administration Grant; Capacity Advancement in Research Infrastructure; National Institute on Minority Health and Health Disparities

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Berkey, 2004[5] **PCS, Growing Up Today Study (GUTS), U.S.** Analytic N=11,634 **Participant characteristics at baseline:** children and adolescents • Age: Range: 9-14y • Female: 57% • Race/ethnicity: White: 95% • SEP: NR • Anthropometry: Overweight (>85th percentile CDC BMI charts): boys: 23.2%; girls: 17.5%; Very lean (<10th percentile): boys: 7.2%; girls: 8.6% • Physical activity: NR • Smoking: NR • Diet quality: NR • TEI: Boys, Mean~2290 kcal/d; Girls, Mean~2050 kcal/d **Study beverage intake at baseline:** Mean servings/d (serving size not specified) Apple juice: Boys: ~0.40 svg/d; Girls: ~0.41 svg/d Orange juice: Boys: ~0.45 svg/d; Girls: ~0.40 svg/d **Inclusion criteria:** offspring of Nurses' Health Study II participants; ages 9-14 at baseline (1996); **Excluded:** any height >3 SD beyond gender-age-specific mean height (0.46% excluded); any 1-y height change which declined by >1 inch or increased by >3 SD above mean change (1.65% excluded); BMI < 12.0 kg/m2; BMI >3 SD above or below gender-age-specific mean (0.87% excluded);	**Exposure:** Fruit juices (orange juice and apple/other juices) **Other exposures:** Milk, SSB, LNCSB **Comparator:** juice intake (continuous) **Exposure Assessment Methods and Timing:** Self-administered semi-quantitative, validated FFQ for older children and adolescents; Represents intake during previous year At baseline, 1y follow-up, 2y follow-up **Outcome Assessment Methods and Timing:** BMI from height and weight self-reported by children with measuring instructions and suggestion to ask someone for help provided (all have mothers who are nurses in NHSII) At baseline, 1y, & 2y follow-ups	**BMI change over 1y**, kg/m2, β (SE), Linear regression **Per 1y svg/d increase:** ***Not adjusted for TEI*** Boys: 0.033 (0.023), P=0.148 Girls: -0.018 (0.020), P=0.361 ***Adjusted for TEI*** Boys: 0.017 (0.024), P=0.488 Girls: -0.021 (0.021), P=0.325	**Model adjustments:** • TEI: yes and no • Key confounders: Sex, age, race and/or ethnicity, anthropometry at baseline, physical activity, diet quality (other beverage intake (sugar added, diet soda)) • Other: Tanner stage, menarche (girls), height growth, milk type (whole/2%/1%/nonfat/soy), inactivity **Limitations:** • Did not account for key confounders: SEP • Not all key confounders accounted for; Differences in attrition (children lost to follow-up were older and had higher sugar added beverage intake and lower milk intake at baseline); self-reported outcome data; no preregistered data analysis plan **Funding:** NIH; Boston Obesity Nutrition Research Center Grant; CDC; Economic Research Service of the USDA; Kellogg’s

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Blum, 2005[6] **PCS, U.S.** Analytic N=166 **Participant characteristics at baseline:** Children • Age: Mean (SD): 9.3 (1.0); Range: 3rd-5th grade • Female: 55% • Race/ethnicity: White: 94% • SEP: NR • Anthropometry: BMI z-score, Mean=0.47, SD=1.0; Height, Mean=139.4 cm, SD=7.9; Weight, Mean=35.7 kg, SD=8.1 • Physical activity: NR • Smoking: NR • Diet quality: SSB intake, mean (SD): 7.4 (9.3) oz/d • TEI: Mean=1957.7 kcal/d, SD=575.3 **Study beverage intake at baseline:** Mean (SD): 2.1 (4.4) oz/d **Inclusion criteria:** children in grades 3-6; baseline and 2y measurements **Excluded:** outlier values (>2.5 SD) on change in BMI z-score (n=2)	**Exposure:** 100% juice **Other exposures:** Milk, SSB, LNCSB **Comparator:** juice intake (continuous, oz/d) **Exposure Assessment Methods and Timing:** 24-hr recall with two interviews per 24-hr period; parents of random sub-sample called to verify consumption at home; Represents intake during past 24-hr on a school day Baseline, 2y **Outcome Assessment Methods and Timing:** Weight and height measured by study staff BMI z-score calculated (CDC age and gender specific) from height and weight; Overweight: BMI z-score ≥1.0; Normal weight: BMI z-score<1.0 Baseline, 2y	**Change in 100% juice intake for Change-in-BMI z-score subgroups**, oz/d; ANOVA, Mean (SD): Unadjusted analysis Within group differences: (t-tests) Normal weight at baseline & 2y, n=99: -0.6 (6.4), NS Overweight at baseline & 2y, n=48; -0.9 (5.6), NS Gained weight (Normal weight at baseline; Overweight at 2y), n=11: -0.5 (4.4), NS Lost weight (Overweight at baseline; Normal weight at 2y), n=6: 2.3 (5.5), NS Between group differences (ANOVA): All NS **BMI z-score**, Linear Regression Increase per oz/d increase in baseline intake: P=NS, Data: NR	**Model adjustments:** • TEI: yes • Key confounders: Sex, age, anthropometry at baseline, diet quality (SSB intake) • Other: Baseline beverage intakes (milk, 100% juice, LNCSB, SSB), 2y follow-up beverage intakes **Limitations:** • Did not account for key confounders: Race and/or ethnicity, SEP, physical activity • Not all key confounders accounted for; Single 24-hr recall used to assess intake; impact of high level of missing data on analyses unclear; no preregistered analysis plan **Funding:** NR

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Carlson, 2012[7] **PCS, MOVE Project (RCT), U.S.** Analytic N=254 **Participant characteristics at baseline:** Children • Age: Mean (SD): 6.7 (0.7) y • Female: 56% • Race/ethnicity: 48% Latino, 39% non-Hispanic white • SEP: Parent with college degree: 41% • Anthropometry: BMI: ≥85th% 20%, ≥95th% 15%; Body Fat %, Mean (SD)=29.9 (8.7) • Physical activity: 4.35 (2.00) days/wk • Smoking: NR • Diet quality: Mean (SD) High fat foods: 3.49 (1.66) foods/d Fruits and vegetables: 3.9 (1.68) servings/d Fast food/restaurants: 1.67 (1.16) times/wk Meals in front of TV: 1.72 (2.06) times/wk Breakfast as a family: 3.02 (2.08) days/wk Dinner as a family: 5.10 (1.53) days/wk • TEI: NR **Study beverage intake at baseline:** Mean (SD): 0.60 (0.56) svg/d **Inclusion criteria:** participants in control group of the MOVE Project (no obesity-related intervention); age 6-7y at baseline **Excluded:** living in a foster or group home; medical and/or psychological condition that affected diet, physical activity, growth, or weight; unable to speak, read, and understand either English or Spanish; lost to follow-up; change in % body fat by ≥5 SD from the mean change	**Exposure:** 100% fruit or vegetable juice (svg = 8 oz) **Other exposures:** SSB **Comparator:** Juice intake (continuous; svg/d) **Exposure Assessment Methods and Timing:** Unvalidated survey completed by parents; represents usual dietary behavior Baseline, 2y **Outcome Assessment Methods and Timing:** Height and weight measured by trained staff. Age- and gender-specific BMI percentiles and z-scores calculated using CDC growth charts. Percent body fat measured using bioelectrical impedance analysis and Schaefer equation Baseline, 2y	**BMI z-score over 2y**, β (95% CI), Linear regression Change per svg/d increase: -0.04 (-0.21, 0.13), P=0.631 **Percent Body Fat over 2y**, Linear regression, β (95% CI) Change per svg/d increase: -1.06 (-2.70, 0.57), P=0.202	**Model adjustments:** • TEI: no • Key confounders: sex, age, race and/or ethnicity, socioeconomic position (parent education) • Other: Baseline height **Limitations:** • Did not account for key confounders: anthropometry at baseline, physical activity, diet quality • Not all key confounders accounted for; Exposure assessment tool not validated; No preregistered data analysis plan **Funding:** NIDDK

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Dong, 2015[8] **PCS, Avon Longitudinal Study pf Parents and Children (ALSPAC), U.K.** Analytic N=4,646 **Participant characteristics at baseline:** Children • Age: Mean: 8y • Female: 49% • Race/ethnicity: NR • SEP: NR • Anthropometry: BMI, Mean: 16.2; BMI z-score, Mean: 0.1 • Physical activity: Mean (SD): 22.9 min/d (15.4) (at age 11y) • Smoking: NR • Diet quality: Mean (SD), g/d Fruit: 80 Vegetables: 74 Whole grains: 12 • TEI: NR **Study beverage intake at baseline:** grams/d, mean (SD): 7y: 94.4 (138.1) 10y: 124.0 (154.7) 13y: 164.7 (208.2) **Inclusion criterion:** Complete dietary and anthropometric data at 7y, 10y, and 13y	**Exposure:** Fruit juices **Other exposures:** Milk, SSB, LNCSB **Comparator:** Juices (continuous; g/d): Per 100 g/d change over 3y, Per 100 g/d average across 3y **Exposure Assessment Methods and Timing:** Three-day food diary, child report with help from parent; Represents current intake Ages 7y, 10y, 13y **Outcome Assessment Methods and Timing:** Height and weight measured by study personnel Calculated UK age and sex adjusted BMI z-score to represent adiposity Excessive weight gain: increase in adiposity over 3y compared to reference group BMI converted to g for interpretation (assumes 0.01 increase in BMI z-score = 50g) Ages 7y, 10y, 13y	**Excess weight gain (g) (BMI z-score) over 3y**, per 100 g/d increase (change) or per 100 g/d intake (average), Mean, linear regression **Juice intake, continuous** Change: β: 10, P=NS Average: β: -15, P=NS ***Boys (n=2155)*** Change: β: 5, P=NS ***Girls (n=2193)*** Change: β: 20, P=NS ***7-10y period*** Change: β: 6, P=NS ***10-13y period*** Change: β: 25, P=NS	**Model adjustments:** • TEI: no • Key confounders: Sex, age, SEP (highest education level of child's mother), physical activity • Other: Pubertal status (Tanner stage) **Limitations:** • Did not account for key confounders: Race and/or ethnicity, anthropometry at baseline, diet quality • Not all key confounders accounted for; No info on missing data; no preregistered data analysis plan **Funding:** NR

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Dubois, 2016[9] **PCS, Quebec Newborn Twin Study, Canada** Analytic N=304 **Participant characteristics at baseline:** Monozygotic (MZ) twin children • Age: Mean (SD): 9y (0.6) • Female: 55% • Race/ethnicity: NR • SEP: NR • Anthropometry: BMI Mean (SD): 16.5 kg/m2 (2.5) • Physical activity: NR • Smoking: NR • Diet quality: Food group intake, kcal/d, % of energy intake Vegetables: 98, 5% Fruit & fruit juice: 156, 9% Whole grain: 86, 5% Data for other food groups and macronutrients available in paper • TEI: Kcal/d, Mean (SD): 1,814 (393) **Study beverage intake at baseline:** Juice intake, Mean (SD): 79.51 (83.26) kcal/d **Excluded:** dietary data misreporting (Energy Intake:Basal Metabolic Rate ratios of <0.96 and >2.49)	**Exposure:** Fruit juice (kcal/d, % of total energy) **Other exposures:** Milk, SSB **Comparator:** Fruit juice (kcal), continuous **Exposure Assessment Methods and Timing:** 24-hr recall performed by registered dietitians; Represents usual intake Baseline (9y) **Outcome Assessment Methods and Timing:** Height and weight self-reported except at baseline (measured) Intrapair difference (MZ twins) in BMI Discordant twins defined as ≥2 BMI units between pairs at least once at 9, 12, 13, and/or 14y Ages 9y, 12y, 13y, 14y	**Correlation between intrapair differences in intake at 9y (kcal or % energy) and intrapair differences in BMI in subsequent yrs**; Spearman correlation **Fruit juice intake, continuous** All: kcal; % energy 12y (n=238): -0.14, NS; -0.15, NS 13y (n=226): -0.17, P<0.05; -0.14, NS 14y (n=212): -0.10, NS; -0.14, NS **Change 9-14y (n=210): -0.21, P<0.05; -0.21, P<0.05** ***Boys:*** kcal; % energy 12y (n=102): -0.13, NS; -0.17, NS 13y (n=96): -0.28, NS; -0.24, NS 14y (n=92): -0.24, NS; -0.24, NS Change 9-14y (n=92): -0.25, NS; -0.23, NS ***Girls:*** kcal; % energy 12y (n=136): -0.16, NS; -0.13, NS 13y (n=130): -0.11, NS; -0.07, NS 14y (n=120): 0.03, NS; -0.00, NS Change 9-14y (n=108): -0.18, NS; -0.17, NS **Refer to paper and supplemental data for additional analyses on:** • Comparison of Dietary Intake (at 9 years) Among Leaner and Heavier Twins From Discordant and Concordant MZ Twin Pairs • Comparison of Dietary Intake at 9 Years Between Discordant MZ Twins for BMI at 9 Years and Older	**Model adjustments:** • TEI: no • Key confounders: Sex, age, race and/or ethnicity, SEP, diet quality • Other: None **Limitations:** • Did not account for key confounders: Anthropometry at baseline, physical activity • No info on missing data; no preregistered data analysis plan **Funding:** Fonds Quebecois de la Recherche sur la Societe et la Culture; Fonds de la Recherche en Sante du Quebec; Social Science and Humanities Research Council of Canada; National Health Research Development Program; CIHR; Sainte-Justine Hospital Research Centre; Academy of Finland

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Field, 2003[10] **PCS, Growing Up Today Study (GUTS), U.S.** Analytic N=14,918 **Participant characteristics at baseline:** children and adolescents • Age: Mean ~12y (range: 9-14y) • Female: 54% • Race/ethnicity: NR • SEP: NR • Anthropometry: Mean BMI ~19 kg/m2 • Physical activity: NR • Smoking: NR • Diet quality: Servings/d of fruits and vegetables: 2 servings: ~22.9% 3 servings: ~20.3% 4 servings: ~16.5% 5+ servings: ~22.9% • TEI: ~2100 kcal/d **Study beverage intake at baseline:** ~0.9 daily servings **Inclusion criteria:** children of women in Nurses' Health Study II, age 9-14y at baseline, completion of at least 2 GUTS questionnaires between 1996-1999	**Exposure:** Juice (no other details provided) **Other exposures:** **Comparator:** Juice intake (continuous; svg/d) **Exposure Assessment Methods and Timing:** Self-administered semi-quantitative, validated FFQ for older children and adolescents; Represents intake during previous year Baseline and annually for 3y (1996-1999) **Outcome Assessment Methods and Timing:** Height and weight self-reported; BMI calculated. Age- and gender-specific BMI% and BMI z-score calculated based on CDC growth charts. With overweight: BMI between the national 85th and 95th percentile for age and gender; With obesity: BMI >95th percentile Baseline and annually for 3y (1996-1999)	**BMI z-score**, Annual change: 1996-1999, Conditional linear model, β (95%CI) **Girls:** TEI unadjusted: -0.000 (-0.002, 0.001) **TEI adjusted: 0.003 (0.001, 0.005)** **Boys:** TEI unadjusted: 0.000 (-0.002, 0.002) TEI adjusted: 0.002 (0.000, 0.005)	**Model adjustments:** • TEI: yes and no • Key confounders: sex, age, anthropometry at baseline, physical activity • Other: Tanner stage, inactivity **Limitations:** • Did not account for key confounders: race and/or ethnicity, socioeconomic position, diet quality • Not all key confounders accounted for; exposure not clearly defined, self-reported height and weight; no preregistered data analysis plan **Funding:** CDC; Boston Obesity Nutrition Research Center; NIH; Kellogg Company

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Fiorito, 2009[11] **PCS, U.S.** Analytic N=166 **Participant characteristics at baseline:** Female children • Age: Mean: 5y • Female: 100% • Race/ethnicity: "Predominantly non-Hispanic white" • SEP: Family income, averaged $50,000-$75,000; Paternal education, 14.9y (2.7); Maternal education, 14.8y (2.3) • Anthropometry: Mean (SD): BMI for age percentile, 59.3 (26.6); Body fat %, 20.6 (4.3); Overweight 18% • Physical activity: NR • Smoking: NR • Diet quality: NR • TEI: NR **Study beverage intake at baseline:** NR **Inclusion criteria:** complete dietary intake and body weight data at ≥4/6 measurement occasions, living with both biological parents, absence of severe food allergies or chronic medical problems affecting food intake, absence of dietary restrictions involving animal products	**Exposure:** Fruit juice (100% fruit juice); 1 svg=8oz **Other exposures:** milk, SSB **Comparator:** Fruit juice intake (continuous; 8 oz svg/d) **Exposure Assessment Methods and Timing:** Three, 24-hr recalls (2 weekdays, 1 weekend day) within 2- to 3-wk period conducted by trained staff using NDS-R software and reported by mother; represents usual intake Baseline **Outcome Assessment Methods and Timing:** Body fat % estimated by tricep and subscapular skinfold thickness at age 5, 7, 9, and 11y and DXA scans at age 9, 11, 13 and 15 At 7, 9, 11, 13, 15y	**Body fat percentage**, Linear Regression, standardized regression coefficient 7y (N=169): 0.02, P=NS 9y (N=158): 0.02, P=NS 11y (N=164): 0.03, P=NS 13y (N=150): 0.00, P=NS 15y (N=160): -0.02, P=NS	**Model adjustments:** • TEI: no • Key confounders: Sex • Other: none **Limitations:** • Did not account for key confounders: Age, race and/or ethnicity, SEP, anthropometry at baseline, physical activity, diet quality • Not all key confounders accounted for; Possible reporting bias (not all outcome measures reported for each beverage type); no preregistered data analysis plan **Funding:** NIH; The National Dairy Council

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Gaffney, 2012[2] Prospective Cohort Study, IFPS II, United States Analytic N=691 (Excluded participants without weight data from 12 mo survey, with missing data for essential variables, or with biologically impossible observations for WAZ.) Participant Characteristics • Race/ethnicity: White: 94.8%, Hispanic: 3.6%, Black: 1.6% • Maternal education: HS or less: 14.6%, Some college: 34.3%, 4-y college or more: 51.1% • Other SEP measure(s): Household income (% of poverty line): <185%: 24.7%, 185-349%: 31.4%, >349%: 43.8% • Maternal age: 18-24 y: 10.1%, 25-34 y: 69.6%, >34 y: 20.3% • Milk feeding practices: BF intensity 6-12 mo: Low (<20% milk feedings from BM): 52.1%, Medium (20-80% milk feedings from BM): 24.3%, High (>80% milk feeding from BM): 23.6% • Child sex (female): 51% • Birth weight: 7.65 (1.02) lb • Gestational age: 100% born ≥35 wk	**Exposure:** Juice intake intensity over 6-12 mo (1 juice feeding/2 d, >1 juice feeding/2 d) **Comparator:** No juice intake (categorical) Exposure assessment method and timing: • Maternal questionnaire • 6, 7, 9, 10, and 12 mo **Study beverage intake:** • 0: 21.3%, 1 per 2 d: 35.2%, >1 per 2 d: 43.6% **Outcomes and assessment methods:** • At 12 mo • Maternal report of weight and age at most recent doctor's visit. WAZ calculated using age and gender-specific growth reference data from CDC.	**WAZ**, Multiple regression, β (SE) 1 juice feeding/2 d: **0.25 (0.110), p=0.049** >1 juice feeding/2 d: 0.21 (0.110), p=0.25	**TEI adjusted**: No **Confounders accounted for:** • SEP, sex, milk feeding practices, baseline anthropometry **Confounders NOT accounted for:** • race/ethnicity, gestational age **Additional model adjustments:** Bottle-to-bed behavior, BF intensity in late infancy, birth weight, mother's smoking status, weight gain during pregnancy, mother's age, mother's pregravid BMI, mother's education, mother's race/ethnicity, household income, introduction to complementary foods **Limitations:** • Not all key confounders accounted for • No information on funding • High loss to follow-up (85.9%) **Funding sources:** NR

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Guerrero, 2016[12] **PCS, Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), U.S.** Analytic N=15,418 **Participant characteristics at baseline:** Children • Age: Mean (SD): ~53 (4.1) mo (Range: 44-64.8 mo) • Female: 49% • Race/ethnicity: White: 43%; Black: 16%; Asian: 11%; Native American: NR; Latino: 20%; Hispanic: NR; Non-Hispanic: NR; Other: 10%; 9% Spanish-speaking • SEP: 79% lived in 2-parent households; Income: ~24% below fed poverty level; Maternal education: 21% High school, 27% College, 31% ≥Bachelor; Mother's acculturation (# years in US), mean (SD): 27.6 (10.4)y • Anthropometry: Mean BMI ~16.5 kg/m2; ~47% with overweight or obesity at baseline • Physical activity: NR • Smoking: NR • Diet quality: Consumption in last week (% Yes); Data from n=7696 included at 48-mo wave (baseline) Any soda: 71.3%; Any fast food: 75.4%; Fruit 7 times/wk: 71.7%; Vegetables 7 times/wk: 68.4% • TEI: NR **Study beverage intake at baseline:** Any juice in past week (age 48mo): ~92% **Inclusion criteria:** non-probability birth sample drawn in 2001; complete data on weight and height; mothers were able to be interviewed **Excluded:** serious birth defects (such as spina bifida or heart defects); death before 5y	**Exposure:** 100% Fruit juice intake **Other exposures:** SSB **Comparator:** 100% Fruit juice intake, categorical: Any intake in the last 7d vs. No intake in the last 7d **Exposure Assessment Methods and Timing:** Parental interview: "Was 100% fruit juice consumed in past 7d? Yes/No" 48, 60, and 72 mo **Outcome Assessment Methods and Timing:** Height and weight obtained by trained researchers using standardized procedures and equipment. Age- and sex-specific BMI percentiles calculated using 2000 CDC growth charts; Overweight: BMI 85th-<95th percentile; Obesity: BMI ≥95% percentile 48, 60, and 72 mo	**BMI across 2y follow up**, Hierarchical linear modeling, β (SE) No juice (ref) vs 100% fruit juice within 7d: -0.101 (0.053), NS **By race:** No juice (ref) vs 100% fruit juice within 7d; β (SE) **White: -0.142 (0.070), P<0.05** Black: -0.082 (0.197), NS Asian: 0.277 (0.156), NS Hispanic-English: -0.226 (0.0207), NS Hispanic-Spanish: -0.021 (0.203), NS	**Model adjustments:** • TEI: no • Key confounders: Sex, age, race and/or ethnicity, socioeconomic position, diet quality (soda intake, daily servings of fruits and vegetables) • Other: Birth weight, breastfeeding during infancy **Limitations:** • Did not account for key confounders: Anthropometry at baseline, physical activity, • Not all key confounders accounted for; Exposure not well defined (does not account for amount of exposure (just Y/N within 7d); Exposure assessment tool not validated; Baseline, analytic sample sizes, and attrition not clear; No preregistered data analysis plan **Funding:** HHS; University of California's Institute of Human Development; McCormick Foundation

Lambourne, 2013[13]
RCT-Parallel, U.S.
Baseline N=136, Analytic N=108 (Attrition: 21%); Power: Achieved sample size gives 80% power to detect medium difference (Glass's delta = 0.75) in FFM among groups with alpha = 0.05, assuming correlation between repeated measures up to 0.60

Participant characteristics at baseline: Adolescents
- Age: Mean: ~13.6y
- Female: 64%
- Race/ethnicity: Minorities: 86%
- SEP: NR
- Anthropometry: Mean ~85th BMI percentile
- Physical activity: Moderate to vigorous physical activity, Mean ~25 min/d
- Smoking: NR
- Diet quality: NR
- TEI: Mean ~1564 kcal/d

Study purpose: to examine the effects of a supervised RT program with daily milk supplementation on weight, fat mass, and fat-free mass in a sample of middle-school students compared to a water control

Excluded: BMI ≤50th ≥99th percentile, resistance training in past 12mo, >3hr/wk of endurance training, were not weight stable (+-4.5kg) past 3mo, used tobacco or weight-altering products or medications that could affet metabolism, had an eating disorder, depression, psychiatric illness, specialized diet regime, food allergies, or lactose intolerance; calcium intake >1,000 mg/d, milk intake >1.5 8oz serv/d

Intervention: 100% fruit juice
Participants randomized to a milk, juice, or water group. Juice was isocaloric to milk, and participants had a choice of apple, orange, and/or grape juice daily (in 4-6oz svg, totaling 340-380kcal/d; all groups did resistance training 3d/wk), n=34 (Boys, n=14; Girls, n=20)

Other interventions: Resistance training (all groups); Dairy milk

Comparator: Water (24 fl oz/d bottled water per day; resistance training 3d/wk), n=38 (Boys, n=12; Girls, n=26)

Duration: 6mo

Study beverage intake at baseline: NR
Compliance: Directly observed by study staff on weekdays and obtained by self-report on weekends; Mean (SD) supplements consumed (total sample): Juice 87.4% (7.2), Water 89.8% (5.8); mean (SD) supplements consumed (per protocol): Juice 89.3% (5.1), Water 91.3% (3.6)

Outcome Assessment Methods and Timing:
Height and weight measured by trained research staff
BMI percentile calculated using CDC software
Waist circumference measured by trained research staff using procedures of Lohman, Roche, and Martorell (1988)
Fat Mass (FM), Fat-free mass (FFM), and % body fat: assessed via DXA
Baseline, 6mo follow up

<u>**BMI percentile**</u>, Mean (SD), Linear mixed model
By study group: baseline, 6mo change
Water: 84.7 (12.7), 0.3 (7.1)
Juice: 85.0 (12.7), 1.5 (4.2)
Group, P=0.56; Time, P<0.0001

Boys
Water: 85.6 (12.7), -2.0 (4.5)
Juice: 85.3 (12.5), 1.5 (4.4)
Group, P=0.07; Time, P=0.04

Girls
Water: 84.3 (12.7), 1.4 (7.9)
Juice: 84.8 (13.2), 1.5 (4.1)
Group, P=0.94; Time, P<0.0001

<u>**Fat mass**</u>, kg, Mean (SD), Linear mixed model
By study group: baseline, 6mo change
Water: 20.9 (10.2), 0.4 (3.6)
Juice: 20.1 (10.1), 1.6 (2.5)
Group, P=0.33; Time, P<0.0001

Boys
Water: 17.4 (10.6), -1.9 (4.7)
Juice: 16.3 (9.1), 1.2 (2.7)
Group, P=0.04; Time, P=0.06
Pairwise comparison, P=NS

Girls
Water: 22.5 (9.8), 1.5 (2.5)
Juice: 22.8 (10.0), 1.9 (2.3)
Group, P=0.85; Time, P<0.0001

<u>**Fat free mass**</u>, kg, Mean (SD), Linear mixed model
By study group: baseline, 6mo change
Water: 41.4 (8.6), 1.7 (2.9)
Juice: 44.1 (7.2), 2.7 (1.9)
Group, P=0.06; Time, P<0.0001

Boys
Water: 47.9 (9.7), 4.3 (1.4)
Juice: 49.3 (7.2), 4.0 (1.3)
Group, P=0.99; Time, P<0.0001

Model adjustments:
- TEI: no
- Other: Study site

Limitations:
- No information on randomization and concealment of allocation sequence; No preregistered data analysis plan

Funding:
Dairy Research Institute

Girls
Water: 38.4 (9.7), 0.5 (1.3)
Juice: 40.5 (3.7), 1.8 (1.7)
Group, P=0.25; Time, P=0.49
Pairwise comparison, P=0.02

Percent fat, %, Mean (SD), Linear mixed model
By study group: baseline, 6mo change
Water: 33.5 (11.0), 0 (3.5)
Juice: 31.5 (11.4), 0.4 (2.4)
Group, P=0.99; Time, P=0.05

Boys
Water: 25.6 (11.0), -2.8 (3.2)
Juice: 24.8 (11.5), 0.0 (2.7)
Group, P=0.05; Time, P=0.87
Pairwise comparison, P=NS

Girls
Water: 37.2 (11.0), 1.3 (2.9)
Juice: 36.2 (9.0), 0.7 (2.2)
Group, P=0.22; Time, P=0.01

WC, cm, Mean (SD), Linear mixed model
By study group: baseline, 6mo change
Water: 77.3 (9.3), 0.6 (4.2)
Juice: 76.7 (8.8), 1.7 (2.9)
Group, P=0.20; Time, P=0.67

Boys
Water: 79.0 (10.3), 0.9 (5.2)
Juice: 78.5 (8.0), 1.3 (3.7)
Group, P=0.21; Time, P=0.85

Girls
Water: 76.6 (8.9), 0.4 (3.8)
Juice: 75.4 (9.4), 1.9 (2.2)
Group, P=0.25; Time, P=0.49

Body mass, kg, Mean (SD), Linear mixed model
By study group: baseline, 6mo change
Water: 62.8 (13.8), 2.3 (2.9)
Juice: 64.8 (11.9), 4.2 (3.1)
Group, P=0.12; Time, P<0.0001

Boys
Water: 65.1 (13.8), 2.8 (3.3)

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
		Juice: 65.9 (11.4), 5.2 (3.1) Group, P=0.14; Time, P<0.0001 **Girls** Water: 61.8 (14.0), 2.0 (2.8) Juice: 64.1 (12.5), 3.5 (3.1) Group, P=0.60; Time, P<0.0001	

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Johnson, 2007[14] **PCS, Avon Longitudinal Study of Parents and Children (ALSPAC), Children in Focus (CIF) subsample, UK** Analytic N=5y & 9y (n=521) 7y & 9y (n=682) **Participant characteristics at baseline:** British children born to ALSPAC participants from 04/1991-12/1992. • Age: Mean (SD): 5.16y (0.05) • Female: NR • Race/ethnicity: NR • SEP: Maternal education and paternal class: Data NR • Anthropometry: Fat mass at 5y, kg, Mean (SD): 8.47(4.98) Weight at 5y, kg, Mean(SD): 19.52 (2.54) Overweight at 5y (≥95th percentile): 15% • Physical activity: NR • Smoking: NA • Diet quality: Dietary energy density, kJ/g at 5y: 8.52 (1.49) • TEI: TEI at 5y, Mean (SD) 6218 (1393) kJ/d; Misreporting of TEI, TEI / Estimated energy requirements (EER) at 5y, Mean (SD): 1.06 (0.24) **Study beverage intake at baseline:** 100% juice intake, Median (IQR) 5y: 0 (0-117) g/d; 7y: 19 (0-152) g/d Paper contains beverage intake data at 5y and 7y stratified by maternal education **Excluded:** Missing data on diet or body composition	**Exposure:** Fruit juice (100% fruit juices and concentrates) **Other exposures:** SSB, milk, LNCSB **Comparator:** Different intake level of 100% juice (continuous, g/d or svg/d) **Exposure Assessment Methods and Timing:** Parent-report, 3-day unweighed dietary records, previously validated using weighed dietary records 5y, 7y **Outcome Assessment Methods and Timing:** Fat mass (kg): DXA Fat mass index (FMI): Fat mass (kg) / Height (m^5.8); log transformed Height: valid measure by study staff Weight: valid measure by study staff Age: 9.8 (0.15)y	**Change in fat mass**, kg/serving (95% CI), p-value, Linear regression Change 5y-9y per serving of 100% juice at 5y (n=362): -0.11 (-0.61, 0.38), p=0.66 Change 7y-9y per serving of 100% juice at 7y (n=471): 0.25 (-0.08, 0.58), p=0.14 **FMI quintile**, Spearmean correlation coefficient By mean volume of 100% juice consumed (g/d) at age 5y: Data NR, NS By mean volume of 100% juice consumed (g/d) at age 7y: Data NR, NS	**Model adjustments:** • TEI: yes • Key confounders: Sex, age, socioeconomic position (maternal education, paternal class), anthropometry at baseline, physical activity, smoking, diet quality • Other: TV watching, parental BMI, fat intake, fiber intake, EI/EER **Limitations:** • Did not account for key confounders: Race and/or ethnicity • High attrition/missing data; No information on non-completers; No preregistered data analysis plan **Funding:** U.K. Medical Research Council, the Wellcome Trust, and the University of Bristol

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Kral, 2008[15] **PCS, U.S.** Analytic N=49 **Participant characteristics at baseline:** Children • Age: Mean: ~3y • Female: 44% • Race/ethnicity: White: 100% • SEP: NR • Anthropometry: BMI z-score, Mean ~ -0.4; WC, Mean ~49.8 cm • Physical activity: NR • Smoking: NR • Diet quality: SSB (oz/d), Mean (SEM) Low risk: 1.8 (1.0) High risk: 2.3 (1.0) • TEI: NR **Study beverage intake at baseline:** Mean ~8.5 oz/d **Inclusion criteria:** at either high or low risk of obesity based on maternal pre-pregnancy BMI; food records at ages 3, 4, 5, & 6y	**Exposure:** Fruit juice (100% juice) **Other exposures:** Milk, SSB, LNCSB **Comparator:** Fruit juice intake (change from 3y to 5y; continuous; kcal/d) **Exposure Assessment Methods and Timing:** Three day weighed food and beverage record (2 weekdays, 1 weekend day) recorded by primary caregiver; Represents usual intake Baseline, 1y & 2y follow ups **Outcome Assessment Methods and Timing:** Waist circumference measured in triplicate at the narrowest part of torso by trained anthropometrists Height and weight measured in triplicate by trained anthropometrists BMI z-score calculated using CDC growth charts Baseline, 1y, 2y, & 3y follow ups	**BMI z-score change from 5y – 6y**, per change in kcal/d from 3y – 5y, B (SE), Linear mixed model: Data NR, p>0.10 **WC change from 5y – 6y**, per change in kcal/d from 3y – 5y, B (SE), Linear mixed model: Data NR, P=NS	**Model adjustments:** • TEI: yes • Key confounders: Sex, age, race and/or ethnicity, anthropometry at baseline, diet quality (other beverage intake, including SSB) • Other: change in BMI z-score or waist circumference from ages 3 to 5 years **Limitations:** • Did not account for key confounders: SEP, physical activity • Not all key confounders accounted for; Baseline n NR and no information on non-completers; No preregistered data analysis plan; Exposure data based on parental weighed food records **Funding:** NIH; General Clinical Research Center; Nutrition Center of the Children's Hospital of Philadelphia

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Libuda, 2008[16] **PCS, Dortmund Nutritional and Longitudinally Designed (DONALD), Germany** Analytic N=244 **Participant characteristics at baseline:** Children and adolescents • Age: ~11.9y (range: 9-18y) • Female: 49% • Race/ethnicity: NR • SEP: NR • Anthropometry: Mean BMI ~18.3; Mean percent body fat: ~19% • Physical activity: NR • Smoking: NR • Diet quality: Regular soft drink consumption, mean (SD): Boys: 277 (296) g/d; Girls: 243 (273) g/d • TEI: ~8200 kJ/d **Study beverage intake at baseline:** Mean (SD): boys: 178 (224) g/d, girls: 180 (236) g/d **Inclusion criteria:** completion of at least 4 out of 6 possible annual dietary records **Excluded:** potential under-reporting of dietary intake (ratio of reported total energy intake and predicted individual BMR above age- and sex-specific cut-off values of 1.04 for boys and 1.01 for girls (6-13 year old subjects) and of 1.07 for boys and 0.97 for girls (14-18 year old subjects)	**Exposure:** 100% juice (no other details provided) **Other exposures:** SSB **Comparator:** Fruit juice (continuous; g/d) **Exposure Assessment Methods and Timing:** 3d weighed dietary records; All foods/bevs before consumption and leftovers were weighed and recorded by the parents, or by the older subjects themselves, on 3 consecutive days; participants chose the 1st day of recording within a given period of time Baseline, annually for 5y **Outcome Assessment Methods and Timing:** Body weight measured to nearest 0·1 kg using an electronic scale. Height was measured in a standing position to the nearest 0·1 cm using a digital telescopic stadiometer. Skinfold thickness: Triceps and subscapular skinfolds measured on right side of body using skinfold caliper. Body fat percentage (%BF): sum of both skinfolds using equations of Slaughter. Sex- and age-independent BMI standard deviation scores (BMI-SDS) calculated using German national reference data: Overweight: BMI values 90th – 97th percentile, Obesity: BMI values > 97th percentile Baseline, annually for 5y	**BMI-SDS over 5y follow-up (β)** ***Boys*** Baseline intake*time: 0.033, P=0.310 Change in intake: -0.002, P=0.964 ***Girls*** Baseline intake*time: -0.046, P=0.161 Change in intake: 0.096, P=0.013 **%Body Fat over 5y follow-up (β)** ***Boys*** Baseline intake*time: -0.058, P=0.874 Change in intake: -0.121, P=0.756 ***Girls*** Baseline intake*time: -0.265, P=0.426 Change in intake: 0.615, P=0.139	**Model adjustments:** • TEI: yes • Key confounders: sex, age, socioeconomic position (maternal education level), anthropometry at baseline • Other: Time in years after maximal growth velocity (equals years of adolescence) as an indicator for pubertal status, birth weight, maternal BMI **Limitations:** • Did not account for key confounders: race and/or ethnicity, physical activity, diet quality • Not all key confounders accounted for; No preregistered data analysis plan **Funding:** German Federal Ministry of Food, Agriculture and Consumer Protection

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Mahoney, 2018[3] Prospective Cohort Study, Born in Bradford 1000, UK Analytic N = 779 (Excluded participants with multiple births, missing child dietary data or outcome data, and not of White British or Pakistani ethnicity) Participant Characteristics • Race/ethnicity: Pakistani: 49%, White British: 38% • Maternal education: NR • Other SEP measure(s): NR • Maternal age: NR • Milk feeding practices: NR • Child sex (female): NR • Birth weight: 3234.15 (521.97) g • Gestational age: NR	**Exposure:** Pure fruit juices and baby fruit juices **Comparator:** Juice intake (categorical; (Consumer vs non-consumer at 12 mo, ≤ vs > Median at 18 mo)) <u>Exposure assessment method and timing</u>: • FFQ completed by parents • 12, 18 mo **Study beverage intake:** • Frequency/wk pure fruit juice (Median, IQR): 12 mo: 0.0 (0.0, 0.5); 18 mo: 7.0 (0.0, 7.0) **Outcomes and assessment methods:** • At 36 mo • Height, weight measured by trained researchers. Age- and sex-adjusted BMI z-score calculated based on WHO 2006 standards.	**<u>BMI z-score at 36 mo</u>**, Multiple regression, β (95% CI) <u>Intake at 12 mo</u>: Consumer vs non-consumer: -0.05 (-0.20, 0.10), p=0.53 <u>Intake at 18 mo</u>: > vs ≤ 7.0/wk: -0.07 (-0.21, 0.08), p=0.37	**TEI adjusted**: No **Confounders accounted for:** • sex, race/ethnicity, baseline anthropometry **Confounders NOT accounted for:** • SEP, milk feeding practices, gestational age **Additional model adjustments:** Ethnicity, gender, birth weight, other key indicator food groups (formula milk; commercial savory baby foods; commercial sweet baby foods; chips, roast and potato shapes; processed meat products; vegetables; fruit; cakes, biscuits, chocolate and sweets; crisps and savory snacks; sugar-sweetened drinks; low-sugar drinks; water) **Limitations:** • Not all key confounders accounted for • Most participant characteristics NR • High attrition **Funding sources:** NIHR

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Marshall, 2019[17] **PCS, Iowa Fluoride and Iowa Bone Development Studies, U.S.** Analytic N=623 **Participant characteristics at baseline:** Children • Age: Range: 2-4.7y • Female: 51% • Race/ethnicity: Non-Hispanic white: 94% • SEP: Mother had 4y college degree 45%; Household annual income ≥$60,000 19%; Low 25%, Middle 38%, High 38% • Anthropometry: BMI, Mean~16.0 kg/m2; BMI z-score, Mean~0.31 • Physical activity: NR • Smoking: NR • Diet quality: SSB, oz/d, Median (25th, 75th percentile) Males: 2.7 (1.1, 5.1) Females: 2.6 (1.2, 5.1) • TEI: Median~1360 kcal/d **Inclusion criteria:** ≥2 assessments ages 2-8.5y or ≥1 ages 9-17y	**Exposure:** 100% juice intake (juice drinks were included in this group through age 8.5y, but were assessed separately in later surveys) **Other exposures:** Milk, SSB, LNCSB **Comparator:** Juice intake (continuous; 8 oz/d) **Exposure Assessment Methods and Timing:** Validated beverage frequency questionnaire; represents previous week's beverage intakes At 3- to 6-mo intervals: ages 9-10.5, 11-12.5, 13-14.5, and 15-17y. Mean daily beverage intakes were calculated for each subject from all available questionnaires over the time periods preceding clinic examinations (i.e., 9 to 10.5, 11 to 12.5, 13 to 14.5, and 15 to 17 years). **Outcome Assessment Methods and Timing:** Height measured without shoes using stadiometer during clinic visits Weight was measured at clinic visit using a standard physician's scale BMIs were calculated from weight and height measures (kg/m2) Age- and sex-specific BMI z-scores calculated 2000 CDC growth charts At ages 9, 11, 13, 15, 17y	**BMI z-score**, Change through age 17y, per 8 oz/d increase over same period, Linear regression: β: 0.044, 95% CI: -0.038, 0.125, P=0.29	**Model adjustments:** • TEI: yes • Key confounders: Sex, age, SEP (household income and maternal education), anthropometry at baseline, diet quality (other beverage intake, including SSB) • Other: Protein intake, other beverage intake **Limitations:** • Did not account for key confounders: Race and/or ethnicity, physical activity • Not all key confounders accounted for; No information on non-completers; No preregistered data analysis plan **Funding:** NIH; The Roy J. Carver Charitable Trust; Delta Dental of Iowa Foundation

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Mrdjenovic, 2003[18] **PCS, Cornell Summer Day Camp (RCT), U.S.** Analytic N=21 **Participant characteristics at baseline:** Children and adolescents • Age: ~8y (range: 6-13y) • Female: 37% • Race/ethnicity: mostly white, 17% (n=5) from minority groups • SEP: mostly upper middle-class families • Anthropometry: BMI ~16.5 kg/m2 • Physical activity: NR • Smoking: NR • Diet quality: Sweetened drink consumption, mean (SD): 6-7y: 366 (306) g/day; 7-10y: 233 (234) g/day; 11-13y: 415 (433) • TEI: ~1618 kcal/d **Study beverage intake at baseline:** Mean~120 g/d **Inclusion criteria:** "healthy" children with no known food intolerances or allergies **Excluded:** children with poor dietary recording	**Exposure:** Pure or 100% fruit juice (6 oz = 1 serving) **Other exposures:** SSB **Comparator:** Fruit juice intake (categorical; oz/d): 0 (no drink consumed); <6 (1 svg/d); 6-12 (2 glasses or 1 cup); >12 ; >16 oz/d **Exposure Assessment Methods and Timing:** Food consumption at camp (during weekdays) was weighed before and after consumption; food consumption at home (weekend) calculated based on recorded amounts by converting home measures into grams. Children served themselves a drink of their choice whenever they wished, but were requested to report the amounts they drank. Daily throughout a 4-8wk follow up **Outcome Assessment Methods and Timing:** Height measured without shoes to the nearest cm with a portable field stadiometer; Weight measured to the nearest gram in the morning before breakfast using portable digital scale. BMI calculated from weight and height. Baseline, during last week of camp (NR)	**Weight Gain**, kg, Multiple regression, β (SD) Change per oz/d increase: <6 oz/d: 0.5 (0.4) 6-12 oz/d: Data NR >12 oz/d: 3.3 (1.95) >16: Data NR P for trend=0.2	**Model adjustments:** • TEI: yes • Key confounders: None • Other: **Limitations:** • Did not account for key confounders: Sex, age, race and/or ethnicity, socioeconomic position, anthropometry at baseline, physical activity, diet quality • Not all key confounders accounted for; Exposure based on self-report by child; Power analysis NR; Potential selection bias (unclear why 30 of 42 were selected into study); High attrition (30%); Follow-up time NR; Unclear of outcome assessment timing; No preregistered data analysis plan **Funding:** USDA

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Newby, 2004[19] **PCS, U.S.** Analytic N=1,345 **Participant characteristics at baseline:** Low-income preschool children • Age: Mean (SD): 2.9y (0.7) • Female: 50% • Race/ethnicity: Native American 11%, Other 6%, White 83% • SEP: Maternal education, Mean~12.6y; Poverty level: <100%: 55%; 100-133%: 22%; >133-185%: 23% • Anthropometry: BMI, Mean~16.6 kg/m2; At risk of overweight 14%, Overweight 6% • Physical activity: NR • Smoking: NR • Diet quality: Soda intake: Mean~1.2 oz/d; ≥12 oz/d: ~3% • TEI: Mean~1747 kcal/d **Study beverage intake at baseline:** Mean~10.7 oz/d; ≥12 oz/d: 45% **Inclusion criteria:** children seen by North Dakota WIC Program between 1/1/95 and 6/30/98 **Excluded:** only 1 clinic visit, underweight (based on age- and sex-specific 5th percentile BMI), implausible energy intake (<800 kcal or >3500 kcal/d), unreasonable measures for weight-for height, weight-for-age or height-for-age, "suspicious" change in BMI between visits (< -4 or >4 kg/m2), child breastfeeding at baseline	**Exposure:** 100% fruit juices (e.g., orange juice, apple juice), ounces/day **Other exposures:** Milk, SSB, LNCSB **Comparator:** Fruit juice intake (continuous; oz/d); Fruit juice intake (categorical; oz/d): <12 (ref) vs. ≥12 **Exposure Assessment Methods and Timing:** Validated FFQ; represents dietary intake during previous month At baseline, follow-up 6-12mo later (mean 8.4mo) **Outcome Assessment Methods and Timing:** Height measured by trained staff using wall-mounted measuring board. Weight measured by trained staff using standard floor-model beam scale. Age- and sex-specific BMI calculated based on 2000 CDC growth charts. At risk of overweight (BMI 85th to <95th percentile); Overweight (BMI≥95th percentile) At baseline, follow-up 6-12mo later (mean 8.4mo)	**Weight**, Linear regression Change per oz/d increase, β (SE): TEI adj: 0.01 (0.01), P=0.23 <12 oz/d (ref) vs. ≥12 oz/d: NS, Data NR **BMI**, Linear regression Change per oz/d increase, β (SE): TEI adj: 0.01 (0.00), P=0.20 <12 oz/d (ref) vs. ≥12 oz/d: NS, Data NR Estimates remained similar when TEI was omitted from model. (Data NR)	**Model adjustments:** • TEI: yes and no • Key confounders: Sex, age, race and/or ethnicity, SEP (maternal years of education, poverty level), anthropometry at baseline (weight), diet quality (other beverages) • Other: Birth weight, change in height, residence (town or city, rural, reservation, military base) **Limitations:** • Did not account for key confounders: Physical activity • Not all key confounders accounted for; No preregistered data analysis plan **Funding:** USDA; NIH Health Harvard Education Program in Cancer Prevention Control; Boston Obesity Nutrition Research Center

Sakaki, 2021a[21]
PCS, Growing Up Today Study II, U.S.
Analytic N=7,301

Participant characteristics at baseline: children and adolescents
• Age: Mean (SD)
Boys: 13.3 (1.8)y
Girls: 13.4 (1.8)y
Range 9-16y
• Female: 55%
• Race/ethnicity: 96% Non-Hispanic White
• SEP: NR
• Anthropometry: BMI, kg/m2, mean (SD)
Boys: 20.3 (3.8)
Girls: 20.1 (3.6)
Overweight/obesity prevalence: 24.6% boys and 17.3% girls
• Physical activity: MET-hr/wk, mean (SD)
Boys: 92.1 (66.5)
Girls: 69.4 (51.3)
• Smoking: NR
• Diet quality: NR
• TEI: Boys: Mean 9736 kJ/d; Girls: Mean 8159 kJ/d

Study beverage intake at baseline:
Orange juice intake (glasses/wk), Mean (SD): Boys 2.6 (3.4); Girls 2.2 (3.0)

Inclusion criteria: participants that responded to 2004 baseline questionnaire and 2006 follow-up questionnaire. Excluded from analysis if participant questionnaires had incomplete/invalid values for juice intake, age, weight, height, screen time, extremely low BMI (<12 kg/m2), total daily caloric intake <2092 kJ or >20920 kJ, implausible changes in energy intake between survey years (>8368 kJ change)

Exposure: Orange juice (authors note it is likely 100%)

Other exposures: none

Comparator: Categorical (never or <1 glass/mo, 1-3 glasses/mo, 1-6 glasses/wk, ≥1 glass/d)

Exposure Assessment Methods and Timing:
Semiquantitative FFQ validated; represents usual food and beverage intake over preceding year; contained specific questions on orange juice separate from other beverages or juices.
2004 and 2006

Outcome Assessment Methods and Timing:
Height and weight were self-reported by children and used to calculate BMI, BMI%, and HAZ.
BMI% based on 2000 CDC growth charts and used to determine weight status (defined by CDC).
2004, 2006, and 2008

2yΔ HAZ by baseline juice intake, adjusted mixed linear regression, Mean (SE)
Boys
Never or <1 glass/mo: 0.04 (0.02)
1-3 glasses/mo: 0.08 (0.02)
1-6 glass/wk: 0.05 (0.01)
≥1 glass/d: 0.03 (0.02)
P-trend=0.30
Girls
Never or <1 glass/mo: 0.03 (0.01)
1-3 glasses/mo: 0.03 (0.02)
1-6 glass/wk: 0.06 (0.01)
≥1 glass/d: 0.09 (0.02)
P-trend=0.02

2yΔ Height (cm) by baseline juice intake, unadjusted mixed linear regression, Mean (SE)
Boys
Never or <1 glass/mo: 10.6 (7.4)
1-3 glasses/mo: 10.9 (7.6)
1-6 glass/wk: 10.2 (7.5)
≥1 glass/d: 10.0 (7.4)
P-trend=0.02
Girls
Never or <1 glass/mo: 4.9 (6.2)
1-3 glasses/mo: 4.5 (5.9)
1-6 glass/wk: 4.5 (5.7)
≥1 glass/d: 5.2 (6.4)
P-trend=0.22

2yΔ BMI percentile by baseline juice intake, adjusted mixed linear regression, Mean (SE)
Boys
Never or <1 glass/mo: -0.94 (0.53)
1-3 glasses/mo: -1.68 (0.52)
1-6 glass/wk: -0.81 (0.38)
≥1 glass/d: -1.12 (0.61)
p-trend=0.81
Girls
Never or <1 glass/mo: -0.44 (0.36)
1-3 glasses/mo: 0.20 (0.41)
1-6 glass/wk: -0.04 (0.34)
≥1 glass/d: -0.77 (0.62)
p-trend=0.49

2yΔ Weight (kg) by baseline juice intake, unadjusted mixed linear regression, Mean (SD)
Boys
Never or <1 glass/mo: 11.7 (7.4)
1-3 glasses/mo: 11.5 (7.6)
1-6 glass/wk: 11.3 (7.4)
≥1 glass/d: 11.1 (6.9)
p-trend=0.14
Girls

Model adjustments:
• TEI: yes
• Key confounders: sex, age, race and/or ethnicity, anthropometry at baseline, physical activity
• Other: screen time (for BMI percentile analyses)

Limitations:
• Did not account for key confounders: socioeconomic position, diet quality
• Only baseline exposure data used in analyses; No information on non-completers; Height and weight were self-reported; No preregistered data analysis plan

Funding:
Florida Department of Citrus

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
		Never or <1 glass/mo: 6.1 (6.4) 1-3 glasses/mo: 6.1 (6.1) 1-6 glass/wk: 6.0 (5.7) ≥1 glass/d: 6.0 (5.3) p-trend=0.63 **2yΔ BMI (kg/m2) by baseline juice intake**, unadjusted mixed linear regression, Mean (SD) ***Boys*** Never or <1 glass/mo: 1.5 (2.1) 1-3 glasses/mo: 1.4 (2.3) 1-6 glass/wk: 1.4 (2.3) ≥1 glass/d: 1.5 (1.9) p-trend=0.79 ***Girls*** Never or <1 glass/mo: 1.2 (2.2) 1-3 glasses/mo: 1.3 (2.5) 1-6 glass/wk: 1.2 (1.8) ≥1 glass/d: 1.0 (2.6) p-trend=0.09	

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Sakaki, 2021b[20] **PCS, Growing Up Today II, U.S.** Analytic N=8,173 **Participant characteristics at baseline:** children and adolescents • Age: Mean (SD): 13.3y (1.81) (Range: 9-16y) • Female: 56% • Race/ethnicity: >95% non-Hispanic white • SEP: NR • Anthropometry: BMI Mean (SD) Boys: 20.3 (3.9) Girls: 20.2 (3.7) • Physical activity: MET-hrs/wk: Mean (SD) Boys: 91.99 (66.02) Girls: 70.35 (52.13) • Smoking: NR • Diet quality: NR • TEI: Mean (SD): Boys: 2324 kcal/d (724); Girls: 1953 kcal/d (638) **Study beverage intake at baseline:** Mean (SD): Total 100% juice: ~0.64 (0.69) servings/day Orange juice: ~0.34 (0.46) Other fruit juice: ~0.29 (0.42) Consume any milk at least monthly: 95% **Excluded:** missing data on age, race, PA, TEI, or beverage intake at baseline or 2y follow up; implausible energy intake or change in daily intake (n=92), or extremely low BMI (<12kg/m2) (n=64)	**Exposure:** Total 100% fruit juice intake; orange juice only; apple/other fruit juice only 1 serving = 10 fl oz. **Other exposures:** Dairy milk **Comparator:** Continuous intake (svg/d) **Exposure Assessment Methods and Timing:** Child/adolescent semi-quantitative FFQ, validated Baseline **Outcome Assessment Methods and Timing:** Participant self-reported and measured height and weight 2y & 4y follow up	**<u>BMI change over 2y</u>**, β (SE), p-value, linear regression Total 100% fruit juice: Boys: -0.02 (0.04), p=0.59 **Girls: -0.10 (0.04), p<0.01** **Orange juice:** Boys: 0.03 (0.06), p=0.62 **Girls: -0.14 (0.05), p=0.01** **Other fruit juice:** Boys: -0.08 (0.07), p=0.22 Girls: -0.07 (0.06), p=0.32	**Model adjustments:** • TEI: yes • Key confounders: sex, age, race and/or ethnicity, anthropometry at baseline, physical activity, total energy intake • Other: **Limitations:** • Did not account for key confounders: socioeconomic position, diet quality • Exposure not well defined, Exposure data only measured at baseline; No information on non-completers; BMI was self-reported; No preregistered data analysis plan **Funding:** The Florida Department of Citrus (an executive agency of the state of Florida)

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Shefferly, 2016[22] **PCS, Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), U.S.** Analytic N=6,250 **Participant characteristics at baseline:** Children • Age: 2y • Female: 49% • Race/ethnicity: White: 53.6%; Black: 13.7%; Asian: 2.7%; Hispanic: 25.3%; Other: 4.8% • SEP: Determined by National Center for Education Statistics based on family income, maternal education, maternal occupation, paternal education, and paternal occupation; divided into quintiles (5=highest SEP; 1=lowest SEP) High 20.7%, Medium high 20.6%, Medium 20.1%, Medium low 19.7%, Low 18.9% • Anthropometry: Weight status: Normal weight 67.5%, Overweight 15.6%, Obesity 16.9% • Physical activity: NR • Smoking: NR • Diet quality: NR • TEI: NR **Study beverage intake at baseline:** 72% were 'regular drinkers' (drank juice at/between meals or snacks) **Inclusion criteria:** children with birth certificate from 2001 **Excluded:** age < 24 months; incomplete data on juice intake	**Exposure:** 100% fruit juice intake (orange, apple, or grape); 1 svg=8oz **Other exposures:** **Comparator:** Juice intake (categorical; svg/d): Regular drinkers; ≥1; Infrequent/non-drinkers; <1 **Exposure Assessment Methods and Timing:** Parent interview in the home by trained assessors (or computer at 2y); represents usual intake Baseline (age 2y), age 4y and 5y **Outcome Assessment Methods and Timing:** Height and weight obtained by trained researchers using standardized procedures and equipment. Age- and sex-specific BMI percentiles and z-scores calculated using 2000 CDC growth charts. Weight categories: with normal weight (BMI<85th%), with overweight (BMI 85th-<95th%), and with obesity (BMI≥95th%) Baseline (age 2y), age 4y and 5y	**Overweight (BMI 85th-95th%),** Logistic regression, OR (95% CI) **Change from 2–4y between groups:** **<1 vs ≥1 svg/d: 1.30 (1.06, 1.59); P=0.0129** Change from 4–5y between groups: <1 vs ≥1 svg/d: 0.86 (0.63, 1.16); P=0.4010 **Obesity (BMI≥95th%),** Logistic regression, OR (95% CI) Change from 2–4y between groups: <1 vs ≥1 svg/d: 1.30 (0.93, 1.83); P=0.1293 Change from 4–5y between groups: <1 vs ≥1 svg/d: 0.80 (0.43, 1.49); P=0.4730 **BMI z-score**, Linear regression, β (SE) **Change from 2–4y between groups:** **<1 svg/d: 0.030 (0.037)** **≥1 svg/d: 0.282 (0.028)** **P=0.0003** Change from 4–5y between groups: <1 svg/d: 0.034 (0.031) ≥1 svg/d: 0.020 (0.021) P=0.6778 **Height z-score**, Linear regression, β (SE) **Change from 2–4y between groups:** **<1 svg/d: 0.410 (0.028)** **≥1 svg/d: 0.308 (0.020)** **P=0.0010** Change from 4–5y between groups: <1 svg/d: 0.052 (0.020) ≥1 svg/d: 0.071 (0.015) P=0.3670 **Weight z-score**, Linear regression, β (SE) Change from 2–4y between groups: <1 svg/d: 0.371 (0.032) ≥1 svg/d: 0.432 (0.024) P=0.0550 Change from 4–5y between groups: <1 svg/d: 0.042 (0.016) ≥1 svg/d: 0.029 (0.012) P=0.4553	**Model adjustments:** • TEI: no • Key confounders: sex, age, race and/or ethnicity, socioeconomic position, anthropometry at baseline (baseline z-score (for analyses of change in height, weight, and BMI-z-score)) • Other: Maternal BMI **Limitations:** • Did not account for key confounders: physical activity, diet quality • Not all key confounders accounted for; Exposure assessment tool not validated; no information on non-completers; No preregistered data analysis plan **Funding:** NIH; Doris Duke Charitable Foundation Career Development Award

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Skinner, 2001[23] **PCS, U.S.** Analytic N=72 **Participant characteristics at baseline:** Children • Age: Mean ~27mo • Female: 49% • Race/ethnicity: 100% white • SEP: mostly middle or upper SEP; all parents except 1 mother had some education beyond high school • Anthropometry: NR • Physical activity: NR • Smoking: NR • Diet quality: NR • TEI: Mean: 1406 kcal/d **Study beverage intake at baseline:** Mean (SD): 6.8 (6.3) oz/d; 0.51 (0.46) oz/kg **Inclusion criteria:** continuous participants in another longitudinal study from 1992-1999; complete or mainly complete data sets	**Exposure:** 100% juice intake **Comparator:** 100% juice intake (continuous) **Exposure Assessment Methods and Timing:** Average of 7 sets of 3-day dietary info (One 24hr recall & 2d food records) from 7 interviews with parent (when child was age ~27, ~34, 42, 48, 54, 60 and 72mo); represents usual intake Baseline (mean age 27mo), and every 6mo until age 72mo **Outcome Assessment Methods and Timing:** Height measured to nearest 0.1 cm by registered dietitian with a steel tape using a wall or doorway and a square; Weight measured to nearest 0.1 pound by registered dietitian using standard scale. BMI calculated as kg/m2. At baseline (age 27mo), and 4y follow-up (age 72mo). Growth parameters at 72mo were compared to national norms	**Height**, cm, General linear model Change per longitudinal juice intake: B=NR; P=0.370 **Weight**, kg, General linear model Change per longitudinal juice intake: B=NR; P=0.494 **BMI**, kg/m2, General linear model Change per longitudinal juice intake: B=-0.057; P=0.099	**Model adjustments:** • TEI: yes • Key confounders: sex, age, race and/or ethnicity, anthropometry at baseline • Other: Parent height or BMI **Limitations:** • Did not account for key confounders: socioeconomic position, physical activity, diet quality • Not all key confounders accounted for; No information on baseline sample; no information on how missing data was handled (though amount of missing data was small); No preregistered data analysis plan **Funding:** Gerber Products Company; Tennessee Agricultural Experiment Station

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Striegel-Moore, 2006[24] **PCS, NHLBI Growth and Health Study, U.S.** Analytic N=2,371 **Participant characteristics at baseline:** Female adolescents • Age: Mean ~10y • Female: 100% • Race/ethnicity: Black 51%, White 49% • SEP: SEP: <$10K: 17%; $10<20K: 14%; $20<30K: 15%; $30<40K: 14%; $40<50K: 12%; $50<75K: 17%; ≥$75K: 6% • Anthropometry: Weight: ~ 37kg; Height: ~141 cm • Physical activity: NR • Smoking: NR • Diet quality: Soda intake, g/d, Mean (SE): White, 135.45 (8.29); Black, 134.53 (7.85) • TEI: NR **Study beverage intake at baseline:** Mean (SE): White: 110.46 (4.94) g/d; Black: 108.36 (4.86) g/d **Inclusion criteria:** girls age 9 or 10 at study entry who identified themselves as "black" or "white", non-Hispanic, with racially concordant parents or guardians	**Exposure:** 100% fruit juice intake (fruit or vegetable juice bottled, canned, fresh, frozen, sweetened or unsweetened; fruit nectars) **Other exposures:** Milk, SSB, LNCSB, Coffee/tea **Comparator:** Fruit juice intake (continuous; 100 g/d) **Exposure Assessment Methods and Timing:** Validated 3-d food records; represents usual intake over 3 consecutive days (2 weekdays and 1 weekend day) At baseline, and annually for years 1-5, then at years 7, 8, 10 **Outcome Assessment Methods and Timing:** Weight measured twice by research staff using electronic scale. Height measured twice by research staff using stadiometer. BMI calculated as weight in kilograms divided by height in meters squared Baseline, annually until 10y follow-up	**BMI**, Linear regression Change per 100g/d increase: B: 0.005, SE: 0.007, P>0.05	**Model adjustments:** • TEI: yes • Key confounders: Sex, age, race and/or ethnicity, diet quality (other beverages, including SSB) • Other: Study site **Limitations:** • Did not account for key confounders: SEP, anthropometry at baseline, physical activity • No information on non-completers; No preregistered data analysis plan **Funding:** NHLBI

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Vandyousefi, 2021[4] Prospective Cohort Study, SWIFT, United States Analytic N = 835 **Participant Characteristics** • Race/ethnicity: Non-Hispanic Asian: 37%, Hispanic: 30%, Non-Hispanic White: 23%, Non-Hispanic Black: 8%, Mixed race/other: 2% • Maternal education: 14.9 (2.9) y • Other SEP measure(s): Private insurance: 100% • Maternal age: 33.4 (4.8) y • Milk feeding practices: Any BF duration: 9 (7.2) mo; BF duration <6 mo: 40%, ≥6 mo: 60%; BF intensity at 6-9 wk: Exclusively BF: 22%, Mostly BF: 41%, Mixed/inconsistent FF: 21%, Exclusively or mostly FF: 16%; BF intensity and duration at 12 mo: <6: 53%, ≥6: 47% • Child sex (female): 48% • Birth weight: 3,397 (499) g; Birth length: 50.5 (2.4) cm; Size-at-birth percentile: LGA: 21%, AGA: 77%, SGA: 2% • Gestational age: 39 (1.2) wk • Other relevant characteristics: WIC recipient: 25%; GDM: 100%; Pre-pregnancy BMI: child normal weight: 28.5 (6.8), child with overweight: 31.7 (8.3), child with obesity: 33.6 (7.1), p<0.001 **Exclusion criteria:** missing data; mothers who had overt diabetes at study baseline	**Exposure:** 100% fruit juice **Comparator:** fruit juice (categorical; Any vs none at birth to 1 y) Exposure assessment method and timing: • Maternal surveys of date of introduction of fruit juice, sweetened beverages, water, sugar water, and other beverages, including types and amounts of each item • 6-9 wk, 1 y post baseline (in-person surveys); Monthly from delivery to 1 y (mailed surveys) **Study beverage intake:** • No SSB/no 100% fruit juice from birth to 1 y: 33% • Any 100% fruit juice from birth to 1 y: 51% **Outcomes and assessment methods:** • At 2-5 y • Weight and length from Electronic Health Records during well check visits. Age- and sex-standardized BMI percentiles calculated based on CDC growth percentiles. Overweight defined as BMI-for-age 85th-<95th percentile. Obesity defined as BMI-for-age ≥95th percentile.	**Overweight at 2-5 y**, Logistic regression, OR (95% CI) All participants: 100% fruit juice vs No SSB/no 100% fruit juice (ref): 1.24 (0.78, 1.98), p=0.48 Adequate BF: 100% fruit juice vs No SSB/no 100% fruit juice (ref): 1.23 (0.73, 2.34), p=0.65 Adequate EBF: 100% fruit juice vs No SSB/no 100% fruit juice (ref): 1.28 (0.73, 2.27), p=0.39 **Obesity at 2-5 y**, Logistic regression, OR (95% CI) All participants: 100% fruit juice vs No SSB/no 100% fruit juice (ref): **2.18 (1.17, 4.06), p=0.02** Adequate BF: 100% fruit juice vs No SSB/no 100% fruit juice (ref): **3.13 (1.11, 7.29), p=0.03** Adequate EBF: 100% fruit juice vs No SSB/no 100% fruit juice (ref): **4.17 (1.55, 11.17), p<0.01**	**TEI adjusted**: No **Confounders accounted for:** • SEP, sex, race/ethnicity, milk feeding practices **Confounders NOT accounted for:** • gestational age, baseline anthropometry **Additional model adjustments:** Maternal education level, race/ethnicity, gestational weight gain, prenatal 3h 100g OGTT sum of 4 z-scores, GDM treatment type, gestational age at GDM diagnosis, WIC participation, parity, infant sex, infant size for gestational age, sex at birth, and age at BMI measurement **Limitations:** • Not all key confounders accounted for • Limited to mothers with GDM • High attrition (19%); excluded sample having less education, more receiving WIC, and shorter BF duration **Funding sources:** NIDDK; NICHD; ADA

Vanselow, 2009[25]
PCS, Project EAT, U.S.
Analytic N=2,294

Participant characteristics at baseline: Adolescents
• Age: 14.9y
• Female: 55%
• Race/ethnicity: 62.9% white, 17.9% Asian American, 9.7% African American, 3.9% Hispanic, 2.7% American Indian, 2.9% mixed/other
• SEP: Parent education level (highest of the 2 parents), ~18%
• Anthropometry: NR
• Physical activity: Strenuous exercise, hr/wk, mean (SE), chi-square test
Apple juice:
0 svg/wk: 3.7 (0.1)
0.5-6 svg/wk: 3.9 (0.0)
≥7 svg/wk: 4.1 (0.1)
P<0.05
Orange juice:
0 sg/wk: 3.7 (0.1)
0.5-6 svg/wk: 3.8 (0.0)
≥7 svg/wk: 4.2 (0.1)
P<0.05
• Smoking: NR
• Diet quality: Saturated fat, ~10.4% kcal
Fiber, g/1000 kcal, mean (SE), chi-square test
Apple juice: 0 svg/wk: 7.5 (0.1); 0.5-6 svg/wk: 7.9 (0.1); ≥7 svg/wk: 8.4 (0.1)
P<0.05
Orange juice: 0 svg/wk: 7.2 (0.2); 0.5-6 svg/wk: 7.8 (0.1); ≥7 svg/wk: 8.6 (0.1)
P<0.05
Calcium: ~565 mg/d
• TEI: Kcal/d, mean (SE), chi-square test
Apple juice:
0 svg/wk: 1652 (55)
0.5-6 svg/wk: 1984 (25)
≥7 svg/wk: 2661 (40)
P<0.05
Orange juice:

Exposure: Apple and orange juice. Serving size NR.

Other exposures: SSB, LNCSB, dairy milk

Comparator: Different intake of juice, categorical intake (0, 0.5-6, ≥7 svg/wk)

Exposure Assessment Methods and Timing: Validated 149-item youth and adolescent food-frequency questionnaire (YAQ). Responses ranged from "never/less than once per month" to ≥4 glasses, cups, cans, or drinks per day depending on beverage type.
Baseline, 5y

Outcome Assessment Methods and Timing: BMI calculated from self-reported height and weight. Overweight considered as BMI ≥85th percentile for sex and age

Baseline, 5y

Change in BMI over 5y by number of servings/wk of time 2 juice intake, kg/m2, mean (SE), multivariable linear regression

Apple juice
Model 1
0 svg/wk: 1.89 (0.16)
0.5-6 svg/wk: 1.89 (0.09)
≥7 svg/wk: 1.56 (0.20)
P=0.30

Model 2
0 svg/wk: 1.84 (0.17)
0.5-6 svg/wk: 1.91 (0.09)
≥7 svg/wk: 1.60 (0.21)
P=0.42

Orange juice
Model 1
0 svg/wk: 1.83 (0.19)
0.5-6 svg/wk: 1.90 (0.09)
≥7 svg/wk: 1.54 (0.18)
P=0.20

Model 2
0 svg/wk: 1.84 (0.17)
0.5-6 svg/wk: 1.91 (0.09)
≥7 svg/wk: 1.60 (0.21)
P=0.42

Model adjustments:
• TEI: no
• Key confounders: sex, age, race and/or ethnicity, socioeconomic position, anthropometry at baseline, physical activity (models 2 and 3), diet quality (models 2 and 3, SSB intake)
• Other: Model 1: key confounders as listed; baseline beverage consumption of the beverage being analyzed
Model 2: all beverages assessed together in the model; adjusted for key confounders and all baseline beverages, cohort, change in BMI, baseline and time 2 strenuous physical activity, and time 2 weekday television watching and coffee and tea consumption

Limitations:
• Did not account for key confounders:
• No preregistered data analysis plan; No information on non-completers; Lack of accurate assessment of exposure portion sizes

Funding:
HHS (Maternal and Child Health Bureau, Health Resources and Services Administration)

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
0 svg/wk: 1721 (62) 0.5-6 svg/wk: 1920 (25) ≥7 svg/wk: 2633 (37) P<0.05 **Study beverage intake at baseline:** Apple juice: 13.3% 0 svg/wk, 62.8% 0.5-6 svg/wk, 23.9% ≥7 svg/wk Orange juice: 10.4% 0 svg/wk, 61.4% 0.5-6 svg/wk, 28.2% ≥7 svg/wk **Exclusion criteria:** lost to follow-up, missing data, implausible energy intakes			

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Wan, 2020[26] **PCS, Framingham Children's Study, U.S.** Analytic N=100 **Participant characteristics at baseline:** preschool-aged children • Age: Mean ~5y • Female: 39% • Race/ethnicity: "largely of middle-class Caucasian ancestry" • SEP: Mother's education, % college <0.5 cups/d: 20% 0.5 - < 1 cup/d: 40% ≥1 cup/d: 50% p-trend=0.0116 • Anthropometry: BMI, Mean ~16.3 kg/m2 • Physical activity: Activity ~11 Caltrac counts/hr • Smoking: NR • Diet quality: HEI 2015 Score, mean (SD) <0.5 cups/d: 48 (2) 0.5 - < 1 cup/d: 52.4 (6.1) ≥1 cup/d: 55.0 (6.7) p-trend=0.0002 p-trend=0.0116 • TEI: ~1600 kcal/d **Study beverage intake at baseline:** 100% juice intake: 35% <0.5 cup/d; 35% 0.5-1 cup/d, 30% ≥1 cup/d **Inclusion criteria:** participants with dietary data at baseline and throughout follow-up	**Exposure:** 100% fruit juice and 100% juice blends (blended with other 100% juices), such as apple juice, orange juice, and cranberry juice blends; excluded part-juice beverages and tomato juice. Measured in USDA-defined cup-equivalents per day **Other exposures:** none **Comparator:** Categorical (<0.5 cups/d, 0.5-<1.0 cups/d, ≥1 cups/d) **Exposure Assessment Methods and Timing:** Multiple sets of 3d diet records; completed by parents prior to age 10y At baseline, then annually for 10y. Only baseline (3-6y) measurement used in analysis **Outcome Assessment Methods and Timing:** Height and weight measured at annual clinic exam; used to calculate BMI At baseline, then annually for 10y	**Change in BMI (kg/m2) from 3-17y based on juice intake at 3-6y** NS, data NR (figure only)	**Model adjustments:** • TEI: no • Key confounders: sex, age, socioeconomic position, anthropometry at baseline, physical activity • Other: maternal BMI, TV and video viewing time **Limitations:** • Did not account for key confounders: race and/or ethnicity, diet quality • Exposure data only measured at baseline; No preregistered data analysis plan **Funding:** NHLBI; Juice Products Association

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Welsh, 2005[27] **PCS, Missouri WIC Program, U.S.** Analytic N=10,904 **Participant characteristics at baseline:** Children • Age: Mean: ~34 mo • Female: 50% • Race/ethnicity: White: 88.6%; Black: 5.8%; Other: 5.6% • SEP: All enrolled in Missouri WIC program • Anthropometry: BMI %: Normal or underweight 75.5%, At risk for overweight 14.5%, Overweight 10.1% • Physical activity: NR • Smoking: NR • Diet quality: Mean sweet drinks/d: 2.9 • TEI: Mean: 1780 kcal/d **Study beverage intake at baseline:** Vitamin C juice at baseline (drinks/d): 0-<1, 61.0%; 1-<2, 17.6%; 2-<3, 17.7%; ≥3, 3.7%; Mean=1.0 drinks/d Other juice at baseline (drinks/d): 0-<1, 61.9%; 1-<2, 16.8%; 2-<3, 17.7%; ≥3, 3.6%; Other juice: Mean=1.0 drinks/d **Inclusion criteria:** children aged 2-3y at baseline who were enrolled in Missouri WIC Program between January 1999 and December 2001; at least one clinic visit where height and weight data were collected and reported to PedNSS and one follow-up clinic visit with height and weight data collected 1y later **Excluded:** missing values for key dietary or outcome variables, extreme BMI values (z score < -4 or >5); extremes in total energy intake (<800 or >3500 kcal)	**Exposure:** Fruit juice intake (includes vitamin C-containing juices (natural or added), and other juices). 1 drink=1 parent-defined serving **Other exposures:** SSB **Comparator:** Fruit juice intake (categorical; drinks/d): 0-<1 (ref); 1-<2; 2-<3; ≥3 **Exposure Assessment Methods and Timing:** Validated FFQ completed by parents; represents usual intake in the last 4wk Baseline **Outcome Assessment Methods and Timing:** Standing height measured using standard measuring board. Weight measured using pediatric scale or beam balance scale. Age- and sex-specific BMI percentile based on 2000 CDC growth chart. Normal or underweight (BMI<85th%), at risk for overweight (BMI 85th-<95th percentile), overweight (BMI≥95th percentile) Baseline, 1y follow-up	**<u>Overweight at follow up (BMI >95th%),</u>** by fruit juice intake (drinks/d) stratified by baseline weight status: Logistic regression, OR (95% CI) Normal or underweight at baseline 0-<1 (n=2768, Ref) 1-<2 (n=1815): 1.1 (0.8, 1.5) 2-<3 (n=2210): 1.0 (0.7, 1.4) ≥3 (n=1435): 1.2 (0.8, 1.7) **At risk of overweight at baseline** 0-<1 (n=573, Ref) 1-<2 (n=345): 1.1 (0.8, 1.6) 2-<3 (n=405): 1.0 (0.7, 1.4) ≥3 (n=256): 0.8 (0.5, 1.1) **Overweight at baseline** 0-<1 (n=390), Ref 1-<2 (n=259): 1.5 (1.0, 2.1) 2-<3 (n=262): 1.5 (1.1, 2.2) ≥3 (n=186): 1.2 (0.8, 1.8)	**Model adjustments:** • TEI: yes • Key confounders: sex, age, race and/or ethnicity, socioeconomic position, anthropometry at baseline, diet quality (sweet food intake, high-fat food intake) • Other: **Limitations:** • Did not account for key confounders: physical activity • Not all key confounders accounted for; Exposure data only measured at baseline; Attrition rate unclear, but may be >70%; No preregistered data analysis plan **Funding:** NR

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Zheng, 2015(a)[28] **PCS, Childhood Asthma Prevention Study (RCT), Australia** Analytic N=158 **Participant characteristics at baseline:** Children • Age: Mean: ~8y • Female: 48% • Race/ethnicity: Mother born in Australia/New Zealand ~78%; Father born in Australia/New Zealand ~73% • SEP: Maternal education level >12y ~55%; Paternal education level >12y ~58%; Living in disadvantaged area ~20% • Anthropometry: BMI z-score, Mean (SD): 0.4(1.0); Overweight/obesity: 27.2% • Physical activity: NR • Smoking: NR • Diet quality: NR • TEI: Mean ~8.0 MJ/d (~1,912 kcal/d) **Study beverage intake at baseline:** Fruit juice intake at baseline (g/d), Mean (SD): ~90(89) **Inclusion criteria:** participants in CAPS RCT; participation in anthropometric assessment at 8y and dietary assessment at age 9y **Excluded:** incomplete diet data, misreporting of energy intake, missing anthropometric data	**Exposure:** 100% fruit juice intake (apple, blackcurrant, grape, orange, and fruit blend) **Other exposures:** Milk, SSB, LNCSB **Comparator:** Fruit juice intake (100 g/d) modeled continuously **Exposure Assessment Methods and Timing:** Three 24-hr dietary recalls via phone using multiple pass approach completed by children with parental assistance; Represents usual dietary intake on nonconsecutive weekdays and weekends At 1y follow-up (age 9y) **Outcome Assessment Methods and Timing:** Weight measured to nearest 0.1kg. Height measured using stadiometer. Age- and sex-specific BMI z-scores calculated using 2000 CDC growth charts. Percentage body fat (%BF) measured by bioimpedance analysis. Baseline (age 8y), and 3.5y follow-up (age 11.5y)	**BMI z-score**, Linear regression Change per 100 g/d increase, β (SE): TEI unadjusted: 0.07 (0.05), P=0.15 TEI adjusted: 0.07 (0.05), P=0.12 **%Body Fat**, Linear regression Change per 100 g/d increase, β (SE): TEI unadjusted: -0.10 (0.45), P=0.84 TEI adjusted: -0.05 (0.44), P=0.91	**Model adjustments:** • TEI: yes and no • Key confounders: Sex, age, SEP (socioeconomic index for area score, parental education level), anthropometry at baseline (BMI z-score) • Other: Maternal age at birth, presence of gestational diabetes, exclusive breastfeeding at 3mo, pubertal status, randomization group (omega-3 fatty acid dietary supplementation and house dust mite reduction) **Limitations:** • Did not account for key confounders: Race and/or ethnicity, physical activity, diet quality • Not all key confounders accounted for; Exposure measured at baseline only; Baseline data for exposure and outcome occurred 1 year apart **Funding:** National Health and Medical Research Council of Australia; Cooperative Research Centre for Asthma; New South Wales Department of Health; Children's Hospital Westmead

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Zheng, 2015(c)[29] **PCS, European Youth Heart Study (EYHS), Denmark** Analytic N=358 **Participant characteristics at baseline:** Children • Age: Mean (SD): 9.6y (0.4) • Female: 56% • Race/ethnicity: NR • SEP: Maternal education: 47% Low (elementary, high school, or vocational education) • Anthropometry: BMI 17.2 (2.3) kg/m2; BMI z-score 0.4 (1.1) • Physical activity: 55% Active (regular exercise) • Smoking: NR • Diet quality: SSB, g/d, Mean (SD): 154 (205) • TEI: Mean: 9.1 (2.3) MJ/d **Study beverage intake at baseline:** Fruit juice intake, mean (SD): 62.4 (139.0) g/d **Inclusion criteria:** third-grade children who participated in the Danish part of EYHS in 1997 with 6-y follow-up in 2003 **Excluded:** incomplete diet or anthropometric data; underreporting energy intake	**Exposure:** 100% pure fruit juice intake (apple, orange, or other juice) **Other exposures:** Milk, SSB, Coffee/tea **Comparator:** Fruit juice intake (100g/d) modeled continuously **Exposure Assessment Methods and Timing:** One 24h recall face-to-face interview supplemented with parent-assisted food record; represents food intake Baseline (age 9) **Outcome Assessment Methods and Timing:** Height measured bare feet to nearest 5mm using stadiometer. Weight measured to nearest 0.1 kg using beam balance scale. BMI calculated as kg/m2. Age- and sex-specific BMI z-score generated using the least mean squares method. Waist circumference (WC) measured twice with metal anthropometric tape (mean was used). Sum of 4 skinfolds (Σ4SF) obtained by adding average skinfolds of 4 sites (biceps, triceps, subscapular, and suprailiac) that were measured in duplicate with Harpenden fat calipers Baseline, 6y follow up	*Base Model (Model 1 in paper) adjusted for confounders listed to the left, but did not adjust for TEI* *Standard Multivariate Model (Model 2 in paper) adjusted for TEI* *Energy Partition Model (Model 3 in paper) included energy-containing beverages only (ie, excluded water) and adjusted for energy from non-beverage sources.* **Change in WC age 9-15y**: cm, Per 100 g/d increase, Linear regression, β (SE) Base Model: -0.01 (0.22), P=0.59 TEI Model: -0.01 (0.23), P=0.96 Energy Partition: -0.01 (0.22), P=0.95 **Change in Σ4SF age 9-15y**: mm, Per 100 g/d increase, Linear regression, β (SE) Base Model: 0.47 (0.54), P=0.38 TEI Model: 0.58 (0.57), P=0.31 Energy Partition: 0.60 (0.56), P=0.28 *Base Model (Model 1 in paper) adjusted for confounders listed to the left, but did not adjust for TEI* *Standard Multivariate Model (Model 2 in paper) adjusted for TEI* *Energy Partition Model (Model 3 in paper) included energy-containing beverages only (ie, excluded water) and adjusted for energy from non-beverage sources.* **Change in BMI z-score age 9-15y:** Per 100 g/d increase, Linear regression, β (SE) Base Model: 0.02 (0.03), P=0.39 +AR2TEI Model: 0.03 (0.03), P=0.34 Energy Partition: 0.03 (0.03), P=0.35	**Model adjustments:** • TEI: yes and no • Key confounders: Sex, age, SEP (maternal education), anthropometry at baseline (BMI z-score or WC), physical activity, diet quality (other beverages) • Other: Pubertal status, Sex x SEP, energy from non-beverage sources **Limitations:** • Did not account for key confounders: Race and/or ethnicity • Not all key confounders accounted for; Exposure measured at baseline only; No preregistered data analysis plan **Funding:** NR

[a] Abbreviations: AGA: appropriate for gestational age; β: beta coefficient; BF: breast-fed; BM: birth mother; BMI: body mass index; BMI-SDS: BMI standard deviation score; BMIZ: BMI z-score; CDC: Centers for Disease Control and Prevention; CI: confidence interval; cm: centimeter; d: day; DEXA/DXA: dual energy x-ray absorptiometry; DQIS: diet quality

index score; EER: estimated energy requirement; EI: energy intake; FF: formula-fed; FFQ: food frequency questionnaire; fl oz: fluid ounces; FMI: fat mass index; g: grams; GDM: gestational diabetes mellitus; HAZ: height-for-age z-score; HHS: Department of Health and Human Services; kg: kilogram; kJ: kilojoules; LGA: large for gestational age; LNCSB: low- and no-calorie sweetened beverages; M: meter; mL: milliliter; MJ: megajoule; mo: month; MZ: monozygotic; NHLBI: National Heart, Lung, and Blood Institute; NHS II: Nurses Health Study II; NICHD: Eunice Kennedy Shriver National Institute of Child Health and Human Development; NIDDK: National Institute of Diabetes and Digestive and Kidney Diseases; NIH: National Institutes of Health; NR: not reported; NS: not significant; OGTT: oral glucose tolerance test; OR: odds ratio; Oz: ounce; PCS: prospective cohort study; RCT: randomized controlled trial; Ref: reference; SD: standard deviation; SE: standard error; SEP: socioeconomic position; SGA: small for gestational age; SSB: sugar sweetened beverages; Svg: serving; TEI: total energy intake; USDA: United States Department of Agriculture; WAZ: weight-for-age z-score; WC: waist circumference; WIC: Special Supplemental Nutrition Program for Women, Infants & Children; Wk: week; WLZ: weight-for-length z-score; Wt: weight; y: year(s)

Table 12. Risk of bias for randomized controlled trials examining 100% juice consumption in infancy through adolescence and growth, body composition, and risk of obesity[a]

Article	Randomization	Deviations from intended interventions (effect of assignment) or (per-protocol)	Missing outcome data	Outcome measurement	Selection of the reported result	Overall risk of bias
Lambourne, 2013[13]	SOME CONCERNS	LOW	LOW	LOW	SOME CONCERNS	SOME CONCERNS

[a] Possible ratings of low, some concerns, or high determined using the "Cochrane Risk-of-bias 2.0" (RoB 2.0) (August 2019 version)" (Sterne JAC, Savović J, Page MJ, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. *BMJ* 2019; **366**: l4898.

Table 13. Risk of bias for observational studies examining 100% juice consumption in infancy through adolescence and growth, body composition, and risk of obesity[a]

Article	Confounding	Exposure measurement	Selection of participants	Post-exposure interventions	Missing data	Outcome measurement	Selection of the reported result	Overall risk of bias
Amaro-Rivera, 2019[1]	SOME CONCERNS	SOME CONCERNS	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Berkey, 2004[5]	HIGH	LOW	LOW	LOW	HIGH	LOW	HIGH	VERY HIGH
Blum, 2005[6]	HIGH	SOME CONCERNS	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Carlson, 2012[7]	HIGH	LOW	LOW	LOW	LOW	LOW	SOME CONCERNS	HIGH
Dong, 2015[8]	HIGH	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Dubois, 2016[9]	HIGH	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH

Article	Confounding	Exposure measurement	Selection of participants	Post-exposure interventions	Missing data	Outcome measurement	Selection of the reported result	Overall risk of bias
Field, 2003[10]	HIGH	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Fiorito, 2009[11]	HIGH	LOW	LOW	LOW	LOW	LOW	HIGH	HIGH
Gaffney, 2012[2]	SOME CONCERNS	SOME CONCERNS	LOW	LOW	HIGH	SOME CONCERNS	SOME CONCERNS	HIGH
Guerrero, 2016[12]	HIGH	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Johnson, 2007[14]	SOME CONCERNS	LOW	SOME CONCERNS	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Kral, 2008[15]	HIGH	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Libuda, 2008[16]	HIGH	SOME CONCERNS	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Mahoney, 2018[3]	HIGH	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Marshall, 2019[17]	HIGH	LOW	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Mrdjenovic, 2003[18]	HIGH	SOME CONCERNS	HIGH	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Newby, 2004[19]	SOME CONCERNS	LOW	SOME CONCERNS	LOW	LOW	LOW	SOME CONCERNS	HIGH
Sakaki, 2021a[21]	HIGH	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Sakaki, 2021b[20]	SOME CONCERNS	LOW	SOME CONCERNS	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Shefferly, 2016[22]	HIGH	SOME CONCERNS	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH

Article	Confounding	Exposure measurement	Selection of participants	Post-exposure interventions	Missing data	Outcome measurement	Selection of the reported result	Overall risk of bias
Skinner, 2001[23]	HIGH	LOW	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Striegel-Moore, 2006[24]	HIGH	LOW	LOW	LOW	LOW	LOW	SOME CONCERNS	HIGH
Vandyousefi, 2021[4]	SOME CONCERNS	SOME CONCERNS	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Vanselow, 2009[25]	SOME CONCERNS	SOME CONCERNS	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Wan, 2020[26]	SOME CONCERNS	LOW	LOW	LOW	LOW	LOW	SOME CONCERNS	SOME CONCERNS
Welsh, 2005[27]	SOME CONCERNS	SOME CONCERNS	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Zheng, 2015a[28]	HIGH	LOW	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Zheng, 2015c[29]	SOME CONCERNS	LOW	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	SOME CONCERNS

[a] Possible ratings of low, some concerns, high, very high, no information, or not applicable were determined using the "Risk of Bias in Non-randomized Studies of Exposures (ROBINS-E)" tool (Higgins JPT, Morgan RL, Rooney AA, et al. A tool to assess risk of bias in non-randomized follow-up studies of exposure effects (ROBINS-E). *Environment International* 2024 (published online Mar 24); doi: 10.1016/j.envint.2024.108602.)

Table 14. Evidence examining the relationship between 100% juice consumption in adults and body composition and risk of obesity[a]

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Randomized Controlled Trials			
Aptekmann, 2010[30] RCT-Parallel, Brazil Baseline N=30, Analytic N=26 (Attrition: 13%); Power: NR **Participant characteristics at baseline:** Children and adolescents, adults, older adults, individuals during pregnancy and postpartum (can also specific men/women, girls/boys, etc as applicable) • Age: 30-48y • Female: 100% • Race/ethnicity: NR • SEP: NR • Anthropometry: Overweight: 37%, Obesity: 63%; Mean weight: 75.5 (14.2) kg • Physical activity: all "sedentary", lack of regular physical activity was inclusion criterion • Smoking: NR • Diet quality: NR • TEI: ~8 MJ **Study beverage intake at baseline:** irregular or no consumption of orange juice (inclusion criteria) **Inclusion criteria:** LDL-C < 160 mg/dL and triglycerides < 200 mg/dL; irregular or no consumption of orange juice and lack of regular physical activity; absence of thyroid and/or kidney disorders and diabetes; not taking hormone replacement therapy or vitamin or mineral supplements; not taking cholesterol-lowering medication; compliance with aerobic training program (≤1 absence in 12 sessions/mo (1 mo) and ≤3 sessions out of 36 sessions (3mo))	**Intervention**: Consume 500 mL/d of orange juice + 1hr aerobic training 3 times/wk, no other dietary guidance given, n=13 **Study purpose:** to investigate how consumption of orange juice associated with aerobic training affected serum lipids and physical characteristics of overweight, middle-aged women **Other interventions:** 1h aerobic training sessions 3d/wk **Comparator:** Usual intake (little/no orange juice); plus 1h aerobic training sessions 3d/wk, n=13 **Duration:** 3mo **Compliance:** verified indirectly by self-report; all confirmed they drank the preset amount of orange juice daily **Outcomes and assessment methods:** Weight and height measured, BMI calculated. Body fat (%): assessed early in the morning with a bioelectrical impedance device before the participants broke the overnight fast or exercised. Skinfold thickness: Triceps, abdominal and thigh skinfold thicknesses were measured three times with a Lange Skinfold Caliper (Cambridge Scientific Industries, Inc.), average was used as the reference value 1st and 90th day	**Body fat (%),** Paired t-test, Mean (SD) Within group, over time: before, after Control: 39.3 (7.33), 33.8 (7.98), P<0.05 OJ: 37.7 (7.56), 33.4 (7.42), P<0.05 Between groups, at follow-up: NS **Skinfold thickness**, mm, Mean (SD) **Tricep** Within group, over time: before, after Control: 32.0 (10.1), 27.3 (9.33), P<0.05 OJ: 31.9 (7.90), 26.6 (6.85), P<0.05 Between groups, at follow-up: NS **Abdominal** Within group, over time: before, after Control: 30.2 (14.3), 25.5 (11.9), P<0.05 OJ: 32.2 (11.8), 29.3 (9.60), P<0.05 Between groups, at follow-up: NS **Thigh** Within group, over time: before, after Control: 53.0 (12.8), 45.9 (14.9), P<0.05 OJ: 52.6 (11.5), 43.4 (9.99), P<0.05 Between groups, at follow-up: NS **Weight,** kg, Paired t-test, Mean (SD) Within group, over time: before, after Control: 76.3 (15.3), 74.5 (15.9), P<0.05 OJ: 74.6 (13.0), 73.6 (12.4), P<0.05 Between groups, at follow-up: NS **BMI,** kg/m2, Paired t-test, Mean (SD) Within group, over time: before, after Control: 29.0 (5.53), 28.3 (5.81), P<0.05 OJ: 28.4 (4.46), 28.1 (4.47), P<0.05 Between groups, at follow-up: NS	**Model adjustments:** • TEI: yes and no • Other: Nutrient intake (carbohydrate, total fat, SFA, PUFA, MUFA, Vitamin C, folate) and cholesterol (all NS) **Limitations:** • Methods for randomization and concealment NR; No power calculation; No preregistered data analysis plan **Funding:** Fischer Group; "Associacão Laranja Brasil"

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Hollis, 2009[40] RCT-Parallel, U.S. Baseline N=86, Analytic N=76 (Attrition: 12%); Power: NR **Participant characteristics at baseline:** adults with overweight • Age: 18-50y, Mean ~25y (P<0.05, between groups) • Female: NR (men & women were included) • Race/ethnicity: NR • SES: NR • Anthropometry: BMI ~27, NS between groups • Physical activity: NR • Smoking: 100% nonsmokers (inclusion criteria: no use of tobacco products) • Diet quality: NR • TEI: ~8860 kJ **Study beverage intake at baseline:** Intake of CGJ or red wine ≤2 times/wk (inclusion criteria) **Inclusion criteria:** general good health; age 18 to 50 years; BMI 25.0-29.9 (kg/m2); customary consumption of grape juice or red wine no more than twice per week; no use of dietary supplements that would confound analysis of antioxidant capacity; no use of tobacco products; no use of medication that would confound the study outcome measures.	**Intervention**: Consume 480 mL/d of Concord grape juice, no other dietary guidance given , n=25 **Study purpose**: to assess the effects of Concord grape juice consumption for 12 wk on appetite, diet, body weight, lipid profile, and antioxidant status **Other interventions:** polyphenol-free substitute grape-flavored drink, n=26 **Comparator:** Control, no treatment (usual intake of CGJ or red wine ≤2 times/wk), n=25 **Duration:** 12wk **Compliance:** NR **Outcomes and assessment methods:** Weight measured on calibrated scales. Body composition was measured using bioelectrical-impedance analysis. Waist circumference measured using a flexible tape to the nearest millimeter At weeks: 0, 2, 4, 6, 8, 10, 12	**Waist circumference**, cm, Mean (SD) Within group: Baseline, 12wk Control: 33.4 (2.5), 33.1 (3.0), P=NS CGJ: 32.8 (2.6), 32.3 (2.8), P<0.005 Between groups: P=NS **Weight,** kg, Mean (SD) Within group: Baseline, 12wk Control: 77.6 (10.3), 77.7 (9.8), P=NS CGJ: 79.0 (8.4), 79.7 (9.5) P=NS Between groups: P=NS **BMI,** kg/m2, Mean (SD) Within group: Baseline, 12wk Control: 27.3 (1.5), 27.1 (2.0), P=NS CGJ: 27.0 (1.6), 27.1 (2.0), P=NS Between groups: P=NS	**Model adjustments:** • TEI: no • Other: **Limitations**: • Baseline difference in age, sex NR; Methods for randomization and concealment NR; No power calculation; No measure of compliance; No preregistered data analysis plan **Funding**: Welch Foods Inc.

Shenoy, 2010[48]
RCT-Parallel, U.S.
Baseline N=81, Analytic N=60 (Attrition: 25%); Power: NR

Participant characteristics at baseline: adults with metabolic syndrome (35-65)
• Age: mean (SD) 49.8 (6.9)
• Female: 73%
• Race and/or ethnicity: White: 16.5%; Black: 57%; Mexican-American: 22.8%; Other: 3.7%
• SEP: High school education or less: 58.9%
• Anthropometry: Mean (SD)
wt 105.6 kg (18.4)
BMI 37.8 (4.9)
WC 115.8 cm (13.3)
• Physical activity: NR
• Smoking: Current smoker: 13.3%
• Alcohol intake: NR
• TEI: Mean (SD)
Control: 1898.5 (599.9)
8oz group: 2015.9 (931.9)
16oz group: 2184 (703.6)

Study beverage intake at baseline: 8oz juice group: 100% adherence
16 oz juice group: 56% adherence

Inclusion criteria: metabolic syndrome defined by the NCEP Adult Treatment Panel: met 3 out 5 criteria 1) WC for men > 40 in, for women > 35 in; 2) triglycerides > 150 mg/dL; 3) systolic BP > 130 mmHg or diastolic BP > 85 mmHg; 4) fasting blood glucose > 100 mg/dL; 5) HDL-C < 40 mg/dl for men and < 50 mg/dl for females; Body 30- 50 kg/m^2, 16-35 years of age
Excluded: use of anxiolytics or antidepressive medication, hormone replacement therapy, alcohol in excess of 1 ounce/d, diabetes controlled with insulin, hyper- or hypothyroidism, inflammatory disorders, treatment with corticosteroids and anti-inflammatory drugs, routine use of aspirin and other NSAIDs, or hx of a major cardiovascular; abnormal CBC defined as

Intervention: V8®; Campbell Soup Company, Camden, NJ) provided 50 calories, 140 mg sodium

Other interventions: Education on DASH diet, caloric diet prescription (1600 for women, and 1800 for men)

Comparator: No juice, 8 oz/d of vegetablejuice, 16 oz/d vegetable juice

Duration: 12 weeks
Compliance: Daily consumption reported on checklist; adherence was considered as 85% to beverage allotment

Outcomes and assessment methods:
Height measured on stadiometer, weight measured on electronic scale, Body mass index (kg) calculated as weight (kg) divided by height squared (m2)
6 and 12 wk

No statistically significant differences in weight loss over time between groups.

Weight change baseline to 12-wk follow up: aggregated juice groups compared to control; adjusted model (gender, education, and age); data not shown
Completers: F= 4.3, P=0.02
LOCF and ITT: F3.8, P=0.03

Model adjustments:
• TEI: yes and no
• Other: aggregated data model adjusted for age, sex, and education

Limitations:
• Methods for concealment NR; Differences in attrition; Unclear if outcome assessors were aware of intervention assignment; No power calculation; High attrition; No preregistered data analysis plan

Funding:
Campbell Soup Company

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
low/high WBCs (less than 4.0 K/mm3 or greater than 11 K/mm3); hemoglobin (less than 11.5 or greater than 17g/dL), platelets (less than 130 K/mm3 or greater than 450 K/mm3); or a Beck Depression Inventory® scale score of 21 or above			

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Silver, 2011[49] RCT-Parallel, U.S. Baseline N=95, Analytic N=68 (Attrition: 28%); Power: nQuery Advisor with 85% power to detect a minimum difference in total weight loss of 3.3 kg between groups, assuming a common SD of 3 kg and a 15-20% drop out rate, 23 subjects per group needed **Participant characteristics at baseline:** adults (21-50y) • Age: mean age 38.7 ± 8.2y • Female: 75% • Race/ethnicity: White: 60%; Black: 40% • SEP: High school: 10%; Undergraduate: 62%; Graduate: 27% • Anthropometry: mean BMI was 35.6 ± 3.3 kg/ m2 • Physical activity: NR • Smoking: Previous smoker: 11.7% • Alcohol intake: NR • TEI: 12.5% calorie restriction from baseline intake; mean intake not reported **Study beverage intake at baseline:** 127g 20 minutes before meals **Inclusion criteria:** BMI 30-39.9 kg/m2; weight under 300 lb **Excluded:** diabetes, cardiovascular, liver or kidney disease; medications for estrogen replacement, thyroid disease, depression, gastrointestinal disorders; medications metabolized by the cytochrome P450 3A4 enzyme; orexigenic agents; and food allergies or medically restricted diets, weight change >5 pounds within 3 mo, bariatric surgery, disordered eating, non-restrained eating, “yes” to PAR-Q questions, serum triglyceride or LDL-cholesterol level >200 mg/dL, abnormal liver enzyme level, tobacco use, illicit drug use, alcohol intake >1 drink/d, pregnancy (by serum beta-HCG level) or lactation	**Intervention**: V8®; Campbell Soup Company, Camden, NJ) provided 50 calories, 140 mg sodium **Other interventions:** Education on DASH diet, caloric diet prescription (1600 for women, and 1800 for men) **Comparator:** No juice, 8 oz/d of vegetable juice, 16 oz/d vegetable juice **Duration:** 12 weeks **Compliance:** Daily consumption reported on checklist; adherence was considered as 85% to beverage allotment **Outcomes and assessment methods:** Height measured on stadiometer, weight measured on electronic scale, Body mass index (kg) calculated as weight (kg) divided by height squared (m2) 6 and 12 wk	**BMI change from baseline:** controlled for baseline weight, p-value difference between group - 1.9 ± 1.4, p=0.523 **WC (cm) change from baseline:** controlled for baseline WC, p-value difference between group - 5.5 ± 5.7, p=0.189 **Total body fat %:** controlled for baseline body fat, p-value difference between group - 1.1 ± 1.9, p=0.489	**Model adjustments:** • TEI: yes and no • Other: baseline anthropometric measures **Limitations:** • Methods for concealment NR; Concerns with deviations from intended intervention (intent to treat); Unclear if outcome assessors were aware of intervention assignment **Funding:** State of Florida, Department of Citrus, National Center for Research Resources, NIH, Tennessee Valley Healthcare System, Vanderbilt Diabetes Research and Training Center

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Prospective cohort studies			
Auerbach, 2018[31] PCS, Women's Health Initiative, U.S. Analytic N=49,106 **Participant characteristics at baseline:** Postmenopausal women • Age: Mean (SD): 57.9 (4.1) y • Female: 100% • Race/ethnicity: White: 84%; Black ("African American"): 7.6%; Asian("/Pacific"): 3.0%; Hispanic ("/Latino"): 4.0% • SEP: College degree or higher 48%, Annual household income ≥ $75,000 15.4% • Anthropometry: Mean (SD), BMI= 26.2 (4.0) kg/m2 • Physical activity: Recreational physical activity level (MET-hours/wk): 4.3 (3.9) • Smoking: Current smoking 7.1% • Diet quality: HEI diet quality score, Mean (SD): 67.9 (10.5) • TEI: Mean (SD): 1636 (620) kcal/d **Study beverage intake at baseline:** Mean (SD): 0.67 (0.63) svg/d **Inclusion criteria:** female; postmenopausal; age 50-79y; **Excluded:** missing baseline weight, year 3 weight, baseline 100% fruit juice intake, year 3 100% fruit juice intake, baseline age >65y, BMI >35.0 kg/m2, implausible energy intake	**Exposure**: 100% fruit juice intake (1 svg = 6 oz) **Other exposures:** SSB **Comparator:** 100% fruit juice intake (continuous; svg/d increase over 3y) **Assessment methods and timing:** Validated FFQ; represents usual intake baseline, 3y **Outcomes and assessment methods:** Weight measured using standardized protocol and calibrated scales baseline, 3y follow-up	Weight, lb/3-year change per svg/d increase, Linear mixed effects model, B (95% CI): TEI unadj: 0.39 (0.10, 0.69) TEI adj: 0.33 (0.04, 0.63) Analysis with Multiple Imputation (n=74,397) TEI unadj: 0.39 (0.15, 0.63) TEI adj: 0.33 (0.09, 0.58) Stratified by BMI group BMI 18.5-24.9 (n=20,494): TEI unadj: 0.42 (-0.07, 0.91) TEI adj: 0.38 (-0.11, 0.87) BMI 25.0-29.9 (n=18,543): TEI unadj: 0.28 (-0.15, 0.71) TEI adj: 0.23 (-0.20, 0.66) BMI 30.0-34.9 (n=9,588): TEI unadj: 0.59 (-0.07, 1.25) TEI adj: 0.50 (-0.15, 1.16) "Results did not differ in stratified analyses of 5-year increments of baseline age or baseline BMI category, and interaction terms for change in 100% fruit juice consumption and baseline age (P=.64) and baseline BMI (P=.66) were not significant" (Data NR)	**Model adjustments:** • TEI: yes and no • Key confounders: sex, age, race and/or ethnicity, socioeconomic position (total household income, education level), anthropometry at baseline (BMI), physical activity, diet quality (3-y change in HEI diet quality score), smoking • Other: Hormone replacement therapy status **Limitations**: • Did not account for key confounders: anthropometry at baseline (weight) • No preregistered data analysis plan **Funding**: NHLBI; NIH

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Bes-Rastrollo, 2008[32] PCS, Nurses' Health Study II, U.S. Analytic N=50,026 **Participant characteristics at baseline:** Adult women • Age: Mean (SD): 36.5y (4.6) • Female: 100% • Race/ethnicity: NR • SEP: NR • Anthropometry: Mean (SD): BMI: 24.2 (5.0); Weight, kg: 65.9 (14.3) • Physical activity: MET-h/wk, Mean (SD): 20.4 (26.4) • Smoking: Current: 11% • Diet quality: Dietary energy density, kcal/g (food only): 1.2 (0.4) Dietary ED, kcal/g (food+beverages): 1.1 (0.3) Food group intake, Mean (SD): Vegetables, g/d: 159 (99) Fruit, g/d: 176 (118) Other macronutrient and food group intakes reported in paper • TEI: Mean (SD), kcal/d 1771 (522) **Study beverage intake at baseline**: NR **Excluded:** missing dietary (completely missing or >9 missing items), physical activity, weight, or follow-up data; unreasonable energy intakes; history of diabetes or CVD; cancer; pregnancy	**Exposure**: Tomato juice, Orange juice, Apple juice **Other exposures:** SSB, LNCSB, milk, coffee, tea **Comparator:** Categorical intake (Highest vs. lowest tertile of change) **Assessment methods and timing:** Self-administered semi-quantitative FFQ; Represents intake during previous year Baseline, 8y **Outcomes and assessment methods:** Weight, self-reported through biennial questionnaires Baseline, 8y	**Weight change over 8y,** kg, Linear regression Orange juice Lowest tertile (ref) vs Highest tertile: Data NR, $P<0.05$ Apple juice Lowest tertile (ref) vs Highest tertile: Data NR, P=NS Tomato juice Lowest tertile (ref) vs Highest tertile: Data NR, P=NS	**Model adjustments:** • TEI: no • Key confounders: sex, age, physical activity, smoking • Other: Postmenopausal hormone use, oral contraceptive use, changes in confounders between time periods **Limitations**: • Did not account for key confounders: race/ethnicity, SEP, anthropometry at baseline, diet quality • Not all key confounders accounted for; Exposures not well defined and FFQ varied over time; No info on non-completers; Self-reported weight; No preregistered data analysis plan **Funding**: NIH; Spanish Ministry of Education; Fundacion Caja Madrid; Amigos de la Universidad de Navarra; AHA Established Investigator Award

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Castellana, 2020[33] PCS, Multicenter Italian study on Cholelithiasis (MICOL) and GreatAGE, Italy Analytic N=734 **Participant characteristics at baseline:** older adults • Age: mean (SD): 65.95 • Female: 42% • Race/ethnicity: NR • SEP: NR • Anthropometry: Mean (SD): 29.83 (5.04) • Physical activity: NR • Smoking: NR • mean intake g/day: leafy vegetables 63.14 Fruiting vegetables 93.24 Root vegetables 7.81 Other vegetables 74.65 Fruit 595.53 • TEI: mean (SD) 2182.76 **Study beverage intake at baseline:** NR **Inclusion criteria:** without impaired health indicators at baseline, participated in both MICOL3 and greatAGE cohorts	**Exposure**: fruit juices **Other exposures:** SSB, coffee **Comparator:** Amount of intake (g/day) **Assessment methods and timing:** FFQ- 85 items reflected regional diet MICOL3 - 2005-2006 **Outcomes and assessment methods:** Height and weight measurements were performed using a Seca 220 altimeter and a Seca 711 scale M3 2005-2006 and greatAGE 2012-2018	**BMI gain >1.5 kg/m2:** p-values, linear regression with intake grams/day p=0.673	**Model adjustments:** • TEI: no • Key confounders: sex, age, socioeconomic position, anthropometry at baseline, smoking • Other: **Limitations**: • Did not account for key confounders: race and/or ethnicity, physical activity, diet quality, • Exposure not well defined; Exposure data only measured at baseline; No information on non-completers; No preregistered data analysis plan **Funding:** Italian Ministry of Health with "Ricerca Corrente 2019" Grant.

Chen, 2009[34]
PCS, Secondary analysis of PREMIER randomized trial, U.S.
Analytic N=810

Participant characteristics at baseline: adults enrolled in an 18mo behavioral intervention trial to lower BP
• Age: Mean (SD) = 50 (8.9) y, Range 25-79y
• Female: 62%
• Race/ethnicity: African American: 34.4%, Non-Hispanic White: 64.2%, All Others: 1.4%
• SEP: 57.2% college degree or above; 70% annual household income >$45,000, 65.2% married
• Anthropometry: BMI Mean (SD): 33.1 (5.8) kg/m2; 65.2% BMI ≥ 30, 29% BMI 25.0-29.9, 5.4% BMI < 25
• Physical activity: EER Mean (SD) 33.7 (2.9) kcal/kg•d
• Smoking: 4.8% current smokers
• Alcohol intake: Liquid calorie intake, Mean (SD): 356 (237) kcal/d
% of total energy intake from liquid calories, Mean (SD): 19 (11.5)
• TEI: NR

Study beverage intake at baseline: 100% juice intake at baseline: Mean (SD), 139.0 (201.1) mL/d
(~4.7 (6.8) oz/d)

Inclusion criteria: adults with prehypertension or stage 1 hypertension (systolic BP 120-159 mmHg and diastolic BP 80-95 mmHg).

Excluded: routine use of antihypertensive medications, weight loss medication, or oral steroids; those with diabetes, history of a cardiovascular event, CHF, current symptoms of angina or PVD, cancer diagnosis or treatment in past 2y (except for nonmelanoma skin cancer), renal insufficiency, or psychiatric hospitalization within the past 2y

Exposure: 100% fruit and vegetable juice

Other exposures: Milk, SSB, LNCSB, Coffee/Tea

Comparator: Continuous intake (12-oz svg/d)

Assessment methods and timing: Two 24h dietary recalls (1 weekday and 1 weekend day) via telephone interviews using multiple-pass and portion size estimation aids
At baseline, 6mo, and 18mo

Outcomes and assessment methods:
Weight measured using calibrated scale
At baseline, 6mo, and 18mo

Weight change (kg) according to change in juice intake by 1 svg/d, β (95% CI)
6mo: -0.05 (-0.44, 0.27), P=0.71
18mo: 0.005 (-0.65, 0.65), P=0.99

Model adjustments:
• TEI: yes
• Key confounders: sex, age, race and/or ethnicity, socioeconomic position, anthropometry at baseline, physical activity, diet quality, smoking
• Other: intervention group

Limitations:
• Did not account for key confounders: N/A
• No preregistered data analysis plan

Funding:
NHLBI; NIH; Center for Human Nutrition, Johns Hopkins Bloomberg School of Public Health; NICHD

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Drapeau, 2004[36] PCS, Quebec Family Study, Canada Analytic N=248 **Participant characteristics at baseline:** Parents and adult offspring • Age: Mean (SEM): 39.6y (0.9), Range: 18-65y • Female: 55% • Race/ethnicity: NR • SEP: NR • Anthropometry: BMI, Mean (SEM): 25.3 (0.3), Range: 17.4-55.6 • Physical activity: NR • Smoking: NR • Diet quality: Macro- and micronutrient intakes reported in paper • TEI: NR **Study beverage intake at baseline:** NR **Excluded:** missing any dietary data; responding "I don't know" to any dietary intake category	**Exposure**: Fruit juice (nonsweet fruit juice: orange, apple, pineapple) **Other exposures:** SSB, milk **Comparator:** Fruit juice intake (categorical change over 6y: more, the same, or less intake) **Assessment methods and timing:** Three-day dietary record (2 weekdays, 1 weekend day); Represents usual intake Baseline, 6y **Outcomes and assessment methods:** Weight measured by study personnel. Body fat percentage estimated using underwater weighing technique and the Siri formula. Waist circumference measured by study personnel using Airlie Conference procedures. Sum of 6 skinfold thicknesses (triceps, biceps, medial calf, subscapular, suprailiac, and abdominal) measured by study personnel. Baseline, 6y	**6y change by 6y change in intake,** linear regression Body fat percentage: NS, Data NR Waist circumference: NS, Data NR Sum of 6 skinfold thicknesses: NS, Data NR **6y change by 6y change in intake,** linear regression Weight change: NS, Data NR	**Model adjustments:** • TEI: no • Key confounders: age, anthropometry at baseline, physical activity • Other: **Limitations**: • Did not account for key confounders: sex, race/ethnicity, SES, smoking, diet quality • Did not account for all key confounders; Validation of 3-day dietary record unclear; No information on non-completers; No preregistered data analysis plan **Funding**: Canadian Institutes of Health Research

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Duffey, 2010[35] PCS, Coronary Artery Risk Development in Young Adults (CARDIA) Study, U.S. Analytic N=2,444 **Participant characteristics at baseline:** adults • Age: Mean (SD): 25.0 y (3.6) • Female: 54% • Race/ethnicity: Black: 47.4%; White: 52.6% • SEP: NR • Anthropometry: Mean (SD) BMI: 24.5 (5.0) kg/m2; WC: 77.3 cm (10.9) • Physical activity: Mean (SD): 429 exercise units/wk (302) • Smoking: Current 28.1%, Former 13.1%, Never 58.7% • Diet quality: NR • TEI: NR; energy from food, Mean: 2347 kcal **Study beverage intake at baseline:** 95% consuming; Among consumers: Mean (SE)=121 (2) kcal/d **Inclusion criteria (original cohort):** 18-30y at baseline; White or Black race; permanent residence in one of 4 recruitment sites (Birmingham, AL, Chicago, IL, Minneapolis, MN, Oakland, CA); free of a long-term disease or disability that would interfere substantially with any part of the examination **Excluded from original cohort:** pregnant or up to 3 mo post-partum **Excluded from current analyses:** people with high WC at baseline or year 7	**Exposure**: Fruit juice (does not include sweetened 'fruit drinks') **Other exposures:** Dairy milk, SSB **Comparator:** Fruit juice intake (continuous; kcal/d); Fruit juice intake (categorical; quartiles) **Assessment methods and timing:** Semi-quantitative, interviewer-administered, validated diet history FFQ; Represents previous month At baseline, 7y follow-up (averaged) **Outcomes and assessment methods:** WC at minimum abdominal girth measured in duplicate; High WC defined as WC>88cm (women) or >102cm (men) Baseline, 20y follow-up	**High WC,** Poisson regression, RR (95% CI) Fruit juice intake, categorical: 1.00 (0.92, 1.09), P for trend = 0.999 Fruit juice intake, continuous: 0.98 (0.90, 1.06)	**Model adjustments:** • TEI: yes • Key confounders: sex, age, race and/or ethnicity, anthropometry at baseline (body weight), physical activity, diet quality (fruit, vegetables, milk, non-milk dairy), smoking • Other: Calories from alcohol, CARDIA exam center **Limitations**: • Did not account for key confounders: socioeconomic position, anthropometry at baseline (WC) • Start of follow-up and exposure do not coincide; Unclear if exposure assessment tool is validated; Impact of missing data on analysis unclear; No preregistered data analysis plan; not all key confounders accounted for **Funding**: Danone Research Center; NIH; UNC-CH Center for Environmental Health and Susceptibility; UNC-CH Clinic Nutrition Resarch Center; Carolina Population Center; University of Alabama at Birmingham Coordinating Center; University of Alabama at Birmingham Field Center, University of Minnesota Field Center, Northwestern University Field Center, Kaiser Foundation Research Institute

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Ferreira-Pego, 2016[37] PCS of trial data, PREDIMED (PREvención con DIeta MEDiterránea), Spain Analytic N=1,868 **Participant characteristics at baseline:** adults at high risk for CVD • Age: Mean (SD): 67y (6) • Female: 53% • Race/ethnicity: NR • SEP: NR • Anthropometry: BMI Mean (SD): 28.3 (3.5) kg/m2 • Physical activity: Leisure time MET, min/d, Mean (SD): 274 (252) • Smoking: Never: ~58%; Current; ~17%; Former: ~26% • Diet quality: Mean (SD), g/d Vegetables: ~334 (152) Fruit: ~359 (199) • TEI: Mean (SD): 2,323 (~530) kcal/d **Study beverage intake at baseline:** During follow up: Mean 29.3 mL/d **Inclusion criterion:** high-risk for CVD **Excluded:** MetS, history of CVD, severe chronic illness, drug/alcohol addiction, history of allergy or intolerance to olive oil or nuts, low predicted likelihood of changing dietary habits, missing dietary data, implausible TEI	**Exposure**: Fruit juice (natural fruit juices: freshly extracted juice, for which the only procedure accepted was the squeezing of the whole piece of fruit); 1svg=200mL **Other exposures:** SSB, LNCSB **Comparator:** Categorical intake: <1 svg/wk, 1-5, >5 **Outcomes and assessment methods:** • Weight: measured by trained personnel with calibrated scales • Height: measured by trained personnel with a wall-mounted stadiometer. • Waist circumference measured using an anthropometric tape midway between the lower rib and the superior border of the iliac crest • Abdominal obesity: waist circumference ≥88cm in women and ≥102 cm in men Baseline, annually for ≥2y	**Abdominal obesity,** Multivariable time-dependent Cox proportional regression, HR (95% CI) Natural fruit juices: <1 svg/wk: Ref 1-5 svg/wk: 0.97 (0.76, 1.24) >5 svg/wk: 1.52 (1.02, 2.25) P for trend: 0.08	**Model adjustments:** • TEI: yes • Key confounders: Sex, age, anthropometry at baseline, physical activity, smoking, diet quality (vegetables, legumes, fruit, cereals, meat, fish, bakery, dairy products, olive oil, and nuts) • Other: alcohol (overall alcohol intake & alcohol squared in grams per day), intervention group, prevalence of MetS components at baseline **Limitations**: • Did not account for key confounders: Race and/or ethnicity, SEP • No information on whether or not amount of missing data varied across exposure groups; Follow-up time differs among participants; No preregistered data analysis plan **Funding**: Spanish Ministry of Health, the Thematic Network, FEDER (European Regional Development Fund), the Centre Catalá de la Nutrició de l'Institut d'Estudis Catalans, and the Fundació "LaMarat´ o de TV3"

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Funtikova, 2015[38] PCS, Spain Analytic N=2,112 **Participant characteristics at baseline:** adults • Age: Mean: ~49.2y • Female: 53% • Race/ethnicity: NR • SEP: Higher education ~37% • Anthropometry: Mean: WC, ~89.6 cm • Physical activity: Mean: ~200 MET-min/d (leisure time) • Smoking: Current smoker ~26% • Diet quality: validated, modified Mediterranean Diet Score (mMDS), mean ~17.6 (out of a possible 30) • TEI: Mean: ~11.2 MJ/d **Study beverage intake at baseline:** Juices, mL/d, mean (SD): 64 (114) **Inclusion criteria (original cohort, n=3058):** adults aged 25-75y residing in Girona, Spain **Excluded from current analyses:** no longer residing in catchment area (n=343); lost to follow-up (n=534), missing data for WC (n=37) and smoking status (n=32)	**Exposure**: Including commercial and natural fruit and vegetable juices; apple, peach, orange, grape, and tomato (1 svg=200mL) **Other exposures:** SSB, Dairy milk **Comparator:** Juice intake (continuous; 100 kcal/d); Juice intake (categorical; svg/d): No consumption (ref), <1, ≥1; Juice intake (categorical; change in consumption): No consumption (ref), Decrease, Increase, Maintain **Assessment methods and timing:** Validated, 166-item FFQ administered by trained interviewer; Represents intake during previous year Baseline, 9y follow-up **Outcomes and assessment methods:** WC measured midway between lowest rib and iliac crest with participant lying horizontally. Abdominal obesity defined as >102 cm for men and >88 cm for women Baseline, 9y follow-up	**Abdominal obesity,** OR (95% CI), logistic regression Juices, categorical Incidence by baseline intake: No consumption (ref) <1 svg/d: 0.98 (0.72, 1.31) ≥1 svg/d: 0.74 (0.49, 1.13) Men (n=756) No consumption (ref) <1 svg/d: 1.15 (0.72, 1.82) ≥1 svg/d: 1.23 (0.64, 2.36) P trend =0.62 Women (n=723) No consumption (ref) <1 svg/d: 0.87 (0.60, 1.30) ≥1 svg/d: 0.53 (0.35, 1.00) P trend = 0.027 **WC,** cm, Mean (95% CI), linear regression Juices, continuous Change per 100 kcal/d increase: -0.03 (-0.74, 0.68), P=0.93 Men: -0.25 (-1.26, 0.76), P=0.63 Women: 0.06 (-0.95, 1.07), P=0.91 **WC,** cm, Change by change in consumption, Juices (change in consumption), categorical, Mean (95% CI), linear regression: No consumption (ref) Decrease: 0.25 (-0.67, 1.17), P=0.59 Increase: 0.25 (-0.73, 1.22), P=0.62 Maintain: 0.15 (-1.93, 2.24), P=0.89 Men (n=1000) No consumption (ref) Decrease: 0.50 (-0.71, 1.72), P=0.42 Increase: -0.81 (-2.10, 0.48), P=0.22 Maintain: 0.30 (-2.05, 2.56), P=0.60 Women (n=1112) No consumption (ref) Decrease: 0.10 (-1.35, 1.56), P=0.69 Increase: 1.05 (-0.40, 2.51), P=0.16 Maintain: 0.38 (-1.80, 2.55), P=0.74	**Model adjustments:** • TEI: yes • Key confounders: sex, age, race and/or ethnicity, socioeconomic position, anthropometry at baseline, physical activity, diet quality, smoking • Other: energy under- or over-reporting **Limitations:** • Did not account for key confounders: race and/or ethnicity • Start of follow-up and exposure do not coincide; High attrition (31%) with no information on non-completers; No preregistered data analysis plan; Not all key confounders accounted for **Funding**: Catalan Government; Carlos III Health Institute European Fund for Regional Development; Catalonian Agency for the Administration of University and Research Grants

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Halkjaer, 2009[39] PCS, Danish Diet, Cancer, and Health study, Denmark Analytic N=42,696 **Participant characteristics at baseline:** adults • Age: 56y (Range: 50-64y) • Female: 53% • Race/ethnicity: NR • SEP: NR • Anthropometry: BMI Mean: 25 kg/m2 • Physical activity: Perform ≥30min sport/wk • Smoking: Current: 33% • Diet quality: Median (5th-95th %), kcal/d Vegetables: Male(M): 67 (22-146); Female(F): 74 (24-169) Fruits: M: 84 (16-277); F: 114 (25-320) Soft drinks: M: 6.8 (0.1-81); F: 2.0 (0.1-35) • TEI: NR **Study beverage intake at baseline:** Total juice: Median (5th-95th %), kcal/d Males: 3.6 (0.0-43) Females: 3.8 (0.1-45) **Inclusion criteria:** Age 5-64y, born in Denmark, no history of cancer **Excluded:** too many data errors, missing data on follow-up time	**Exposure**: Vegetable and fruit juice **Other exposures:** SSB, Coffee/Tea **Comparator:** Continuous intake (per 60 kcal/d increments) **Assessment methods and timing:** Validated FFQ; represents usual intake Baseline **Outcomes and assessment methods:** • Height, weight, waist circumference, hip circumference measured at baseline • Follow-up weight and WC were self-report • Waist circumference measured at the smallest horizontal circumference between the ribs and iliac crest (the natural waist), or, in case of an indeterminable waist narrowing, halfway between the lower rib and the iliac crest; SELF-REPORTED: measuring tape was provided, participants were told to measure WC at the level of the umbilicus • Hip circumference was measured at the largest horizontal expansion of the buttocks Baseline, 5y follow up	**Waist circumference,** cm, 5y change per 60 kcal/d juice, Linear regression, β (95% CI) Women: -0.15 (-0.38, 0.09) Men: 0.11 (-0.09, 0.31) Interaction, P=0.09	**Model adjustments:** • TEI: yes • Key confounders: Sex, age, anthropometry at baseline, physical activity, smoking • Other: Alcohol **Limitations**: • Did not account for key confounders: Race and/or ethnicity, SEP, diet quality • Attrition 25% without information on non-completers, Exposure data only measured at baseline, WC self-reported, No preregistered data analysis plan; no reporting of other outcomes measured (weight, BMI, hip circumference) **Funding**: National Danish Research Foundation; Diet, Obesity and Genes project, supported by European Community

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Hosseinpour-Niazi, 2021[41] PCS, Tehran Lipid and Glucose Study, Iran Analytic N=1,915 **Participant characteristics at baseline:** adults • Age: Mean (SD): 36.5 (13.3)y • Female: 60% • Race/ethnicity: NR • SEP: Baseline characteristics reported across tertiles (T1 and T3) of 100% juice intake % with academic degrees: T1: 31.8%, T3: 21.6%, p<0.001 Occupational status, % unemployed: T1: 54.4%, T3: 60.5%, p=0.073 • Anthropometry: BMI, mean (SD): 25.6 (4.5) kg/m2 • Physical activity: MET-h/week, mean (SD): T1: 4.6 (0.3), T3: 5.5 (0.3), p=0.061 • Smoking: % smoker at baseline: T1: 12.4%, T3: 33.1%, p<0.001 • Diet quality: NR • TEI: Kcal/day, mean (SD) T1: 2296 (35); T3: 2407 (35); p=0.041 **Study beverage intake at baseline:** Mean (SD): 24.7 (0.9) g/day Median intake, g/d: T1: 2.9, T3: 29.6 **Inclusion criteria:** age ≥3y at baseline, resident of district 13 in Tehran **Excluded:** refusal to complete FFQ (n=838), incomplete FFQ information (n=197), metabolic syndrome at baseline (n=879), pregnant or lactating at baseline or follow-up (n=28), daily energy intake < 500 and >4200 kcal/d (n=115), on a specific diet for hyperlipidemia, hypertension, or hyperglycemia (n=26), missing laboratory or anthropometric data related to metabolic syndrome diagnosis during follow-up (n=309)	**Exposure**: 100% fruit juices included cantaloupe juice (with pulp), apple juice (without pulp), grapefruit juice (without pulp), and orange juice (without pulp) **Other exposures:** SSB **Comparator:** Categorical intake (tertiles) **Assessment methods and timing:** Validated semi-quantitative FFQ; represents intake over previous year. Standard units or portion sizes were converted to grams. 2006-2008 (baseline), 2008-2011, 2012-2015, 2016-2018 **Outcomes and assessment methods:** Height and weight: valid measure by study staff. BMI calculated from weight and height. % weight change calculated by subtracting baseline weight from follow-up weight, divided by baseline weight, and multiplied by 100. Participants categorized as those who lost weight (≥-2%), those with weight stability (-1.9%-1.9%), and those who gained weight (≥2%). 2006-2008, 2016-2018 (median follow-up: 8.91y (IQR: 7.98-9.69y))	**Risk of weight gain ≥2%,** multivariable Cox regression, HR (95% CI) T1: ref T2: 0.90 (0.77, 1.05) T3: 1.41 (1.20, 1.65) p<0.001	**Model adjustments:** • TEI: yes • Key confounders: sex, age, socioeconomic position (education levels, occupation status), anthropometry at baseline, physical activity, diet quality (SSB, dietary fiber), smoking • Other: Family history of diabetes, anti-hyperglycemic medication use, antihyperlipidemic medication use, dietary cholesterol **Limitations**: • Did not account for key confounders: race and/or ethnicity, • Start of follow-up and exposure do not coincide; High amount of missing data; No preregistered data analysis plan **Funding**: Research Institute for Endocrine Sciences, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Konieczna, 2019[42] PCS, Secondary analysis of PREDIMED trial, Spain Analytic N=7,009 **Participant characteristics at baseline:** Spanish older adults • Age: Mean (SD): 67y (6.2) • Female: 58% • Race/ethnicity: All "white, elderly Spanish" • SES: Higher education/technician: 7% • Anthropometry: Body weight, kg, mean (SD): 76.7 (12.0) WC, cm, mean (SD): 100 (10) BMI, kg/m^2, mean (SD): 30.0 (3.8) Obesity prevalence: 47% Abdominal obesity prevalence: 73% • Physical activity: METs (min/d), mean (SD): 233 (239) • Smoking: Current smoker: 14% • Diet quality: Adherence to MedDiet (14-points score), mean (SD): 9 (2) • TEI: Kcal/day, mean (SD): 2239 (543) **Study beverage intake at baseline:** mean (SD): 0.14 (0.33) svg/d Average yearly change (svg/d) during follow-up, mean (5th, 95th percentile): -0.01 (-0.22, 0.22) **Inclusion criteria:** age between 55-80y, free of CVD at enrollment but at risk of CVD based on T2DM diagnosis or ≥3 risk factors (hypercholesterolemia, low HDL, overweight/obesity, hypertension, current smoking or family history of premature coronary heart disease) **Excluded:** missing data on waist circumference, physical activity, or FFQ at baseline (n=291), total energy intake values outside predefined limits (500-3500 kcal/d (women), 800-4000 kcal/d (men)) (n=147)	**Exposure**: 100% juice (natural fruit juices). Exposure of interest was change in intake expressed in serving/d, calculated as the difference between yearly measured values and values from the previous year. **Other exposures:** Milk, SSB, LNCSB, coffee and tea **Comparator:** Different intake of 100% juice (continuous, svg/d) **Assessment methods and timing:** 137-item semi-quantitative FFQ; intake calculated by multiplying serving size by frequency of consumption (from never to > 6 times/d) At baseline and yearly thereafter (~5y follow-up) **Outcomes and assessment methods:** Height and weight: valid measure by study staff BMI: calculated from height and weight measurements Waist circumference: determined midway between lowest rib and iliac crest using anthropometric tape; measured in duplicate by trained staff; average of two measurements was analyzed value Absolute change in body weight and WC: calculated as difference between yearly measured values and values from previous year Baseline and annually thereafter (mean follow-up 4.8y)	**ΔWC (cm) over 5y follow-up by concurrent changes in juice intake (svg/d),** β (95% CI), generalized estimating equation Overall: -0.20 (-0.53, 0.13), p=0.235 Men: -0.10 (-0.48, 0.28), p=0.605 Women: -0.28 (-0.76, 0.21), p=0.259 **ΔBody weight (kg) over 5y follow-up by concurrent changes in juice intake (svg/d),** β (95% CI), generalized estimating equation 0.02 (-0.14, 0.19), p=0.779	**Model adjustments:** • TEI: Yes (for food groups found to be significantly associated with outcomes) • Key confounders: sex, age, socioeconomic position, anthropometry at baseline, physical activity, smoking, diet quality • Other: Time (years, due to slight variations in period between successive visits), center, intervention group (combined MedDiets vs. control); for food groups for which the associations with changes in anthropometry were statistically significant, models were additionally adjusted for intake of other foods simultaneously, to estimate mutually adjusted associations. No multi-collinearity was observed between these food groups. **Limitations**: • Did not account for key confounders: race and/or ethnicity • No preregistered data analysis plan; Limited generalizability **Funding**: CIBER Fisiopatología de la Obesidad y Nutrición (CIBEROBN); Instituto de Salud Carlos III (ISCIII); "FOLIUM" program within the FUTURMed project; Fundación Instituto de Investigación Sanitaria Illes Balears; ERC Advanced Research Grant

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Mozaffarian, 2011[43] PCS, Nurses Health Study (NHS) + NHS II + Health Professionals Follow-Up Study (HPS), U.S. Analytic N: NHS = 50,422, NHS II = 47,898, HPS = 22,557 **Participant characteristics at baseline:** Adults • Age: Mean (SD): NHS 52.2y (7.2), NHS II 37.5y (4.1), HPS 50.8y (7.5) • Female: NHS & NHS II: 100% HPS: 0% • Race/ethnicity: Primarily white • SEP: Primarily well-educated • Anthropometry: Mean (SD): BMI (kg/m2), NHS 23.7 (1.4), NHS II 23.0 (2.7), HPS 24.7 (1.1) • Physical activity: MET-hr/wk, Mean (SD): NHS 14.8 (9.9), NHS II 21.6 (25.9), HPS 22.9 (15.1) • Smoking: Never smoker: 53%, Past smoker: 33%, Current smoker: 13%, Missing: 1% • Diet quality: Mean, svg/d Fruit: ~1.5; Vegetables: ~3.5; Whole grains: ~0.6 Additional food group data in paper • TEI: NR **Study beverage intake at baseline:** NR **Excluded:** obesity, diabetes, cancer, or cardiovascular, pulmonary, renal, or liver disease at baseline; missing data on lifestyle habits; implausible energy intake, >9 blank responses on the diet questionnaire; newly pregnant during follow-up; >65y of age	**Exposure**: 100% fruit juice intake (apple juice or cider, orange, grapefruit, and other fruit juice) **Other exposures:** Milk, SSB, LNCSB **Comparator:** Continuous intake (svg/d) **Assessment methods and timing:** Validated questionnaire; represents usual dietary intake At baseline, every 4y over 12- to 20-y follow-up **Outcomes and assessment methods:** • Weight was collected via self-report from questionnaire • At baseline, and every 2y over 12- to 20-y follow-up	**Weight,** lb, Linear regression, β (95% CI) Change per svg/d increase: NHS: 0.26 (0.20, 0.32), P<0.001 NHS II: 0.49 (0.41, 0.58), P<0.001 HPS: 0.17 (0.10, 0.25), P<0.001	**Model adjustments:** • TEI: no • Key confounders: Sex, age, anthropometry at baseline, physical activity, smoking, diet quality (fruits, vegetables, whole-fat and low-fat dairy, potato chips, potatoes/fries, whole grains, refined grains, sweets and desserts, processed and unprocessed meats, trans fat, fried foods at and away from home, and other beverage types) • Other: Alcohol, television watching, sleep duration **Limitations**: • Did not account for key confounders: Race and/or ethnicity, SEP • Not all key confounders accounted for; Self-reported weight **Funding**: NIH; Searle Scholars Program

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Pan, 2013[44] PCS, Nurses Health Study (NHS) + NHS II + Health Professionals Follow-up Study (HPS) , U.S. Analytic N: NHS = 50,013; NHS II = 52,987; HPS = 21,988 **Participant characteristics at baseline:** Adults • Age: Mean ~47y • Female: NHS & NHS II: 100% HPS: 0% • Race/ethnicity: Primarily white • SEP: Primarily well-educated • Anthropometry: Overweight: 31%, Obesity: 17%, BMI Mean: ~25 kg/m2 • Physical activity: Mean~18 MET-hr/wk • Smoking: Never smoker: 54%, Past smoker: 33%, Current smoker: 13% • Diet quality: Mean, serv/d SSB: ~0.4 • TEI: NR **Study beverage intake at baseline:** Fruit juice intake, svg/d, Mean (5th-95th%): NHS 0.83 (0-2.29), NHS II 0.62 (0-2.0), HPS 0.78 (0-2.43)	**Exposure**: Fruit juice intake (apple, orange, grapefruit, and other juice) **Other exposures:** Milk, SSB, LNCSB, Coffee/Tea **Comparator:** Continuous intake (svg/d) **Assessment methods and timing:** Validated FFQ; represents usual intake of foods and beverages At baseline, every 4y over 16- to 20-y follow-up **Outcomes and assessment methods:** Weight was collected via self-report from questionnaire At baseline, and every 2y over 16- to 20-y follow-up	**Weight change over ~20y (by 4-year assessment intervals),** kg, Linear regression, β (95% CI) Change per svg/d increase over each 4y period: NHS: 0.24 (0.20, 0.28), P=NR NHS II: 0.26 (0.22, 0.30), P=NR HPS: 0.15 (0.10, 0.19), P=NR Stratified by age: ≤50y, >50y NHS: 0.23 (0.15, 0.31), 0.42 (0.38, 0.46), P=0.24 NHS II: 0.28 (0.24, 0.32), 0.19 (0.09, 0.29), P=0.04 HPS: 0.15 (0.07, 0.23), 0.15 (0.09, 0.20), P=0.76 Stratified by BMI (kg/m2): <25, 25-29.9, ≥30 NHS: 0.07 (0.03, 0.10), 0.26 (0.19, 0.320, 0.60 (0.47, 0.74), P<0.001 NHS II: 0.13 (0.09, 0.16), 0.33 (0.25, 0.41), 0.55 (0.42, 0.68), P<0.001 HPS: 0.06 (0.01, 0.11), 0.16 (0.10, 0.23), 0.55 (0.32, 0.79), P<0.001	**Model adjustments:** • TEI: no • Key confounders: Sex, age, anthropometry at baseline, physical activity, smoking, diet quality (fruits, vegetables, whole grain, refined grain, potatoes, potato chips, red meat, other dairy products, sweets and deserts, nuts, fried foods, and trans fat, and other beverage types) • Other: Alcohol, protein, television watching **Limitations**: • Did not account for key confounders: Race and/or ethnicity, SEP • Not all key confounders accounted for; Self-reported weight **Funding**: NIH

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Rautiainen, 2015[45] PCS of trial data, Women's Health Study, US Analytic N=18,146 **Participant characteristics at baseline:** Women ≥45y with normal BMI at baseline • Age: Mean: 53y, all ≥45y • Female: 100% • Race/ethnicity: "Predominantly Caucasian" • SEP: "Predominantly health care professionals" • Anthropometry: BMI 18.5-<25 kg/m2 • Physical activity: Mean~17 MET hrs • Smoking: Current: 14.5% • Diet quality: Fruits & vegetables, svg/d Quintile 1: <3.5, Q2: 3.5-<4.9, Q3: 4.9-<6.3 Q4: 6.3-<8.2, Q5: ≥8.3 • TEI: Mean: 1,710 kcal/d **Study beverage intake at baseline:** Fruit juice intake (svg/d): Quintile 1 (Q1)<0.1, 23%; Q2: 0.1 to <0.3, 18%; Q3: 0.3 to <0.5, 20%; Q4: 0.5 to <0.8, 20%; Q5: ≥0.8, 19% **Inclusion criteria:** ≥45y, postmenopausal or not planning pregnancy, no history of myocardial infarction, stroke, transient ischemic attack, cancer, diabetes, or CVD **Excluded:** BMI outside 18.5-25kg/m2, missing fruit/vegetable intake data, insufficient FFQ data, implausible TEI	**Exposure**: Fruit juice (grapefruit, orange, apple, and other juice; does not specifically say '100%') **Other exposures:** None **Comparator:** Categorical (quintiles) **Outcomes and assessment methods:** • At baseline, and 2, 3, 5, 6, 9y follow-up during RCT, then annually from 11-17y during observational follow-up (Mean follow-up: 15.9y) • Weight (lb) and height (inches) were self-reported • BMI calculated as kg/m2 • Overweight: BMI 25 to <30 kg/m2 • At baseline, and 2, 3, 5, 6, 9y follow-up during RCT, then annually from 11-17y during observational follow-up (Mean follow-up: 15.9y)	**Incident overweight/Obesity (BMI ≥25 kg/m2), among normal BMI at baseline,** Cox proportional hazard, HR (95% CI) Q1 (n=4130): ref Q2 (n=3287): 0.98 (0.91, 1.04) Q3 (n=3615): 0.79 (0.73, 0.84) Q4 (n=3573): 0.88 (0.82, 0.95) Q5 (n=3518): 0.81 (0.76, 0.88) P-trend <0.0001	**Model adjustments:** • TEI: yes • Key confounders: Sex, age, anthropometry at baseline, physical activity, smoking • Other: Randomization treatment assignment, history of hypercholesterolemia or hypertension, postmenopausal status, postmenopausal hormone use, supplements, alcohol **Limitations**: • Did not account for key confounders: Race and/or ethnicity, SEP, diet quality • Not all key confounders accounted for; Exposure not clearly defined; Exposure measured only at baseline; Attrition 54% without information on non-completers; Weight and height self-reported; No preregistered data analysis plan **Funding**: NIH; Swedish Council of Working Life and Social Research

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Romaguera, 2011[46] PCS, European Prospective Investigation into Cancer and Nutrition (EPIC), Italy, UK, the Netherlands, Germany, Denmark Analytic N=48,631 **Participant characteristics at baseline:** Adults • Age: 20-60y • Female: 60% • Race/ethnicity: NR • SEP: NR • Anthropometry: NR • Physical activity: NR • Smoking: NR • Diet quality: Mean (SD), g/d Fruits: ~180 Vegetables: ~170 Soft drinks: ~900 • TEI: NR **Study beverage intake at baseline:** Juice intake, g/d, Mean (SD): Men, 63.76 (117.91), Range=31.19-189.97; Women, 76.50 (128.63), Range=35.24-119.77 **Excluded:** no blood sample data, pregnancy, missing diet or anthropometric data, highest and lowest 1% of TEI:energy requirement ratio, chronic disease (cancer, CVD, diabetes) at baseline or follow up, unrealistic anthropometric measurements, baseline age >60y or follow-up age >65y, missing data on smoking or change in smoking status from baseline to follow up	**Exposure**: 100% fruit juice **Other exposures:** Milk, SSB, Coffee/Tea **Comparator:** Continuous, 100 kcal/d **Assessment methods and timing:** Country-specific validated FFQ; represents usual food intakes Baseline **Outcomes and assessment methods:** • Weight and height measured using standard protocol or via self-report • Waist circumference (WC) measured either midway between the lowest rib and iliac crest, at the narrowest torso circumference, or via self-report • BMI calculated as weight (kg) divided by height (m) squared • Waist circumference for a given body mass index (WCBMI) calculated as the residual values from gender- and center-specific regression equations of WC on BMI using baseline and follow-up values of WC and BMI Baseline, 5.5y follow up	**Association between intake and annual change in WC for given BMI;** β2 (95% CI), Linear regression All: -0.01 (-0.03, 0.00), P=0.100 Men: -0.01 (-0.02, 0.01), P=0.315 Women: -0.02 (-0.05, 0.01), P=0.211 Interaction by gender: P=NS	**Model adjustments:** • TEI: yes • Key confounders: Sex, age, race/ethnicity, SEP, anthropometry at baseline, physical activity, smoking • Other: Alcohol, follow-up duration, menopausal status and hormone replacement therapy use (in women) **Limitations**: • Did not account for key confounders: Diet quality • Exposure measured at baseline only; excluded participants with chronic disease at follow up **Funding**: European Union; Danish Strategic Research Council

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Schulze, 2004[47] PCS, Nurses' Health Study II, U.S. Analytic N=51,603 **Participant characteristics at baseline:** Adult female nurses • Age: Mean ~36y (24-44y) • Female: 100% • Race/ethnicity: NR • SEP: NR • Anthropometry: Mean BMI ~24.4 kg/m2 • Physical activity: ~19 METs/wk • Smoking: 12% current smokers • Diet quality: Cereal fiber: ~5.5 g/d Total fat intake: ~31% of total energy intake • TEI: Mean ~1800 kcal/d **Study beverage intake at baseline:** NR **Inclusion criteria:** female nurses aged 24 to 44y at study initiation (1989) **Excluded:** missing dietary questionnaire in 1991 or >9 items on FFQ left blank; implausible total energy intake (< 500 kcal/d or >3500 kcal/d); history of diabetes, cancer (except nonmelanoma skin cancer), or CVD at baseline; no data on physical activity in 1991 questionnaire, missing SSB intake information, history of diabetes or CVD before 1995 or reported cancer diagnosis (except nonmelanoma skin cancer) on any questionnaire, missing body weight information, no data on physical activity assessed in 1997	**Exposure**: Fruit juice (apple, orange, grape, and other juice) **Other exposures:** SSB, 100% juice **Comparator:** Categorical intake: Change in drink frequency from 1991 to 1995): Consistent ≤1/wk, Consistent ≥1/d, Increased (≤1/wk to ≥1/d), Decreased (≥1/d to ≤1/wk), Other **Assessment methods and timing:** Validated semi-quantitative FFQ; represents intake over previous year Baseline (1991), 4y follow-up (1995) **Outcomes and assessment methods:** Height measured via self-report at baseline only, Weight measured via self-report. BMI calculated as kg/m2 Baseline (1991), 4y follow-up (1995)	**Weight gain, Per change in 100% juice consumption from 1991-1995:** Increased intake (≤1/wk to ≥1/d): 4.03 kg Decreased intake (≥1/d to ≤1/wk): 2.32 kg P<0.001	**Model adjustments:** • TEI: no • Key confounders: Sex, age, anthropometry at baseline, physical activity, diet quality (cereal fiber intake, total fat intake), smoking • Other: Postmenopausal hormone use, oral contraceptive use **Limitations**: • Did not account for key confounders: Race and/or ethnicity, socioeconomic position • Not all key confounders accounted for; High attrition without information on non-completers; Weight and height self-reported; No preregistered data analysis plan **Funding**: NIH; European Association for the Study of Diabetes/American Diabetes Association; German Academic Exchange Service (DAAD)

Study and Population Characteristics	Intervention, Comparator, and Outcome	Results	Confounding and Study Limitations
Siqueira, 2023[50] PCS, ELSA-Brazil cohort, Brazil Analytic N=6,124 **Participant characteristics at baseline:** adults, older adults • Age: mean age 50 ± 8.5y • Female: 59% • Race/ethnicity: White: 50.5%; Non-white: 49.5% • SEP: income per capita ($): 876 ; Education: 53% college, 37% secondary, 10% elementary • Anthropometry: Mean BMI 24.9 ± 3.8 kg/m2 • Physical activity: Strong (1,500 MET-min/wk high intensity or 7 days of any combination of high and moderate reaching 3,000 METS-min/wk): 8%; Moderate (>3days of 20 min high intensity exercise or >5 days 30 min moderate intensity: 16%; Weak (no exercise): 76% • Smoking: Non-smokers: 11%; Former: 19%; Current: 69.5% • Alcohol intake: Mean intake g/d: Fruit: 491 Vegetables: 183 • TEI: mean 2,943 **Study beverage intake at baseline:** SSB consumption servings/d: <0.1: 64% >0.1-<0.4: 20% >0.4-<1: 10% >1: 6% **Excluded:** history of cardiovascular events and cancer at baseline, reported intake of diet soda, implausible calorie intake (<500 and >600 kcal/d), history of bariatric surgery, lack of follow-up, missing data on main exposure or outcome	**Exposure**: 100% fruit juice, fruit or fruit pulp with or without addition of water **Comparator:** daily beverage intake: < 0.1 serving/d, >0.1 to < 0.4 serving/day, > 0.4 to < 1 serving/day, and = 1 servings/day **Assessment methods and timing:** Validated semi-quantitative FFQ; average daily intake calculated from frequency of servings equivalent to 250ml Baseline (2008-2010) **Outcomes and assessment methods:** Height was measured using a vertical wall stadiometer Seca-SE-216 (Seca Brasil, Brazil) with an accuracy of 1 mm, Body weight was measured using a calibrated Toledo 2096PP scale (Toledo do Brasil Ltda, Brazil), BMI calculated as body weight divided by height squared (kg /m2), WC measured with measuring tape around midpoint between the lower edge of the ribs and the iliac crest Follow-up (2012-2014)	**Risk of high WC:** relative risk (95% CI), poisson regression , 1 serving=250mL Model 2: <0.1 serving/d: REF 0.1-<0.4/d: 1.09 (0.85–1.39) 0.4-<1/d: 0.99 (0.77–1.27) >1/d: 1.26 (0.90–1.78) Model 3 (controlled for TEI) <0.1 serving/d: REF 0.1-<0.4/d: 1.11 (0.86–1.41) 0.4-<1/d: 1.05 (0.81–1.34) >1/d: 1.39 (0.97–1.91)	**Model adjustments:** • TEI: yes and no • Key confounders: sex, age, race, socioeconomic position, anthropometry at baseline, physical activity, diet quality, smoking • Other: **Limitations**: • Did not account for key confounders: • Exposure data only measured at baseline; no information on non-completers; No preregistered data analysis plan **Funding**: Brazilian Ministry of Health (Department of Science and Technology) and Ministry of Science, Technology and Innovation, FINEP (Financiadora de Estudos e Projetos), National Council for Scientific and Technological Development

[a] Abbreviations: AHA: American Heart Association; BMI: body mass index; BP: blood pressure; d: day(s); CARDIA: Coronary Artery Risk Development in Young Adults; CBC: complete blood count; CGJ: concord grape juice; CHF: congestive heart failure; cm: centimeter(s); CVD: cardiovascular disease; DASH: Dietary Approaches to Stop Hypertension; dL: deciliter(s); FFQ: food frequency questionnaire; g: gram(s); HDL-C: high-density lipoprotein cholesterol; HEI: Healthy Eating Index; hr: hour(s); HPS: Health Professionals Follow-up Study; HR: hazard ratio; in: inch(es); K: kelvin; kcal: kilocalories; kg: kilograms; kJ: kilojoules; LDL-C: low-density lipoprotein cholesterol; LNCSB: low- and no-calorie sweetened beverage(s); MET: metabolic equivalents of task; MetS: metabolic syndrome; mg: milligram(s); min: minute(s); MJ: megajoule; mL: milliliters; mm: millimeters; mmHg: millimeters of mercury; mo: month(s); MUFA: monounsaturated fatty acids; N/A: not applicable; NCEP: National Cholesterol Education Program; NHLBI: National Heart, Lunch, and Blood Institute; NHS: Nurses Health Study; NICHD: Eunice Kennedy Shriver National Institute of Child Health and Human Development; NIH: National Institutes of Health; NR: not reported; NS: not significant; NSAID: non-steroidal anti-inflammatory drug; OJ: orange juice; OR: odds ratio; oz: ounce; PCS: prospective cohort study; PREDIMED: PREvención con DIeta MEDiterránea; PUFA: polyunsaturated fatty acids; PVD: peripheral vascular disease; RCT: randomized controlled trial; ref/REF: reference; SD: standard deviation; SEM: standard error of mean; SEP: socioeconomic position; SFA: saturated fatty acids; SSB: sugar-sweetened beverage(s); svg: serving; T2DM: type 2 diabetes mellitus; TEI: total energy intake; UNC-CH: University of North Carolina-Chapel Hill; WBC: white blood cells; WC: waist circumference; wk: week(s); wt: weight; y: year(s)

Table 15. Risk of bias for randomized controlled trials examining 100% juice consumption in adults and body composition and risk of obesity[a]

Article	Randomization	Deviations from intended interventions (effect of assignment) or (per-protocol)	Missing outcome data	Outcome measurement	Selection of the reported result	Overall risk of bias
Aptekmann, 2010[30]	SOME CONCERNS	LOW	LOW	LOW	SOME CONCERNS	SOME CONCERNS
Hollis, 2009[40]	HIGH	SOME CONCERNS	LOW	LOW	SOME CONCERNS	HIGH
Shenoy, 2010[48]	SOME CONCERNS	HIGH	LOW	LOW	SOME CONCERNS	SOME CONCERNS
Silver, 2011[49]	SOME CONCERNS	LOW	LOW	LOW	SOME CONCERNS	SOME CONCERNS

[a] Possible ratings of low, some concerns, or high determined using the "Cochrane Risk-of-bias 2.0" (RoB 2.0) (August 2019 version)" (Sterne JAC, Savović J, Page MJ, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. *BMJ* 2019; **366**: l4898.

Table 16. Risk of bias for observational studies examining 100% juice consumption in adults and body composition and risk of obesity[a]

Article	Confounding	Exposure measurement	Selection of participants	Post-exposure interventions	Missing data	Outcome measurement	Selection of the reported result	Overall risk of bias
Auerbach, 2018[31]	LOW*	LOW	LOW	LOW	LOW	LOW	SOME CONCERNS	SOME CONCERNS
Bes-Rastrollo, 2008[32]	HIGH	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Castellana, 2020[33]	HIGH	HIGH	SOME CONCERNS	LOW	HIGH	LOW	HIGH	VERY HIGH
Chen, 2009[34]	LOW*	LOW	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	SOME CONCERNS
Drapeau, 2004[36]	HIGH	SOME CONCERNS	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Duffey, 2010[35]	HIGH	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Ferreira-Pego, 2016[37]	HIGH	LOW	SOME CONCERNS	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Funtikova, 2015[38]	SOME CONCERNS	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Halkjaer, 2009[39]	HIGH	SOME CONCERNS	LOW	LOW	SOME CONCERNS	SOME CONCERNS	SOME CONCERNS	HIGH
Hosseinpour-Niazi, 2021[41]	SOME CONCERNS	LOW	HIGH	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Konieczna, 2019[42]	LOW*	LOW	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	SOME CONCERNS
Mozaffarian, 2011[43]	HIGH	LOW	LOW	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Pan, 2013[44]	HIGH	LOW	SOME CONCERNS	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH

Article	Confounding	Exposure measurement	Selection of participants	Post-exposure interventions	Missing data	Outcome measurement	Selection of the reported result	Overall risk of bias
Rautiainen, 2015[45]	HIGH	LOW	SOME CONCERNS	LOW	HIGH	LOW	SOME CONCERNS	HIGH
Romaguera, 2011[46]	SOME CONCERNS	SOME CONCERNS	SOME CONCERNS	LOW	SOME CONCERNS	LOW	SOME CONCERNS	HIGH
Schulze, 2004[47]	HIGH	LOW	LOW	LOW	SOME CONCERNS	SOME CONCERNS	SOME CONCERNS	HIGH
Siqueira, 2023[50]	LOW*	LOW	LOW	LOW	HIGH	LOW	SOME CONCERNS	HIGH

[a] Possible ratings of low, some concerns, high, very high, no information, or not applicable were determined using the "Risk of Bias in Non-randomized Studies of Exposures (ROBINS-E)" tool (Higgins JPT, Morgan RL, Rooney AA, et al. A tool to assess risk of bias in non-randomized follow-up studies of exposure effects (ROBINS-E). *Environment International* 2024 (published online Mar 24); doi: 10.1016/j.envint.2024.108602. *Low risk of bias except for concerns about uncontrolled confounding.

Table 17. Evidence examining the relationship between 100% juice consumption in individuals during pregnancy and gestational weight gain[a]

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Guilloty, 2015[51] PCS, Puerto Rico Testsite for Exploring Contamination Threats (PROTECT), U.S. (Puerto Rico) Analytic N=160 **Participant characteristics at baseline:** Puerto Rican individuals during pregnancy • Age: Mean (SD) = 27.4 (5.3) y • Female: 100% • Race/ethnicity: NR • SEP: Education: 84% > high school, 16%≤ high school Income: 40% <$20,000 family annual income (poverty threshold for 2012 in Puerto Rico), 60% ≥$20,000. 14% non-response rate for income reporting. • Anthropometry: Pre-pregnancy BMI: 6% with underweight, 50% with normal weight, 25% with overweight, 19% with obesity • Physical activity: NR • Smoking: NR • Alcohol intake: NR • TEI: NR **Study beverage intake at baseline:** 100% juice <1/day ~52% **Inclusion criteria:** Healthy pregnant women 18-40y, living in northern karst region of Puerto Rico, planning to give birth in one of the three participating hospitals, having less than 20 wk gestation, no pregnancy complications, completion of FFQ. Exclusion criteria: pre-pregnancy use of birth control pills; pregnancy conceived by use of assistive reproductive technology and; conditions or complication such as diabetes, hypertension, or heart disease.	**Exposure:** 100% fruit juice. Serving size NR. Other exposures: milk, coffee, soft drinks, fruit drinks Comparator: Categorical intake (<1/d, ≥1/d) Assessment methods and timing: Validated, self-administered, semi-quantitative FFQ; represents intake during previous 12mo Between second and third prenatal visit (20-28wk) **Outcomes and assessment methods:** GWG calculated from difference between last and initial weight (first prenatal visit at 16-20wk) recorded in medical record. Participants were classified as "inadequate GWG" if weight gain was below, "appropriate GWG" if weight gain was according, and "excessive GWG" if weight gain was above the IOM 2009 guidelines. Last prenatal visit before delivery	<u>**Gestational weight gain**</u>, Chi-square difference Total Sample Excessive GWG: 23.5% <1/d vs 25.7% ≥1/d Appropriate GWG: 51.8% <1/d vs 48.6% ≥1/d Inadequate GWG: 24.7% <1/d vs 25.7% ≥1/d P=0.92 **Stratified by pre-pregnancy BMI (Under & Normal weight):** Excessive GWG: 7.3% <1/d vs. 17.0% ≥1/d Appropriate GWG: 58.5% <1/d vs. 55.3% ≥1/d Inadequate GWG: 34.1% < 1/d vs. 27.7% ≥1/d P=0.15 **Stratified by pre-pregnancy BMI (with overweight and obesity):** Excessive GWG: 38.6% <1/d vs. 40.7% ≥1/d Appropriate GWG: 45.5% <1/d vs. 37.0% ≥1/d Inadequate GWG: 15.9% < 1/d vs. 22.2% ≥1/d P=0.47	**Model adjustments:** • TEI: no • Key confounders: anthropometry at baseline, diabetes mellitus in the current pregnancy (exclusion criteria), hypertensive disorders in the current pregnancy (exclusion criteria) • Other: N/A **Limitations:** • Did not account for key confounders: age, race and/or ethnicity, physical activity, smoking, diet quality, parity • Exposure not well defined; Exposure data only measured once; Low response rate for completing and returning FFQ, differences in FFQ completers vs. non-completers (completeres were younger and with higher education and income); No preregistered data analysis plan **Funding:** Superfund Research for the National Institute of Environmental Health Sciences; RCMI Clinical Research Center; Center for Collaborative Research in Health Disparities; Puerto Rico Clinical and Translational Research Consortium; NIH Institute of Minority Health and Health Disparities

Table 18. Risk of bias for observational study examining 100% juice consumption in individuals during pregnancy and gestational weight gain[b]

Article	Confounding	Exposure measurement	Selection of participants	Post-exposure interventions	Missing data	Outcome measurement	Selection of the reported result	Overall risk of bias
Guilloty, 2015[51]	HIGH	SOME CONCERNS	LOW	LOW	LOW	LOW	SOME CONCERNS	HIGH

[a] Abbreviations: BMI: body mass index; FFQ: food frequency questionnaire; GWG: gestational weight gain; IOM: Institute of Medicine; mo: months; N/A: not applicable; NIH: National Institutes of Health; NR: not reported; PCS: prospective cohort study; RCMI: Research Centers in Minority Institutions; SD: standard deviation; T2DM: type 2 diabetes mellitus; TEI: total energy intake; wk: week(s); y: year(s)

[b] Possible ratings of low, some concerns, high, very high, no information, or not applicable were determined using the "Risk of Bias in Non-randomized Studies of Exposures (ROBINS-E)" tool (Higgins JPT, Morgan RL, Rooney AA, et al. A tool to assess risk of bias in non-randomized follow-up studies of exposure effects (ROBINS-E). *Environment International* 2024 (published online Mar 24); doi: 10.1016/j.envint.2024.108602.)

Table 19. Evidence examining the relationship between 100% juice consumption in individuals during postpartum and postpartum weight change[a]

Study and Population Characteristics	Intervention or Exposure, Comparator, and Outcome(s)	Results	Confounding and Study Limitations
Alderete, 2020[52] PCS, Southern California Mother's Milk Study, U.S. Analytic N=99 **Participant characteristics at baseline:** Postpartum women • Age: Mean (SD): 29.4 (6.5)y • Female: 100% • Race/ethnicity: 100% self-identified as Hispanic (inclusion criteria) • SEP: NR • Anthropometry: Weight, kg, mean (SD): 73.1 (13.1); BMI, kg/m2, mean (SD): 29.8 (4.8); pre-pregnancy: 29% healthy weight, 38% overweight, and 32% with obesity • Physical activity: NR • Smoking: All nonsmokers or <1 cigarette/wk (part of exclusion criteria) • Diet quality: No summary metric; data on mean dietary intake available in Table 2 • TEI: Kcal/day, mean (SD): 1666 (375) **Study beverage intake at baseline:** 8-ounce servings/day, mean (SD) Citrus juice: 0.7 (1.2) Fruit juice excluding citrus juice: 0.5 (0.8) **Excluded:** <18y at time of delivery; preterm or multiple birth; >1mo postpartum; no intention to breastfeed for ≥3mo postpartum, taking medications or had any medical conditions that could affect metabolism, nutritional status, or physical or mental health; current use of tobacco (i.e., >1 cigarette/wk) or other recreational drugs; clinical diagnosis of fetal abnormalities; dietary data unavailable at 1- and 6-mo postpartum (n=114); dietary sugar variables (i.e., sucrose, mannitol, soft drinks, sweets) >2 SD above mean (n=4); weight loss >11 SD above the mean (n=1)	**Exposure:** citrus juice; fruit juice excluding citrus juice; 8oz svg/d (236.6 mL/d) **Other exposures:** SSB **Comparator:** Different intake of 100% juice, continuous (half a serving per day) **Assessment methods and timing:** Two nonconsecutive 24-h dietary recalls (unclear if validated) conducted on 1 weekday and 1 weekend day using the multipass method. Data at all 4 time points were averaged to represent mean dietary intake. 1 and 6 months postpartum **Outcomes and assessment methods:** Weight: valid measure by study staff. 1 and 6 mo postpartum	**Postpartum weight change from 1 to 6 mo** per half 8-ounce svg/d increase in 100% juice consumption, kg, β (95% CI), multiple linear regression Citrus juice: 0.03 (-0.32, 0.39), p=0.85 Fruit juice excluding citrus juice: -0.47 (-1.02, 0.07), p=0.09	**Model adjustments:** • TEI: yes • Key confounders: sex, age, race and/or ethnicity, anthropometry at baseline • Other: Maternal height; change in breastfeeding **Limitations:** • Did not account for key confounders: socioeconomic position, physical activity, diet quality, smoking, parity • Start of follow-up and exposure do not coincide; High missing data; No preregistered data analysis plan **Funding:** NIDDK; Gerber Foundation; National Institute of Environmental Health Sciences

Table 20. Risk of bias for observational study examining 100% juice consumption in individuals during postpartum and postpartum weight change[b]

Article	Confounding	Exposure measurement	Selection of participants	Post-exposure interventions	Missing data	Outcome measurement	Selection of the reported result	Overall risk of bias
Alderete, 2020[52]	HIGH	SOME CONCERNS	SOME CONCERNS	LOW	HIGH	LOW	SOME CONCERNS	HIGH

[a] Abbreviations: β: beta coefficient; BMI: body mass index; CI: confidence interval; d: day(s); h: hour(s); kg: kilograms; mL: milliliters; mo: month(s); NIDDK: National Institute of Diabetes and Digestive and Kidney Diseases; NR: not reported; PCS: prospective cohort study; SD: standard deviation; SSB: sugar-sweetened beverages; svg: serving; TEI: total energy intake; y: year(s)

[b] Possible ratings of low, some concerns, high, very high, no information, or not applicable were determined using the "Risk of Bias in Non-randomized Studies of Exposures (ROBINS-E)" tool (Higgins JPT, Morgan RL, Rooney AA, et al. A tool to assess risk of bias in non-randomized follow-up studies of exposure effects (ROBINS-E). *Environment International* 2024 (published online Mar 24); doi: 10.1016/j.envint.2024.108602.)

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References of the articles included in the systematic review

1. Amaro-Rivera K, Molina J, Perez CM, Palacios C. Longitudinal Associations between Dietary Patterns and Weight Status in Puerto Rican Infants and Toddlers' Participants of the WIC Program. *P R Health Sci J*. 2019;38(2):75-80.
2. Gaffney KF, Kitsantas P, Cheema J. Clinical practice guidelines for feeding behaviors and weight-for-age at 12 months: a secondary analysis of the Infant Feeding Practices Study II. *Worldviews Evid Based Nurs*. 2012;9(4):234-42. Available at: https://doi.org/10.1111/j.1741-6787.2011.00236.x.
3. Mahoney S, Bryant M, Sahota P, Barber S. Dietary intake in the early years and its relationship to BMI in a bi-ethnic group: the Born in Bradford 1000 study. *Public Health Nutr*. 2018;21(12):2242-2254. Available at: https://doi.org/10.1017/S1368980018000654.
4. Vandyousefi S, Davis JN, Gunderson EP. Association of infant diet with subsequent obesity at 2-5 years among children exposed to gestational diabetes: the SWIFT study. *Diabetologia*. 2021;64(5):1121-1132. Available at: https://doi.org/10.1007/s00125-020-05379-y.
5. Berkey CS, Rockett HR, Field AE, Gillman MW, Colditz GA. Sugar-added beverages and adolescent weight change. *Obes Res*. 2004;12(5):778-88. Available at: https://doi.org/10.1038/oby.2004.94.
6. Blum JW, Jacobsen DJ, Donnelly JE. Beverage consumption patterns in elementary school aged children across a two-year period. *J Am Coll Nutr*. 2005;24(2):93-8. Available at: https://doi.org/10.1080/07315724.2005.10719449.
7. Carlson JA, Crespo NC, Sallis JF, Patterson RE, Elder JP. Dietary-related and physical activity-related predictors of obesity in children: a 2-year prospective study. *Child Obes*. 2012;8(2):110-5. Available at: https://doi.org/10.1089/chi.2011.0071.
8. Dong D, Bilger M, van Dam RM, Finkelstein EA. Consumption Of Specific Foods And Beverages And Excess Weight Gain Among Children And Adolescents. *Health Aff (Millwood)*. 2015;34(11):1940-8. Available at: https://doi.org/10.1377/hlthaff.2015.0434.
9. Dubois L, Diasparra M, Bogl LH, et al. Dietary Intake at 9 Years and Subsequent Body Mass Index in Adolescent Boys and Girls: A Study of Monozygotic Twin Pairs. *Twin Res Hum Genet*. 2016;19(1):47-59. Available at: https://doi.org/10.1017/thg.2015.97.
10. Field AE, Gillman MW, Rosner B, Rockett HR, Colditz GA. Association between fruit and vegetable intake and change in body mass index among a large sample of children and adolescents in the United States. *Int J Obes Relat Metab Disord*. 2003;27(7):821-6. Available at: https://doi.org/10.1038/sj.ijo.0802297.
11. Fiorito LM, Marini M, Francis LA, Smiciklas-Wright H, Birch LL. Beverage intake of girls at age 5 y predicts adiposity and weight status in childhood and adolescence. *Am J Clin Nutr*. 2009;90(4):935-42. Available at: https://doi.org/10.3945/ajcn.2009.27623.
12. Guerrero AD, Mao C, Fuller B, Bridges M, Franke T, Kuo AA. Racial and Ethnic Disparities in Early Childhood Obesity: Growth Trajectories in Body Mass Index. *J Racial Ethn Health Disparities*. 2016;3(1):129-37. Available at: https://doi.org/10.1007/s40615-015-0122-y.
13. Lambourne K, Washburn RA, Lee J, et al. A 6-month trial of resistance training with milk supplementation in adolescents: effects on body composition. *Int J Sport Nutr Exerc Metab*. 2013;23(4):344-56. Available at: https://doi.org/10.1123/ijsnem.23.4.344.
14. Johnson L, Mander AP, Jones LR, Emmett PM, Jebb SA. Is sugar-sweetened beverage consumption associated with increased fatness in children? *Nutrition*. 2007;23(7-8):557-63. Available at: https://doi.org/10.1016/j.nut.2007.05.005.
15. Kral TV, Stunkard AJ, Berkowitz RI, Stallings VA, Moore RH, Faith MS. Beverage consumption patterns of children born at different risk of obesity. *Obesity (Silver Spring)*. 2008;16(8):1802-8. Available at: https://doi.org/10.1038/oby.2008.287.
16. Libuda L, Alexy U, Sichert-Hellert W, et al. Pattern of beverage consumption and long-term association with body-weight status in German adolescents--results from the DONALD study. *Br J Nutr*. 2008;99(6):1370-9. Available at: https://doi.org/10.1017/S0007114507862362.
17. Marshall TA, Curtis AM, Cavanaugh JE, Warren JJ, Levy SM. Child and Adolescent Sugar-Sweetened Beverage Intakes Are Longitudinally Associated with Higher Body Mass Index z Scores in a Birth Cohort Followed 17 Years. *J Acad Nutr Diet*. 2019;119(3):425-434. Available at: https://doi.org/10.1016/j.jand.2018.11.003.

18. Mrdjenovic G, Levitsky DA. Nutritional and energetic consequences of sweetened drink consumption in 6- to 13-year-old children. *J Pediatr*. 2003;142(6):604-10. Available at: https://doi.org/10.1067/mpd.2003.200.
19. Newby PK, Peterson KE, Berkey CS, Leppert J, Willett WC, Colditz GA. Beverage consumption is not associated with changes in weight and body mass index among low-income preschool children in North Dakota. *J Am Diet Assoc*. 2004;104(7):1086-94. Available at: https://doi.org/10.1016/j.jada.2004.04.020.
20. Sakaki JR, Li J, Gao S, et al. Associations between fruit juice and milk consumption and change in BMI in a large prospective cohort of U.S. adolescents and preadolescents. *Pediatr Obes*. 2021;16(9):e12781. Available at: https://doi.org/10.1111/ijpo.12781.
21. Sakaki JR, Li J, Melough MM, et al. Orange juice intake and anthropometric changes in children and adolescents. *Public Health Nutr*. 2021;24(14):4482-4489. Available at: https://doi.org/10.1017/S1368980020003523.
22. Shefferly A, Scharf RJ, DeBoer MD. Longitudinal evaluation of 100% fruit juice consumption on BMI status in 2-5-year-old children. *Pediatr Obes*. 2016;11(3):221-7. Available at: https://doi.org/10.1111/ijpo.12048.
23. Skinner JD, Carruth BR. A longitudinal study of children's juice intake and growth: the juice controversy revisited. *J Am Diet Assoc*. 2001;101(4):432-7. Available at: https://doi.org/10.1016/S0002-8223(01)00111-0.
24. Striegel-Moore RH, Thompson D, Affenito SG, et al. Correlates of beverage intake in adolescent girls: the National Heart, Lung, and Blood Institute Growth and Health Study. *J Pediatr*. 2006;148(2):183-7. Available at: https://doi.org/10.1016/j.jpeds.2005.11.025.
25. Vanselow MS, Pereira MA, Neumark-Sztainer D, Raatz SK. Adolescent beverage habits and changes in weight over time: findings from Project EAT. *Am J Clin Nutr*. 2009;90(6):1489-95. Available at: https://doi.org/10.3945/ajcn.2009.27573.
26. Wan L, Jakkilinki PD, Singer MR, Bradlee ML, Moore LL. A longitudinal study of fruit juice consumption during preschool years and subsequent diet quality and BMI. *BMC Nutr*. 2020;6:25. Available at: https://doi.org/10.1186/s40795-020-00347-6.
27. Welsh JA, Cogswell ME, Rogers S, Rockett H, Mei Z, Grummer-Strawn LM. Overweight among low-income preschool children associated with the consumption of sweet drinks: Missouri, 1999-2002. *Pediatrics*. 2005;115(2):e223-9. Available at: https://doi.org/10.1542/peds.2004-1148.
28. Zheng M, Allman-Farinelli M, Heitmann BL, et al. Liquid versus solid energy intake in relation to body composition among Australian children. *J Hum Nutr Diet*. 2015;28 Suppl 2:70-9. Available at: https://doi.org/10.1111/jhn.12223.
29. Zheng M, Rangan A, Olsen NJ, et al. Substituting sugar-sweetened beverages with water or milk is inversely associated with body fatness development from childhood to adolescence. *Nutrition*. 2015;31(1):38-44. Available at: https://doi.org/10.1016/j.nut.2014.04.017.
30. Aptekmann NP, Cesar TB. Orange juice improved lipid profile and blood lactate of overweight middle-aged women subjected to aerobic training. *Maturitas*. 2010;67(4):343-7. Available at: https://doi.org/10.1016/j.maturitas.2010.07.009.
31. Auerbach BJ, Littman AJ, Krieger J, et al. Association of 100% fruit juice consumption and 3-year weight change among postmenopausal women in the in the Women's Health Initiative. *Prev Med*. 2018;109:8-10. Available at: https://doi.org/10.1016/j.ypmed.2018.01.004.
32. Bes-Rastrollo M, van Dam RM, Martinez-Gonzalez MA, Li TY, Sampson LL, Hu FB. Prospective study of dietary energy density and weight gain in women. *Am J Clin Nutr*. 2008;88(3):769-77. Available at: https://doi.org/10.1093/ajcn/88.3.769.
33. Castellana F, Zupo R, Bortone I, et al. Traditional Old Dietary Pattern of Castellana Grotte (Apulia) Is Associated with Healthy Outcomes. *Nutrients*. 2020;12(10). Available at: https://doi.org/10.3390/nu12103097.
34. Chen L, Appel LJ, Loria C, et al. Reduction in consumption of sugar-sweetened beverages is associated with weight loss: the PREMIER trial. *Am J Clin Nutr*. 2009;89(5):1299-306. Available at: https://doi.org/10.3945/ajcn.2008.27240.
35. Duffey KJ, Gordon-Larsen P, Steffen LM, Jacobs DR, Jr., Popkin BM. Drinking caloric beverages increases the risk of adverse cardiometabolic outcomes in the Coronary Artery Risk Development in Young Adults (CARDIA) Study. *Am J Clin Nutr*. 2010;92(4):954-9. Available at: https://doi.org/10.3945/ajcn.2010.29478.

36. Drapeau V, Després JP, Bouchard C, et al. Modifications in food-group consumption are related to long-term body-weight changes. *Am J Clin Nutr*. 2004;80(1):29-37. Available at: https://doi.org/10.1093/ajcn/80.1.29.
37. Ferreira-Pego C, Babio N, Bes-Rastrollo M, et al. Frequent Consumption of Sugar- and Artificially Sweetened Beverages and Natural and Bottled Fruit Juices Is Associated with an Increased Risk of Metabolic Syndrome in a Mediterranean Population at High Cardiovascular Disease Risk. *J Nutr*. 2016;146(8):1528-36. Available at: https://doi.org/10.3945/jn.116.230367.
38. Funtikova AN, Subirana I, Gomez SF, et al. Soft drink consumption is positively associated with increased waist circumference and 10-year incidence of abdominal obesity in Spanish adults. *J Nutr*. 2015;145(2):328-34. Available at: https://doi.org/10.3945/jn.114.205229.
39. Halkjaer J, Tjonneland A, Overvad K, Sorensen TI. Dietary predictors of 5-year changes in waist circumference. *J Am Diet Assoc*. 2009;109(8):1356-66. Available at: https://doi.org/10.1016/j.jada.2009.05.015.
40. Hollis JH, Houchins JA, Blumberg JB, Mattes RD. Effects of concord grape juice on appetite, diet, body weight, lipid profile, and antioxidant status of adults. *J Am Coll Nutr*. 2009;28(5):574-82. Available at: https://doi.org/10.1080/07315724.2009.10719789.
41. Hosseinpour-Niazi S, Aghayan M, Mirmiran P, Azizi F. Does weight change modify the association between the consumption of sugar-sweetened beverages and 100% fruit juice and the risk of metabolic syndrome? *Clin Nutr*. 2021;40(10):5261-5268. Available at: https://doi.org/10.1016/j.clnu.2021.08.017.
42. Konieczna J, Romaguera D, Pereira V, et al. Longitudinal association of changes in diet with changes in body weight and waist circumference in subjects at high cardiovascular risk: the PREDIMED trial. *Int J Behav Nutr Phys Act*. 2019;16(1):139. Available at: https://doi.org/10.1186/s12966-019-0893-3.
43. Mozaffarian D, Hao T, Rimm EB, Willett WC, Hu FB. Changes in diet and lifestyle and long-term weight gain in women and men. *N Engl J Med*. 2011;364(25):2392-404. Available at: https://doi.org/10.1056/NEJMoa1014296.
44. Pan A, Malik VS, Hao T, Willett WC, Mozaffarian D, Hu FB. Changes in water and beverage intake and long-term weight changes: results from three prospective cohort studies. *Int J Obes (Lond)*. 2013;37(10):1378-85. Available at: https://doi.org/10.1038/ijo.2012.225.
45. Rautiainen S, Wang L, Lee IM, Manson JE, Buring JE, Sesso HD. Higher Intake of Fruit, but Not Vegetables or Fiber, at Baseline Is Associated with Lower Risk of Becoming Overweight or Obese in Middle-Aged and Older Women of Normal BMI at Baseline. *J Nutr*. 2015;145(5):960-8. Available at: https://doi.org/10.3945/jn.114.199158.
46. Romaguera D, Angquist L, Du H, et al. Food composition of the diet in relation to changes in waist circumference adjusted for body mass index. *PLoS One*. 2011;6(8):e23384. Available at: https://doi.org/10.1371/journal.pone.0023384.
47. Schulze MB, Manson JE, Ludwig DS, et al. Sugar-sweetened beverages, weight gain, and incidence of type 2 diabetes in young and middle-aged women. *JAMA*. 2004;292(8):927-34. Available at: https://doi.org/10.1001/jama.292.8.927.
48. Shenoy SF, Poston WS, Reeves RS, et al. Weight loss in individuals with metabolic syndrome given DASH diet counseling when provided a low sodium vegetable juice: a randomized controlled trial. *Nutr J*. 2010;9:8. Available at: https://doi.org/10.1186/1475-2891-9-8.
49. Silver HJ, Dietrich MS, Niswender KD. Effects of grapefruit, grapefruit juice and water preloads on energy balance, weight loss, body composition, and cardiometabolic risk in free-living obese adults. *Nutr Metab (Lond)*. 2011;8(1):8. Available at: https://doi.org/10.1186/1743-7075-8-8.
50. Siqueira JH, Pereira TSS, Moreira AD, et al. Consumption of sugar-sweetened soft drinks and risk of metabolic syndrome and its components: results of the ELSA-Brasil study (2008-2010 and 2012-2014). *J Endocrinol Invest*. 2023;46(1):159-171. Available at: https://doi.org/10.1007/s40618-022-01895-3.
51. Guilloty NI, Soto R, Anzalota L, Rosario Z, Cordero JF, Palacios C. Diet, Pre-pregnancy BMI, and Gestational Weight Gain in Puerto Rican Women. *Matern Child Health J*. 2015;19(11):2453-61. Available at: https://doi.org/10.1007/s10995-015-1764-4.
52. Alderete TL, Wild LE, Mierau SM, et al. Added sugar and sugar-sweetened beverages are associated with increased postpartum weight gain and soluble fiber intake is associated with postpartum weight loss in Hispanic women from Southern California. *Am J Clin Nutr*. 2020;112(3):519-526. Available at: https://doi.org/10.1093/ajcn/nqaa156.

Appendices

Appendix 1: Abbreviations

Table A 1. List of abbreviations

Abbreviation	Full name
BMI	Body mass index
BMIZ	BMI z-score
FFQ	Food frequency questionnaire
FNS	Food and Nutrition Service
HDI	Human Development Index
HHS	United States Department of Health and Human Services
IOM	Institute of Medicine
NESR	Nutrition Evidence Systematic Review
NGAD	Nutrition Guidance and Analysis Division
PCS	Prospective cohort study
RCT	Randomized controlled trial
SEP	Socioeconomic position
TEI	Total energy intake
USDA	United States Department of Agriculture

Appendix 2: Conclusion statements from the existing systematic review

Table A 2. Conclusion statements from the existing systematic review for the research question: What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity?

Citation	Conclusion statements and grades
Mayer-Davis E, Leidy H, Mattes R, Naimi T, Novotny R, Schneeman B, Kingshipp BJ, Spill M, Cole NC, Bahnfleth CL, Butera G, Terry N, Obbagy J. *Beverage Consumption and Growth, Size, Body Composition, and Risk of Overweight and Obesity: A Systematic Review.* July 2020. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2020.SR0401	Limited evidence suggests 100% juice intake in children is not associated with adiposity or height in children. (Grade: Limited) Limited evidence suggests 100% juice consumption is not associated with measures of adiposity in adults. (Grade: Limited)

Appendix 3: Inclusion and exclusion criteria comparison between existing and updated systematic reviews

Table A 3. Inclusion and exclusion criteria comparison between existing[*] and updated systematic reviews for the research question: What is the relationship between 100% juice consumption and growth, body composition, and risk of obesity?

Category	Existing Review	Updated Review	Change and Rationale
Study design	Included: • Randomized controlled trials • Non-randomized controlled trials (including quasi-experimental and controlled before and after studies) • Prospective cohort studies • Retrospective cohort studies • Nested case-control studies • Mendelian randomization studies Excluded: • Uncontrolled trials • Case-control studies • Cross-sectional studies • Uncontrolled before-and-after studies • Narrative reviews • Systematic reviews • Meta-analyses	Included: • Randomized controlled trials • Non-randomized controlled trials[†] • Prospective cohort studies • Retrospective cohort studies • Nested case-control studies • Mendelian randomization studies Excluded: • Uncontrolled trials[‡] • Case-control studies • Cross-sectional studies • Ecological studies • Narrative reviews • Systematic reviews • Meta-analyses • Modeling and simulation studies	No changes were made. Formatting was edited for clarity. Modeling and simulation studies, which were always excluded, were added explicitly to the exclude list.

[*] Mayer-Davis E, Leidy H, Mattes R, et al. *Beverage Consumption and Growth, Size, Body Composition, and Risk of Overweight and Obesity: A Systematic Review*. July 2020. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://doi.org/10.52570/NESR.DGAC2020.SR0401

[†] Including quasi-experimental and controlled before-and-after studies

[‡] Including uncontrolled before-and-after studies

Category	Existing Review	Updated Review	Change and Rationale
Publication date	Included: • January 2000 – June 2019 (Milk, 100% Juice, LNCSB) • January 2012 – June 2019 (SSB) [*] Excluded: • Before January 2000, after June 2019	Included: • January 2000 – May 2023[†] Excluded: • Before January 2000, after May 2023	Dates were modified to enable focus on the most recent evidence.
Population: Study participants	Included: • Human Excluded: • Non-human	Included: • Human Excluded: • Non-human	No change
Population: Life stage	Included: • At intervention/exposure and outcome: ○ Children and adolescents (2 up to 19 years) ○ Adults (19 years and older) ○ Older adults (65 years and older) Excluded: • At intervention/exposure and outcome: • Infants and young children (up to 24 months)	Included: • At intervention/exposure and outcome: ○ Infants and young children (up to 24 months) ○ Children and adolescents (2 up to 19 years) ○ Adults and older adults (19 years and older) ○ Individuals during pregnancy ○ Individuals during postpartum Excluded: ○ N/A	Infants, young children, and individuals during pregnancy and postpartum were included in the updated review on 100% juice rather than being addressed in separate questions.

[*] This publication date range criteria were applied to the review of SSB evidence because the 2015 Dietary Guidelines Advisory Committee reviewed evidence on the relationship between added sugars, including SSB, and body weight/obesity, published up to January 2012.

[†] This review update date range encompasses the original systematic review date range, which included articles published from January 2000 to June 2019

Category	Existing Review	Updated Review	Change and Rationale
Population: Health Status	<u>Included</u>: • Studies that enroll participants who are healthy and/or at risk for chronic disease • Studies that enroll some participants diagnosed with a disease • Studies that enroll some participants who are classified as underweight, stunted, wasted, or obese <u>Excluded</u>: • Studies that exclusively enroll participants diagnosed with a disease, or hospitalized with an illness or injury • Studies that exclusively enroll participants classified as obese (i.e., studies that aim to treat participants who have already been classified as obese)	<u>Included</u>: • Studies that <u>exclusively</u> enroll participants not diagnosed with a disease* • Studies that enroll <u>some</u> participants: ○ diagnosed with a disease; ○ diagnosed with a disorder that affects feeding/eating or growth (e.g., autism spectrum disorder, attention-deficit/hyperactivity disorder, eating disorder); ○ with severe undernutrition, failure to thrive/underweight, stunting, or wasting; ○ who became pregnant using Assisted Reproductive Technologies; ○ with multiple gestation pregnancies; ○ receiving pharmacotherapy to treat obesity; ○ pre- or post-bariatric surgery; ○ and/or hospitalized for an illness, injury, or surgery <u>Excluded</u>: • Studies that <u>exclusively</u> enroll participants: ○ diagnosed with a disease;† ○ diagnosed with a disorder that affects feeding/eating or growth (e.g., autism spectrum disorder, attention-deficit/hyperactivity disorder, eating disorder); ○ with severe undernutrition, failure to thrive/underweight, stunting, or wasting; ○ who became pregnant using Assisted Reproductive Technologies; ○ with multiple gestation pregnancies; ○ receiving pharmacotherapy to treat obesity; ○ pre- or post-bariatric surgery; ○ and/or hospitalized for an illness, injury, or surgery‡	Study samples where 100% of participants have obesity will be included.

Category	Existing Review	Updated Review	Change and Rationale
Intervention/exposure	Included: Type and amount of beverage consumption of the following beverage types: • Milk (dairy milk and milk substitutes, including flavored milk) • 100% Juice • Low- and no-calorie sweetened beverages (LNCSB) • Sugar-sweetened beverages (SSB) Excluded: • Other beverage types, including: Coffee, tea, water, and nutritional beverages (e.g., protein shakes, smoothies) • Studies focusing on specific nutrients added to beverages instead of a beverage as a whole (i.e., studies where beverages are the delivery mechanism for a nutrient) • Beverages that are not commercially available (e.g., experimentally manipulated beverages) • Supplements • Alcohol • Soups	Included: • 100% juice consumption • Multi-component intervention in which the isolated effect of the intervention of interest on the outcome(s) of interest is provided or can be determined despite multiple components Excluded: • Infant milk, infant formula, toddler formula/milks • Other beverage types, such as nutritional beverages (e.g., protein shakes, smoothies) • Studies focusing on specific nutrients added to beverages instead of a beverage as a whole (i.e., studies where beverages are the delivery mechanism for a nutrient) • Beverages that are not commercially available (e.g., experimentally manipulated beverages) • Supplements • Alcohol • Soups • Multi-component intervention in which the isolated effect of the intervention of interest on the outcome(s) of interest is not provided or cannot be determined due to multiple components	The existing systematic review conducted by the 2020 Dietary Guidelines Advisory Committee (Committee) examined multiple beverages: milk, 100% juice, LNCSB, and SSB. The proposed question will update the review of 100% juice, which will be examined as an individual systematic review.

[*] Studies that enroll participants who are at risk for chronic disease will be included

[†] Studies that exclusively enroll participants with obesity will be included

[‡] Studies that exclusively enroll participants post-cesarean section will be included

Category	Existing Review	Updated Review	Change and Rationale
Comparator	Included: • Different amount of the same beverage (including no consumption and versions diluted with water) • Beverage vs. solid • Beverage vs. water • Sugar-sweetened beverages vs. low- and no-calorie sweetened beverages • Dairy milk with different amounts of fat Excluded: • No comparator • Studies comparing different types of beverages (with the exception of studies comparing a beverage to plain water, dairy milk with different amounts of fat, and sugar-sweetened beverages to low- and no-calorie sweetened beverages)	Included: • Consumption of a different amount of 100% juice (including no consumption and versions diluted with water) • 100% juice vs. water • 100% juice vs. solid Excluded: • No comparator	No change

Category	Existing Review	Updated Review	Change and Rationale

Outcome(s)	Included:
	• Weight, weight-for-age
	• Height, length/stature-for-age
	• BMI, BMI z-score, weight-for-length
	• Body circumferences: head, arm, waist, thigh, neck
	• Body composition and distribution (e.g., % fat mass, % fat free mass)
	• Incidence and prevalence of:
	  ○ Underweight, failure to thrive, stunting, wasting
	  ○ Healthy weight
	  ○ Overweight
	  ○ Obesity
	Excluded
	• N/A
		Included:
		Growth (in children, adolescents):
		• Height
		• Weight
		• Stunting, failure to thrive, wasting
		• BMI-for-age
		• Body circumference (arm, neck, thigh)
		Body composition (in children, adolescents, adults, older adults):
		• Skinfold thickness
		• Fat mass, ectopic fat
		• Fat-free mass or lean mass
		• Waist circumference, waist-to-hip-ratio
		Risk of obesity (in children, adolescents, adults, older adults):
		• BMI
		• Underweight
		• Normal weight
		• Overweight and/or obesity
		• Weight gain
		• Weight loss and maintenance (in adults, older adults)
		Pregnancy and postpartum-related weight change
		• Adequacy of total gestational weight gain (i.e., in relation to recommendations based on pre-pregnancy BMI)
		• Postpartum weight change (during postpartum)
		Excluded
		• N/A
			The existing systematic review conducted by the 2020 Dietary Guidelines Advisory Committee (Committee) examined growth, size, body composition, and risk of overweight and obesity.
			The proposed question will update the relationships examined by the 2020 Committee and expand that work by including additional outcomes of weight loss and maintenance. This expansion was recommended by the 2020 Committee, Federal stakeholders, and the public. In addition, gestational weight gain and postpartum weight change will be included in the updated review rather than addressed in separate systematic review questions.

Study duration	Included • N/A Excluded • N/A	Included • Intervention length ≥12 weeks (in children, adolescents, adults, and older adults only) Excluded • Intervention length <12 weeks (in children, adolescents, adults, and older adults only)	Study duration criteria were developed to enable focus on a stronger body of evidence.

Category	Existing Review	Updated Review	Change and Rationale
Publication status	Included • Articles published in peer-reviewed journals Excluded • Articles not published in peer-reviewed journals, including unpublished data, manuscripts, reports, pre-prints, abstracts, and conference proceedings	Included • Peer-reviewed articles published in research journals Excluded • Non-peer-reviewed articles, unpublished data or manuscripts, pre-prints, reports, editorials, retracted articles, and conference abstracts or proceedings	No change
Language	Included • Articles published in English Excluded • Articles published in language other than English	Included • Published in English Excluded • Not published in English	No change
Country*	Included • Studies conducted in very high or high Human Development countries Excluded • Studies conducted in medium or lower Human Development countries	Included • Studies conducted in countries classified as high or very high on the Human Development Index the year(s) the intervention/exposure data were collected Excluded • Studies conducted in countries classified as medium or low on the Human Development Index the year(s) the intervention/exposure data were collected	Clarification added that Human Development Index classification is based on the year(s) when intervention/exposure data were collected.

* In order to determine the inclusion exclusion criteria for country, the Human Development classification was used. This classification is based on the Human Development Index (HDI) ranking from the year the study intervention occurred or data were collected (UN Development Program. HDI 1990-2017 HDRO calculations based on data from UNDESA (2017a), UNESCO Institute for Statistics (2018), United Nations Statistics Division (2018b), World Bank (2018b), Barro and Lee (2016) and IMF (2018). Available from: http://hdr.undp.org/en/data). If the study did not report the year in which the intervention occurred or data were collected, the HDI classification for the year of publication was applied. HDI values are available from 1980, and then from 1990 to present. If a study was conducted prior to 1990, the HDI classification from 1990 was applied. If a study was conducted in 2018 or 2019, the most current HDI classification was applied. When a country was not included in the HDI ranking, the current country classification from the World Bank was used instead (The World Bank. World Bank country and lending groups. Available from: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-country-and-lending-groups)

Appendix 4: Literature search strategy

Searches from the existing reviews

Review A identified articles published between January 2000 and June 2019. For the complete search documentation, refer to:

> Mayer-Davis E, Leidy H, Mattes R, et al. Beverage Consumption and Growth, Size, Body Composition, and Risk of Overweight and Obesity: A Systematic Review.. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review; 2020. https://doi.org/10.52570/NESR.DGAC2020.SR0401

Review B identified articles published between January 1980 and May 2023. These articles were included in one or both systematic reviews with meta-analysis conducted by the Committee (sugar-sweetened beverages and growth, body composition, and risk of obesity, and 100% juice and growth, body composition, and risk of obesity) and were not included in the systematic reviews for low- and no-calorie sweetened beverages, beverage patterns, or dairy milk and milk alternatives and growth, body composition, and risk of obesity. For the complete search documentation, refer to:

> Fisher JO, Abrams SA, Andres A, et al. Complementary Feeding and Growth, Body Composition, and Risk of Obesity: A Systematic Review. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review; 2024. https://doi.org/10.52570/NESR.DGAC2025.SR18

Searches from the current review

<u>Search A</u>

The search was conducted to identify articles on beverage consumption and gestational weight gain and postpartum weight change published between January 2000 and June 2019. This search was done because search terms for gestational weight gain were not included in the existing review search. The terms are included in Search C.

Database: PubMed

Provider: U.S. National Library of Medicine
Date(s) Searched: June 25, 2019
Dates Covered: January 1, 2000 – June 25, 2019

Table A 4. Search for PubMed (Search A)

Search #	Concept	String
#1	Beverages	"Beverages"[Mesh:NoExp] OR beverage[tiab] OR beverages[tiab] OR caloric drink* OR sports drink* OR protein drink* OR fortified drink* OR sweetened drink* OR sweet drink* OR sugary drink* OR dairy drink* OR chocolate drink* OR nutritional drink* OR smoothie*[tiab] OR protein shake* OR meal replacement*[tiab] OR carbonated drink*[tiab] OR soft drink*[tiab] OR soda[tiab] OR sodas[tiab] OR caffeinated drink*[tiab] OR "Drinking Water"[Mesh] OR drinking water[tiab] OR bottled water[tiab] OR "Carbonated Beverages"[Mesh] OR carbonated water[tiab] OR sparkling water[tiab] OR flavored water[tiab] OR flavoured water[tiab] OR flavoured drink[tiab] OR flavored drink* OR "Energy Drinks"[Mesh] OR energy drink*[tiab] OR sugar sweetened drink* OR "Fruit and Vegetable Juices"[Mesh] OR juice[tiab] OR juices[tiab] OR fruit drink* OR fizzy drink* OR "Coffee"[Mesh] OR coffee[tiab] OR "Tea"[Mesh] OR tea[tiab] OR "Milk"[Mesh:NoExp] OR milk[tiab] OR "Soy Milk"[Mesh] OR soymilk[tiab] OR "Buttermilk"[Mesh] OR buttermilk[tiab] OR "Whey"[Mesh] OR whey[tiab] OR liquid[tiab] OR liquids[tiab]

#2	Pregnancy and postpartum period	"Pregnancy"[Mesh] OR “Pregnancy Complications”[Mesh] OR “Prenatal Exposure Delayed Effects”[Mesh] OR “Maternal Exposure”[Mesh] OR “pregnant women”[Mesh] OR pregnan*[tiab] OR pre-pregnancy[tiab] OR prenatal[tiab] OR pre-natal[tiab] OR maternal[tiab] OR mother[tiab] OR mothers[tiab] OR “Mothers”[Mesh] OR postpartum[tiab] OR perinatal[tiab] OR peri-natal[tiab] OR pre-conception[tiab] OR preconception[tiab] OR peri-conception[tiab] OR periconception[tiab] OR "Peripartum Period"[Mesh] OR peripartum[tiab] OR peri-partum[tiab] OR gestation*[tiab] OR natal[tiab] OR antenatal[tiab] OR ante-natal[tiab] OR puerperium[tiab] OR "Maternal Nutritional Physiological Phenomena"[Mesh] OR "Postpartum Period"[Mesh] OR postpartum[tiab] OR post-partum[tiab] OR perinatal OR peri-natal OR puerperium[tiab] OR postpartal OR post-partal OR postnatal OR post delivery[tiab] OR after birth[tiab] OR "Lactation"[Mesh] OR lactation[tiab] OR lactating[tiab] OR "Breast Feeding"[Mesh] OR breastfeeding[tiab] OR breast-feeding[tiab] OR breast feed* OR breast-feed*[tiab] OR breastfed[tiab] OR breast-fed[tiab] OR breastfeed* OR "Milk, Human"[Mesh] OR human milk[tiab] OR nursing women[tiab]
#3	Weight change	"Gestational Weight Gain"[Mesh] OR gestational weight gain[tiab] OR "Weight Gain"[Mesh:NoExp] OR weight gain[tiab] OR "Obesity"[Mesh] OR obesity[tiab] OR obese[tiab] OR overweight[tiab] OR "body size"[tiab] OR "Body Size"[Mesh] OR overnutrition[tiab] OR "Overnutrition"[Mesh:NoExp] OR adipos*[tiab] OR anthropometry[tiab] OR anthropometric*[tiab] OR "Adiposity"[Mesh] OR adipose[tiab] OR body weight[tiab] OR "Body Weight"[Mesh] OR "Body Composition"[Mesh] OR body fat[tiab] OR weight[ti] OR "Body Mass Index"[Mesh] OR body mass index[tiab] OR BMI[tiab] OR weight status[tiab] OR "Adipose Tissue"[Mesh] OR healthy weight[tiab] OR body fat mass[tiab] OR weight change[tiab] OR weight changes[tiab] OR "Weight Loss"[Mesh] OR weight loss*[tiab] OR weight reduc*[tiab] OR body weight[tiab] OR "Weight Reduction Programs"[Mesh] OR "Body-Weight Trajectory"[Mesh] OR weight maint* OR "Diet, Reducing"[Mesh] OR diet reduc*[tiab] OR weight cycling[tiab] OR weight decreas*[tiab] OR weight watch*[tiab] OR weight control*[tiab] OR weight retention[tiab] OR (weight[tiab] AND (reduction OR reduced OR reducing OR loss OR losses OR maintenanc* OR maintain*[tiab] OR decreas*[tiab] OR watch OR control*[tiab] OR change*[tiab] OR gain[tiab]))
#4		#1 AND #2 AND #3
#5	Limits	#4 NOT ("Animals"[Mesh] NOT ("Animals"[Mesh] AND "Humans"[Mesh])) NOT (editorial[ptyp] OR comment[ptyp] OR news[ptyp] OR letter[ptyp] OR review[ptyp] OR systematic review[ptyp] OR systematic review[ti] OR meta-analysis[ptyp] OR meta-analysis[ti] OR meta-analyses[ti] OR retracted publication[ptyp] OR retraction of publication[ptyp] OR retraction of publication[tiab] OR retraction notice[ti]) Filters: Publication date from 2000/01/01 to 2019/06/25; English

Database: Embase

Provider: Elsevier
Date(s) Searched: June 25, 2019
Dates Covered: January 1, 2000 – June 25, 2019

Table A 5. Search for Embase (Search A)

Search #	Concept	String
#1	Beverages	'beverage'/mj OR 'drinking water'/mj OR 'carbonated beverage'/de OR 'energy drink'/de OR 'fruit and vegetable juice'/exp/mj OR 'coffee'/exp/mj OR 'milk'/mj OR 'soybean milk'/de OR 'buttermilk'/de OR 'whey'/de OR beverage:ab,ti OR beverages:ab,ti OR 'sports drink*':ab,ti OR 'protein drink*':ab,ti OR 'fortified drink*':ab,ti OR 'sweetened drink*':ab,ti OR 'sweet drink*':ab,ti OR 'sugary drink*':ab,ti OR 'dairy drink*':ab,ti OR 'chocolate drink*':ab,ti OR 'nutritional drink*':ab,ti OR smoothie*:ab,ti OR 'protein shake*':ab,ti OR 'meal replacement*':ab,ti OR 'carbonated drink*':ab,ti OR 'soft drink*':ab,ti OR soda:ab,ti OR sodas:ab,ti OR 'caffeinated drink*':ab,ti OR 'drinking water':ab,ti OR 'bottled water':ab,ti OR 'carbonated water':ab,ti OR 'sparkling water':ab,ti OR 'flavored water':ab,ti OR 'flavoured water':ab,ti OR 'flavoured drink':ab,ti OR 'flavored drink*':ab,ti OR 'energy drink*':ab,ti OR 'sugar sweetened drink*':ab,ti OR juice:ab,ti OR juices:ab,ti OR 'fruit drink*':ab,ti OR 'fizzy drink*':ab,ti OR coffee:ab,ti OR tea:ab,ti OR milk:ab,ti OR soymilk:ab,ti OR buttermilk:ab,ti OR whey:ab,ti OR liquid:ab,ti OR liquids:ab,ti
#2	Pregnancy and postpartum period	'pregnancy'/exp/mj OR 'pregnancy complication'/exp/mj OR 'prenatal exposure'/mj OR 'maternal exposure'/mj OR 'pregnant woman'/mj OR 'mother'/mj OR 'puerperium'/exp/mj OR 'maternal nutrition'/mj OR 'lactation'/mj OR 'breast feeding'/exp/mj OR 'breast milk'/exp/mj OR pregnancy:ab,ti OR 'pre pregnancy':ab,ti OR prenatal:ab,ti OR 'pre natal':ab,ti OR maternal:ab,ti OR mother:ab,ti OR mothers:ab,ti OR 'pre conception':ab,ti OR preconception:ab,ti OR 'peri conception':ab,ti OR periconception:ab,ti OR peripartum:ab,ti OR 'peri partum':ab,ti OR gestation*:ab,ti OR natal:ab,ti OR antenatal:ab,ti OR 'ante natal':ab,ti OR postpartum:ab,ti OR post-partum:ab,ti OR perinatal:ab,ti OR 'peri natal':ab,ti OR puerperium:ab,ti OR postpartal:ab,ti OR post-partal:ab,ti OR postnatal:ab,ti OR 'post delivery':ab,ti OR 'after birth':ab,ti OR lactation:ab,ti OR lactating:ab,ti OR breastfeeding:ab,ti OR breast-feeding:ab,ti OR 'breast feed*':ab,ti OR breastfed:ab,ti OR 'breast fed':ab,ti OR breastfeed:ab,ti OR 'human milk':ab,ti OR 'nursing women':ab,ti
#3	Weight change	'gestational weight gain'/mj OR 'body weight gain'/de OR 'obesity'/exp/mj OR 'body size'/mj OR 'overnutrition'/mj OR 'body weight'/exp/mj OR 'body composition'/exp/mj OR 'body mass'/de OR 'adipose tissue'/exp/mj OR 'body weight loss'/exp/mj OR 'weight loss program'/mj OR 'weight trajectory (body weight)'/mj OR 'low calorie diet'/exp/mj OR 'gestational weight gain':ab,ti OR 'weight gain':ab,ti OR obesity:ab,ti OR obese:ab,ti OR overweight:ab,ti OR 'body size':ab,ti OR overnutrition:ab,ti OR adipos*:ab,ti OR anthropometry:ab,ti OR anthropometric*:ab,ti OR adipose:ab,ti OR 'body fat':ab,ti OR weight:ab,ti OR 'body mass index':ab,ti OR bmi:ab,ti OR 'weight status':ab,ti OR 'healthy weight':ab,ti OR 'body fat mass':ab,ti OR 'weight change':ab,ti OR 'weight changes':ab,ti OR 'weight loss*':ab,ti OR 'weight reduct*':ab,ti OR 'body weight':ab,ti OR 'weight maint*':ab,ti OR 'diet reduc*':ab,ti OR 'weight cycling':ab,ti OR 'weight decreas*':ab,ti OR 'weight watch*':ab,ti OR 'weight control*':ab,ti OR 'weight retention':ab,ti OR (weight NEAR/4 (reduction OR reduced OR reducing OR loss OR losses OR maintenanc* OR maintain* OR decreas* OR watch OR control* OR change* OR gain)):ab,ti
#4		#1 AND #2 AND #3
#5	Limits	#4 AND ([article]/lim OR [article in press]/lim) AND [humans]/lim AND [english]/lim AND [2000-2019]/py NOT ([conference abstract]/lim OR [conference paper]/lim OR [editorial]/lim OR [erratum]/lim OR [letter]/lim OR [note]/lim OR [review]/lim OR [systematic review]/lim OR [meta analysis]/lim) AND [2000-2019]/py

Database: Cochrane Central Register of Controlled Trials (CENTRAL)

Provider: John Wiley & Sons
Date(s) Searched: June 25, 2019
Dates Covered: January 1, 2000 – June 25, 2019

Table A 6. Search for Cochrane CENTRAL (Search A)

Search #	Concept	String
#1	Beverages	[mh ^Beverages] OR [mh "Drinking Water"] OR [mh "Carbonated Beverage"] OR [mh "Energy Drink"] OR [mh "Fruit and Vegetable Juice"] OR [mh Coffee] OR [mh ^Milk] OR (beverage OR beverages OR “sports drink” OR “protein drink” OR “fortified drink” OR “sweetened drink” OR “sweet drink” OR “sugary drink” OR “dairy drink” OR “chocolate drink” OR “nutritional drink” OR smoothie* OR “protein shake” OR “meal replacement” OR “carbonated drink” OR “soft drink” OR soda OR sodas OR “caffeinated drink” OR “drinking water” OR “bottled water” OR “carbonated water” OR “sparkling water” OR “flavored water” OR “flavoured water” OR “flavoured drink” OR “flavored drink*” OR “energy drink” OR “sugar sweetened drink” OR juice OR juices OR “fruit drink” OR “fizzy drink” OR coffee OR tea OR milk OR soymilk OR buttermilk OR whey OR liquid OR liquids):ti,ab,kw"
#2	Pregnancy and postpartum period	[mh "Pregnancy"] OR [mh "Pregnancy Complications"] OR [mh "Prenatal Exposure Delayed Effects"] OR [mh "Maternal Exposure"] OR [mh "Pregnant Women"] OR [mh "Mothers"] OR [mh "Peripartum Period"] OR [mh "Maternal Nutritional Physiological Phenomena"] OR [mh "Postpartum Period"] OR [mh Lactation] OR [mh "Breast Feeding"] OR [mh "Milk, Human"] OR (pregnancy OR pre-pregnancy OR prenatal OR pre-natal OR maternal OR mother OR mothers OR postpartum OR perinatal OR peri-natal OR pre-conception OR preconception OR peri-conception OR periconception OR peripartum OR peri-partum OR gestation* OR natal OR antenatal OR ante-natal OR puerperium OR postpartum OR post-partum OR perinatal OR peri-natal OR puerperium OR postpartal OR post-partal OR postnatal OR “post delivery” OR “after birth” OR lactation OR lactating OR breastfeeding OR breast-feeding OR breast feed* OR breast-feed* OR breastfed OR breast-fed OR breastfeed OR “human milk” OR “nursing women”):ti,ab,kw
#3	Weight change	[mh "Gestational Weight Gain"] OR [mh ^"Weight Gain"] OR [mh Obesity] OR [mh "Body Size"] OR [mh ^Overnutrition] OR [mh Adiposity] OR [mh “Body Weight”] OR [mh "Body Composition"] OR [mh "Body Mass Index"] OR [mh "Adipose Tissue"] OR [mh "Weight Loss"] OR [mh "Weight Reduction Programs"] OR [mh "Body-Weight Trajectory"] OR [mh "Diet, Reducing"] OR (“gestational weight gain” OR “weight gain” OR obesity OR obese OR overweight OR "body size" OR overnutrition OR adipos* OR anthropometry OR anthropometric* OR adipose OR “body weight” OR “body fat” OR weight OR “body mass index” OR BMI OR “weight status” OR “healthy weight” OR “body fat mass” OR “weight change” OR “weight changes” OR “weight loss*” OR “weight reduct*” OR “body weight” OR “weight maint*” OR “diet reduc*” OR “weight cycling” OR “weight decreas*” OR “weight watch*” OR “weight control*” OR “weight retention”):ti,ab,kw OR ((weight NEAR/4 (reduction OR reduced OR reducing OR loss OR losses OR maintenanc* OR maintain* OR decreas* OR watch OR control* OR change* OR gain)):ti,ab,kw
#4		#1 AND #2 AND #3
	Limits	Publication Year from 2000 to 2019, in Trials (Word variations have been searched)

Database: CINAHL

Provider: EBSCO
Date(s) Searched: June 25, 2019
Dates Covered: January 1, 2000 – June 25, 2019

Table A 7. Search for CINAHL (Search A)

Search #	Concept	String
#1	Beverages	(MH "Beverages+" OR MH "Water Supply") OR (beverage OR beverages OR “sports drink*” OR “protein drink*” OR “fortified drink*” OR “sweetened drink*” OR “sweet drink*” OR “sugar drink*” OR “sugary drink*” OR “dairy drink*” OR “chocolate drink*” OR “nutritional drink*” OR smoothie* OR “protein shake*” OR “meal replacement*” OR “carbonated drink*” OR “soft drink*” OR soda OR sodas OR “caffeinated drink*” OR “drinking water” OR “bottled water*” OR “carbonated water*” OR “sparkling water*” OR “flavored water*” OR “flavoured water*” OR “flavoured drink*” OR “flavored drink*” OR “energy drink*” OR “sugar sweetened drink*” OR juice OR juices OR “fruit drink*” OR “fizzy drink*” OR coffee OR tea OR milk OR soymilk OR buttermilk OR whey OR liquid*)
#2	Pregnancy and postpartum period	(MH "Pregnancy+") OR (MH "Pregnancy Complications") OR (MH "Prenatal Exposure Delayed Effects") OR (MH "Maternal Exposure") OR (MH "Expectant Mothers") OR (MH "Mothers") OR (MH "Puerperium") OR (MH "Maternal Nutritional Physiology") OR (MH "Postnatal Period") OR (MH "Lactation") OR (MH "Breast Feeding") OR (MH "Milk, Human") OR pregnancy OR pre-pregnancy OR prenatal OR pre-natal OR maternal OR mother OR mothers OR postpartum OR perinatal OR peri-natal OR pre-conception OR preconception OR peri-conception OR periconception OR peripartum OR peri-partum OR gestation* OR natal OR antenatal OR ante-natal OR puerperium OR postpartum OR post-partum OR perinatal OR peri-natal OR puerperium OR postpartal OR post-partal OR postnatal OR “post delivery” OR “after birth” OR lactation OR lactating OR breastfeeding OR breast-feeding OR breast feed* OR breast-feed* OR breastfed OR breast-fed OR breastfeed OR “human milk” OR “nursing women”
#3	Weight change	(MH "Gestational Weight Gain") OR (MH "Weight Gain") OR (MH "Obesity") OR (MH "Body Size") OR (MH "Body Weight") OR (MH "Body Composition") OR (MH "Body Mass Index") OR (MH "Adipose Tissue") OR (MH "Weight Loss") OR (MH "Weight Reduction Programs") OR (MH "Diet, Reducing") OR “gestational weight gain” OR “weight gain” OR obesity OR obese OR overweight OR "body size" OR overnutrition OR adipos* OR anthropometry OR anthropometric* OR adipose OR “body weight” OR “body fat” OR weight OR “body mass index” OR BMI OR “weight status” OR “healthy weight” OR “body fat mass” OR “weight change” OR “weight changes” OR “weight loss*” OR “weight reduct*” OR “body weight” OR “weight maint*” OR “diet reduc*” OR “weight cycling” OR “weight decreas*” OR “weight watch*” OR “weight control*” OR “weight retention” OR (weight N4 (reduction OR reduced OR reducing OR loss OR losses OR maintenanc* OR maintain* OR decreas* OR watch OR control* OR change* OR gain))
#4		S1 AND S2 AND S3
#5	Limits	S4 NOT (MH "Literature Review" OR MH "Meta Analysis" OR MH "Systematic Review" OR MH "News" OR MH "Retracted Publication" OR MH "Retraction of Publication) Limiters - Published Date: 20000101-20190625; Peer Reviewed; English Language; Human

Search B

This search identified articles published between January 2000 and June 2019. The terms cover growth, body composition, and risk of obesity terms included in Search C, but not included in the search from the existing review. This search was only run in PubMed.

Database: PubMed

Provider: U.S. National Library of Medicine
Date(s) Searched: July 19, 2021
Dates Covered: January 1, 2000 to December 31, 2019

Table A 8. Search for PubMed (Search B)

Search #	Concept	String
#1	Growth, body composition, and risk of obesity (updated 2021)	“Adipose Tissue”[Mesh] OR “Body Composition”[Mesh] OR “Body Weights and Measures”[Mesh] OR "Overnutrition"[Mesh] OR "Growth"[Mesh:NoExp] OR anthropometric*[tiab] OR body fat[tiab] OR fat mass[tiab] OR fat free mass[tiab] OR obese[tiab] OR obesity[tiab] OR underweight[tiab] OR overweight[tiab] OR weight status[tiab] OR head circumference[tiab] OR arm circumference[tiab] OR calf circumference[tiab] OR neck circumference[tiab] OR thigh circumference[tiab] OR waist circumference[tiab] OR body mass index[tiab] OR BMI[tiab] OR adipos*[tiab] OR anthropometry[tiab] OR anthropometric[tiab] OR body weight[tiab] OR body height[tiab] OR body size[tiab] OR body composition[tiab] OR overnutrition[tiab] OR wasting[tiab] OR healthy weight[tiab] OR skin fold[tiab] OR skin folds[tiab] OR skinfold[tiab] OR skinfolds[tiab] OR "Weight Reduction Programs"[Mesh] OR "Body-Weight Trajectory"[Mesh] OR "Weight Gain"[MeSH] OR "Weight Loss"[MeSH:NoExp] OR weight maint* OR "Diet, Reducing"[Mesh] OR diet reduc*[tiab] OR weight cycling[tiab] OR weight decreas*[tiab] OR weight watch*[tiab] OR weight control*[tiab] OR weight retention[tiab] OR (weight[tiab] AND (reduction OR reduced OR reducing OR loss OR losses OR maintenanc* OR maintain*[tiab] OR decreas*[tiab] OR watch OR control*[tiab] OR change*[tiab] OR gain[tiab])) OR “Growth Charts”[Mesh] OR growth chart[tiab] OR growth charts[tiab] OR stunting[tiab] OR stunted[tiab] OR weight for height[tiab] OR stature for age[tiab] OR weight for age[tiab] OR height for age[tiab] OR length for age[tiab] OR weight for length[tiab] OR failure to thrive[tiab]
#2	Growth, body composition, and risk of obesity (updated 2019)	("Body Composition"[Mesh] OR body composition[tiab] OR fat mass[tiab] OR fat free mass[tiab] OR healthy weight[tiab] OR underweight[tiab] OR wasting[tiab] OR failure to thrive[tiab] OR "Waist Circumference"[Mesh] OR waist circumference[tiab] OR head circumference[tiab] OR arm circumference[tiab] OR thigh circumference[tiab] OR neck circumference[tiab] OR "Body Height"[Mesh:NoExp] OR body height[tiab] OR stunting[tiab] OR stunted[tiab] OR "Overweight"[Mesh] OR overweight[tiab] OR obesity[tiab] OR obese[tiab] OR "Body Mass Index"[Mesh] OR body mass index[tiab] OR BMI[tiab] OR body fat[tiab]
#3	Beverages	"Beverages"[Mesh:NoExp] OR beverage[tiab] OR beverages[tiab] OR sports drink* OR protein drink* OR fortified drink* OR sweetened drink* OR sweet drink* OR sugary drink* OR dairy drink* OR chocolate drink* OR nutritional drink* OR smoothie*[tiab] OR protein shake* OR meal replacement*[tiab] OR carbonated drink*[tiab] OR soft drink*[tiab] OR soda[tiab] OR sodas[tiab] OR caffeinated drink*[tiab] OR "Drinking Water"[Mesh] OR drinking water[tiab] OR bottled water[tiab] OR "Carbonated Beverages"[Mesh] OR carbonated water[tiab] OR sparkling water[tiab] OR flavored water[tiab] OR flavoured water[tiab] OR flavoured drink[tiab] OR flavored drink* OR "Energy Drinks"[Mesh] OR energy drink*[tiab] OR sugar sweetened drink* OR "Fruit and Vegetable Juices"[Mesh] OR juice[tiab] OR juices[tiab] OR fruit drink* OR fizzy drink* OR "Coffee"[Mesh] OR coffee[tiab] OR "Tea"[Mesh] OR tea[tiab] OR "Milk"[Mesh:NoExp] OR milk[tiab] OR "Soy Milk"[Mesh] OR soymilk[tiab] OR "Buttermilk"[Mesh] OR buttermilk[tiab] OR "Whey"[Mesh] OR whey[tiab] OR liquid[tiab] OR liquids[tiab]

#4		(#1 NOT #2) AND #3
#5		#4 NOT (("Animals"[Mesh] NOT ("Animals"[Mesh] AND "Humans"[Mesh]))) NOT (editorial[ptyp] OR comment[ptyp] OR news[ptyp] OR letter[ptyp] OR review[ptyp] OR systematic review[ptyp] OR systematic review[ti] OR meta-analysis[ptyp] OR meta-analysis[ti] OR meta-analyses[ti] OR retracted publication[ptyp] OR retraction of publication[ptyp] OR retraction of publication[tiab] OR retraction notice[ti]) Language: English Publication Year:2000-2019

Search C

This search was conducted to identify articles published since the existing review. This search was used in both this review and in systematic reviews that examine the relationship between dairy and milk alternatives and growth, body composition, and risk of obesity; low- and no-calorie sweetened beverages and growth, body composition, and risk of obesity; beverage patterns and growth, body composition, and risk of obesity; and sugar sweetened beverages and growth, body composition, and risk of obesity. The search captured articles published from June 2019 through May 2023. The search was first run on December 12, 2021, and then periodically run using NESR's continuous evidence monitoring methods[*] until May 31, 2023.

Database: PubMed

Provider: U.S. National Library of Medicine
Date(s) Searched: December 12, 2021 (initial search); December 16, 2021 to May 31, 2023 (continuous evidence monitoring)
Dates Covered: June 20, 2019 – May 31, 2023

Table A 9. Search for PubMed (Search C)

Search #	Concept	String
#1	Growth, body composition, and risk of obesity	"Adipose Tissue"[Mesh] OR "Body Composition"[Mesh] OR "Body Weights and Measures"[MeSH:NoExp] OR "Body Fat Distribution"[Mesh] OR "Body Mass Index"[Mesh] OR "Body Size"[Mesh] OR "Skinfold Thickness"[Mesh] OR "Waist-Hip Ratio"[Mesh] OR "Overnutrition"[Mesh] OR "Growth"[Mesh:NoExp] OR anthropometr*[tiab] OR body fat[tiab] OR fat mass[tiab] OR fat free mass[tiab] OR lean mass[tiab] OR obese[tiab] OR obesity[tiab] OR underweight[tiab] OR overweight[tiab] OR weight status[tiab] OR head circumference[tiab] OR arm circumference[tiab] OR calf circumference[tiab] OR neck circumference[tiab] OR thigh circumference[tiab] OR waist circumference[tiab] OR waist to hip ratio[tiab] OR waist hip ratio[tiab] OR body mass index[tiab] OR BMI[tiab] OR adipos*[tiab] OR body weight[tiab] OR body height[tiab] OR body size[tiab] OR body composition[tiab] OR overnutrition[tiab] OR wasting[tiab] OR healthy weight[tiab] OR skin fold[tiab] OR skin folds[tiab] OR skinfold[tiab] OR skinfolds[tiab] OR "Weight Reduction Programs"[Mesh] OR "Body-Weight Trajectory"[Mesh] OR "Weight Gain"[MeSH] OR "Weight Loss"[MeSH:NoExp] OR "Diet, Reducing"[Mesh] OR weight gain[tiab] OR diet reduc*[tiab] OR weight cycling[tiab] OR weight decreas*[tiab] OR weight watch*[tiab] OR weight control*[tiab] OR weight retention[tiab] OR weight management[tiab] OR (weight[tiab] AND (maint*[tiab] OR reduc*[tiab] OR loss*[tiab] OR chang*[tiab])) OR "Growth Charts"[Mesh] OR growth chart*[tiab]OR stunting[tiab] OR stunted[tiab] OR weight for height[tiab] OR stature for age[tiab] OR weight for age[tiab] OR height for age[tiab] OR length for age[tiab] OR weight for length[tiab] OR failure to thrive[tiab]

[*] USDA Nutrition Evidence Systematic Review Branch. Chapter 10: Continuous Evidence Monitoring. In: *USDA Nutrition Evidence Systematic Review: Methodology Manual*. February 2023. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion, Nutrition Evidence Systematic Review. Available at: https://nesr.usda.gov/methodology-overview.

#2	Beverages	("Beverages"[Mesh:NoExp] OR “Sugar Sweetened Beverages”[MeSH] OR beverage*[tiab] OR sports drink*[tiab] OR fortified drink*[tiab] OR sweetened drink*[tiab] OR sweet drink*[tiab] OR sugary drink*[tiab] OR dairy drink*[tiab] OR chocolate drink*[tiab] OR smoothie*[tiab] OR carbonated drink*[tiab] OR soft drink*[tiab] OR soda[tiab] OR sodas[tiab] OR caffeinated drink*[tiab] OR "Drinking Water"[Mesh] OR drinking water[tiab] OR bottled water[tiab] OR "Carbonated Beverages"[Mesh] OR carbonated water[tiab] OR sparkling water[tiab] OR flavored water[tiab] OR flavoured water[tiab] OR flavoured drink*[tiab] OR flavored drink*[tiab] OR "Energy Drinks"[Mesh] OR energy drink*[tiab] OR "Fruit and Vegetable Juices"[Mesh] OR juice[tiab] OR juices[tiab] OR fruit drink*[tiab] OR fizzy drink*[tiab] OR "Coffee"[Mesh] OR coffee[tiab] OR "Tea"[Mesh] OR tea[tiab] OR "Milk"[Mesh:NoExp] OR milk[tiab] OR "Soy Milk"[Mesh] OR soymilk[tiab] OR "Buttermilk"[Mesh] OR buttermilk[tiab] OR liquid[tiab] OR liquids[tiab])
#3		#1 AND #2
#4	Limits	#3 NOT ("Animals"[Mesh] NOT ("Animals"[Mesh] AND "Humans"[Mesh])) NOT (editorial[ptyp] OR comment[ptyp] OR commentary[tiab] OR news[ptyp] OR letter[ptyp] OR review[ptyp] OR systematic review[ptyp] OR systematic review[ti] OR meta-analysis[ptyp] OR meta-analysis[ti] OR meta-analyses[ti] OR protocol[ti] OR protocols[ti] OR retracted publication[ptyp] OR retraction of publication[ptyp] OR retraction of publication[tiab] OR retraction notice[ti] OR “retracted publication”[ti] OR "Congress"[Publication Type] OR "Consensus Development Conference"[Publication Type] OR “conference abstract*”[tiab] OR “conference proceeding*”[tiab] OR “conference paper*”[tiab] OR "practice guideline"[ptyp] OR "practice guideline"[ti]) Language: English Publication Date: 6/20/2019 - present

Database: Embase

Provider: Elsevier
Date(s) Searched: December 12, 2021 (initial search); December 16, 2021- May 31, 2023 (continuous evidence monitoring)
Dates Covered: June 20, 2019 – May 31, 2023

Table A 10. Search for Embase (Search C)

Search #	Concept	String
#1	Growth, body composition, and risk of obesity	'adipose tissue'/exp OR 'body composition'/exp OR 'anthropometry'/de OR 'body mass'/exp OR 'anthropometric parameters'/exp OR 'skinfold thickness'/exp OR 'overnutrition'/exp OR 'growth'/de OR 'anthropometr*':ab,ti OR 'body fat':ab,ti OR 'fat mass':ab,ti OR 'fat free mass':ab,ti OR 'lean mass':ab,ti OR 'obese':ab,ti OR 'obesity':ab,ti OR 'underweight':ab,ti OR 'overweight':ab,ti OR 'weight status':ab,ti OR 'head circumference':ab,ti OR 'arm circumference':ab,ti OR 'calf circumference':ab,ti OR 'neck circumference':ab,ti OR 'thigh circumference':ab,ti OR 'waist circumference':ab,ti OR 'waist to hip ratio':ab,ti OR 'waist hip ratio':ab,ti OR 'body mass index':ab,ti OR 'BMI':ab,ti OR 'adipos*':ab,ti OR 'body weight':ab,ti OR 'body height':ab,ti OR 'body size':ab,ti OR 'body composition':ab,ti OR 'overnutrition':ab,ti OR 'wasting':ab,ti OR 'healthy weight':ab,ti OR 'skin fold*':ab,ti OR 'skinfold*':ab,ti OR 'body weight management'/exp OR 'body weight change'/exp OR 'weight gain*':ab,ti OR 'diet reduc*':ab,ti OR 'weight cycling':ab,ti OR 'weight watch*':ab,ti OR 'weight control*':ab,ti OR 'weight retention':ab,ti OR 'weight management':ab,ti OR (weight NEAR/4 (decreas* OR gain* OR maint* OR reduc* OR loss* OR chang*)):ab,ti OR 'weight chart'/exp OR 'growth chart*':ab,ti OR stunting:ab,ti OR stunted:ab,ti OR 'weight for height':ab,ti OR 'stature for age':ab,ti OR 'weight for age':ab,ti OR 'height for age':ab,ti OR 'length for age':ab,ti OR 'weight for length':ab,ti OR ' failure to thrive':ab,ti
#2	Beverages	'beverages'/de OR 'sweetened beverage'/exp OR 'drinking water'/exp OR 'carbonated beverages'/exp OR 'carbonated water'/exp OR 'energy drink'/exp OR 'fruit and vegetable juice'/exp OR 'coffee'/exp OR 'tea'/exp OR 'milk'/de OR 'soybean milk'/exp OR 'buttermilk'/exp OR 'beverage':ab,ti OR 'beverages':ab,ti OR 'sports drink*':ab,ti OR 'fortified drink*':ab,ti OR 'sweetened drink*':ab,ti OR 'sweet drink*':ab,ti OR 'sugary drink*':ab,ti OR 'dairy drink*':ab,ti OR 'chocolate drink*':ab,ti OR smoothie*:ab,ti OR 'carbonated drink*':ab,ti OR 'soft drink*':ab,ti OR 'soda':ab,ti OR 'sodas':ab,ti OR 'caffeinated drink*':ab,ti OR 'drinking water':ab,ti OR 'bottled water':ab,ti OR 'carbonated water':ab,ti OR 'sparkling water':ab,ti OR 'flavored water':ab,ti OR 'flavoured water':ab,ti OR 'flavoured drink':ab,ti OR 'flavored drink*':ab,ti OR 'energy drink*':ab,ti OR 'juice':ab,ti OR 'juices':ab,ti OR 'fruit drink*':ab,ti OR 'fizzy drink*':ab,ti OR 'coffee':ab,ti OR 'tea':ab,ti OR 'milk':ab,ti OR 'soymilk':ab,ti OR 'soy milk':ab,ti OR 'buttermilk':ab,ti OR 'liquid':ab,ti OR 'liquids':ab,ti
#3		#1 AND #2
#4	Limits	#3 AND ([article]/lim OR [article in press]/lim) NOT ([animals]/lim NOT ([animals]/lim AND [humans]/lim)) AND [english]/lim NOT ([conference abstract]/lim OR [conference paper]/lim OR [conference review]/lim OR [editorial]/lim OR [erratum]/lim OR [letter]/lim OR [note]/lim OR 'retraction of publication':ab,ti OR 'retraction notice':ti OR 'retracted publication':ab,ti OR [review]/lim OR [systematic review]/lim OR [meta analysis]/lim OR 'practice guideline':ti) AND [2019-2023]/py

Database: Cochrane Central Register of Controlled Trials (CENTRAL)

Provider: John Wiley & Sons
Date(s) Searched: December 12, 2021 (initial search); December 16, 2021- May 31, 2023 (continuous evidence monitoring)
Dates Covered: June 20, 2019 – May 31, 2023

Table A 11. Search for Cochrane CENTRAL (Search C)

Search #	Concept	String
#1	Growth, body composition, and risk of obesity	[mh "Adipose Tissue"] OR [mh "Body Composition"] OR [mh ^"Body Weights and Measures"] OR [mh "Body Fat Distribution"] OR [mh "Body Mass Index"] OR [mh "Body Size"] OR [mh "Skinfold Thickness"] OR [mh "Waist-Hip Ratio"] OR [mh Overnutrition] OR [mh ^Growth] OR (anthropometr* OR “body fat” OR “fat mass” OR “fat free mass” OR “lean mass” OR obese OR obesity OR underweight OR overweight OR “weight status” OR “head circumference” OR “arm circumference” OR “calf circumference” OR “neck circumference” OR “thigh circumference” OR “waist circumference” OR “waist to hip ratio” OR “waist hip ratio” OR “body mass index” OR BMI OR adipos* OR “body weight” OR “body height” OR “body size” OR “body composition” OR overnutrition OR wasting OR “healthy weight” OR “skin fold” OR “skin folds” OR skinfold OR skinfolds):ti,ab,kw OR [mh "Weight Reduction Programs"] OR [mh "Body-Weight Trajectory"] OR [mh "Weight Gain"] OR [mh ^“Weight Loss”] OR [mh "Diet, Reducing"] OR (“diet reduc*” OR “weight cycling” OR “weight watch*” OR “weight control*” OR “weight retention” OR “weight management”):ti,ab,kw OR ((weight NEAR/4 (decreas* OR gain* OR maint* OR reduc* OR loss* OR chang*)) OR [mh “Growth Charts”] OR “growth chart*” OR stunting OR stunted OR “weight for height” OR “stature for age” OR “weight for age” OR “height for age” OR “length for age” OR “weight for length” OR “ failure to thrive”):ti,ab,kw
#2	Beverages	[mh ^"Beverages"] OR [mh "Sugar Sweetened Beverage"] OR [mh "Drinking Water"] OR [mh "Carbonated Beverages"] OR [mh "Energy Drinks"] OR [mh "Fruit and Vegetable Juices"] OR [mh "Coffee"] OR [mh "Tea"] OR [mh ^"Milk"] OR [mh "Soy Milk"] OR [mh "Buttermilk"] OR (beverage OR beverages OR “sports drink*” OR “fortified drink*” OR “sweetened drink*” OR “sweet drink*” OR “sugary drink*” OR “dairy drink*” OR “chocolate drink*” OR smoothie* OR “carbonated drink*” OR “soft drink*” OR soda OR sodas OR “caffeinated drink*” OR “drinking water” OR “bottled water” OR “carbonated water” OR “sparkling water” OR “flavored water” OR “flavoured water” OR “flavoured drink” OR “flavored drink*” OR “energy drink*” OR juice OR juices OR “fruit drink*” OR “fizzy drink*” OR coffee OR tea OR milk OR soymilk OR “soy milk” OR buttermilk OR liquid OR liquids):ti,ab,kw
#3		#1 AND #2
#4	Limits	In Trials, word variations searched, year first published 2019-2023

Database: CINAHL

Provider: EBSCO
Date(s) Searched: December 12, 2021 (initial search); December 16, 2021- May 31, 2023 (continuous evidence monitoring)
Dates Covered: June 20, 2019 – May 31, 2023

Table A 12. Search for CINAHL (Search C)

Search #	Concept	String
#1	Growth, body composition, and risk of obesity	(MH “Adipose Tissue+”) OR (MH "Body Composition+") OR (MH "Body Weights and Measures") OR (MH "Arm Circumference") OR (MH "Body Height") OR (MH "Body Mass Index") OR (MH "Body Size") OR (MH "Body Weight+") OR (MH "Crown-Rump Length") OR (MH "Waist Circumference") OR (MH "Waist-Hip Ratio") OR (MH "Skinfold Thickness") OR (MH "Obesity+") OR (MH "Overnutrition") OR (MH "Growth") OR (TI anthropometr* OR “body fat” OR “fat mass” OR “fat free mass” OR “lean mass” OR obese OR obesity OR underweight OR overweight OR “weight status” OR “head circumference” OR “arm circumference” OR “calf circumference” OR “neck circumference” OR “thigh circumference” OR “waist circumference” OR “waist to hip ratio” OR “waist hip ratio” OR “body mass index” OR BMI OR adipos* OR “body weight” OR “body height” OR “body size” OR “body composition” OR overnutrition OR wasting OR “healthy weight” OR “skin fold” OR “skin folds” OR skinfold OR skinfolds) OR (AB anthropometr* OR “body fat” OR “fat mass” OR “fat free mass” OR “lean mass” OR obese OR obesity OR underweight OR overweight OR “weight status” OR “head circumference” OR “arm circumference” OR “calf circumference” OR “neck circumference” OR “thigh circumference” OR “waist circumference” OR “waist to hip ratio” OR “waist hip ratio” OR “body mass index” OR BMI OR adipos* OR “body weight” OR “body height” OR “body size” OR “body composition” OR overnutrition OR wasting OR “healthy weight” OR “skin fold” OR “skin folds” OR skinfold OR skinfolds) OR (MH “Weight Reduction Programs”) OR (MH "Body Weight Changes") OR (MH "Weight Gain+") OR (MH "Weight Loss") OR (MH "Diet, Reducing") OR (TI “diet reduc*” OR “weight cycling” OR “weight watch*” OR “weight control*” OR “weight retention” OR “weight management”) OR (AB “diet reduc*” OR “weight cycling” OR “weight watch*” OR “weight control*” OR “weight retention” OR “weight management”) OR (TI (weight N4 (decreas* OR gain* OR maint* OR reduc* OR loss* OR chang*))) OR (AB (weight N4 (decreas* OR gain* OR maint* OR reduc* OR loss* OR chang*))) OR (TI “growth chart*” OR stunting OR stunted OR “weight for height” OR “stature for age” OR “weight for age” OR “height for age” OR “length for age” OR “weight for length” OR “failure to thrive”) OR (AB “growth chart*” OR stunting OR stunted OR “weight for height” OR “stature for age” OR “weight for age” OR “height for age” OR “length for age” OR “weight for length” OR “failure to thrive”)

#2	Beverages	(MH "Sweetened Beverages") OR (MH "Water+") OR (MH "Carbonated Beverages") OR (MH "Energy Drinks") OR (MH "Fruit Juices") OR (MH "Coffee") OR (MH "Tea") OR (MH "Milk") OR (MH "Milk Substitutes+") OR TI (beverage* OR sports drink* OR fortified drink* OR sweetened drink* OR sweet drink* OR sugary drink* OR dairy drink* OR chocolate drink* OR smoothie* OR carbonated drink* OR soft drink* OR soda OR sodas OR caffeinated drink* OR drinking water OR bottled water OR carbonated water OR sparkling water OR flavored water OR flavoured water OR flavoured drink* OR flavored drink* OR energy drink* OR juice OR juices OR fruit drink* OR fizzy drink* OR coffee OR tea OR milk OR soymilk OR buttermilk OR liquid OR liquids) OR AB (beverage* OR sports drink* OR fortified drink* OR sweetened drink* OR sweet drink* OR sugary drink* OR dairy drink* OR chocolate drink* OR smoothie* OR carbonated drink* OR soft drink* OR soda OR sodas OR caffeinated drink* OR drinking water OR bottled water OR carbonated water OR sparkling water OR flavored water OR flavoured water OR flavoured drink* OR flavored drink* OR energy drink* OR juice OR juices OR fruit drink* OR fizzy drink* OR coffee OR tea OR milk OR soymilk OR buttermilk OR liquid OR liquids)
#3		S1 AND S2
#4	Limits	S3 NOT ((MH "Animals+") OR (MH "Animal Studies")) NOT ((MH "Literature Review") OR (MH "Meta Analysis") OR (MH "Systematic Review") OR (MH "News") OR (MH "Retracted Publication") OR (MH "Retraction of Publication”)) Limiters - English Language, Expanders - Apply equivalent subjects, Published Date: 20190601-20230531

Appendix 5: Excluded articles

The existing systematic review for this question included 152 articles. However, after applying the inclusion and exclusion criteria established for the update to that review, seven articles were no longer eligible for inclusion. The following articles were excluded from the existing systematic review due to updated eligibility criteria:

1. Faghih S, Abadi AR, Hedayati M, Kimiagar SM. Comparison of the effects of cows' milk, fortified soy milk, and calcium supplement on weight and fat loss in premenopausal overweight and obese women. *Nutr Metab Cardiovasc Dis*. 2011;21(7):499-503. doi: 10.1016/j.numecd.2009.11.013. (Study duration)
2. Fathi Y, Faghih S, Zibaeenezhad MJ, Tabatabaei SH. Kefir drink leads to a similar weight loss, compared with milk, in a dairy-rich non-energy-restricted diet in overweight or obese premenopausal women: a randomized controlled trial. *Eur J Nutr*. 2016;55(1):295-304. doi: 10.1007/s00394-015-0846-9. (Study duration)
3. Fresan U, Gea A, Bes-Rastrollo M, Ruiz-Canela M, Martinez-Gonzalez MA. Substitution models of water for other beverages, and the incidence of obesity and weight gain in the SUN cohort. *Nutrients*. 2016;8(11). doi: 10.3390/nu8110688. (Intervention/exposure)
4. Houchins JA, Burgess JR, Campbell WW, et al. Beverage vs. solid fruits and vegetables: effects on energy intake and body weight. *Obesity*. 2012;20(9):1844-1850. doi: 10.1038/oby.2011.192. (Study duration)
5. Lee YJ, Seo JA, Yoon T, et al. Effects of low-fat milk consumption on metabolic and atherogenic biomarkers in Korean adults with the metabolic syndrome: a randomised controlled trial. *J Hum Nutr Diet*. 2016;29(4):477-486. doi: 10.1111/jhn.12349. (Study duration)
6. Pourahmadi Z, Mahboob S, Saedisomeolia A, Reykandeh MT. The effect of tomato juice consumption on antioxidant status in overweight and obese females. *Women Health*. 2015;55(7):795-804. doi: 10.1080/03630242.2015.1050546. (Study duration)
7. Simao TN, Lozovoy MA, Simao AN, et al. Reduced-energy cranberry juice increases folic acid and adiponectin and reduces homocysteine and oxidative stress in patients with the metabolic syndrome. *Br J Nutr*. 2013;110(10):1885-1894. doi: 10.1017/s0007114513001207. (Study duration)

The following table lists the articles excluded after full-text screening for the updated systematic review literature search (**Appendix 4**). At least one reason for exclusion is provided for each article, though this may not reflect all possible reasons. Information about articles excluded after title and abstract screening is available upon request.

Table A 13. Articles excluded after full-text screening

	Citation	Rationale
1	. Can drinking milk really help me lose weight?. *Mayo Clin Womens Healthsource*. 2006. 10:10.	Publication status
2	. Milk as an essential factor in pregnancy. *Reproductive biomedicine online*. 2006. 12:736.	Pub status
3	. Trying to lose weight? Watch what you drink. *Mayo Clin Womens Healthsource*. 2008. 12:7.	Publication status

	Citation	Rationale
4	Abdalgwad, R, Rafey, MF, Foy, S, Newell, M, Davenport, C, O'Keeffe, DT, Finucane, FM. Long-Term Changes in Weight in Patients With Severe and Complicated Obesity After Completion of a Milk-Based Meal Replacement Programme. *Front Nutr*. 2020. 7:551068. doi:10.3389/fnut.2020.551068 .	Int/Exp: Not relevant
5	Abedini, M, Ghasemi-Tehrani, H, Tarrahi, MJ, Amani, R. The effect of concentrated pomegranate juice consumption on risk factors of cardiovascular diseases in women with polycystic ovary syndrome: A randomized controlled trial. *Phytother Res*. 2021. 35:442-451. doi:10.1002/ptr.6820 .	EXCLUDE - All other health status criteria
6	Adegboye, ARA, Santana, DD, Dos Santos, PPT, Cocate, PG, Benaim, C, de Castro, MBT, Schlüssel, MM, Kac, G, Heitmann, BL. Exploratory efficacy of calcium-vitamin D milk fortification and periodontal therapy on maternal oral health and metabolic and inflammatory profile. *Nutrients*. 2021. 13:1-15. doi:10.3390/nu13030783 .	Int/Exp: Not relevant; Outcome
7	Aggazzotti, G, Righi, E, Fantuzzi, G, Biasotti, B, Ravera, G, Kanitz, S, Barbone, F, Sansebastiano, G, Battaglia, MA, Leoni, V, Fabiani, L, Triassi, M, Sciacca, S. Chlorination by-products (CBPs) in drinking water and adverse pregnancy outcomes in Italy. *J Water Health*. 2004. 2:233-47.	Study design; Outcome; Population
8	Aguilar, SS, Wengreen, HJ, Dew, J. Skin Carotenoid Response to a High-Carotenoid Juice in Children: A Randomized Clinical Trial. *J Acad Nutr Diet*. 2015. 115:1771-8. doi:10.1016/j.jand.2015.06.011	Comparator; Outcome
9	Alexy, U, Kersting, M. Time trends in the consumption of dairy foods in German children and adolescents. *Eur J Clin Nutr*. 2003. 57:1331-7. doi:10.1038/sj.ejcn.1601696	Outcome
10	Alfonso Mayén, V, Ogunlusi, A, Wright, CM, Garcia, AL. Childhood stunting and micronutrient status unaffected by RCT of micronutrient fortified drink. *Matern Child Nutr*. 2022;18(1):e13256. doi:10.1111/mcn.13256 .	Country
11	Ali, MA, Strandvik, B, Palme-Kilander, C, Yngve, A. Lower polyamine levels in breast milk of obese mothers compared to mothers with normal body weight. *J Hum Nutr Diet*. 2013. 26 Suppl 1:164-70. doi:10.1111/jhn.12097	Intervention/Exposure; Outcome
12	Alikhani, S, Etemad, Z, Azizbeigi, K. Effects of spinning workout and green tea consumption on the anti-inflammatory and inflammatory markers and body composition of overweight women. *Journal of Kermanshah University of Medical Sciences*. 2021. 25:n.pag. doi:10.5812/jkums.110116 .	Int/Exp: Not relevant
13	Allman-Farinelli, M, Partridge, SR, McGeechan, K, Balestracci, K, Hebden, L, Wong, A, Phongsavan, P, Denney-Wilson, E, Harris, MF, Bauman, A. A Mobile Health Lifestyle Program for Prevention of Weight Gain in Young Adults (TXT2BFiT): nine-Month Outcomes of a Randomized Controlled Trial. *JMIR mhealth and uhealth*. 2016. 4:e78. doi:10.2196/mhealth.5768 .	Int/Exp: Not relevant
14	Almberg, KS, Turyk, ME, Jones, RM, Rankin, K, Freels, S, Stayner, LT. Atrazine Contamination of Drinking Water and Adverse Birth Outcomes in Community Water Systems with Elevated Atrazine in Ohio, 2006(-)2008. *Int J Environ Res Public Health*. 2018. 15(9):1889. doi:10.3390/ijerph15091889	Study design; Intervention/Exposure; Outcome
15	Alperet, DJ, Rebello, SA, Khoo, EY, Tay, Z, Seah, SS, Tai, BC, Tai, ES, Emady-Azar, S, Chou, CJ, Darimont, C, van Dam, RM. The effect of coffee consumption on insulin sensitivity and other biological risk factors for type 2 diabetes: a randomized placebo-controlled trial. *Am J Clin Nutr*. 2020. 111:448-458. doi:10.1093/ajcn/nqz306 .	Comparator
16	Alustiza, E, Perales, A, Mateo-Abad, M, Ozcoidi, I, Aizpuru, G, Albaina, O, Vergara, I. Tackling risk factors for type 2 diabetes in adolescents: PRE-STARt study in Euskadi. An *Pediatr (Engl Ed)*. 2021. 95:186-196. doi:10.1016/j.anpede.2020.11.005 .	Int/Exp: Not relevant

	Citation	Rationale
17	Alves-Santos, NH, Cocate, PG, Eshriqui, I, Benaim, C, Barros, EG, Emmett, PM, Kac, G. Dietary patterns and their association with adiponectin and leptin concentrations throughout pregnancy: a prospective cohort. *Br J Nutr*. 2018. 119:320-329. doi:10.1017/s0007114517003580	Intervention/Exposure
18	Amagase, H, Sun, B, Nance, DM. Immunomodulatory effects of a standardized Lycium barbarum fruit juice in Chinese older healthy human subjects. *J Med Food*. 2009. 12:1159-65. doi:10.1089/jmf.2008.0300	Intervention/exposure; EXCLUDE; Country
19	Andersson, C, Sullivan, L, Benjamin, EJ, Aragam, J, Jacques, P, Cheng, S, Vasan, RS. Association of soda consumption with subclinical cardiac remodeling in the Framingham heart study. *Metabolism*. 2015. 64:208-12. doi:10.1016/j.metabol.2014.10.009	Study design; Outcome
20	Angelopoulos, TJ, Lowndes, J, Sinnett, S, Rippe, JM. Fructose containing sugars do not raise blood pressure or uric acid at normal levels of human consumption. *J Clin Hypertens (Greenwich)*. 2015. 17:87-94. doi:10.1111/jch.12457	Intervention/exposure; Comparator
21	Anleu, E, Reyes, M, Araya, BM, Flores, M, Uauy, R, Garmendia, ML. Effectiveness of an Intervention of Dietary Counseling for Overweight and Obese Pregnant Women in the Consumption of Sugars and Energy. *Nutrients*. 2019. 11(2):385. doi:10.3390/nu11020385	Intervention/Exposure; Outcome
22	Antonakou, A, Papoutsis, D, Panou, I, Chiou, A, Matalas, AL. Role of exclusive breastfeeding in energy balance and weight loss during the first six months postpartum. *Clin Exp Obstet Gynecol*. 2013. 40:485-8.	Intervention/Exposure
23	Antonakou, A, Skenderi, KP, Chiou, A, Anastasiou, CA, Bakoula, C, Matalas, AL. Breast milk fat concentration and fatty acid pattern during the first six months in exclusively breastfeeding Greek women. *Eur J Nutr*. 2013. 52:963-73. doi:10.1007/s00394-012-0403-8	Intervention/Exposure; Outcome
24	Arthur, R, Kirsh, VA, Rohan, TE. Associations of coffee, tea and caffeine intake with risk of breast, endometrial and ovarian cancer among Canadian women. *Cancer Epidemiol*. 2018. 56:75-82. doi:10.1016/j.canep.2018.07.013	Outcome
25	Arvizu, M, Stuart, J, Rich-Edwards, J, Gaskins, A, Rosner, B, Chavarro, J. Adherence to Pre-pregnancy DASH Dietary Pattern and Diet Recommendations from the American Heart Association and the Risk of Preeclampsia (OR35-06-19). *Curr Dev Nutr*. 2019. 3:Supp1. doi:10.1093/cdn/nzz048.OR35-06-19	Pub status
26	Assaf-Balut, C, de la Torre, NG, Fuentes, M, Durán, A, Bordiú, E, Del Valle, L, Valerio, J, Jiménez, I, Herraiz, MA, Izquierdo, N, Torrejón, MJ, de Miguel, MP, Barabash, A, Cuesta, M, Rubio, MA, Calle-Pascual, AL. A high adherence to six food targets of the mediterranean diet in the late first trimester is associated with a reduction in the risk of materno-foetal outcomes: The st. carlos gestational diabetes mellitus prevention study. *Nutrients*. 2019. 11(1):66. doi:10.3390/nu11010066	Intervention/Exposure; Outcome
27	Atalla, M, Pinto, AJ, Mielke, GI, Benatti, FB, Gualano, B. Impact of a Real-World Lifestyle Intervention in an Entire Latin American City with More Than 50,000 People. *Obesity (Silver Spring)*. 2019. 27:1967-1974. doi:10.1002/oby.22575 .	Study design; Int/Exp: Not relevant
28	Aumueller, N, Gruszfeld, D, Gradowska, K, Escribano, J, Ferré, N, Rousseaux, D, Hoyos, J, Verduci, E, ReDionigi, A, Koletzko, B, Grote, V. Associations of sugar intake with anthropometrics in children from ages 2 until 8 years in the EU Childhood Obesity Project. *European Journal of Nutrition*. 2020. 59:2593-2601. doi:10.1007/s00394-019-02107-0 .	Int/Exp: Not relevant
29	Azad, MB, Sharma, AK, de Souza, RJ, Dolinsky, VW, Becker, AB, Mandhane, PJ, Turvey, SE, Subbarao, P, Lefebvre, DL, Sears, MR. Association Between Artificially Sweetened Beverage Consumption During Pregnancy and Infant Body Mass Index. *JAMA Pediatr*. 2016. 170:662-70. doi:10.1001/jamapediatrics.2016.0301	Outcome; Population

	Citation	Rationale
30	Babio, N, Becerra-Tomás, N, Martínez-González, MA, Corella, D, Estruch, R, Ros, E, Sayón-Orea, C, Fitó, M, Serra-Majem, L, Arós, F, Lamuela-Raventós, RM, Lapetra, J, Gómez-Gracia, E, Fiol, M, Díaz-López, A, Sorlí, JV, Martínez, JA, Salas-Salvadó, J. Consumption of Yogurt, Low-Fat Milk, and Other Low-Fat Dairy Products Is Associated with Lower Risk of Metabolic Syndrome Incidence in an Elderly Mediterranean Population. *J Nutr*. 2015. 145:2308-16. doi:10.3945/jn.115.214593	Duplicate; Other; Included in 2020 DGs
31	Badillo, P, Salgado, P, Bravo, P, Guevara, K, Acurio, J, Gonzalez, MA, Oyarzun, C, San Martin, R, Escudero, C. High plasma adenosine levels in overweight/obese pregnant women. *Purinergic Signal*. 2017. 13:479-488. doi:10.1007/s11302-017-9574-3	Study design; Intervention/Exposure
32	Baião Ddos, S, Conte-Junior, CA, Paschoalin, VM, Alvares, TS. Beetroot juice increase nitric oxide metabolites in both men and women regardless of body mass. *Int J Food Sci Nutr*. 2016. 67:40-6. doi:10.3109/09637486.2015.1121469	Intervention/exposure; Outcome
33	Bakker, R, Steegers, EA, Obradov, A, Raat, H, Hofman, A, Jaddoe, VW. Maternal caffeine intake from coffee and tea, fetal growth, and the risks of adverse birth outcomes: the Generation R Study. *Am J Clin Nutr*. 2010. 91:1691-8. doi:10.3945/ajcn.2009.28792	Outcome; Population
34	Bakuradze, T, Lang, R, Hofmann, T, Eisenbrand, G, Schipp, D, Galan, J, Richling, E. Consumption of a dark roast coffee decreases the level of spontaneous DNA strand breaks: a randomized controlled trial. *Eur J Nutr*. 2015. 54:149-56. doi:10.1007/s00394-014-0696-x	Outcome; EXCLUDE
35	Balsan, G, Pellanda, LC, Sausen, G, Galarraga, T, Zaffari, D, Pontin, B, Portal, VL. Effect of yerba mate and green tea on paraoxonase and leptin levels in patients affected by overweight or obesity and dyslipidemia: A randomized clinical trial. *Nutrition Journal*. 2019. 18(1):5. doi:10.1186/s12937-018-0426-y .	Outcome
36	Baltaci A, Hurtado Choque GA, Davey C, Reyes Peralta A, Alvarez de Davila S, Zhang Y, Gold A, Larson N, Reicks M. Padres Preparados, Jóvenes Saludables: intervention impact of a randomized controlled trial on Latino father and adolescent energy balance-related behaviors. *BMC Public Health*. 2022. 22(1):1932. doi:10.1186/s12889-022-14284-5.	Int/Exp: Not relevant
37	Barr, SI, McCarron, DA, Heaney, RP, Dawson-Hughes, B, Berga, SL, Stern, JS, Oparil, S. Effects of increased consumption of fluid milk on energy and nutrient intake, body weight, and cardiovascular risk factors in healthy older adults. *J Am Diet Assoc*. 2000. 100:810-7. doi:10.1016/s0002-8223(00)00236-4	Duplicate; Other; Included in 2020 DGs
38	Bartakova, V, Kuricova, K, Zlamal, F, Belobradkova, J, Kankova, K. Differences in food intake and genetic variability in taste receptors between Czech pregnant women with and without gestational diabetes mellitus. *Eur J Nutr*. 2018. 57:513-521. doi:10.1007/s00394-016-1334-6	Intervention/Exposure; Outcome
39	Bartok, CJ, Ventura, AK. Mechanisms underlying the association between breastfeeding and obesity. *International Journal of Pediatric Obesity*. 2009. 4:196-204. doi:10.3109/17477160902763309	Study design
40	Basu, A, Betts, NM, Ortiz, J, Simmons, B, Wu, M, Lyons, TJ. Low-energy cranberry juice decreases lipid oxidation and increases plasma antioxidant capacity in women with metabolic syndrome. *Nutr Res*. 2011. 31:190-6. doi:10.1016/j.nutres.2011.02.003	Intervention/exposure; Comparator
41	Beardsall, A, Perreault, M, Farncombe, T, Vanniyasingam, T, Thabane, L, Teo, KK, Atkinson, SA. Maternal and child factors associated with bone length traits in children at 3years of age. *Bone*. 2019. 127:1-8. doi:10.1016/j.bone.2019.05.025	Outcome
42	Beaudry, KM, Ludwa, IA, Thomas, AM, Ward, WE, Falk, B, Josse, AR. First-year university is associated with greater body weight, body composition and adverse dietary changes in males than females. *PLoS One*. 2019. 14:e0218554. doi:10.1371/journal.pone.0218554 .	Int/exp: Not included bev type

	Citation	Rationale
43	Beaudry, KM, Ludwa, IA, Thomas, AM, Ward, WE, Falk, B, Josse, AR. First-year university is associated with greater body weight, body composition and adverse dietary changes in males than females. *PLoS One*. 2019. 14:e0218554. doi:10.1371/journal.pone.0218554 .	Int/Exp: Not relevant
44	Bech, BH, Frydenberg, M, Henriksen, TB, Obel, C, Olsen, J. Coffee Consumption During Pregnancy and Birth Weight: Does Smoking Modify the Association?. *Journal of Caffeine Research*. 2015. 5:65-72. doi:10.1089/jcr.2015.0001	Outcome; Population
45	Bech, BH, Obel, C, Henriksen, TB, Olsen, J. Effect of reducing caffeine intake on birth weight and length of gestation: randomised controlled trial. *Bmj*. 2007. 334:409. doi:10.1136/bmj.39062.520648.BE	Outcome
46	Bellikci-Koyu E, Sarer-Yurekli BP, Karagozlu C, Aydin-Kose F, Ozgen AG, Buyuktuncer Z. Probiotic kefir consumption improves serum apolipoprotein A1 levels in metabolic syndrome patients: a randomized controlled clinical trial. *Nutr Res*. 2022;102:59-70. doi:10.1016/j.nutres.2022.02.006	Comparator
47	Bellikci-Koyu, E, Sarer-Yurekli, BP, Akyon, Y, Aydin-Kose, F, Karagozlu, C, Ozgen, AG, Brinkmann, A, Nitsche, A, Ergunay, K, Yilmaz, E, Buyuktuncer, Z. Effects of Regular Kefir Consumption on Gut Microbiota in Patients with Metabolic Syndrome: A Parallel-Group, Randomized, Controlled Study. *Nutrients*. 2019. 11(9):2089. doi:10.3390/nu11092089 .	Int/exp: Not included bev type; Comparator
48	Bellikci-Koyu, E, Sarer-Yurekli, BP, Akyon, Y, Aydin-Kose, F, Karagozlu, C, Ozgen, AG, Brinkmann, A, Nitsche, A, Ergunay, K, Yilmaz, E, Buyuktuncer, Z. Effects of Regular Kefir Consumption on Gut Microbiota in Patients with Metabolic Syndrome: A Parallel-Group, Randomized, Controlled Study. *Nutrients*. 2019. 11(9):2089. doi:10.3390/nu11092089	Intervention/exposure; Comparator
49	Berkey, CS, Willett, WC, Tamimi, RM, Rosner, B, Frazier, AL, Colditz, GA. Dairy intakes in older girls and risk of benign breast disease in young women. *Cancer Epidemiol Biomarkers Prev*. 2013. 22:670-4. doi:10.1158/1055-9965.Epi-12-1133	Outcome
50	Bes-Rastrollo, M, van Dam, RM, Martinez-Gonzalez, MA, Li, TY, Sampson, LL, Hu, FB. Prospective study of dietary energy density and weight gain in women. *Am J Clin Nutr*. 2008. 88:769-77. doi:10.1093/ajcn/88.3.769	Duplicate; Other; Included in 2020 DGs
51	Bhatia, S, Saraswat, S. Effect of Japan water therapy infused with cinnamon on body weight, waist/hip ratio, and body mass index of overweight and obese subjects. *Asian Journal of Pharmaceutical and Clinical Research*. 2019. 12:302-305. doi:10.22159/ajpcr.2019.v12i9.34269 .	Int/Exp: Not relevant; Comparator
52	Bonjour, JP, Chevalley, T, Ammann, P, Slosman, D, Rizzoli, R. Gain in bone mineral mass in prepubertal girls 3.5 years after discontinuation of calcium supplementation: a follow-up study. *Lancet*. 2001. 358:1208-12. doi:10.1016/s0140-6736(01)06342-5	Intervention/exposure
53	Borazjani F, Angali KA, Kulkarni SS. Milk and protein intake by pregnant women affects growth of foetus. *J Health Popul Nutr*. 2013;31(4):435-445. doi:10.3329/jhpn.v31i4.19991	Outcome; Population
54	Borgen, I, Aamodt, G, Harsem, N, Haugen, M, Meltzer, HM, Brantsæter, AL. Maternal sugar consumption and risk of preeclampsia in nulliparous Norwegian women. *European Journal of Clinical Nutrition*. 2012. 66:920-925. doi:10.1038/ejcn.2012.61	Outcome
55	Botton, J, Kogevinas, M, Gracia-Lavedan, E, Patelarou, E, Roumeliotaki, T, Iniguez, C, Santa Marina, L, Ibarluzea, J, Ballester, F, Mendez, MA, Chatzi, L, Sunyer, J, Villanueva, CM. Postnatal weight growth and trihalomethane exposure during pregnancy. *Environ Res*. 2015. 136:280-8. doi:10.1016/j.envres.2014.09.035	Population
56	Bracken, MB, Triche, EW, Belanger, K, Hellenbrand, K, Leaderer, BP. Association of maternal caffeine consumption with decrements in fetal growth. *Am J Epidemiol*. 2003. 157:456-66. doi:10.1093/aje/kwf220	Outcome; Population

	Citation	Rationale
57	Bracken, MB, Triche, EW, Belanger, K, Hellenbrand, K, Leaderer, BP. Association of maternal caffeine consumption with decrements in fetal growth. *Am J Epidemiol*. 2003. 157:456-66. doi:10.1093/aje/kwf220	Intervention/exposure; Outcome
58	Brembeck, P, Winkvist, A, Ohlsson, C, Lorentzon, M, Augustin, H. Determinants of microstructural, dimensional and bone mineral changes postpartum in Swedish women. *Br J Nutr*. 2016. doi:10.1017/s0007114516003998	Intervention/Exposure; Outcome
59	Broccoli S, Bonvicini L, Djuric O, et al. Understanding the association between mother's education level and effectiveness of a child obesity prevention intervention: a secondary analysis of an RCT [published correction appears in Epidemiol Prev. 2021 May-Jun;45(3):131. doi: 10.19191/EP21.3.P131.071]. Influenza del titolo di studio materno sull'efficacia di un intervento di prevenzione dell'obesità infantile: analisi secondaria di un RCT [published correction appears in Epidemiol Prev. 2021 May-Jun;45(3):131. doi: 10.19191/EP21.3.P131.071]. *Epidemiol Prev*. 2020;44(5-6 Suppl 1):153-162. doi:10.19191/EP20.5-6.S1.P153.085	Intervention/Exposure
60	Buntuchai, G, Pavadhgul, P, Kittipichai, W, Satheannoppakao, W. Traditional Galactagogue Foods and Their Connection to Human Milk Volume in Thai Breastfeeding Mothers. *J Hum Lact*. 2017. 33:552-559. doi:10.1177/0890334417709432	Outcome
61	Buscemi S, Corleo D, Buscemi C, et al. Influence of Habitual Dairy Food Intake on LDL Cholesterol in a Population-Based Cohort. *Nutrients*. 2021;13(2):593. Published 2021 Feb 11. doi:10.3390/nu13020593	Study design; Outcome
62	Bzikowska-Jura, A, Czerwonogrodzka-Senczyna, A, Oledzka, G, Szostak-Wegierek, D, Weker, H, Wesolowska, A. Maternal Nutrition and Body Composition During Breastfeeding: Association with Human Milk Composition. *Nutrients*. 2018. 10(10):1379. doi:10.3390/nu10101379	Intervention/Exposure; Outcome
63	Caire-Juvera, G, Casanueva, E, Bolanos-Villar, AV, de Regil, LM, Calderon de la Barca, AM. No changes in weight and body fat in lactating adolescent and adult women from Mexico. *Am J Hum Biol*. 2012. 24:425-31. doi:10.1002/ajhb.22234	Intervention/Exposure
64	Campbell AP. Time for tea?. *Diabetes Self Manag*. 2004;21(2):8-12.	Study design
65	Cao, WC, Zeng, Q, Luo, Y, Chen, HX, Miao, DY, Li, L, Cheng, YH, Li, M, Wang, F, You, L, Wang, YX, Yang, P, Lu, WQ. Blood Biomarkers of Late Pregnancy Exposure to Trihalomethanes in Drinking Water and Fetal Growth Measures and Gestational Age in a Chinese Cohort. *Environ Health Perspect*. 2016. 124:536-41. doi:10.1289/ehp.1409234	Outcome; Population
66	Capel, F, Bongard, V, Malpuech-Brugère, C, Karoly, E, Michelotti, GA, Rigaudière, JP, Jouve, C, Ferrières, J, Marmonier, C, Sébédio, JL. Metabolomics reveals plausible interactive effects between dairy product consumption and metabolic syndrome in humans. *Clinical Nutrition*. 2020. 39:1497-1509. doi:10.1016/j.clnu.2019.06.013 .	Int/Exp: Not relevant; Outcome
67	Cardoso, GA, Salgado, JM, Cesar, MDC, Donado-Pestana, CM. The Effects of Green Tea Consumption and Resistance Training on Body Composition and Resting Metabolic Rate in Overweight or Obese Women. *Journal of medicinal food*. 2013. 16:120-127. doi:10.1089/jmf.2012.0062 .	Int/Exp: Not relevant
68	Carwile, JL, Willett, WC, Wang, M, Rich-Edwards, J, Frazier, AL, Michels, KB. Milk Consumption after Age 9 Years Does Not Predict Age at Menarche. *J Nutr*. 2015. 145:1900-8. doi:10.3945/jn.115.214270	Outcome
69	Chan, GM, McElligott, K, McNaught, T, Gill, G. Effects of dietary calcium intervention on adolescent mothers and newborns: A randomized controlled trial. *Obstet Gynecol*. 2006. 108:565-71. doi:10.1097/01.AOG.0000231721.42823.9e	Outcome

	Citation	Rationale
70	Chan, GM, McElligott, K, McNaught, T, Gill, G. Effects of dietary calcium intervention on adolescent mothers and newborns: A randomized controlled trial. *Obstet Gynecol*. 2006. 108:565-71. doi:10.1097/01.AOG.0000231721.42823.9e	Intervention/exposure
71	Chee, WS, Suriah, AR, Chan, SP, Zaitun, Y, Chan, YM. The effect of milk supplementation on bone mineral density in postmenopausal Chinese women in Malaysia. *Osteoporos Int*. 2003. 14:828-34. doi:10.1007/s00198-003-1448-6	Duplicate; Other; Included in 2020 DGs
72	Chen, JL, Guedes, CM, Lung, AE. Smartphone-based Healthy Weight Management Intervention for Chinese American Adolescents: Short-term Efficacy and Factors Associated With Decreased Weight. *Journal of Adolescent Health*. 2019. 64:443-449. doi:10.1016/j.jadohealth.2018.08.022 .	Duplicate
73	Chen, L, Hu, FB, Yeung, E, Willett, W, Zhang, C. Prospective study of pre-gravid sugar-sweetened beverage consumption and the risk of gestational diabetes mellitus. *Diabetes Care*. 2009. 32:2236-41. doi:10.2337/dc09-0866	Outcome
74	Chen, Lei, Bell, Erin, Browne, Marilyn, Druschel, Charlotte, Romitti, Paul. Exploring Maternal Patterns of Dietary Caffeine Consumption Before Conception and During Pregnancy. *Maternal & Child Health Journal*. 2014. 18:2446-2455. doi:10.1007/s10995-014-1483-2	Outcome
75	Chen, LW, Fitzgerald, R, Murrin, CM, Mehegan, J, Kelleher, CC, Phillips, CM. Associations of maternal caffeine intake with birth outcomes: Results from the Lifeways Cross Generation Cohort Study. *American Journal of Clinical Nutrition*. 2018. 108:1301-1308. doi:10.1093/ajcn/nqy219	Outcome; Population
76	Chen, LW, Murrin, CM, Mehegan, J, Kelleher, CC, Phillips, CM. Maternal, but not paternal or grandparental, caffeine intake is associated with childhood obesity and adiposity: The Lifeways Cross-Generation Cohort Study. *Am J Clin Nutr*. 2019. 109:1648-1655. doi:10.1093/ajcn/nqz019	Outcome
77	Chew, B, Mathison, B, Kimble, L, McKay, D, Kaspar, K, Khoo, C, Chen, CYO, Blumberg, J. Chronic consumption of a low calorie, high polyphenol cranberry beverage attenuates inflammation and improves glucoregulation and HDL cholesterol in healthy overweight humans: a randomized controlled trial. *European Journal of Nutrition*. 2019. 58:1223-1235. doi:10.1007/s00394-018-1643-z .	Comparator; Outcome
78	Chiang, KM, Pan, WH. Causal link between milk consumption and obesity? A 10-year longitudinal study and a mendelian randomization study. *Food and Nutrition Research*. 2021. 65:#pages#. doi:10.29219/FNR.V65.6300 .	Country
79	Chiochetta, M, Ferreira, EJ, Moreira, Itds, Avila, RCS, Oliveira, AA, Busnello, FM, Braganhol, E, Barschak, AG. Green Juice in Human Metabolism: A Randomized Trial. *J Am Coll Nutr*. 2018. #volume#:1-7. doi:10.1080/07315724.2018.1457458	Intervention/exposure; Comparator
80	Chiu, HF, Lin, TY, Shen, YC, Venkatakrishnan, K, Wang, CK. Improvement of green tea polyphenol with milk on skin with respect to antioxidation in healthy adults: a double-blind placebo-controlled randomized crossover clinical trial. *Food Funct*. 2016. 7:893-901. doi:10.1039/c5fo01271f	Intervention/exposure
81	Chiu, YH, Rifas-Shiman, SL, Kleinman, K, Oken, E, Young, JG. Effects of intergenerational exposure interventions on adolescent outcomes: An application of inverse probability weighting to longitudinal pre-birth cohort data. *Paediatr Perinat Epidemiol*. 2020. 34:366-375. doi:10.1111/ppe.12646 .	Study design
82	Chortatos, A, Haugen, M, Iversen, PO, Vikanes, A, Magnus, P, Veierod, MB. Nausea and vomiting in pregnancy: associations with maternal gestational diet and lifestyle factors in the Norwegian Mother and Child Cohort Study. *Bjog*. 2013. 120:1642-53. doi:10.1111/1471-0528.12406	Intervention/Exposure; Outcome

	Citation	Rationale
83	Chrysohoou, C, Panagiotakos, DB, Pitsavos, C, Zeimbekis, A, Zampelas, A, Papademetriou, L, Masoura, C, Stefanadis, C. The associations between smoking, physical activity, dietary habits and plasma homocysteine levels in cardiovascular disease-free people: the 'ATTICA' study. *Vasc Med*. 2004. 9:117-23. doi:10.1191/1358863x04vm542oa	Study design
84	Cleghorn, DB, O'Loughlin, PD, Schroeder, BJ, Nordin, BE. An open, crossover trial of calcium-fortified milk in prevention of early postmenopausal bone loss. *Med J Aust*. 2001. 175:242-5. doi:10.5694/j.1326-5377.2001.tb143554.x	Intervention/exposure
85	Coelho Nde, L, Cunha, DB, Esteves, AP, Lacerda, EM, Theme Filha, MM. Dietary patterns in pregnancy and birth weight. *Rev Saude Publica*. 2015. 49:62. doi:10.1590/s0034-8910.2015049005403	Intervention/Exposure; Outcome
86	Coelho Nde, L, Cunha, DB, Esteves, AP, Lacerda, EM, Theme Filha, MM. Dietary patterns in pregnancy and birth weight. *Rev Saude Publica*. 2015. 49:62. doi:10.1590/s0034-8910.2015049005403	Intervention/exposure
87	Cohen CC, Dabelea D, Michelotti G, Tang L, Shankar K, Goran MI, Perng W. Metabolome Alterations Linking Sugar-Sweetened Beverage Intake with Dyslipidemia in Youth: The Exploring Perinatal Outcomes among CHildren (EPOCH) Study.. *Metabolites*. 2022. 12(6):559. doi:10.3390/metabo12060559.	Outcome
88	Colleran, HL, Lovelady, CA. Use of MyPyramid Menu Planner for Moms in a weight-loss intervention during lactation. *J Acad Nutr Diet*. 2012. 112:553-8. doi:10.1016/j.jand.2011.12.004	Intervention/Exposure
89	Costa CDS, Buffarini R, Flores TR, Neri D, Freitas Silveira M, Monteiro CA. Consumption of ultra-processed foods and growth outcomes in early childhood: 2015 Pelotas Birth Cohort. *Br J Nutr*. doi:10.1017/S0007114522002926.	Int/Exp: Not relevant
90	Costa, Caroline dos Santos, Buffarini, Romina, Flores, Thaynã Ramos, Neri, Daniela, Freitas Silveira, Mariângela, Monteiro, Carlos Augusto. Consumption of ultra-processed foods and growth outcomes in early childhood: 2015 Pelotas Birth Cohort. *British Journal of Nutrition*. 2023. 129:2153-2160. doi:10.1017/S0007114522002926 .	Int/Exp: Not relevant
91	Costa, D, Warkentin, S, Oliveira, A. The effect of sugar-sweetened beverages at 4 years of age on appetitive behaviours of 7-year-olds from the Generation XXI birth cohort. *British Journal of Nutrition*. 2021. 126:790-800. doi:10.1017/S000711452000447X .	Outcome; Publication status
92	Cranney, L, O'Hara, B, Gale, J, Rissel, C, Bauman, A, Phongsavan, P. Telephone based coaching for adults at risk of diabetes: impact of Australia's Get Healthy Service. *Transl Behav Med*. 2019. 9:1178-1185. doi:10.1093/tbm/ibz007 .	Study design; Int/Exp: Not relevant
93	Crézé, C, Notter-Bielser, ML, Knebel, JF, Campos, V, Tappy, L, Murray, M, Toepel, U. The impact of replacing sugar- by artificially-sweetened beverages on brain and behavioral responses to food viewing - An exploratory study. *Appetite*. 2018. 123:160-168. doi:10.1016/j.appet.2017.12.019	Study design; Outcome
94	Crozier, SR, Inskip, HM, Godfrey, KM, Cooper, C, Robinson, SM. Nausea and vomiting in early pregnancy: Effects on food intake and diet quality. *Matern Child Nutr*. 2017. 13(4):e12389. doi:10.1111/mcn.12389	Outcome
95	da Mota Santana, Jerusa, Alves de Oliveira Queiroz, Valterlinda, Monteiro Brito, Sheila, Barbosa dos Santos, Djanilson, Oliveira Assis, Ana Marlucia, Marlucia Oliveira Assis, Ana. FOOD CONSUMPTION PATTERNS DURING PREGNANCY: A LONGITUDINAL STUDY IN A REGION OF THE NORTH EAST OF BRAZIL. *Nutricion Hospitalaria*. 2015. 32:130-138. doi:10.3305/nh.2015.32.1.8970	Intervention/Exposure; Outcome
96	Daly, RM, Brown, M, Bass, S, Kukuljan, S, Nowson, C. Calcium- and vitamin D3-fortified milk reduces bone loss at clinically relevant skeletal sites in older men: a 2-year randomized controlled trial. *J Bone Miner Res*. 2006. 21:397-405. doi:10.1359/jbmr.051206	Intervention/exposure

	Citation	Rationale
97	Daly, RM, Gianoudis, J, De Ross, B, O'Connell, SL, Kruger, M, Schollum, L, Gunn, C. Effects of a multinutrient-fortified milk drink combined with exercise on functional performance, muscle strength, body composition, inflammation, and oxidative stress in middle-aged women: a 4-month, double-blind, placebo-controlled, randomized trial. *Am J Clin Nutr*. 2020. 112:427-446. doi:10.1093/ajcn/nqaa126 .	Int/exp: Not included bev type
98	Daly, RM, Gianoudis, J, De Ross, B, O'Connell, SL, Kruger, M, Schollum, L, Gunn, C. Effects of a multinutrient-fortified milk drink combined with exercise on functional performance, muscle strength, body composition, inflammation, and oxidative stress in middle-aged women: a 4-month, double-blind, placebo-controlled, randomized trial. *Am J Clin Nutr*. 2020. 112:427-446. doi:10.1093/ajcn/nqaa126 .	Int/Exp: Not relevant
99	Daly, RM, Nowson, CA. Long-term effect of calcium-vitamin D(3) fortified milk on blood pressure and serum lipid concentrations in healthy older men. *Eur J Clin Nutr*. 2009. 63:993-1000. doi:10.1038/ejcn.2008.79	Intervention/exposure; Comparator
100	Daly, RM, Petrass, N, Bass, S, Nowson, CA. The skeletal benefits of calcium- and vitamin D3-fortified milk are sustained in older men after withdrawal of supplementation: an 18-mo follow-up study. *Am J Clin Nutr*. 2008. 87:771-7. doi:10.1093/ajcn/87.3.771	Intervention/exposure
101	Daniel MM, Liboredo JC, Anastácio LR, Souza TCM, Oliveira LA, Della Lucia CM, Ferreira LG. Incidence and Associated Factors of Weight Gain During the Covid-19 Pandemic. *Front Nutr*. 2022. 9:818632. doi:10.3389/fnut.2022.818632.	Study design; Int/Exp: Not relevant
102	Danileviciute, A, Grazuleviciene, R, Vencloviene, J, Paulauskas, A, Nieuwenhuijsen, MJ. Exposure to drinking water trihalomethanes and their association with low birth weight and small for gestational age in genetically susceptible women. *Int J Environ Res Public Health*. 2012. 9:4470-85. doi:10.3390/ijerph9124470	Population
103	Darnai, G, Plózer, E, Perlaki, G, Orsi, G, Nagy, SA, Horváth, R, Schwarcz, A, Kovács, N, Altbäcker, A, Janszky, J, Clemens, Z. Milk and dairy consumption correlates with cerebral cortical as well as cerebral white matter volume in healthy young adults. *Int J Food Sci Nutr*. 2015. 66:826-9. doi:10.3109/09637486.2015.1093609	Outcome
104	Davis, JN, Shearrer, GE, Tao, W, Hurston, SR, Gunderson, EP. Dietary variables associated with substantial postpartum weight retention at 1-year among women with GDM pregnancy. *BMC Obes.* 2017. 4:31. doi:10.1186/s40608-017-0166-0	Other; Included in GWG/PPWL search
105	Dayeon, Shin, Kyung Won, Lee, Song, WonO. Pre-Pregnancy Weight Status Is Associated with Diet Quality and Nutritional Biomarkers during Pregnancy. *Nutrients*. 2016. 8:162. doi:10.3390/nu8030162	Intervention/Exposure; Outcome
106	de Jersey, SJ, Nicholson, JM, Callaway, LK, Daniels, LA. An observational study of nutrition and physical activity behaviours, knowledge, and advice in pregnancy. *BMC Pregnancy Childbirth*. 2013. 13:115. doi:10.1186/1471-2393-13-115	Outcome; Population
107	De B, Shrivastav A, Das T, Goswami TK. Physicochemical and nutritional assessment of soy milk and soymilk products and comparative evaluation of their effects on blood gluco-lipid profile. *Applied Food Research*. 2022;2(2):100146. doi:10.1016/j.afres.2022.100146	Int/exp: Not included bev type
108	Descarpentrie A, Bernard JY, Vandentorren S, Melchior M, Galéra C, Chia A, Chong MF, Charles MA, Heude B, Lioret S. Prospective associations of lifestyle patterns in early childhood with socio-emotional and behavioural development and BMI: An outcome-wide analysis of the EDEN mother-child cohort.. *Paediatr Perinat Epidemiol*. 2023. 37(1):69-80. doi:10.1111/ppe.12926.	Int/Exp: Not relevant
109	Dominguez, LigiaJ, Donat-Vargas, Carolina, Banegas, JoséR, Barbagallo, Mario, Rodríguez-Artalejo, Fernando, Guallar-Castillón, Pilar. Adherence to a Healthy Beverage Score Is Associated with Lower Frailty Risk in Older Adults. *Nutrients*. 2022. 14:N.PAG-N.PAG. doi:10.3390/nu14183861 .	Duplicate; Other;

	Citation	Rationale
110	Dominguez, LJ, Martinez-Gonzalez, MA, Basterra-Gortari, FJ, Gea, A, Barbagallo, M, Bes-Rastrollo, M. Fast food consumption and gestational diabetes incidence in the SUN project. PLoS One. 2014. 9:e106627. doi:10.1371/journal.pone.0106627	Intervention/Exposure; Outcome
111	Donazar-Ezcurra, M, Lopez-Del Burgo, C, Martinez-Gonzalez, MA, Basterra-Gortari, FJ, de Irala, J, Bes-Rastrollo, M. Soft drink consumption and gestational diabetes risk in the SUN project. *Clin Nutr*. 2018. 37:638-645. doi:10.1016/j.clnu.2017.02.005	Outcome
112	Dong, Xing-Xuan, Wang, Rui-Rui, Liu, Jie-Yu, Ma, Qing-Hua, Pan, Chen-Wei. Habitual tea consumption and 5-year incident metabolic syndrome among older adults: a community-based cohort study. *BMC Geriatrics*. 2021. 21:1-9. doi:10.1186/s12877-021-02707-8 .	Duplicate
113	Dong, Xing-Xuan, Wang, Rui-Rui, Liu, Jie-Yu, Ma, Qing-Hua, Pan, Chen-Wei. Habitual tea consumption and 5-year incident metabolic syndrome among older adults: a community-based cohort study. *BMC Geriatrics*. 2021. 21:1-9. doi:10.1186/s12877-021-02707-8 .	Other; Duplicate
114	Drapeau V, Harvey AA, Jacob R, Provencher V, Panahi S. The impact of a family web-based nutrition intervention to increase fruit, vegetable, and dairy intakes: a single-blinded randomized family clustered intervention.. *Nutr J*. 2022. 21(1):75. doi:10.1186/s12937-022-00825-6.	Int/Exp: Not relevant
115	Drouin-Chartier, JP, Li, Y, Ardisson Korat, AV, Ding, M, Lamarche, B, Manson, JE, Rimm, EB, Willett, WC, Hu, FB. Changes in dairy product consumption and risk of type 2 diabetes: results from 3 large prospective cohorts of US men and women. *Am J Clin Nutr*. 2019. 110:1201-1212. doi:10.1093/ajcn/nqz180	Intervention/exposure; Outcome
116	Dubois L, Bédard B, Goulet D, Prud'homme D, Tremblay RE, Boivin M. Eating behaviors, dietary patterns and weight status in emerging adulthood and longitudinal associations with eating behaviors in early childhood.. *Int J Behav Nutr Phys Act*. 2022;19(1):139. doi:10.1186/s12966-022-01376-z.	Int/Exp: Not relevant; Outcome
117	Dubois, Lise, Bédard, Brigitte, Goulet, Danick, Prud'homme, Denis, Tremblay, RichardE, Boivin, Michel. Eating behaviors, dietary patterns and weight status in emerging adulthood and longitudinal associations with eating behaviors in early childhood. *International Journal of Behavioral Nutrition & Physical Activity*. 2022. 19:1-11. doi:10.1186/s12966-022-01376-z .	Int/Exp: Not relevant
118	Duthie, SJ, Duthie, GG, Russell, WR, Kyle, JAM, Macdiarmid, JI, Rungapamestry, V, Stephen, S, Megias-Baeza, C, Kaniewska, JJ, Shaw, L, Milne, L, Bremner, D, Ross, K, Morrice, P, Pirie, LP, Horgan, G, Bestwick, CS. Effect of increasing fruit and vegetable intake by dietary intervention on nutritional biomarkers and attitudes to dietary change: a randomised trial. *Eur J Nutr*. 2018. 57:1855-1872. doi:10.1007/s00394-017-1469-0	Intervention/exposure
119	Edwards, AJ, Vinyard, BT, Wiley, ER, Brown, ED, Collins, JK, Perkins-Veazie, P, Baker, RA, Clevidence, BA. Consumption of watermelon juice increases plasma concentrations of lycopene and beta-carotene in humans. *J Nutr*. 2003. 133:1043-50. doi:10.1093/jn/133.4.1043	Outcome
120	El-Elimat, Tamam, Qasem, Wala'aM, Al-Sawalha, NourA, AbuAlSamen, MahmoudM, Munaiem, RamziT, Al-Qiam, Reema, Al Sharie, AhmedH, Al-Qiam, Reema. A Prospective Non-Randomized Open-Label Comparative Study of The Effects of Matcha Tea on Overweight and Obese Individuals: A Pilot Observational Study. *Plant Foods for Human Nutrition*. 2022. 77:447-454. doi:10.1007/s11130-022-00998-9 .	Duplicate; Other;
121	Elliott, LauraJ, Keown-Stoneman, CharlesDG, Birken, CatherineS, Jenkins, DavidJA, Borkhoff, CorneliaM, Maguire, JonathonL. Vegetarian Diet, Growth, and Nutrition in Early Childhood: A Longitudinal Cohort Study. *Pediatrics*. 2022. 149:44-55. doi:10.1542/peds.2021-052598 .	Int/Exp: Not relevant; Other; Duplicate
122	Elvebakk, T, Mostad, IL, Mørkved, S, Salvesen, K. Dietary intakes and dietary quality during pregnancy in women with and without gestational diabetes mellitus—a Norwegian longitudinal study. *Nutrients*. 2018. 10(11):1811. doi:10.3390/nu10111811	Outcome

	Citation	Rationale
123	Elvebakk, T, Mostad, IL, Morkved, S, Salvesen, KA, Stafne, SN. Dietary Intakes and Dietary Quality during Pregnancy in Women with and without Gestational Diabetes Mellitus-A Norwegian Longitudinal Study. *Nutrients*. 2018. 10(11):1811. doi:10.3390/nu10111811	Outcome; Duplicate
124	Englund-Ogge, L, Brantsaeter, AL, Haugen, M, Sengpiel, V, Khatibi, A, Myhre, R, Myking, S, Meltzer, HM, Kacerovsky, M, Nilsen, RM, Jacobsson, B. Association between intake of artificially sweetened and sugar-sweetened beverages and preterm delivery: a large prospective cohort study. *Am J Clin Nutr.* 2012. 96:552-9. doi:10.3945/ajcn.111.031567	Outcome; Population
125	Eny, KM, Jeyakumar, N, Dai, DWH, Maguire, JL, Parkin, PC, Birken, CS. Sugar-containing beverage consumption and cardiometabolic risk in preschool children. *Prev Med Rep*. 2020. 17:101054. doi:10.1016/j.pmedr.2020.101054 .	Study design
126	Ericson, U, Brunkwall, L, Alves Dias, J, Drake, I, Hellstrand, S, Gullberg, B, Sonestedt, E, Nilsson, PM, Wirfält, E, Orho-Melander, M. Food patterns in relation to weight change and incidence of type 2 diabetes, coronary events and stroke in the Malmö Diet and Cancer cohort. *European Journal of Nutrition*. 2019. 58:1801-1814. doi:10.1007/s00394-018-1727-9 .	Int/Exp: Not relevant
127	Ezendam, NP, Evans, AE, Stigler, MH, Brug, J, Oenema, A. Cognitive and home environmental predictors of change in sugar-sweetened beverage consumption among adolescents. *Br J Nutr*. 2010. 103:768-74. doi:10.1017/s0007114509992297	Outcome
128	Fang, J, Gong, C, Wan, Y, Xu, Y, Tao, F, Sun, Y. Polygenic risk, adherence to a healthy lifestyle, and childhood obesity. *Pediatric Obesity*. 2019. 14(4):e12489. doi:10.1111/ijpo.12489 .	Study design
129	Fernandez-Cao, JC, Arija, V, Aranda, N, Bullo, M, Basora, J, Martínez-González, MA, Díez-Espino, J, Salas-Salvadó, J. Heme iron intake and risk of new-onset diabetes in a Mediterranean population at high risk of cardiovascular disease: an observational cohort analysis. *BMC Public Health*. 2013. 13:1042. doi:10.1186/1471-2458-13-1042	Intervention/exposure; Outcome
130	Ferranti, EP, Hartman, TJ, Elliott, AJ, Mitchell, DC, Angal, J, Nickleach, D, Bellissimo, M, Breslow, R. Diet Quality of Pregnant American Indian Women in the Northern Plains. *Prev Chronic Dis*. 2019. 16:E53. doi:10.5888/pcd16.180536	Outcome
131	Feskanich, D, Bischoff-Ferrari, HA, Frazier, AL, Willett, WC. Milk consumption during teenage years and risk of hip fractures in older adults. *JAMA Pediatr*. 2014. 168:54-60. doi:10.1001/jamapediatrics.2013.3821	Outcome; Other; no sig testing of relevant results
132	Flynn, AC, Thompson, JMD, Dalrymple, KV, Wall, C, Begum, S, Pallippadan Johny, J, Cutfield, WS, North, R, McCowan, LME, Godfrey, KM, Mitchell, EA, Poston, L. Childhood dietary patterns and body composition at age 6 years: the Children of SCOPE study. *Br J Nutr*. 2020. 124:1-21. doi:10.1017/s0007114520000628 .	Study design; Int/Exp: Not relevant
133	Forsum, Elisabet, Henriksson, Pontus, Löf, Marie. The Two-Component Model for Calculating Total Body Fat from Body Density: An Evaluation in Healthy Women before, during and after Pregnancy. *Nutrients*. 2014. 6:5888-5899. doi:10.3390/nu6125888	Intervention/Exposure
134	Foscolou, A, Magriplis, E, Tyrovolas, S, Soulis, G, Bountziouka, V, Mariolis, A, Piscopo, S, Valacchi, G, Anastasiou, F, Gotsis, E, Metallinos, G, Tyrovola, D, Polystipioti, A, Polychronopoulos, E, Matalas, AL, Lionis, C, Zeimbekis, A, Tur, JA, Sidossis, LS, Panagiotakos, D. Lifestyle determinants of healthy ageing in a Mediterranean population: The multinational MEDIS study. *Exp Gerontol.* 2018. 110:35-41. doi:10.1016/j.exger.2018.05.008	Intervention/exposure
135	Fowles, ER, Walker, LO. Correlates of dietary quality and weight retention in postpartum women. *J Community Health Nurs*. 2006. 23:183-97. doi:10.1207/s15327655jchn2303_5	Intervention/Exposure
136	Freitas-Vilela, AA, Smith, AD, Kac, G, Pearson, RM, Heron, J, Emond, A, Hibbeln, JR, Castro, MB, Emmett, PM. Dietary patterns by cluster analysis in pregnant women: relationship with nutrient intakes and dietary patterns in 7-year-old offspring. *Matern Child Nutr*. 2017. 13(2):e12353. doi:10.1111/mcn.12353	Outcome; Population

	Citation	Rationale
137	Funatsu, K, Yamashita, T, Nakamura, H. Effect of coffee intake on blood pressure in male habitual alcohol drinkers. *Hypertens Res*. 2005. 28:521-7. doi:10.1291/hypres.28.521	EXCLUDE
138	Fung TT, Pan A, Hou T, et al. Long-Term Change in Diet Quality Is Associated with Body Weight Change in Men and Women [published correction appears in J Nutr. 2016 Sep;146(9):1813. doi: 10.3945/jn.116.238576]. *J Nutr*. 2015;145(8):1850-1856. doi:10.3945/jn.114.208785	Int/Exp: Not relevant
139	Gaeini, Z, Bahadoran, Z, Mirmiran, P, Azizi, F. Tea, coffee, caffeine intake and the risk of cardio-metabolic outcomes: findings from a population with low coffee and high tea consumption. *Nutr Metab (Lond)*. 2019. 16:28. doi:10.1186/s12986-019-0355-6	Outcome
140	Gago C, Aftosmes-Tobio A, Beckerman-Hsu JP, Oddleifson C, Garcia EA, Lansburg K, Figueroa R, Yu X, Kitos N, Torrico M, Leonard J, Jurkowski JK, Mattei J, Kenney EL, Haneuse S, Davison KK. Evaluation of a cluster-randomized controlled trial: Communities for Healthy Living, family-centered obesity prevention program for Head Start parents and children. *Int J Behav Nutr Phys Act*. 2023;20(1):4. doi:10.1186/s12966-022-01400-2.	Int/Exp: Not relevant
141	Gallegos, D, Do, H, To, QG, Vo, B, Goris, J, Alraman, H. The effectiveness of living well multicultural-lifestyle management program among ethnic populations in Queensland, Australia. *Health Promot J Austr*. 2021. 32:84-95. doi:10.1002/hpja.329 .	Study design; Int/Exp: Not relevant; Comparator
142	Garcia DO, Morrill KE, Aceves B, et al. Feasibility and acceptability of a beverage intervention for Hispanic adults: results from a pilot randomized controlled trial. *Public Health Nutr*. 2019;22(3):542-552. doi:10.1017/S1368980018003051	EXCLUDE
143	García-Cordero J, Sierra-Cinos JL, Seguido MA, González-Rámila S, Mateos R, Bravo-Clemente L, Sarriá B. Regular Consumption of Green Coffee Phenol, Oat β-Glucan and Green Coffee Phenol/Oat β-Glucan Supplements Does Not Change Body Composition in Subjects with Overweight and Obesity. *Foods*. 2022;11(5):679. doi:10.3390/foods11050679.	Int/Exp: Not relevant
144	Gaskins, AJ, Rich-Edwards, JW, Williams, PL, Toth, TL, Missmer, SA, Chavarro, JE. Pre-pregnancy caffeine and caffeinated beverage intake and risk of spontaneous abortion. *Eur J Nutr*. 2018. 57:107-117. doi:10.1007/s00394-016-1301-2	Outcome
145	Ghasemi, V, Kheirkhah, M, Vahedi, M. The Effect of Herbal Tea Containing Fenugreek Seed on the Signs of Breast Milk Sufficiency in Iranian Girl Infants. *Iran Red Crescent Med J*. 2015. 17:e21848. doi:10.5812/ircmj.21848	Population
146	Ghizi AC da S, de Almeida Silva M, Moraes FS de A, et al. Kefir improves blood parameters and reduces cardiovascular risks in patients with metabolic syndrome. *PharmaNutrition*. 2021;16:100266. doi:https://doi.org/10.1016/j.phanu.2021.100266	Int/exp: Not included bev type
147	Gillman, MW, Rifas-Shiman, SL, Fernandez-Barres, S, Kleinman, K, Taveras, EM, Oken, E. Beverage Intake During Pregnancy and Childhood Adiposity. *Pediatrics*. 2017. 140(2):e20170031. doi:10.1542/peds.2017-0031	Outcome; Population
148	Giroux, I, Inglis, SD, Lander, S, Gerrie, S, Mottola, MF. Dietary intake, weight gain, and birth outcomes of physically active pregnant women: a pilot study. *Appl Physiol Nutr Metab*. 2006. 31:483-9. doi:10.1139/h06-024	Intervention/Exposure
149	Gkouskou KG, Georgiopoulos G, Vlastos I, et al. CYP1A2 polymorphisms modify the association of habitual coffee consumption with appetite, macronutrient intake, and body mass index: results from an observational cohort and a cross-over randomized study. *Int J Obes (Lond)*. 2022;46(1):162-168. doi:10.1038/s41366-021-00972-6	Study design
150	Gonçalinho GHF, Nascimento JRO, Mioto BM, et al. Effects of Coffee on Sirtuin-1, Homocysteine, and Cholesterol of Healthy Adults: Does the Coffee Powder Matter?. *J Clin Med*. 2022;11(11):2985. Published 2022 May 25. doi:10.3390/jcm11112985	Comparator
151	Gonzalez, HF, Malpeli, A, Mansur, JL, De Santiago, S, Etchegoyen, GS. Changes in body composition in lactating adolescent mothers. *Arch Latinoam Nutr*. 2005. 55:252-6.	Intervention/Exposure

	Citation	Rationale
152	Gonzalez-Palacios S, Navarrete-Muñoz EM, García-de-la-Hera M, et al. Sugar-Containing Beverages Consumption and Obesity in Children Aged 4-5 Years in Spain: the INMA Study. *Nutrients*. 2019;11(8):1772. Published 2019 Aug 1. doi:10.3390/nu11081772	Study design
153	Grandjean, AC, Reimers, KJ, Haven, MC, Curtis, GL. The effect on hydration of two diets, one with and one without plain water. *J Am Coll Nutr*. 2003. 22:165-73. doi:10.1080/07315724.2003.10719290	EXCLUDE
154	Grazuleviciene, R, Nieuwenhuijsen, MJ, Vencloviene, J, Kostopoulou-Karadanelli, M, Krasner, SW, Danileviciute, A, Balcius, G, Kapustinskiene, V. Individual exposures to drinking water trihalomethanes, low birth weight and small for gestational age risk: a prospective Kaunas cohort study. *Environ Health*. 2011. 10:32. doi:10.1186/1476-069x-10-32	Intervention/Exposure; Outcome
155	Greenberg, JA, Axen, KV, Schnoll, R, Boozer, CN. Coffee, tea and diabetes: the role of weight loss and caffeine. *Int J Obes (Lond)*. 2005. 29:1121-9. doi:10.1038/sj.ijo.0802999	Study design
156	Grieger, JA, Nowson, CA. Use of calcium, folate, and vitamin D_3-fortified milk for 6 months improves nutritional status but not bone mass or turnover, in a group of Australian aged care residents. *J Nutr Elder*. 2009. 28:236-54. doi:10.1080/01639360903140130	Study design; Intervention/exposure
157	Grijalva-Avila, J, Villanueva-Fierro, I, Lares-Asseff, I, Chairez-Hernández, I, Rivera-Sanchez, G, Martínez-Estrada, S, Martínez-Rivera, I, Quiñones, LA, Loera-Castañeda, V. Milk intake and IGF-1 rs6214 polymorphism as protective factors to obesity. Int J Food Sci Nutr. 2020. 71:388-393. doi:10.1080/09637486.2019.1666805 .	Study design
158	Grosso, LM, Rosenberg, KD, Belanger, K, Saftlas, AF, Leaderer, B, Bracken, MB. Maternal caffeine intake and intrauterine growth retardation. *Epidemiology*. 2001. 12:447-55. doi:#electronic resource number#	Outcome; Population
159	Grosso, LM, Rosenberg, KD, Belanger, K, Saftlas, AF, Leaderer, B, Bracken, MB. Maternal caffeine intake and intrauterine growth retardation. *Epidemiology*. 2001. 12:447-55. doi:10.1097/00001648-200107000-00015	Intervention/exposure; Outcome
160	Groth, SW, Stewart, PA, Ossip, DJ, Block, RC, Wixom, N, Fernandez, ID. Micronutrient Intake Is Inadequate for a Sample of Pregnant African-American Women. *J Acad Nutr Diet*. 2017. 117:589-598. doi:10.1016/j.jand.2016.11.011	Intervention/Exposure
161	Grundt, Jacob Holter, Nakling, Jakob, Eide, Geir Egil, Markestad, Trond. Possible relation between maternal consumption of added sugar and sugar-sweetened beverages and birth weight - time trends in a population. *BMC Public Health*. 2012. 12:901-901. doi:10.1186/1471-2458-12-901	Outcome; Population
162	Grundt, JH, Nakling, J, Eide, GE, Markestad, T. Possible relation between maternal consumption of added sugar and sugar-sweetened beverages and birth weight--time trends in a population. *BMC Public Health*. 2012. 12:901. doi:10.1186/1471-2458-12-901	Outcome; Population
163	Haghighatdoost, F, Azadbakht, L. Probiotic soy milk and anthropometric measures: Is probiotic soy milk beyond soy milk?. *ARYA Atheroscler*. 2015. 11:265-6.	Study design
164	Haire-Joshu, D, Schwarz, C, Jacob, R, Kristen, P, Johnston, S, Quinn, K, Tabak, R. Raising Well at Home: a pre-post feasibility study of a lifestyle intervention for caregivers and their child with obesity. *Pilot Feasibility Stud*. 2020. 6:149. doi:10.1186/s40814-020-00692-0 .	Study design
165	Haire-Joshu, D, Yount, BW, Budd, EL, Schwarz, C, Schermbeck, R, Green, S, Elliott, M. The quality of school wellness policies and energy-balance behaviors of adolescent mothers. *Prev Chronic Dis*. 2011. 8:A34.	Outcome
166	Haire-Joshu, DL, Schwarz, CD, Peskoe, SB, Budd, EL, Brownson, RC, Joshu, CE. A group randomized controlled trial integrating obesity prevention and control for postpartum adolescents in a home visiting program. *Int J Behav Nutr Phys Act*. 2015. 12:88. doi:10.1186/s12966-015-0247-8	Intervention/Exposure

	Citation	Rationale
167	Halicioglu, O, Sutcuoglu, S, Koc, F, Ozturk, C, Albudak, E, Colak, A, Sahin, E, Asik Akman, S. Vitamin B12 and folate statuses are associated with diet in pregnant women, but not with anthropometric measurements in term newborns. *J Matern Fetal Neonatal Med*. 2012. 25:1618-21. doi:10.3109/14767058.2011.648244	Intervention/Exposure
168	Halldorsson, TI, Strom, M, Petersen, SB, Olsen, SF. Intake of artificially sweetened soft drinks and risk of preterm delivery: a prospective cohort study in 59,334 Danish pregnant women. *Am J Clin Nutr*. 2010. 92:626-33. doi:10.3945/ajcn.2009.28968	Outcome; Population
169	Hedrick, VE, Davy, BM, You, W, Porter, KJ, Estabrooks, PA, Zoellner, JM. Dietary quality changes in response to a sugar-sweetened beverage-reduction intervention: results from the Talking Health randomized controlled clinical trial. *Am J Clin Nutr*. 2017. 105:824-833. doi:10.3945/ajcn.116.144543	Outcome
170	Heppe, DH, van Dam, RM, Willemsen, SP, den Breeijen, H, Raat, H, Hofman, A, Steegers, EA, Jaddoe, VW. Maternal milk consumption, fetal growth, and the risks of neonatal complications: the Generation R Study. *Am J Clin Nutr*. 2011. 94:501-9. doi:10.3945/ajcn.111.013854	Outcome; Population
171	Herber, C, Bogler, L, Subramanian, SV, Vollmer, S. Association between milk consumption and child growth for children aged 6-59 months. *Sci Rep*. 2020. 10:6730. doi:10.1038/s41598-020-63647-8 .	Country
172	Higgins, KA, Mattes, RD. A randomized controlled trial contrasting the effects of 4 low-calorie sweeteners and sucrose on body weight in adults with overweight or obesity. *American Journal of Clinical Nutrition*. 2019. 109:1288-1301. doi:10.1093/ajcn/nqy381 .	Int/Exp: Not relevant
173	Hillesund, ER, Bere, E, Haugen, M, Overby, NC. Development of a New Nordic Diet score and its association with gestational weight gain and fetal growth - a study performed in the Norwegian Mother and Child Cohort Study (MoBa). *Public Health Nutr*. 2014. 17:1909-18. doi:10.1017/s1368980014000421	Intervention/Exposure
174	Hinkle S, Li M, Grewal J, et al. Beverage Intake in U.S. Women Across Pregnancy and Gestational Diabetes Risk (P11-010-19). *Curr Dev Nutr*. 2019;3(Suppl 1):nzz048.P11-010-19. Published 2019 Jun 13. doi:10.1093/cdn/nzz048.P11-010-19	Pub status
175	Hinkle, SN, Laughon, SK, Catov, JM, Olsen, J, Bech, BH. First trimester coffee and tea intake and risk of gestational diabetes mellitus: a study within a national birth cohort. *Bjog*. 2015. 122:420-8. doi:10.1111/1471-0528.12930	Outcome
176	Hinkle, SN, Rawal, S, Bjerregaard, AA, Halldorsson, TI, Li, M, Ley, SH, Wu, J, Zhu, Y, Chen, L, Liu, A, Grunnet, LG, Rahman, ML, Kampmann, FB, Mills, JL, Olsen, SF, Zhang, C. A prospective study of artificially sweetened beverage intake and cardiometabolic health among women at high risk. *Am J Clin Nutr*. 2019. 110:221-232. doi:10.1093/ajcn/nqz094 .	Study design; EXLUDE - All other health status criteria
177	Hirota, T, Kusu, T, Hirota, K. Improvement of nutrition stimulates bone mineral gain in Japanese school children and adolescents. *Osteoporos Int*. 2005. 16:1057-64. doi:10.1007/s00198-004-1804-1	Outcome
178	Hodge, AM, O'Dea, K, English, DR, Giles, GG, Flicker, L. Dietary patterns as predictors of successful ageing. *J Nutr Health Aging*. 2014. 18:221-7. doi:10.1007/s12603-013-0405-0	Intervention/exposure
179	Hodgson, JM, Croft, KD, Woodman, RJ, Puddey, IB, Fuchs, D, Draijer, R, Lukoshkova, E, Head, GA. Black tea lowers the rate of blood pressure variation: a randomized controlled trial. *Am J Clin Nutr*. 2013. 97:943-50. doi:10.3945/ajcn.112.051375	Comparator; Outcome
180	Hoffman, CS, Mendola, P, Savitz, DA, Herring, AH, Loomis, D, Hartmann, KE, Singer, PC, Weinberg, HS, Olshan, AF. Drinking water disinfection by-product exposure and fetal growth. *Epidemiology*. 2008. 19:729-37. doi:10.1097/EDE.0b013e3181812bd4	Outcome; Population

	Citation	Rationale
181	Hohoff E, Perrar I, Jankovic N, Alexy U. Dairy intake and long-term body weight status in German children and adolescents: results from the DONALD study. *Eur J Nutr*. 2022;61(2):1087-1096. doi:10.1007/s00394-021-02715-9	Int/Exp: Not relevant
182	Hopenhayn, C, Ferreccio, C, Browning, SR, Huang, B, Peralta, C, Gibb, H, Hertz-Picciotto, I. Arsenic exposure from drinking water and birth weight. *Epidemiology*. 2003. 14:593-602. doi:10.1097/01.ede.0000072104.65240.69	Intervention/Exposure; Population
183	Hoppe, C, Udam, TR, Lauritzen, L, Mølgaard, C, Juul, A, Michaelsen, KF. Animal protein intake, serum insulin-like growth factor I, and growth in healthy 2.5-y-old Danish children. *Am J Clin Nutr*. 2004. 80:447-52. doi:10.1093/ajcn/80.2.447	Study design
184	Hrolfsdottir L, Halldorsson TI, Birgisdottir BE, Hreidarsdottir IT, Hardardottir H, Gunnarsdottir I. Development of a dietary screening questionnaire to predict excessive weight gain in pregnancy. *Matern Child Nutr*. 2019;15(1):e12639. doi:10.1111/mcn.12639	Intervention/Exposure
185	Hrolfsdottir L, Halldorsson TI, Birgisdottir BE, Hreidarsdottir IT, Hardardottir H, Gunnarsdottir I. Development of a dietary screening questionnaire to predict excessive weight gain in pregnancy. *Matern Child Nutr*. 2019;15(1):e12639. doi:10.1111/mcn.12639	Duplicate; Other
186	Hrolfsdottir, L, Rytter, D, Hammer Bech, B, Brink Henriksen, T, Danielsen, I, Steingrimsdottir, L, Olsen, SF, Halldorsson, TI. Maternal milk consumption, birth size and adult height of offspring: a prospective cohort study with 20 years of follow-up. *Eur J Clin Nutr*. 2013. 67:1036-41. doi:10.1038/ejcn.2013.151	Outcome
187	Hsia, DS, Zhang, DJ, Beyl, RS, Greenway, FL, Khoo, C. Effect of daily consumption of cranberry beverage on insulin sensitivity and modification of cardiovascular risk factors in adults with obesity: a pilot, randomised, placebo-controlled study. *Br J Nutr*. 2020. 124:577-585. doi:10.1017/s0007114520001336 .	Int/Exp: Not relevant; Comparator
188	Huang, L, Lerro, C, Yang, T, Li, J, Qiu, J, Qiu, W, He, X, Cui, H, Lv, L, Xu, R, Xu, X, Huang, H, Liu, Q, Zhang, Y. Maternal tea consumption and the risk of preterm delivery in urban China: a birth cohort study. *BMC Public Health*. 2016. 16:456. doi:10.1186/s12889-016-3100-3	Outcome
189	Huang, L, Lerro, C, Yang, T, Li, J, Qiu, J, Qiu, W, He, X, Cui, H, Lv, L, Xu, R, Xu, X, Huang, H, Liu, Q, Zhang, Y. Maternal tea consumption and the risk of preterm delivery in urban China: a birth cohort study. *BMC Public Health*. 2016. 16:456. doi:10.1186/s12889-016-3100-3	Outcome; Other; Captured in GWG/PPWL search
190	Huseinovic, E, Winkvist, A, Bertz, F, Brekke, HK. Changes in food choice during a successful weight loss trial in overweight and obese postpartum women. *Obesity (Silver Spring)*. 2014. 22:2517-23. doi:10.1002/oby.20895	Intervention/Exposure
191	Hwang, JY, Lee, H, Ko, A, Han, CJ, Chung, HW, Chang, N. Dietary changes in Vietnamese marriage immigrant women: The KoGES follow-up study. *Nutr Res Pract*. 2014. 8:319-26. doi:10.4162/nrp.2014.8.3.319	Outcome; Country
192	Hyson, D, Studebaker-Hallman, D, Davis, PA, Gershwin, ME. Apple juice consumption reduces plasma low-density lipoprotein oxidation in healthy men and women. *J Med Food*. 2000. 3:159-66. doi:10.1089/jmf.2000.3.159	Outcome
193	Igarashi M, Nogawa S, Hachiya T, et al. Association between Dietary Behaviors and BMI Stratified by Sex and the *ALDH2* rs671 Polymorphism in Japanese Adults. *Nutrients*. 2022;14(23):5116. Published 2022 Dec 1. doi:10.3390/nu14235116	Study design
194	Igarashi, Y, Obara, T, Ishikuro, M, Matsubara, H, Shigihara, M, Metoki, H, Kikuya, M, Sameshima, Y, Tachibana, H, Maeda-Yamamoto, M, Kuriyama, S. Randomized controlled trial of the effects of consumption of 'Yabukita' or 'Benifuuki' encapsulated tea-powder on low-density lipoprotein cholesterol level and body weight. Food Nutr Res. 2017. 61:1334484. doi:10.1080/16546628.2017.1334484	Intervention/exposure

	Citation	Rationale
195	Iszatt, N, Nieuwenhuijsen, MJ, Bennett, JE, Toledano, MB. Trihalomethanes in public drinking water and stillbirth and low birth weight rates: an intervention study. *Environ Int*. 2014. 73:434-9. doi:10.1016/j.envint.2014.08.006	Intervention/Exposure; Outcome; Population
196	Jardí, C, Aparicio, E, Bedmar, C, Aranda, N, Abajo, S, March, G, Basora, J, Arija, V, Study Group, TE. Food Consumption during Pregnancy and Post-Partum. ECLIPSES Study. *Nutrients*. 2019. 11(10):2447. doi:10.3390/nu11102447	Intervention/exposure; Outcome
197	Jarosz, M, Wierzejska, R, Siuba, M. Maternal caffeine intake and its effect on pregnancy outcomes. *Eur J Obstet Gynecol Reprod Biol*. 2012. 160:156-60. doi:10.1016/j.ejogrb.2011.11.021	Intervention/Exposure
198	Jasim, SK, Al-Momen, H, Alqurishi, AK. Effects of excessive tea consumption on pregnancy weight gain and neonatal birth weight. *Obstet Gynecol Sci*. 2021. 64:34-41. doi:10.5468/ogs.20157 .	Country
199	Jen, V, Erler, NS, Tielemans, MJ, Braun, KV, Jaddoe, VW, Franco, OH, Voortman, T. Mothers' intake of sugar-containing beverages during pregnancy and body composition of their children during childhood: the Generation R Study. *Am J Clin Nutr*. 2017. 105:834-841. doi:10.3945/ajcn.116.147934	Outcome; Population
200	Jing, W, Huang, Y, Liu, X, Luo, B, Yang, Y, Liao, S. The effect of a personalized intervention on weight gain and physical activity among pregnant women in China. *Int J Gynaecol Obstet*. 2015. 129:138-41. doi:10.1016/j.ijgo.2014.11.014	Intervention/Exposure
201	Johnson, SA, Navaei, N, Pourafshar, S, Jaime, SJ, Akhavan, NS, Alvarez-Alvarado, S, Proaño, GV, Litwin, NS, Clark, EA, Foley, EM, George, KS, Elam, ML, Payton, ME, Arjmandi, BH, Figueroa, A. Effects of Montmorency Tart Cherry Juice Consumption on Cardiometabolic Biomarkers in Adults with Metabolic Syndrome: A Randomized Controlled Pilot Trial. *Journal of Medicinal Food*. 2020. 23:1238-1247. doi:10.1089/jmf.2019.0240 .	Comparator
202	Jurgens, T, Whelan, AM. Can green tea preparations help with weight loss?. *Can Pharm J (Ott)*. 2014. 147:159-60. doi:10.1177/1715163514528668	Study design
203	Kalkwarf, HJ, Khoury, JC, Lanphear, BP. Milk intake during childhood and adolescence, adult bone density, and osteoporotic fractures in US women. *Am J Clin Nutr*. 2003. 77:257-65. doi:10.1093/ajcn/77.1.257	Study design; Outcome
204	Karandish, M, Sheikhi, L, Latifi, SM, Davoudi, I. Comparison of the effect of milk and pistachio snacks (pistacia vera) consumption on satiety status, body fat percent, and macronutrient intake in overweight or obese women: A randomized controlled trial. *Obesity Medicine*. 2021. 23:#pages#. doi:10.1016/j.obmed.2021.100338 .	Int/Exp: Not relevant; Comparator; EXCLUDE
205	Kaseb, F, Kimiagar, M, Ghafarpoor, M, Valaii, N. Effect of traditional food supplementation during pregnancy on maternal weight gain and birthweight. *Int J Vitam Nutr Res*. 2002. 72:389-93. doi:10.1024/0300-9831.72.6.389	Intervention/Exposure
206	Kay, MC, Wasser, H, Adair, LS, Thompson, AL, Siega-Riz, AM, Suchindran, CM, Bentley, ME. Consumption of key food groups during the postpartum period in low-income, non-Hispanic black mothers. *Appetite*. 2017. 117:161-167. doi:10.1016/j.appet.2017.06.023	Outcome
207	Killer, SC, Blannin, AK, Jeukendrup, AE. No evidence of dehydration with moderate daily coffee intake: a counterbalanced cross-over study in a free-living population. *PLoS One*. 2014. 9:e84154. doi:10.1371/journal.pone.0084154	Intervention/exposure
208	Kim, H, Kang, S, Jung, BM, Yi, H, Jung, JA, Chang, N. Breast milk fatty acid composition and fatty acid intake of lactating mothers in South Korea. *Br J Nutr*. 2017. 117:556-561. doi:10.1017/s0007114517000253	Intervention/Exposure; Outcome

	Citation	Rationale
209	Kishimoto, T, Churiki, M, Miyazato, T, Yamashiro, A, Nagasawa, Y, Shokita, H. Association between lifestyle and metabolic syndrome incidence of workers in northern Okinawa, Japan: A cohort study. *Prev Med Rep*. 2022;30:101995. doi:10.1016/j.pmedr.2022.101995	Int/Exp: Not relevant
210	Knüppel, A, Shipley, MJ, Llewellyn, CH, Brunner, EJ. Sugar intake from sweet food and beverages, common mental disorder and depression: prospective findings from the Whitehall II study. *Sci Rep*. 2017. 7:6287. doi:10.1038/s41598-017-05649-7	Intervention/exposure; Outcome
211	Konieczna, J, Morey, M, Abete, I, Bes-Rastrollo, M, Ruiz-Canela, M, Vioque, J, Gonzalez-Palacios, S, Daimiel, L, Salas-Salvadó, J, Fiol, M, Martín, V, Estruch, R, Vidal, J, Martínez-González, MA, Canudas, S, Jover, AJ, Fernández-Villa, T, Casas, R, Olbeyra, R, Buil-Cosiales, P, Babio, N, Schröder, H, Martínez, JA, Romaguera, D. Contribution of ultra-processed foods in visceral fat deposition and other adiposity indicators: Prospective analysis nested in the PREDIMED-Plus trial. *Clin Nutr*. 2021. 40:4290-4300. doi:10.1016/j.clnu.2021.01.019 .	Int/exp: Not included bev type
212	Konieczna, J, Morey, M, Abete, I, Bes-Rastrollo, M, Ruiz-Canela, M, Vioque, J, Gonzalez-Palacios, S, Daimiel, L, Salas-Salvadó, J, Fiol, M, Martín, V, Estruch, R, Vidal, J, Martínez-González, MA, Canudas, S, Jover, AJ, Fernández-Villa, T, Casas, R, Olbeyra, R, Buil-Cosiales, P, Babio, N, Schröder, H, Martínez, JA, Romaguera, D. Contribution of ultra-processed foods in visceral fat deposition and other adiposity indicators: Prospective analysis nested in the PREDIMED-Plus trial. *Clin Nutr*. 2021. 40:4290-4300. doi:10.1016/j.clnu.2021.01.019 .	Int/Exp: Not relevant
213	Kornatowski, BM, Comstock, SS. Dietary diversity is inversely correlated with pre-pregnancy body mass index among women in a Michigan pregnancy cohort. *PeerJ*. 2018. 6:e5526. doi:10.7717/peerj.5526	Outcome
214	Kruger, MC, Chan, YM, Lau, C, Lau, LT, Chin, YS, Kuhn-Sherlock, B, Schollum, LM, Todd, JM. Fortified Milk Supplementation Improves Vitamin D Status, Grip Strength, and Maintains Bone Density in Chinese Premenopausal Women Living in Malaysia. *BioResearch Open Access*. 2019. 8:16-24. doi:10.1089/biores.2018.0027 .	Comparator
215	Kujawska A, López Sánchez GF, Hoti F, Kujawski S, Zalewski P, Kędziora-Kornatowska K. Relationship of the Behavior of Older Participants with Body Composition Change: Results of the Second Wave of the Cognition of Older People, Education, Recreational Activities, Nutrition, Comorbidities, and Functional Capacity Studies (COPERNICUS). *Nutrients*. 2023;15(8):1834. Published 2023 Apr 11. doi:10.3390/nu15081834	Duplicate
216	Kukuljan, S, Nowson, CA, Sanders, KM, Nicholson, GC, Seibel, MJ, Salmon, J, Daly, RM. Independent and combined effects of calcium-vitamin D3 and exercise on bone structure and strength in older men: an 18-month factorial design randomized controlled trial. *J Clin Endocrinol Metab*. 2011. 96:955-63. doi:10.1210/jc.2010-2284	Outcome
217	La Foucade A, Laptiste C, Alcaraz A, et al. The health and economic burden associated with sugar-sweetened beverage consumption in Trinidad and Tobago. *Nutr Health*. Published online February 12, 2023. doi:10.1177/02601060231156117	Study design
218	Lana, A, Rodriguez-Artalejo, F, Lopez-Garcia, E. Dairy Consumption and Risk of Frailty in Older Adults: A Prospective Cohort Study. *J Am Geriatr Soc*. 2015. 63:1852-60. doi:10.1111/jgs.13626	Intervention/exposure
219	Lane, JA, Er, V, Avery, KNL, Horwood, J, Cantwell, M, Caro, GP, Crozier, A, Smith, GD, Donovan, JL, Down, L, Hamdy, FC, Gillatt, D, Holly, J, Macefield, R, Moody, H, Neal, DE, Walsh, E, Martin, RM, Metcalfe, C. ProDiet: A Phase II Randomized Placebo-controlled Trial of Green Tea Catechins and Lycopene in Men at Increased Risk of Prostate Cancer. *Cancer Prev Res (Phila)*. 2018. 11:687-696. doi:10.1158/1940-6207.Capr-18-0147	Intervention/exposure; Comparator

	Citation	Rationale
220	Larson, NI, Neumark-Sztainer, D, Harnack, L, Wall, M, Story, M, Eisenberg, ME. Calcium and dairy intake: Longitudinal trends during the transition to young adulthood and correlates of calcium intake. *J Nutr Educ Behav*. 2009. 41:254-60. doi:10.1016/j.jneb.2008.05.001	Outcome
221	Larsson, SC, Giovannucci, EL, Wolk, A. Sweetened Beverage Consumption and Risk of Biliary Tract and Gallbladder Cancer in a Prospective Study. *J Natl Cancer Inst*. 2016. 108:#pages#. doi:10.1093/jnci/djw125	Outcome
222	Law, YY, Chiu, HF, Lee, HH, Shen, YC, Venkatakrishnan, K, Wang, CK. Consumption of onion juice modulates oxidative stress and attenuates the risk of bone disorders in middle-aged and post-menopausal healthy subjects. *Food Funct.* 2016. 7:902-12. doi:10.1039/c5fo01251a	Intervention/exposure
223	LeCroy, MN, Truesdale, KP, Matheson, DM, Karp, SM, Moore, SM, Robinson, TN, Berge, JM, Nicastro, HL, Thomas, AJ. Snacking characteristics and patterns and their associations with diet quality and BMI in the Childhood Obesity Prevention and Treatment Research Consortium. *Public Health Nutr*. 2019. 22:3189-3199. doi:10.1017/s1368980019000958 .	Study design
224	Lee, I, Bang, KS, Moon, H, Kim, J. Risk Factors for Obesity Among Children Aged 24 to 80 months in Korea: A Decision Tree Analysis. *Journal of pediatric nursing*. 2019. 46:e15-e23. doi:10.1016/j.pedn.2019.02.004 .	Study design; Int/Exp: Not relevant
225	Lelong H, Blacher J, Baudry J, et al. Combination of Healthy Lifestyle Factors on the Risk of Hypertension in a Large Cohort of French Adults. *Nutrients*. 2019;11(7):1687. doi:10.3390/nu11071687	Intervention/exposure; Outcome
226	Lepsch, J, Vaz, JS, Moreira, JD, Pinto, TJ, Soares-Mota, M, Kac, G. Food frequency questionnaire as an indicator of the serum composition of essential n-3 and n-6 polyunsaturated fatty acids in early pregnancy, according to body mass index. *J Hum Nutr Diet*. 2015. 28:85-94. doi:10.1111/jhn.12225	Intervention/Exposure; Outcome
227	Leung, CW, Laraia, BA, Coleman-Phox, K, Bush, NR, Lin, J, Blackburn, EH, Adler, NE, Epel, ES. Sugary beverage and food consumption, and leukocyte telomere length maintenance in pregnant women. *Eur J Clin Nutr*. 2016. 70:1086-8. doi:10.1038/ejcn.2016.93	Outcome
228	Leung, SS, Chan, SM, Lui, S, Lee, WT, Davies, DP. Growth and nutrition of Hong Kong children aged 0-7 years. *J Paediatr Child Health*. 2000. 36:56-65. doi:10.1046/j.1440-1754.2000.00441.x	Intervention/exposure
229	Li, B, Pallan, M, Liu, WJ, Hemming, K, Frew, E, Lin, R, Liu, W, Martin, J, Zanganeh, M, Hurley, K, Cheng, KK, Adab, P. The CHIRPY DRAGON intervention in preventing obesity in Chinese primaryschool-aged children: A cluster-randomised controlled trial. *PLoS Medicine*. 2019. 16:#pages#. doi:10.1371/journal.pmed.1002971 .	Int/Exp: Not relevant
230	Li, JY, Ge, JR, Chen, J, Ye, YJ, Xie, LH, Li, L, Chai, H. Clinical study on the influence of tea drinking habits on bone mineral density and osteoporosis in postmenopausal women in Fuzhou city, China. *Progress in Nutrition*. 2021. 23:#pages#. doi:10.23751/pn.v23i1.9409 .	Study design
231	Li, YF, Hu, NS, Tian, XB, Li, L, Wang, SM, Xu, XB, Wang, N, Shi, CG, Zhu, JC, Sun, JS, Bao, JH, Lang, SH, Li, CJ, Fan, DG, Zhang, L, Zhang, B, Gao, Y, He, B, Wang, JD, Zhang, SC. Effect of daily milk supplementation on serum and umbilical cord blood folic acid concentrations in pregnant Han and Mongolian women and birth characteristics in China. Asia *Pac J Clin Nutr*. 2014. 23:567-74. doi:10.6133/apjcn.2014.23.4.18	Outcome; Population
232	Libuda, L, Alexy, U, Buyken, AE, Sichert-Hellert, W, Stehle, P, Kersting, M. Consumption of sugar-sweetened beverages and its association with nutrient intakes and diet quality in German children and adolescents. *Br J Nutr*. 2009. 101:1549-57. doi:10.1017/s0007114508094671	Outcome
233	Lignell, S, Winkvist, A, Bertz, F, Rasmussen, KM, Glynn, A, Aune, M, Brekke, HK. Environmental organic pollutants in human milk before and after weight loss. *Chemosphere*. 2016. 159:96-102. doi:10.1016/j.chemosphere.2016.05.077	Intervention/Exposure; Outcome

	Citation	Rationale
234	Lima, ACD, Cecatti, C, Fidélix, MP, Adorno, MAT, Sakamoto, IK, Cesar, TB, Sivieri, K. Effect of Daily Consumption of Orange Juice on the Levels of Blood Glucose, Lipids, and Gut Microbiota Metabolites: Controlled Clinical Trials. *Journal of Medicinal Food*. 2019. 22:202-210. doi:10.1089/jmf.2018.0080 .	Study design
235	Linderborg, KM, Kalpio, M, Makela, J, Niinikoski, H, Kallio, HP, Lagstrom, H. Tandem mass spectrometric analysis of human milk triacylglycerols from normal weight and overweight mothers on different diets. *Food Chem*. 2014. 146:583-90. doi:10.1016/j.foodchem.2013.09.092	Intervention/Exposure; Outcome
236	Liu, M, Chen, QT, Li, ZC, Zhang, J, Wang, PG, He, QQ. Association Between Diet Quality and Cardiometabolic Risk Factor Clustering Stratified by Socioeconomic Status Among Chinese Children. *J Acad Nutr Diet*. 2021. 121:1975-1983.e2. doi:10.1016/j.jand.2021.03.009 .	Int/Exp: Not relevant; Outcome
237	Liu, X, Wang, X, Tian, Y, Yang, Z, Lin, L, Lin, Q, Zhang, Z, Li, L. Reduced maternal calcium intake through nutrition and supplementation is associated with adverse conditions for both the women and their infants in a Chinese population. *Medicine (Baltimore).* 2017. 96:e6609. doi:10.1097/md.0000000000006609	Outcome; Country
238	Liu, X, Wang, X, Tian, Y, Yang, Z, Lin, L, Lin, Q, Zhang, Z, Li, L. Reduced maternal calcium intake through nutrition and supplementation is associated with adverse conditions for both the women and their infants in a Chinese population. *Medicine (Baltimore).* 2017. 96:e6609. doi:10.1097/md.0000000000006609	Comparator; Outcome
239	Liu, Z, Li, Q, Maddison, R, Ni Mhurchu, C, Jiang, Y, Wei, DM, Cheng, L, Cheng, Y, Wang, D, Wang, HJ. A School-Based Comprehensive Intervention for Childhood Obesity in China: A Cluster Randomized Controlled Trial. *Childhood obesity (Print).* 2019. 15:105-115. doi:10.1089/chi.2018.0251 .	Int/Exp: Not relevant
240	Lommi, S, Engberg, E, Tuorila, H, Kolho, KL, Viljakainen, H. Sex- and weight-specific changes in the frequency of sweet treat consumption during early adolescence: a longitudinal study. *Br J Nutr.* 2021. 126:1592-1600. doi:10.1017/s0007114521001112 .	Comparator; Outcome
241	Lovelady, CA, Stephenson, KG, Kuppler, KM, Williams, JP. The effects of dieting on food and nutrient intake of lactating women. *J Am Diet Assoc*. 2006. 106:908-12. doi:10.1016/j.jada.2006.03.007	Intervention/Exposure; Outcome
242	Lovelady, CA, Williams, JP, Garner, KE, Moreno, KL, Taylor, ML, Leklem, JE. Effect of energy restriction and exercise on vitamin B-6 status of women during lactation. *Med Sci Sports Exerc*. 2001. 33:512-8. doi:#electronic resource number#	Intervention/Exposure
243	Lovell, AL, Milne, T, Matsuyama, M, Hill, RJ, Davies, PSW, Grant, CC, Wall, CR. Protein Intake, IGF-1 Concentrations, and Growth in the Second Year of Life in Children Receiving Growing Up Milk - Lite (GUMLi) or Cow's Milk (CM) Intervention. *Front Nutr.* 2021. 8:666228. doi:10.3389/fnut.2021.666228 .	Population at Intervention/exposure
244	Lowndes, J, Sinnett, SS, Rippe, JM. No Effect of Added Sugar Consumed at Median American Intake Level on Glucose Tolerance or Insulin Resistance. *Nutrients*. 2015. 7:8830-45. doi:10.3390/nu7105430	Comparator
245	Lu, JH, He, JR, Shen, SY, Wei, XL, Chen, NN, Yuan, MY, Qiu, L, Li, WD, Chen, QZ, Hu, CY, Xia, HM, Bartington, S, Cheng, KK, Lam, KBH, Qiu, X. Does tea consumption during early pregnancy have an adverse effect on birth outcomes?. *Birth.* 2017. 44:281-289. doi:10.1111/birt.12285	Outcome
246	Ludvigsson, JF, Ludvigsson, J. Milk consumption during pregnancy and infant birthweight. *Acta Paediatr*. 2004. 93:1474-8. doi:10.1080/08035250410018319	Outcome; Population
247	Ludvigsson, JF, Ludvigsson, J. Milk consumption during pregnancy and infant birthweight. *Acta Paediatr.* 2004. 93:1474-8. doi:10.1080/08035250410018319	Outcome

	Citation	Rationale
248	Ludwig, DS. Artificially sweetened beverages: cause for concern. *Jama*. 2009. 302:2477-8. doi:10.1001/jama.2009.1822	Study design
249	Lundeen, E, Park, S, Baidal, JAW, Sharma, A, Blanck, HM. Prevalence of and Factors Associated with Sugar-sweetened Beverage Intake Among Women of Reproductive Age-12 States and District of Columbia, 2017 (P16-022-19). *Curr Dev Nutr*. 2019. 3:#pages#. doi:10.1093/cdn/nzz050.P16-022-19	Pub status
250	Luoto, R, Laitinen, K, Nermes, M, Isolauri, E. Impact of maternal probiotic-supplemented dietary counseling during pregnancy on colostrum adiponectin concentration: a prospective, randomized, placebo-controlled study. *Early Hum Dev.* 2012. 88:339-44. doi:10.1016/j.earlhumdev.2011.09.006	Intervention/Exposure
251	Lyu JL, Liu Z, Zhou S, Feng XX, Lin Y, Gao AY, Zhang F, Li L, Hebestreit A, Wang HJ. The Effect of a Multifaceted Intervention on Dietary Quality in Schoolchildren and the Mediating Effect of Dietary Quality between Intervention and Changes in Adiposity Indicators: A Cluster Randomized Controlled Trial. *Nutrients*. 2022;14(16):3272. doi:10.3390/nu14163272	Int/Exp: Not relevant
252	Mahdavi, R, Nikniaz, L, Arefhosseini, S. Energy, fluids intake and beverages consumption pattern among lactating women in Tabriz, Iran. *Pakistan Journal of Nutrition*. 2009. 8:69-73. doi:10.3923/pjn.2009.69.73	Outcome; Population
253	Maillot, M, Vieux, F, Rehm, CD, Rose, CM, Drewnowski, A. Consumption Patterns of Milk and 100% Juice in Relation to Diet Quality and Body Weight Among United States Children: Analyses of NHANES 2011-16 Data. *Front Nutr.* 2019. 6:117. doi:10.3389/fnut.2019.00117 .	Study design
254	Maitland, R, Patel, N, Barr, S, Sherry, C, Marriage, B, Seed, P, Garcia Fernandez, L, Lopez Pedrosa, JM, Murphy, H, Rueda, R, Poston, L. A Slow-Digesting, Low-Glycemic Load Nutritional Beverage Improves Glucose Tolerance in Obese Pregnant Women Without Gestational Diabetes. *Diabetes Technol Ther.* 2018. 20:672-680. doi:10.1089/dia.2018.0102	Intervention/Exposure; Outcome
255	Mallett, LJ, Premkumar, V, Brown, LJ, May, J, Rollo, ME, Schumacher, TL. Total water intake by kilogram of body weight: Analysis of the Australian 2011 to 2013 National Nutrition and Physical Activity Survey. *Nutr Diet.* 2021. 78:496-505. doi:10.1111/1747-0080.12697 .	Study design
256	Mangano, KM, Sahni, S, Kiel, DP, Tucker, KL, Dufour, AB, Hannan, MT. Dietary protein is associated with musculoskeletal health independently of dietary pattern: the Framingham Third Generation Study. *Am J Clin Nutr.* 2017. 105:714-722. doi:10.3945/ajcn.116.136762	Intervention/exposure; Outcome
257	Manios, Y, Lambrinou, CP, Mavrogianni, C, Cardon, G, Lindström, J, Iotova, V, Tankova, T, Rurik, I, Stappen, VV, Kivelä, J, Mateo-Gallego, R, Moreno, LA, Makrilakis, K, Androutsos, O. Lifestyle Changes Observed among Adults Participating in a Family- and Community-Based Intervention for Diabetes Prevention in Europe: The 1(st) Year Results of the Feel4Diabetes-Study. *Nutrients*. 2020. 12:#pages#. doi:10.3390/nu12071949 .	Int/Exp: Not relevant; Outcome
258	Mannion, CA, Gray-Donald, K, Johnson-Down, L, Koski, KG. Lactating women restricting milk are low on select nutrients. *J Am Coll Nutr.* 2007. 26:149-55. doi:10.1080/07315724.2007.10719596	Outcome
259	Mardones, F, Urrutia, MT, Villarroel, L, Rioseco, A, Castillo, O, Rozowski, J, Tapia, JL, Bastias, G, Bacallao, J, Rojas, I. Effects of a dairy product fortified with multiple micronutrients and omega-3 fatty acids on birth weight and gestation duration in pregnant Chilean women. *Public Health Nutr*. 2008. 11:30-40. doi:10.1017/s1368980007000110	Intervention/Exposure; Comparator
260	Marshall, TA, Curtis, AM, Cavanaugh, JE, Warren, JJ, Levy, SM. Child and Adolescent Sugar-Sweetened Beverage Intakes Are Longitudinally Associated with Higher Body Mass Index z Scores in a Birth Cohort Followed 17 Years. *Journal of the Academy of Nutrition and Dietetics.* 2019. 119:425-434. doi:10.1016/j.jand.2018.11.003 .	Duplicate

	Citation	Rationale
261	Martin, CL, Siega-Riz, AM, Sotres-Alvarez, D, Robinson, WR, Daniels, JL, Perrin, EM, Stuebe, AM. Maternal Dietary Patterns are Associated with Lower Levels of Cardiometabolic Markers during Pregnancy. *Paediatr Perinat Epidemiol.* 2016. 30:246-55. doi:10.1111/ppe.12279	Intervention/Exposure; Outcome
262	Martin, KR, Coles, KM. Consumption of 100% tart cherry juice reduces serum urate in overweight and obese adults. *Current Developments in Nutrition*. 2019. 3:#pages#. doi:10.1093/cdn/nzz011 .	Outcome
263	Martínez-López, S, Sarriá, B, Mateos, R, Bravo-Clemente, L. Moderate consumption of a soluble green/roasted coffee rich in caffeoylquinic acids reduces cardiovascular risk markers: results from a randomized, cross-over, controlled trial in healthy and hypercholesterolemic subjects. *Eur J Nutr*. 2019. 58:865-878. doi:10.1007/s00394-018-1726-x	Duplicate; Other; Included in 2020 DGs
264	Martini, D, Rosi, A, Tassotti, M, Antonini, M, Dall'Asta, M, Bresciani, L, Fantuzzi, F, Spigoni, V, Domínguez-Perles, R, Angelino, D, Ricci, C, Del Pozo-Luengo, S, Tornel, PL, Scazzina, F, Gil-Izquierdo, A, Dei Cas, A, Brighenti, F, Bonadonna, R, Del Rio, D, Mena, P. Effect of coffee and cocoa-based confectionery containing coffee on markers of cardiometabolic health: results from the pocket-4-life project. Eur J Nutr. 2021. 60:1453-1463. doi:10.1007/s00394-020-02347-5 .	Intervention/exposure
265	Martucci, M, Conte, M, Bucci, L, Giampieri, E, Fabbri, C, Palmas, MG, Izzi, M, Salvioli, S, Zambrini, AV, Orsi, C, Brigidi, P, Santoro, A, Capri, M, Monti, D, Franceschi, C. Twelve-week daily consumption of Ad Hoc fortified milk with ω-3, D, and group B vitamins has a positive impact on inflammaging parameters: A randomized cross-over trial. Nutrients. 2020. 12:1-19. doi:10.3390/nu12113580 .	Comparator; Outcome
266	Maskarinec, G, Jacobs, S, Shvetsov, Y, Boushey, CJ, Setiawan, VW, Kolonel, LN, Haiman, CA, Le Marchand, L. Intake of cocoa products and risk of type-2 diabetes: the multiethnic cohort. *Eur J Clin Nutr.* 2019. 73:671-678. doi:10.1038/s41430-018-0188-9	Intervention/exposure; Outcome
267	Matthews, J, Torres, SJ, Milte, CM, Hopkins, I, Kukuljan, S, Nowson, CA, Daly, RM. Effects of a multicomponent exercise program combined with calcium-vitamin D(3)-enriched milk on health-related quality of life and depressive symptoms in older men: secondary analysis of a randomized controlled trial. *Eur J Nutr.* 2020. 59:1081-1091. doi:10.1007/s00394-019-01969-8	Intervention/exposure
268	Matthews, J, Torres, SJ, Milte, CM, Hopkins, I, Kukuljan, S, Nowson, CA, Daly, RM. Effects of a multicomponent exercise program combined with calcium–vitamin D3-enriched milk on health-related quality of life and depressive symptoms in older men: secondary analysis of a randomized controlled trial. *European Journal of Nutrition*. 2020. 59:1081-1091. doi:10.1007/s00394-019-01969-8 .	Int/Exp: Not relevant
269	Mazurkiewicz, D, Bronkowska, M. Circulating Insulin and IGF-1 and Frequency of Food Consumption during Pregnancy as Predictors of Birth Weight and Length. *Nutrients*. 2021. 13:#pages#. doi:10.3390/nu13072344 .	Study design
270	McCormick, DP, Reyna, L, Reifsnider, E. Calories, Caffeine and the Onset of Obesity in Young Children. *Acad Pediatr*. 2020. 20:801-808. doi:10.1016/j.acap.2020.02.014 .	Int/Exp: Not relevant; Population at Intervention/exposure
271	McElfish, PearlA, Felix, HollyC, Bursac, Zoran, Rowland, Brett, Yeary, KarenHK, Long, ChristopherR, Selig, JamesP, Kaholokula, Joseph Keawe'aimoku, Riklon, Sheldon. A Cluster Randomized Controlled Trial Comparing Diabetes Prevention Program Interventions for Overweight/Obese Marshallese Adults. *Inquiry* (00469580). 2023. #volume#:1-14. doi:10.1177/00469580231152051 .	Int/Exp: Not relevant
272	McGovern, Caitriona, Rifas-Shiman, SherylL, Switkowski, KarenM, Woo Baidal, JenniferA, Lightdale, JeniferR, Hivert, Marie-France, Oken, Emily, Aris, IzzuddinM. Association of cow's milk intake in early childhood with adiposity and cardiometabolic risk in early adolescence. *American Journal of Clinical Nutrition*. 2022. 116:561-571. doi:10.1093/ajcn/nqac103 .	Duplicate

	Citation	Rationale
273	McGovern, Caitriona, Rifas-Shiman, SherylL, Switkowski, KarenM, Woo Baidal, JenniferA, Lightdale, JeniferR, Hivert, Marie-France, Oken, Emily, Aris, IzzuddinM. Association of cow's milk intake in early childhood with adiposity and cardiometabolic risk in early adolescence. *American Journal of Clinical Nutrition*. 2022. 116:561-571. doi:10.1093/ajcn/nqac103 .	Other; Duplicate
274	Meinila, J, Valkama, A, Koivusalo, SB, Stach-Lempinen, B, Rono, K, Lindstrom, J, Kautiainen, H, Eriksson, JG, Erkkola, M. Is improvement in the Healthy Food Intake Index (HFII) related to a lower risk for gestational diabetes?. *Br J Nutr.* 2017. 117:1103-1109. doi:10.1017/s0007114517001015	Outcome
275	Mela, DJ. Novel food technologies: enhancing appetite control in liquid meal replacers. *Obesity (Silver Spring)*. 2006. 14 Suppl 4:179s-181s. doi:10.1038/oby.2006.302	Study design; Intervention/exposure
276	Mikkelsen, TB, Osler, M, Orozova-Bekkevold, I, Knudsen, VK, Olsen, SF. Association between fruit and vegetable consumption and birth weight: a prospective study among 43,585 Danish women. *Scand J Public Health*. 2006. 34:616-22. doi:10.1080/14034940600717688	Intervention/Exposure; Outcome
277	Mirmiran, P, Moslehi, N, Hosseinpanah, F, Sarbazi, N, Azizi, F. Dietary determinants of unhealthy metabolic phenotype in normal weight and overweight/obese adults: results of a prospective study. *Int J Food Sci Nutr.* 2020. 71:891-901. doi:10.1080/09637486.2020.1746955 .	Outcome
278	Misra, A, Ray, S, Patrikar, S. A longitudinal study to determine association of various maternal factors with neonatal birth weight at a tertiary care hospital. *Med J Armed Forces India*. 2015. 71:270-3. doi:10.1016/j.mjafi.2015.03.001	Population; Country
279	Miyake, Y, Tanaka, K, Okubo, H, Sasaki, S, Arakawa, M. Maternal caffeine intake in pregnancy is inversely related to childhood peer problems in Japan: The Kyushu Okinawa Maternal and Child Health Study. *Nutr Neurosci*. 2018. #volume#:1-8. doi:10.1080/1028415x.2018.1450089	Intervention/Exposure; Outcome
280	Miyake, Y, Tanaka, K, Okubo, H, Sasaki, S, Arakawa, M. Maternal caffeine intake in pregnancy is inversely related to childhood peer problems in Japan: The Kyushu Okinawa Maternal and Child Health Study. *Nutr Neurosci*. 2019. 22:817-824. doi:10.1080/1028415x.2018.1450089	Intervention/exposure; Outcome; Population at Intervention/exposure
281	Miyake, Y, Tanaka, K, Okubo, H, Sasaki, S, Furukawa, S, Arakawa, M. Milk intake during pregnancy is inversely associated with the risk of postpartum depressive symptoms in Japan: the Kyushu Okinawa Maternal and Child Health Study. *Nutr Res*. 2016. 36:907-913. doi:10.1016/j.nutres.2016.06.001	Outcome
282	Modzelewska, D, Bellocco, R, Elfvin, A, Brantsaeter, AL, Meltzer, HM, Jacobsson, B, Sengpiel, V. Caffeine exposure during pregnancy, small for gestational age birth and neonatal outcome - results from the Norwegian Mother and Child Cohort Study. *BMC Pregnancy Childbirth*. 2019. 19:80. doi:10.1186/s12884-019-2215-9	Outcome
283	Montenegro-Bethancourt, G, Johner, SA, Remer, T. Contribution of fruit and vegetable intake to hydration status in schoolchildren. *Am J Clin Nutr*. 2013. 98:1103-12. doi:10.3945/ajcn.112.051490	Outcome
284	Moran Lev, H, Cohen, S, Lubetzky, R. Coffee and tea consumption in relation with weight control-a randomized clinical trial. *Journal of pediatric gastroenterology and nutrition*. 2022. 74:1120-1121. doi:10.1097/MPG.0000000000003446 .	Publication status
285	Moran, LJ, Sui, Z, Cramp, CS, Dodd, JM. A decrease in diet quality occurs during pregnancy in overweight and obese women which is maintained post-partum. *Int J Obes (Lond)*. 2013. 37:704-11. doi:10.1038/ijo.2012.129	Intervention/Exposure; Outcome

	Citation	Rationale
286	Moura de Araújo MF, Gueiros Gaspar MW, Saraiva Veras V, Freire de Freitas RWJ, de Paula MDL, Alves de Oliveira Serra MA, Garcia Lira Neto JC, Coelho Damasceno MM, Bandeira Moreira AV, Derenji de Mello V. Consumption of caffeinated and decaffeinated coffee enriched with cocoa and fructo-oligosaccharides among non-diabetic persons: Double blind randomized clinical trial. *J Food Biochem*. 2022;46(5):e14081. doi:10.1111/jfbc.14081.	Int/Exp: Not relevant
287	Moura de Araujo, MF, Gueiros Gaspar, MW, Saraiva Veras, V, Freire de Freitas, RWJ, de Paula, MDL, Alves de Oliveira Serra, MA, Garcia Lira Neto, JC, Coelho Damasceno, MM, Bandeira Moreira, AV, Derenji de Mello, V. Consumption of caffeinated and decaffeinated coffee enriched with cocoa and fructo-oligosaccharides among non-diabetic persons: double blind randomized clinical trial. *Journal of food biochemistry*. 2022. #volume#:e14081-. doi:10.1111/jfbc.14081 .	Duplicate; Other;
288	Moura de Araujo, MF, Gueiros Gaspar, MW, Saraiva Veras, V, Freire de Freitas, RWJ, de Paula, MDL, Alves de Oliveira Serra, MA, Garcia Lira Neto, JC, Coelho Damasceno, MM, Bandeira Moreira, AV, Derenji de Mello, V. Consumption of caffeinated and decaffeinated coffee enriched with cocoa and fructo-oligosaccharides among non-diabetic persons: double blind randomized clinical trial. *Journal of food biochemistry*. 2022. #volume#:e14081-. doi:10.1111/jfbc.14081 .	Other; Duplicate
289	Mparmpakas, D, Goumenou, A, Zachariades, E, Pados, G, Gidron, Y, Karteris, E. Immune system function, stress, exercise and nutrition profile can affect pregnancy outcome: Lessons from a Mediterranean cohort. *Exp Ther Med.* 2013. 5:411-418. doi:10.3892/etm.2012.849	Outcome
290	Mrdjenovic, G, Levitsky, DA. Nutritional and energetic consequences of sweetened drink consumption in 6- to 13-year-old children. *J Pediatr*. 2003. 142:604-10. doi:10.1067/mpd.2003.200	Duplicate; Other; Included in 2020 DGs
291	Mukhopadhyay, A, Dwarkanath, P, Bhanji, S, Devi, S, Thomas, A, Kurpad, AV, Thomas, T. Maternal intake of milk and milk proteins is positively associated with birth weight: A prospective observational cohort study. *Clin Nutr ESPEN.* 2018. 25:103-109. doi:10.1016/j.clnesp.2018.03.125	Outcome; Country
292	Murrin, CM, Heinen, MM, Kelleher, CC. Are Dietary Patterns of Mothers during Pregnancy Related to Children's Weight Status? Evidence from the Lifeways Cross- Generational Cohort Study. *AIMS Public Health*. 2015. 2:274-296. doi:10.3934/publichealth.2015.3.274	Population
293	Nagata, C, Takatsuka, N, Shimizu, H, Hayashi, H, Akamatsu, T, Murase, K. Effect of soymilk consumption on serum estrogen and androgen concentrations in Japanese men. *Cancer Epidemiol Biomarkers Prev*. 2001. 10:179-84. doi:#electronic resource number#	Outcome; Other; no between group statistical comparison for weight
294	Najar Sedgh Doust, F, Sharifan, P, Razmi, M, Sadat ekhteraei Toussi, M, Taghizadeh, N, Yaghooti-Khorasani, M, Mohammadi Bajgiran, M, Ghazizadeh, H, Darroudi, S, Esmaily, H, Akbari, N, Rastegar Moghadam, N, Khedmatgozar, H, Ferns, G, Assaran darban, R, Ghayour-Mobarhan, M. Effects of vitamin D3-fortified low-fat yogurt and milk on serum cytokine levels and anti hsp-27 antibody titer in adults with abdominal obesity: A randomized clinical trial. *Obesity Medicine*. 2022. 30:#pages#. doi:#electronic resource number# .	Int/Exp: Not relevant; Comparator
295	Nakagi, Y, Ito, T, Hirooka, K, Sugioka, Y, Endo, H, Saijo, Y, Imai, H, Takeda, H, Kayama, F, Sasaki, S, Yoshida, T. Association between lifestyle habits and bone mineral density in Japanese juveniles. *Environ Health Prev Med*. 2010. 15:222-8. doi:10.1007/s12199-009-0131-8	Intervention/exposure; Outcome
296	Ochiai, R, Chikama, A, Kataoka, K, Tokimitsu, I, Maekawa, Y, Ohishi, M, Rakugi, H, Mikami, H. Effects of hydroxyhydroquinone-reduced coffee on vasoreactivity and blood pressure. *Hypertens Res.* 2009. 32:969-74. doi:10.1038/hr.2009.132	Intervention/exposure
297	O'Connor, LM, Lentjes, MA, Luben, RN, Khaw, KT, Wareham, NJ, Forouhi, NG. Dietary dairy product intake and incident type 2 diabetes: a prospective study using dietary data from a 7-day food diary. *Diabetologia*. 2014. 57:909-17. doi:10.1007/s00125-014-3176-1	Outcome

	Citation	Rationale
298	O'Connor, S, Julien, P, Weisnagel, SJ, Gagnon, C, Rudkowska, I. Impact of a High Intake of Dairy Product on Insulin Sensitivity in Hyperinsulinemic Adults: A Crossover Randomized Controlled Trial. *Curr Dev Nutr*. 2019. 3:nzz083. doi:10.1093/cdn/nzz083 .	Int/Exp: Not relevant
299	Oken, E, Ning, Y, Rifas-Shiman, SL, Rich-Edwards, JW, Olsen, SF, Gillman, MW. Diet during pregnancy and risk of preeclampsia or gestational hypertension. *Ann Epidemiol*. 2007. 17:663-8. doi:10.1016/j.annepidem.2007.03.003	Outcome
300	Okop, KJ, Lambert, EV, Alaba, O, Levitt, NS, Luke, A, Dugas, L, Rvh, D, Kroff, J, Micklesfield, LK, Kolbe-Alexander, TL, Warren, S, Dugmore, H, Bobrow, K, Odunitan-Wayas, FA, Puoane, T. Sugar-sweetened beverage intake and relative weight gain among South African adults living in resource-poor communities: longitudinal data from the STOP-SA study. *International Journal of Obesity*. 2019. 43:603-614. doi:10.1038/s41366-018-0216-9 .	Country
301	Okubo, H, Miyake, Y, Sasaki, S, Tanaka, K, Murakami, K, Hirota, Y, Kanzaki, H, Kitada, M, Horikoshi, Y, Ishiko, O, Nakai, Y, Nishio, J, Yamamasu, S, Yasuda, J, Kawai, S, Yanagihara, K, Wakuda, K, Kawashima, T, Narimoto, K, Iwasa, Y, Orino, K, Tsunetoh, I, Yoshida, J, Iito, J, Kaneko, T, Kamiya, T, Kuribayashi, H, Taniguchi, T, Takemura, H, Morimoto, Y, Matsunaga, I, Oda, H, Ohya, Y. Maternal dietary patterns in pregnancy and fetal growth in Japan: the Osaka Maternal and Child Health Study. *Br J Nutr*. 2012. 107:1526-33. doi:10.1017/s0007114511004636	Outcome; Population
302	Okubo, H, Miyake, Y, Tanaka, K, Sasaki, S, Hirota, Y. Maternal total caffeine intake, mainly from Japanese and Chinese tea, during pregnancy was associated with risk of preterm birth: the Osaka Maternal and Child Health Study. *Nutr Res*. 2015. 35:309-16. doi:10.1016/j.nutres.2015.02.009	Outcome; Population
303	Olmedo-Requena, R, Amezcua-Prieto, C, Luna-Del-Castillo Jde, D, Lewis-Mikhael, AM, Mozas-Moreno, J, Bueno-Cavanillas, A, Jimenez-Moleon, JJ. Association Between Low Dairy Intake During Pregnancy and Risk of Small-for-Gestational-Age Infants. *Matern Child Health J*. 2016. 20:1296-304. doi:10.1007/s10995-016-1931-2	Outcome; Population
304	Olsen, SF, Halldorsson, TI, Willett, WC, Knudsen, VK, Gillman, MW, Mikkelsen, TB, Olsen, J. Milk consumption during pregnancy is associated with increased infant size at birth: prospective cohort study. *Am J Clin Nutr*. 2007. 86:1104-10. doi:10.1093/ajcn/86.4.1104	Intervention/Exposure
305	Otsuka R, Zhang S, Tange C, et al. Association of Dietary Intake with the Transitions of Frailty among JapaneseCommunity-Dwelling Older Adults. *J Frailty Aging*. 2022;11(1):26-32. doi:10.14283/jfa.2021.42	Outcome
306	Ottestad, I, Løvstad, AT, Gjevestad, GO, Hamarsland, H, Šaltytė Benth, J, Andersen, LF, Bye, A, Biong, AS, Retterstøl, K, Iversen, PO, Raastad, T, Ulven, SM, Holven, KB. Intake of a Protein-Enriched Milk and Effects on Muscle Mass and Strength. A 12-Week Randomized Placebo Controlled Trial among Community-Dwelling Older Adults. *J Nutr Health Aging*. 2017. 21:1160-1169. doi:10.1007/s12603-016-0856-1	Comparator
307	Palmer, MS, Logan, HM, Spriet, LL. On-ice sweat rate, voluntary fluid intake, and sodium balance during practice in male junior ice hockey players drinking water or a carbohydrate-electrolyte solution. *Appl Physiol Nutr Metab*. 2010. 35:328-35. doi:10.1139/h10-027	Intervention/exposure
308	Papadopoulou, E, Botton, J, Brantsæter, AL, Haugen, M, Alexander, J, Meltzer, HM, Bacelis, J, Elfvin, A, Jacobsson, B, Sengpiel, V. Maternal caffeine intake during pregnancy and childhood growth and overweight: Results from a large Norwegian prospective observational cohort study. *BMJ Open*. 2018. 8:#pages#. doi:10.1136/bmjopen-2017-018895	Intervention/Exposure; Population
309	Papageorgiou AL, Efthymiou V, Giannouli A, Xekouki P, Kranioti CC, Chrousos GP. Comparison of Hospital Consultation and Summer Camp Lifestyle Intervention Programs for Sustained Body Weight Loss in Overweight/Obese Greek Children. *Children (Basel)*. 2022;9(1):86. Published 2022 Jan 8. doi:10.3390/children9010086.	Int/Exp: Not relevant

	Citation	Rationale
310	Papageorgiou, AnnaL, Efthymiou, Vasiliki, Giannouli, Aikaterini, Xekouki, Paraskevi, Kranioti, ChristinaC, Chrousos, GeorgeP. Comparison of Hospital Consultation and Summer Camp Lifestyle Intervention Programs for Sustained Body Weight Loss in Overweight/Obese Greek Children. *Children*. 2022. 9:86-86. doi:10.3390/children9010086 .	Int/Exp: Not relevant
311	Parazzini, F, Chiaffarino, F, Chatenoud, L, Tozzi, L, Cipriani, S, Chiantera, V, Fedele, L. Maternal coffee drinking in pregnancy and risk of small for gestational age birth. *Eur J Clin Nutr.* 2005. 59:299-301. doi:10.1038/sj.ejcn.1602052	Outcome
312	Parvez, S, Gerona, RR, Proctor, C, Friesen, M, Ashby, JL, Reiter, JL, Lui, Z, Winchester, PD. Glyphosate exposure in pregnancy and shortened gestational length: A prospective Indiana birth cohort study. *Environmental Health: A Global Access Science Source*. 2018. 17:#pages#. doi:10.1186/s12940-018-0367-0	Intervention/Exposure
313	Patelarou, E, Kargaki, S, Stephanou, EG, Nieuwenhuijsen, M, Sourtzi, P, Gracia, E, Chatzi, L, Koutis, A, Kogevinas, M. Exposure to brominated trihalomethanes in drinking water and reproductive outcomes. *Occup Environ Med.* 2011. 68:438-45. doi:10.1136/oem.2010.056150	Outcome; Population
314	Peacock, A, Hutchinson, D, Wilson, J, McCormack, C, Bruno, R, Olsson, CA, Allsop, S, Elliott, E, Burns, L, Mattick, RP. Adherence to the Caffeine Intake Guideline during Pregnancy and Birth Outcomes: A Prospective Cohort Study. *Nutrients*. 2018. 10:#pages#. doi:10.3390/nu10030319	Outcome
315	Pereira, MA, Parker, ED, Folsom, AR. Coffee consumption and risk of type 2 diabetes mellitus: an 11-year prospective study of 28 812 postmenopausal women. *Arch Intern Med.* 2006. 166:1311-6. doi:10.1001/archinte.166.12.1311	Outcome
316	Pereira, S, Katzmarzyk, PT, Hedeker, D, Maia, J. Change and Stability in Sibling Resemblance in Obesity Markers: The Portuguese Sibling Study on Growth, Fitness, Lifestyle, and Health. *J Obes.* 2019. 2019:2432131. doi:10.1155/2019/2432131 .	Int/Exp: Not relevant
317	Perez-Ferre, N, Fernandez, D, Torrejon, MJ, Del Prado, N, Runkle, I, Rubio, MA, Montanez, C, Bordiu, E, Calle-Pascual, A. Effect of lifestyle on the risk of gestational diabetes and obstetric outcomes in immigrant Hispanic women living in Spain. *J Diabetes*. 2012. 4:432-8. doi:10.1111/j.1753-0407.2012.00221.x	Intervention/Exposure
318	Perng, W, Tang, L, Song, PXK, Goran, M, Tellez Rojo, MM, Cantoral, A, Peterson, KE. Urate and Nonanoate Mark the Relationship between Sugar-Sweetened Beverage Intake and Blood Pressure in Adolescent Girls: A Metabolomics Analysis in the ELEMENT Cohort. *Metabolites*. 2019. 9:#pages#. doi:10.3390/metabo9050100	Study design
319	Petherick, ES, Goran, MI, Wright, J. Relationship between artificially sweetened and sugar-sweetened cola beverage consumption during pregnancy and preterm delivery in a multi-ethnic cohort: Analysis of the Born in Bradford cohort study. *European Journal of Clinical Nutrition*. 2014. 68:404-407. doi:10.1038/ejcn.2013.267	Outcome
320	Petrova, D, Bernabeu Litrán, MA, García-Mármol, E, Rodríguez-Rodríguez, M, Cueto-Martín, B, López-Huertas, E, Catena, A, Fonollá, J. Effects of fortified milk on cognitive abilities in school-aged children: results from a randomized-controlled trial. *Eur J Nutr.* 2019. 58:1863-1872. doi:10.1007/s00394-018-1734-x .	Comparator
321	Petrova, D, Bernabeu Litrán, MA, García-Mármol, E, Rodríguez-Rodríguez, M, Cueto-Martín, B, López-Huertas, E, Catena, A, Fonollá, J. Effects of fortified milk on cognitive abilities in school-aged children: results from a randomized-controlled trial. *Eur J Nutr.* 2019. 58:1863-1872. doi:10.1007/s00394-018-1734-x	Intervention/exposure; Comparator
322	Phelan, S, Abrams, B, Wing, RR. Prenatal Intervention with Partial Meal Replacement Improves Micronutrient Intake of Pregnant Women with Obesity. *Nutrients*. 2019. 11:#pages#. doi:10.3390/nu11051071	Intervention/Exposure

	Citation	Rationale
323	Phelan, S, Hagobian, TA, Ventura, A, Brannen, A, Erickson-Hatley, K, Schaffner, A, Munoz-Christian, K, Mercado, A, Tate, DF. 'Ripple' effect on infant zBMI trajectory of an internet-based weight loss program for low-income postpartum women. *Pediatr Obes.* 2019. 14:#pages#. doi:10.1111/ijpo.12456	Outcome
324	Phelan, S, Hart, C, Phipps, M, Abrams, B, Schaffner, A, Adams, A, Wing, R. Maternal behaviors during pregnancy impact offspring obesity risk. *Exp Diabetes Res.* 2011. 2011:985139. doi:10.1155/2011/985139	Outcome; Population
325	Phelan, S, Wing, RR, Brannen, A, McHugh, A, Hagobian, T, Schaffner, A, Jelalian, E, Hart, CN, Scholl, TO, Munoz-Christian, K, etal, . Does Partial Meal Replacement During Pregnancy Reduce 12-Month Postpartum Weight Retention?. *Obesity (silver spring, md.).* 2018. (no pagination):#pages#. doi:10.1002/oby.22361	Intervention/Exposure
326	Phelan, S, Wing, RR, Brannen, A, McHugh, A, Hagobian, T, Schaffner, A, Jelalian, E, Hart, CN, Scholl, TO, Munoz-Christian, K, Yin, E, Phipps, MG, Keadle, S, Abrams, B. Does Partial Meal Replacement During Pregnancy Reduce 12-Month Postpartum Weight Retention?. *Obesity (Silver Spring).* 2019. 27:226-236. doi:10.1002/oby.22361	Intervention/Exposure
327	Phelan, S, Wing, RR, Brannen, A, McHugh, A, Hagobian, TA, Schaffner, A, Jelalian, E, Hart, CN, Scholl, TO, Munoz-Christian, K, Yin, E, Phipps, MG, Keadle, S, Abrams, B. Randomized controlled clinical trial of behavioral lifestyle intervention with partial meal replacement to reduce excessive gestational weight gain. *Am J Clin Nutr*. 2018. 107:183-194. doi:10.1093/ajcn/nqx043	Intervention/Exposure
328	Pinto, TJ, Farias, DR, Rebelo, F, Lepsch, J, Vaz, JS, Moreira, JD, Cunha, GM, Kac, G. Lower inter-partum interval and unhealthy life-style factors are inversely associated with n-3 essential fatty acids changes during pregnancy: a prospective cohort with Brazilian women. *PLoS One.* 2015. 10:e0121151. doi:10.1371/journal.pone.0121151	Intervention/Exposure; Outcome
329	Pollak, KI, Alexander, SC, Bennett, G, Lyna, P, Coffman, CJ, Bilheimer, A, Farrell, D, Bodner, ME, Swamy, GK, Ostbye, T. Weight-related SMS texts promoting appropriate pregnancy weight gain: a pilot study. *Patient Educ Couns*. 2014. 97:256-60. doi:10.1016/j.pec.2014.07.030	Intervention/Exposure
330	Ponzo, V, Goitre, I, Fadda, M, Gambino, R, De Francesco, A, Soldati, L, Gentile, L, Magistroni, P, Cassader, M, Bo, S. Dietary flavonoid intake and cardiovascular risk: a population-based cohort study. *J Transl Med*. 2015. 13:218. doi:10.1186/s12967-015-0573-2	Intervention/exposure
331	Psaltopoulou, T, Naska, A, Orfanos, P, Trichopoulos, D, Mountokalakis, T, Trichopoulou, A. Olive oil, the Mediterranean diet, and arterial blood pressure: the Greek European Prospective Investigation into Cancer and Nutrition (EPIC) study. *Am J Clin Nutr*. 2004. 80:1012-8. doi:10.1093/ajcn/80.4.1012	Intervention/exposure; Outcome
332	Puma, JE, Thompson, D, Baer, K, Haemer, MA, Gilbert, K, Hambidge, M, Krebs, NF. Enhancing Periconceptional Health by Targeting Postpartum Mothers at Rural WIC Clinics. *Health Promot Pract.* 2018. 19:390-399. doi:10.1177/1524839917699553	Intervention/Exposure
333	Purdue-Smithe, AC, Manson, JE, Hankinson, SE, Bertone-Johnson, ER. A prospective study of caffeine and coffee intake and premenstrual syndrome. *Am J Clin Nutr*. 2016. 104:499-507. doi:10.3945/ajcn.115.127027	Outcome
334	Radesky, JS, Oken, E, Rifas-Shiman, SL, Kleinman, KP, Rich-Edwards, JW, Gillman, MW. Diet during early pregnancy and development of gestational diabetes. *Paediatr Perinat Epidemiol*. 2008. 22:47-59. doi:10.1111/j.1365-3016.2007.00899.x	Outcome
335	Radulescu, A, Killian, M, Kang, Q, Yuan, Q, Softic, S. Dietary Counseling Aimed at Reducing Sugar Intake Yields the Greatest Improvement in Management of Weight and Metabolic Dysfunction in Children with Obesity. *Nutrients*. 2022. 14:#pages#. doi:#electronic resource number# .	Int/Exp: Not relevant

	Citation	Rationale
336	Rafey, MF, Murphy, CF, Abdalgwad, R, Kilkelly, K, Griffin, H, Beatty, N, O'Shea, PM, Collins, C, McGrath, R, Hynes, M, Davenport, C, O'Donnell, M, Finucane, FM. Effects of a Milk-Based Meal Replacement Program on Weight and Metabolic Characteristics in Adults with Severe Obesity. *Diabetes Metab Syndr Obes*. 2020. 13:197-205. doi:10.2147/dmso.S226327 .	Study design; Int/exp: Not included bev type; Health Status
337	Rafey, MF, Murphy, CF, Abdalgwad, R, Kilkelly, K, Griffin, H, Beatty, N, O'Shea, PM, Collins, C, McGrath, R, Hynes, M, Davenport, C, O'Donnell, M, Finucane, FM. Effects of a Milk-Based Meal Replacement Program on Weight and Metabolic Characteristics in Adults with Severe Obesity. *Diabetes Metab Syndr Obes*. 2020. 13:197-205. doi:10.2147/dmso.S226327 .	Int/Exp: Not relevant
338	Rahmani, S, Medise, BE, Sjarif, DR. Association between growing-up milk consumption and overweight and obesity in children aged 2-3 years. Journal of Pediatric *Gastroenterology & Nutrition*. 2022. 74:1128-1128. doi:10.1097/MPG.0000000000003446 .	Study design; Country
339	Rampersaud, GC. 100 % Fruit juice: perspectives amid the sugar debate. *Public Health Nutr*. 2016. 19:906-13. doi:10.1017/s1368980015001135	Study design
340	Ravn-Haren, G, Dragsted, LO, Buch-Andersen, T, Jensen, EN, Jensen, RI, Németh-Balogh, M, Paulovicsová, B, Bergström, A, Wilcks, A, Licht, TR, Markowski, J, Bügel, S. Intake of whole apples or clear apple juice has contrasting effects on plasma lipids in healthy volunteers. *Eur J Nutr*. 2013. 52:1875-89. doi:10.1007/s00394-012-0489-z	Outcome; Other; No statistical test on outcomes of interest
341	Rebholz, CM, Reynolds, K, Wofford, MR, Chen, J, Kelly, TN, Mei, H, Whelton, PK, He, J. Effect of soybean protein on novel cardiovascular disease risk factors: a randomized controlled trial. *Eur J Clin Nutr*. 2013. 67:58-63. doi:10.1038/ejcn.2012.186	Intervention/exposure; Outcome
342	Reyes-Garcia, R, Garcia-Martin, A, Palacios, S, Salas, N, Mendoza, N, Quesada-Charneco, M, Fonolla, J, Lara-Villoslada, F, Muñoz-Torres, M. Factors Predicting the Response to a Vitamin D-Fortified Milk in Healthy Postmenopausal Women. *Nutrients*. 2019. 11:#pages#. doi:10.3390/nu11112641 .	Int/Exp: Not relevant
343	Richter, CK, Skulas-Ray, AC, Gaugler, TL, Meily, S, Petersen, KS, Kris-Etherton, PM. Effects of Cranberry Juice Supplementation on Cardiovascular Disease Risk Factors in Adults with Elevated Blood Pressure: A Randomized Controlled Trial. *Nutrients*. 2021. 13:#pages#. doi:10.3390/nu13082618 .	Outcome
344	Rondanelli M, Gasparri C, Perna S, Petrangolini G, Allegrini P, Fazia T, Bernardinelli L, Cavioni A, Mansueto F, Oberto L, Patelli Z, Tartara A, Riva A. A 60-Day Green Tea Extract Supplementation Counteracts the Dysfunction of Adipose Tissue in Overweight Post-Menopausal and Class I Obese Women. *Nutrients*. 2022;14(24):5209. Published 2022 Dec 7. doi:10.3390/nu14245209.	Int/Exp: Not relevant
345	Rosal, MC, Lemon, SC, Borg, A, Lopez-Cepero, A, Sreedhara, M, Silfee, V, Pbert, L, Kane, K, Li, W. The Healthy Kids & Families study: Outcomes of a 24-month childhood obesity prevention intervention. *Preventive Medicine Reports*. 2023. 31:#pages#. doi:#electronic resource number# .	Int/Exp: Not relevant
346	Ruiz-Gracia, T, Duran, A, Fuentes, M, Rubio, MA, Runkle, I, Carrera, EF, Torrejon, MJ, Bordiu, E, Valle, LD, Garcia de la Torre, N, Bedia, AR, Montanez, C, Familiar, C, Calle-Pascual, AL. Lifestyle patterns in early pregnancy linked to gestational diabetes mellitus diagnoses when using IADPSG criteria. The St Carlos gestational study. *Clin Nutr*. 2016. 35:699-705. doi:10.1016/j.clnu.2015.04.017	Outcome
347	Salmenhaara, M, Uusitalo, L, Uusitalo, U, Kronberg-Kippila, C, Sinkko, H, Ahonen, S, Veijola, R, Knip, M, Kaila, M, Virtanen, SM. Diet and weight gain characteristics of pregnant women with gestational diabetes. *Eur J Clin Nutr*. 2010. 64:1433-40. doi:10.1038/ejcn.2010.167	Intervention/Exposure; Outcome
348	Savikin, K, Menković, N, Zdunić, G, Pljevljakušić, D, Spasić, S, Kardum, N, Konić-Ristić, A. Dietary supplementation with polyphenol-rich chokeberry juice improves skin morphology in cellulite. *J Med Food*. 2014. 17:582-7. doi:10.1089/jmf.2013.0102	Study design

	Citation	Rationale
349	Schliep, KC, Schisterman, EF, Mumford, SL, Pollack, AZ, Zhang, C, Ye, A, Stanford, JB, Hammoud, AO, Porucznik, CA, Wactawski-Wende, J. Caffeinated beverage intake and reproductive hormones among premenopausal women in the BioCycle Study. *Am J Clin Nutr*. 2012. 95:488-97. doi:10.3945/ajcn.111.021287	Outcome
350	Schulz, M, Nöthlings, U, Hoffmann, K, Bergmann, MM, Boeing, H. Identification of a food pattern characterized by high-fiber and low-fat food choices associated with low prospective weight change in the EPIC-Potsdam cohort. *J Nutr*. 2005. 135:1183-9. doi:10.1093/jn/135.5.1183	Intervention/exposure
351	Scranton, R, Sesso, HD, Stampfer, MJ, Levenson, JW, Buring, JE, Gaziano, JM. Predictors of 14-year changes in the total cholesterol to high-density lipoprotein cholesterol ratio in men. *Am Heart J.* 2004. 147:1033-8. doi:10.1016/j.ahj.2003.11.018	Intervention/exposure; Outcome
352	Seki, T, Takeuchi, M, Kawakami, K. Eating and drinking habits and its association with obesity in Japanese healthy adults: retrospective longitudinal big data analysis using a health check-up database. *Br J Nutr*. 2021. 126:1585-1591. doi:10.1017/s0007114521000179 .	Int/Exp: Not relevant
353	Selmin, Kose, Yildirim, Gulay. The Effect of a Nutrition Education Program on Nutrition Behavior and Body Mass Index of Secondaruy School Students. *International Journal of Caring Sciences*. 2020. 13:573-582. doi:#electronic resource number# .	Int/Exp: Not relevant
354	Sen, A, Papadimitriou, N, Lagiou, P, Perez-Cornago, A, Travis, RC, Key, TJ, Murphy, N, Gunter, M, Freisling, H, Tzoulaki, I, Muller, DC, Cross, AJ, Lopez, DS, Bergmann, M, Boeing, H, Bamia, C, Kotanidou, A, Karakatsani, A, Tjønneland, A, Kyrø, C, Outzen, M, Redondo, ML, Cayssials, V, Chirlaque, MD, Barricarte, A, Sánchez, MJ, Larrañaga, N, Tumino, R, Grioni, S, Palli, D, Caini, S, Sacerdote, C, Bueno-de-Mesquita, B, Kühn, T, Kaaks, R, Nilsson, LM, Landberg, R, Wallström, P, Drake, I, Bech, BH, Overvad, K, Aune, D, Khaw, KT, Riboli, E, Trichopoulos, D, Trichopoulou, A, Tsilidis, KK. Coffee and tea consumption and risk of prostate cancer in the European Prospective Investigation into Cancer and Nutrition. *Int J Cancer*. 2019. 144:240-250. doi:10.1002/ijc.31634	Outcome
355	Sengpiel, V, Elind, E, Bacelis, J, Nilsson, S, Grove, J, Myhre, R, Haugen, M, Meltzer, HM, Alexander, J, Jacobsson, B, Brantsaeter, AL. Maternal caffeine intake during pregnancy is associated with birth weight but not with gestational length: results from a large prospective observational cohort study. *BMC Med*. 2013. 11:42. doi:10.1186/1741-7015-11-42	Population
356	Sengpiel, V, Elind, E, Bacelis, J, Nilsson, S, Grove, J, Myhre, R, Haugen, M, Meltzer, HM, Alexander, J, Jacobsson, B, Brantsaeter, AL. Maternal caffeine intake during pregnancy is associated with birth weight but not with gestational length: results from a large prospective observational cohort study. *BMC Med.* 2013. 11:42. doi:10.1186/1741-7015-11-42	Outcome
357	Shang, X, Li, Y, Xu, H, Zhang, Q, Liu, A, Du, S, Guo, H, Ma, G. Leading dietary determinants identified using machine learning techniques and a healthy diet score for changes in cardiometabolic risk factors in children: a longitudinal analysis. *Nutr J*. 2020. 19:105. doi:10.1186/s12937-020-00611-2 .	Int/Exp: Not relevant; Outcome
358	Sharifan P, Rashidmayvan M, Khorasanchi Z, Darroudi S, Heidari A, Hoseinpoor F, Vatanparast H, Safarian M, Eslami S, Afshari A, Asadi Z, Ghazizadeh H, Bagherniya M, Khedmatgozar H, Ferns G, Rezaie M, Mobarhan MG. Efficacy of low-fat milk and yogurt fortified with vitamin D(3) on systemic inflammation in adults with abdominal obesity. *J Health Popul Nutr*. 2022;41(1):8. Published 2022 Mar 2. doi:10.1186/s41043-022-00283-0.	Comparator; Outcome
359	Sharifan P, Rashidmayvan M, Khorasanchi Z, et al. Efficacy of low-fat milk and yogurt fortified with vitamin D_3 on systemic inflammation in adults with abdominal obesity. *J Health Popul Nutr*. 2022;41(1):8. Published 2022 Mar 2. doi:10.1186/s41043-022-00283-0	Outcome; Other; Duplicate
360	Sharifan P, Ziaee A, Darroudi S, et al. Effect of low-fat dairy products fortified with 1500IU nano encapsulated vitamin D(3) on cardiometabolic indicators in adults with abdominal obesity: a total blinded randomized controlled trial. *Curr Med Res Opin*. 2021. 37:579-588. doi:10.1080/03007995.2021.1874324 .	Comparator

	Citation	Rationale
361	Sheng, X, Tong, M, Zhao, D, Leung, TF, Zhang, F, Hays, NP, Ge, J, Ho, WM, Northington, R, Terry, DL, Yao, M. Randomized controlled trial to compare growth parameters and nutrient adequacy in children with picky eating behaviors who received nutritional counseling with or without an oral nutritional supplement. *Nutr Metab Insights*. 2014. 7:85-94. doi:10.4137/nmi.S15097	Intervention/exposure
362	Shi, L, Shu, XO, Li, H, Cai, H, Liu, Q, Zheng, W, Xiang, YB, Villegas, R. Physical activity, smoking, and alcohol consumption in association with incidence of type 2 diabetes among middle-aged and elderly Chinese men. *PLoS One*. 2013. 8:e77919. doi:10.1371/journal.pone.0077919	Intervention/exposure; Outcome; Country
363	Shi, Z, Yuan, B, Hu, G, Dai, Y, Zuo, H, Holmboe-Ottesen, G. Dietary pattern and weight change in a 5-year follow-up among Chinese adults: results from the Jiangsu Nutrition Study. *Br J Nutr*. 2011. 105:1047-54. doi:10.1017/s0007114510004630	Intervention/exposure; Country
364	Shikany, JM, Safford, MM, Newby, PK, Durant, RW, Brown, TM, Judd, SE. Southern Dietary Pattern is Associated With Hazard of Acute Coronary Heart Disease in the Reasons for Geographic and Racial Differences in Stroke (REGARDS) Study. *Circulation*. 2015. 132:804-14. doi:10.1161/circulationaha.114.014421	Intervention/exposure; Outcome
365	Shin, D, Lee, KW, Song, WO. Dietary Patterns during Pregnancy Are Associated with Risk of Gestational Diabetes Mellitus. *Nutrients*. 2015. 7:9369-82. doi:10.3390/nu7115472	Study design; Outcome
366	Sichert-Hellert, W, Kersting, M, Manz, F. Fifteen year trends in water intake in German children and adolescents: results of the DONALD Study. Dortmund Nutritional and Anthropometric Longitudinally Designed Study. *Acta Paediatr*. 2001. 90:732-7.	Outcome
367	Sichert-Hellert, W, Kersting, M. Significance of fortified beverages in the long-term diet of German children and adolescents: 15-year results of the DONALD Study. *Int J Vitam Nutr Res.* 2001. 71:356-63. doi:10.1024/0300-9831.71.6.356	Outcome
368	Simão, TN, Lozovoy, MA, Simão, AN, Oliveira, SR, Venturini, D, Morimoto, HK, Miglioranza, LH, Dichi, I. Reduced-energy cranberry juice increases folic acid and adiponectin and reduces homocysteine and oxidative stress in patients with the metabolic syndrome. *Br J Nutr*. 2013. 110:1885-94. doi:10.1017/s0007114513001207	Duplicate; Other; Included in 2020 DGs
369	Skeie, G, Sandvær, V, Grimnes, G. Intake of Sugar-Sweetened Beverages in Adolescents from Troms, Norway-The Tromsø Study: Fit Futures. *Nutrients*. 2019. 11:#pages#. doi:10.3390/nu11020211	Study design; Outcome
370	Skreden, M, Bere, E, Sagedal, LR, Vistad, I, Overby, NC. Changes in fruit and vegetable consumption habits from pre-pregnancy to early pregnancy among Norwegian women. *BMC Pregnancy Childbirt*h. 2017. 17:107. doi:10.1186/s12884-017-1291-y	Intervention/Exposure; Outcome
371	Skreden, M, Hillesund, ER, Wills, AK, Brantsaeter, AL, Bere, E, Overby, NC. Adherence to the New Nordic Diet during pregnancy and subsequent maternal weight development: a study conducted in the Norwegian Mother and Child Cohort Study (MoBa). *Br J Nutr*. 2018. 119:1286-1294. doi:10.1017/s0007114518000776	Intervention/Exposure
372	Slurink IA, Chen L, Magliano DJ, Kupper N, Smeets T, Soedamah-Muthu SS. Dairy product consumption and incident prediabetes in the Australian Diabetes, Obesity and Lifestyle Study with 12 years follow up. *J Nutr*. 2023;153(6):1742-1752. doi:10.1016/j.tjnut.2023.03.032.	Outcome
373	Smith, RB, Edwards, SC, Best, N, Wright, J, Nieuwenhuijsen, MJ, Toledano, MB. Birth Weight, Ethnicity, and Exposure to Trihalomethanes and Haloacetic Acids in Drinking Water during Pregnancy in the Born in Bradford Cohort. *Environ Health Perspect*. 2016. 124:681-9. doi:10.1289/ehp.1409480	Outcome
374	Soczynska, I, Dai, D, O'Connor, DL, Birken, CS, Maguire, JL. Age of cow milk introduction and growth among 3-5-year-old children. *Public Health Nutr*. 2021. 24:5436-5442. doi:10.1017/s1368980020001925 .	Int/Exp: Not relevant; Population at Intervention/exposure

	Citation	Rationale
375	Soga, S, Ota, N, Shimotoyodome, A. Reduction in hydroxyhydroquinone from coffee increases postprandial fat utilization in healthy humans: a randomized double-blind, cross-over trial. *Biosci Biotechnol Biochem*. 2017. 81:1433-1435. doi:10.1080/09168451.2017.1301802	Intervention/exposure
376	Spindola Garcez, L, de Sousa Paz Lima, G, de Azevedo Paiva, A, Maria Rebelo Sampaio da Paz, S, Lazaro Gomes, EI, Nunes, VS, Cotta de Faria, E, de Barros-Mazon, S. Serum Retinol Levels in Pregnant Adolescents and Their Relationship with Habitual Food Intake, Infection and Obstetric, Nutritional and Socioeconomic Variables. *Nutrients*. 2016. 8:#pages#. doi:10.3390/nu8110669	Intervention/Exposure; Outcome
377	Stamler, J, Liu, K, Ruth, KJ, Pryer, J, Greenland, P. Eight-year blood pressure change in middle-aged men: relationship to multiple nutrients. *Hypertension*. 2002. 39:1000-6. doi:10.1161/01.hyp.0000016178.80811.d9	Intervention/exposure; Outcome
378	Stern, D, Mazariegos, M, Ortiz-Panozo, E, Campos, H, Malik, VS, Lajous, M, López-Ridaura, R. Sugar-Sweetened Soda Consumption Increases Diabetes Risk Among Mexican *Women. J Nutr*. 2019. 149:795-803. doi:10.1093/jn/nxy298	Outcome
379	Storck Lindholm, E, Strandvik, B, Altman, D, Moller, A, Palme Kilander, C. Different fatty acid pattern in breast milk of obese compared to normal-weight mothers. *Prostaglandins Leukot Essent Fatty Acids*. 2013. 88:211-7. doi:10.1016/j.plefa.2012.11.007	Intervention/Exposure; Outcome
380	Sugita, M, Kapoor, MP, Nishimura, A, Okubo, T. Influence of green tea catechins on oxidative stress metabolites at rest and during exercise in healthy humans. *Nutrition*. 2016. 32:321-31. doi:10.1016/j.nut.2015.09.005	Intervention/exposure
381	Suliga, E, Adamczyk-Gruszka, OK. Health behaviours of pregnant women and gestational weight gains -A pilot study. Medical Studies/Studia Medyczne. 2015. 31:161-167. doi:10.5114/ms.2015.54753	Study design
382	Sylvetsky, AC, Figueroa, J, Rother, KI, Goran, MI, Welsh, JA. Trends in Low-Calorie Sweetener Consumption Among Pregnant Women in the United States. Curr Dev Nutr. 2019. 3:nzz004. doi:10.1093/cdn/nzz004	Outcome
383	Szypowska A, Regulska-Ilow B, Zatońska K, Szuba A. Comparison of Intake of Food Groups Based on Dietary Inflammatory Index (DII) and Cardiovascular Risk Factors in the Middle-Age Population of Lower Silesia: Results of the PURE Poland Study. *Antioxidants (Basel)*. 2023;12(2):285. doi:10.3390/antiox12020285.	Study design; Int/Exp: Not relevant
384	Takagi, T, Hayashi, R, Nakai, Y, Okada, S, Miyashita, R, Yamada, M, Mihara, Y, Mizushima, K, Morita, M, Uchiyama, K, Naito, Y, Itoh, Y. Dietary Intake of Carotenoid-Rich Vegetables Reduces Visceral Adiposity in Obese Japanese men-A Randomized, Double-Blind Trial. *Nutrients.* 2020. 12(8):2342. doi:10.3390/nu12082342 .	Int/Exp: Not relevant
385	Tatullo M, Marrelli B, Benincasa C, Aiello E, Amantea M, Gentile S, Leonardi N, Balestrieri ML, Campanile G. Potential impact of functional biomolecules-enriched foods on human health: A randomized controlled clinical trial. *Int J Med Sci*. 2022;19(3):563-571. Published 2022 Mar 6. doi:10.7150/ijms.70435 .	Int/Exp: Not relevant
386	Tebbani, F, Oulamara, H, Agli, A. Food diversity and nutrient intake during pregnancy in relation to maternal weight gain. Nutrition Clinique et Metabolisme. 2021. 35:93-99. doi:10.1016/j.nupar.2020.09.001 .	Int/Exp: Not relevant
387	Tee, LP, Brandreth, RA, Sauven, N, Clarke, L, Frampton, I. Successful outcomes in childrens specialist weight management: Impact assessment of a novel early years weight management programme. *J Hum Nutr Diet*. 2021. 34:819-826. doi:10.1111/jhn.12872 .	Int/Exp: Not relevant; Comparator
388	Teixeira, JA, Castro, TG, Grant, CC, Wall, CR, Castro, Alds, Francisco, RPV, Vieira, SE, Saldiva, Srdm, Marchioni, DM. Dietary patterns are influenced by socio-demographic conditions of women in childbearing age: a cohort study of pregnant women. *BMC Public Health*. 2018. 18:301. doi:10.1186/s12889-018-5184-4	Outcome

	Citation	Rationale
389	Ten Haaf DSM, Eijsvogels TMH, Bongers CCWG, et al. Protein supplementation improves lean body mass in physically active older adults: a randomized placebo-controlled trial. *J Cachexia Sarcopenia Muscle*. 2019;10(2):298-310. doi:10.1002/jcsm.12394	Int/Exp: Not relevant
390	Teo, CH, Chin, YS, Lim, PY, Masrom, SAH, Shariff, ZM. Impacts of a School-Based Intervention That Incorporates Nutrition Education and a Supportive Healthy School Canteen Environment among Primary School Children in Malaysia. *Nutrients*. 2021. 13:(5):1712. doi:10.3390/nu13051712 .	Int/Exp: Not relevant
391	Theriault, S, Giguere, Y, Masse, J, Girouard, J, Forest, JC. Early prediction of gestational diabetes: a practical model combining clinical and biochemical markers. *Clin Chem Lab Med*. 2016. 54:509-18. doi:10.1515/cclm-2015-0537	Outcome
392	Tholstrup, T, Høy, CE, Andersen, LN, Christensen, RD, Sandström, B. Does fat in milk, butter and cheese affect blood lipids and cholesterol differently?. *J Am Coll Nutr*. 2004. 23:169-76. doi:10.1080/07315724.2004.10719358	EXCLUDE
393	Tollånes, MC, Strandberg-Larsen, K, Eichelberger, KY, Moster, D, Lie, RT, Brantsæter, AL, Meltzer, HM, Stoltenberg, C, Wilcox, AJ. Intake of Caffeinated Soft Drinks before and during Pregnancy, but Not Total Caffeine Intake, Is Associated with Increased Cerebral Palsy Risk in the Norwegian Mother and Child Cohort Study. *J Nutr*. 2016. 146:1701-6. doi:10.3945/jn.116.232272	Outcome
394	Tonstad, S, Smerud, K, Høie, L. A comparison of the effects of 2 doses of soy protein or casein on serum lipids, serum lipoproteins, and plasma total homocysteine in hypercholesterolemic subjects. *Am J Clin Nutr*. 2002. 76:78-84. doi:10.1093/ajcn/76.1.78	Intervention/exposure
395	Torjusen, H, Brantsaeter, AL, Haugen, M, Alexander, J, Bakketeig, LS, Lieblein, G, Stigum, H, Naes, T, Swartz, J, Holmboe-Ottesen, G, Roos, G, Meltzer, HM. Reduced risk of pre-eclampsia with organic vegetable consumption: results from the prospective Norwegian Mother and Child Cohort Study. *BMJ Open*. 2014. 4:e006143. doi:10.1136/bmjopen-2014-006143	Intervention/Exposure; Outcome
396	Torjusen, H, Brantsæter, AL, Haugen, M, Alexander, J, Bakketeig, LS, Lieblein, G, Stigum, H, Næs, T, Swartz, J, Holmboe-Ottesen, G, Roos, G, Meltzer, HM. Reduced risk of pre-eclampsia with organic vegetable consumption: results from the prospective Norwegian Mother and Child Cohort Study. *BMJ Open*. 2014. 4:e006143. doi:10.1136/bmjopen-2014-006143	Intervention/exposure; Outcome
397	Torres-Collado, L, Garcia-de-la-Hera, M, Navarrete-Muñoz, EM, Notario-Barandiaran, L, Gonzalez-Palacios, S, Zurriaga, O, Melchor, I, Vioque, J. Coffee consumption and mortality from all causes of death, cardiovascular disease and cancer in an elderly Spanish population. *Eur J Nutr*. 2019. 58:2439-2448. doi:10.1007/s00394-018-1796-9	Outcome
398	Tovar, A, Guthrie, LB, Platek, D, Stuebe, A, Herring, SJ, Oken, E. Modifiable predictors associated with having a gestational weight gain goal. *Matern Child Health J*. 2011. 15:1119-26. doi:10.1007/s10995-010-0659-7	Study design; Outcome
399	Toxqui, L, Pérez-Granados, AM, Blanco-Rojo, R, Wright, I, de la Piedra, C, Vaquero, MP. Low iron status as a factor of increased bone resorption and effects of an iron and vitamin D-fortified skimmed milk on bone remodelling in young Spanish women. *Eur J Nutr*. 2014. 53:441-8. doi:10.1007/s00394-013-0544-4	Intervention/exposure; Outcome
400	Toxqui, L, Vaquero, MP. An Intervention with Mineral Water Decreases Cardiometabolic Risk Biomarkers. A Crossover, Randomised, Controlled Trial with Two Mineral Waters in Moderately Hypercholesterolaemic Adults. *Nutrients*. 2016. 8(7):400. doi:10.3390/nu8070400	Intervention/exposure; Outcome
401	Tryggvadottir, EA, Medek, H, Birgisdottir, BE, Geirsson, RT, Gunnarsdottir, I. Association between healthy maternal dietary pattern and risk for gestational diabetes mellitus. *Eur J Clin Nutr*. 2016. 70:237-42. doi:10.1038/ejcn.2015.145	Outcome

	Citation	Rationale
402	Tugault-Lafleur CN, De-Jongh González O, Macdonald J, Bradbury J, Warshawski T, Ball GDC, Morrison K, Ho J, Hamilton J, Buchholz A, Mâsse L. Efficacy of the Aim2Be Intervention in Changing Lifestyle Behaviors Among Adolescents With Overweight and Obesity: Randomized Controlled Trial. *J Med Internet Res*. 2023;25:e38545. doi:10.2196/38545.	Int/Exp: Not relevant
403	Twisk, JW, Kemper, HC, Van Mechelen, W, Post, GB. Clustering of risk factors for coronary heart disease. the longitudinal relationship with lifestyle. *Ann Epidemiol*. 2001. 11:157-65. doi:10.1016/s1047-2797(00)00202-7	Intervention/exposure
404	Uerlich, MF, Baker, SR, Day, PF, Brown, L, Vettore, MV. Common Determinants of Dental Caries and Obesity in Children: A Multi-Ethnic Nested Birth Cohort Study in the United Kingdom. *Int J Environ Res Public Health*. 2021. 18:#pages#. doi:10.3390/ijerph182312561 .	Study design
405	Van Der Hoeven, T, Browne, JL, Uiterwaal, CSPM, Van Der Ent, CK, Grobbee, DE, Dalmeijer, GW. Antenatal coffee and tea consumption and the effect on birth outcome and hypertensive pregnancy disorders. *PLoS ONE*. 2017. 12(5):e0177619. doi:10.1371/journal.pone.0177619	Outcome
406	Van Hulst, A, Ybarra, M, Mathieu, ME, Benedetti, A, Paradis, G, Henderson, M. Determinants of new onset cardiometabolic risk among normal weight children. *Int J Obes (Lond)*. 2020. 44:781-789. doi:10.1038/s41366-019-0483-0 .	Outcome
407	Vandyousefi, S, Whaley, S, Asigbee, F, Landry, M, Ghaddar, R, Davis, J. Association of Breastfeeding and Sugar-Sweetened Beverage Consumption with Obesity Prevalence in Offspring Born to Mothers with and Without Gestational Diabetes Mellitus (P11-098-19). *Curr Dev Nutr*. 2019. 3:#pages#. doi:10.1093/cdn/nzz048.P11-098-19	Pub status
408	Viana Dias JP, Pimenta AM, de Souza Costa Sobrinho P, Miranda Hermsdorff HH, Bressan J, Nobre LN. Consumption of sweetened beverages is associated with the incidence of type 2 diabetes in Brazilian adults (CUME project). *Nutr Metab Cardiovasc Dis*. 2023;33(4):789-796. doi:10.1016/j.numecd.2023.01.022	Outcome
409	Vilela, AA, Pinto Tde, J, Rebelo, F, Benaim, C, Lepsch, J, Dias-Silva, CH, Castro, MB, Kac, G. Association of Prepregnancy Dietary Patterns and Anxiety Symptoms from Midpregnancy to Early Postpartum in a Prospective Cohort of Brazilian Women. *J Acad Nutr Diet*. 2015. 115:1626-35. doi:10.1016/j.jand.2015.01.007	Intervention/Exposure; Outcome
410	Villegas, R, Gao, YT, Dai, Q, Yang, G, Cai, H, Li, H, Zheng, W, Shu, XO. Dietary calcium and magnesium intakes and the risk of type 2 diabetes: the Shanghai Women's Health Study. *Am J Clin Nutr*. 2009. 89:1059-67. doi:10.3945/ajcn.2008.27182	Outcome; Country
411	Villegas, R, Gao, YT, Yang, G, Li, HL, Elasy, TA, Zheng, W, Shu, XO. Legume and soy food intake and the incidence of type 2 diabetes in the Shanghai Women's Health Study. *Am J Clin Nutr*. 2008. 87:162-7. doi:10.1093/ajcn/87.1.162	Outcome; Country
412	Vitti, FP, Grandi, C, Cavalli, RC, Simoes, VMF, Batista, RFL, Cardoso, VC. Association between Caffeine Consumption in Pregnancy and Low Birth Weight and Preterm Birth in the birth Cohort of Ribeirao Preto. *Rev Bras Ginecol Obstet*. 2018. 40:749-756. doi:10.1055/s-0038-1675806	Intervention/Exposure; Outcome
413	Vitti, FP, Grandi, C, Cavalli, RC, Simões, VMF, Batista, RFL, Cardoso, VC. Association between Caffeine Consumption in Pregnancy and Low Birth Weight and Preterm Birth in the birth Cohort of Ribeirão Preto. *Rev Bras Ginecol Obstet*. 2018. 40:749-756. doi:10.1055/s-0038-1675806	Study design; Outcome
414	Voerman, E, Jaddoe, VW, Gishti, O, Hofman, A, Franco, OH, Gaillard, R. Maternal caffeine intake during pregnancy, early growth, and body fat distribution at school age. *Obesity (Silver Spring)*. 2016. 24:1170-7. doi:10.1002/oby.21466	Outcome; Population

	Citation	Rationale
415	Voidazan, S, Tarcea, M, Abram, Z, Georgescu, M, Marginean, C, Grama, O, Buicu, F, Ruţa, F. Associations between lifestyle factors and smoking status during pregnancy in a group of Romanian women. *Birth Defects Research*. 2018. 110:519-526. doi:10.1002/bdr2.1190	Outcome
416	Wall, CR, Hill, RJ, Lovell, AL, Matsuyama, M, Milne, T, Grant, CC, Jiang, Y, Chen, RX, Wouldes, TA, Davies, PSW. A multicenter, double-blind, randomized, placebo-controlled trial to evaluate the effect of consuming Growing Up Milk "lite" on body composition in children aged 12-23 mo. *American Journal of Clinical Nutrition*. 2019. 109:526-534. doi:10.1093/ajcn/nqy302 .	Population at Intervention/exposure
417	Wang C, Sun J, Hui Z, et al. Consumption frequencies of beverages and the hypertension risk in adults: a cohort study in China. *BMJ Open*. 2023;13(4):e072474. doi:10.1136/bmjopen-2023-072474	Outcome
418	Wang, ML, Otis, M, Rosal, MC, Griecci, CF, Lemon, SC. Reducing sugary drink intake through youth empowerment: results from a pilot-site randomized study. *Int J Behav Nutr Phys Act*. 2019. 16:58. doi:10.1186/s12966-019-0819-0 .	Int/Exp: Not relevant; Outcome;
419	Wang, XY, Liu, FC, Yang, XL, Li, JX, Cao, J, Lu, XF, Huang, JF, Li, Y, Chen, JC, Zhao, LC, Shen, C, Hu, DS, Zhao, YX, Yu, L, Liu, XQ, Wu, XP, Gu, DF. Association of cardiovascular diseases with milk intake among general Chinese adults. *Chin Med J (Engl)*. 2020. 133:1144-1154. doi:10.1097/cm9.0000000000000786 .	Outcome
420	Watanabe, T, Kobayashi, S, Yamaguchi, T, Hibi, M, Fukuhara, I, Osaki, N. Coffee Abundant in Chlorogenic Acids Reduces Abdominal Fat in Overweight Adults: A Randomized, Double-Blind, Controlled Trial. *Nutrients*. 2019. 11(7):1617. doi:10.3390/nu11071617 .	Int/Exp: Not relevant
421	Watson, PE, McDonald, BW. Water and nutrient intake in pregnant New Zealand women: association with wheeze in their infants at 18 months. *Asia Pac J Clin Nutr*. 2014. 23:660-70. doi:10.6133/apjcn.2014.23.4.13	Outcome; Population
422	Watson, PE, McDonald, BW. Water and nutrient intake in pregnant New Zealand women: association with wheeze in their infants at 18 months. *Asia Pac J Clin Nutr*. 2014. 23:660-70. doi:10.6133/apjcn.2014.23.4.13	Outcome
423	Wei, X, He, JR, Lin, Y, Lu, M, Zhou, Q, Li, S, Lu, J, Yuan, M, Chen, N, Zhang, L, Qiu, L, Mai, W, Pan, Y, Yin, C, Hu, C, Xia, H, Qiu, X. The influence of maternal dietary patterns on gestational weight gain: A large prospective cohort study in China. *Nutrition*. 2019. 59:90-95. doi:10.1016/j.nut.2018.07.113	Intervention/Exposure; Comparator
424	Wen, LM, Flood, VM, Simpson, JM, Rissel, C, Baur, LA. Dietary behaviours during pregnancy: findings from first-time mothers in southwest Sydney, Australia. *International Journal of Behavioral Nutrition & Physical Activity*. 2010. 7:7p-7p. doi:10.1186/1479-5868-7-13	Study design; Outcome
425	Wen, LM, Simpson, JM, Rissel, C, Baur, LA. Maternal "junk food" diet during pregnancy as a predictor of high birthweight: findings from the healthy beginnings trial. *Birth*. 2013. 40:46-51. doi:10.1111/birt.12028	Outcome; Population
426	Wheaton N, Millar L, Allender S, Nichols M. The stability of weight status through the early to middle childhood years in Australia: a longitudinal study. *BMJ Open*. 2015;5(4):e006963. Published 2015 Apr 28. doi:10.1136/bmjopen-2014-006963	Duplicate
427	Whitaker, KM, Marino, RC, Haapala, JL, Foster, L, Smith, KD, Teague, AM, Jacobs, DR, Fontaine, PL, McGovern, PM, Schoenfuss, TC, Harnack, L, Fields, DA, Demerath, EW. Associations of Maternal Weight Status Before, During, and After Pregnancy with Inflammatory Markers in Breast Milk. *Obesity (Silver Spring)*. 2018. 26:1659-1660. doi:10.1002/oby.22278	Intervention/Exposure; Outcome
428	Wierzejska, R, Jarosz, M, Wojda, B. Caffeine Intake During Pregnancy and Neonatal Anthropometric Parameters. *Nutrients*. 2019. 11(4):806. doi:10.3390/nu11040806	Outcome

	Citation	Rationale
429	Wild, CEK, Wynter, LE, Triggs, CM, Derraik, JGB, Hofman, PL, Anderson, YC. Five-year follow-up of a family-based multidisciplinary program for children with obesity. *Obesity (Silver Spring)*. 2021. 29:1458-1468. doi:10.1002/oby.23225 .	Int/Exp: Not relevant
430	Wilunda, C, Sawada, N, Goto, A, Yamaji, T, Takachi, R, Ishihara, J, Mori, N, Kotemori, A, Iwasaki, M, Tsugane, S. Associations between changes in fruit and vegetable consumption and weight change in Japanese adults. *European Journal of Nutrition*. 2021. 60:217-227. doi:10.1007/s00394-020-02236-x .	Int/Exp: Not relevant
431	Wojcicki, JM, Lustig, RH, Jacobs, LM, Mason, AE, Hartman, A, Leung, C, Stanhope, K, Lin, J, Schmidt, LA, Epel, ES. Longer Leukocyte Telomere Length Predicts Stronger Response to a Workplace Sugar-Sweetened Beverage Sales Ban: An Exploratory Study. *Curr Dev Nutr*. 2021. 5:nzab084. doi:10.1093/cdn/nzab084 .	Int/Exp: Not relevant; Outcome
432	Wojcicki, JM, Tsuchiya, KJ, Murakami, K, Ishikuro, M, Obara, T, Morisaki, N. Limited consumption of 100% fruit juices and sugar sweetened beverages in Japanese toddler and preschool children. *Prev Med Rep*. 2021. 23:101409. doi:10.1016/j.pmedr.2021.101409 .	Outcome
433	Wong, EY, James, AP, Lee, AH, Jancey, J. Effectiveness of a Singaporean Community-Based Physical Activity and Nutrition Intervention: A Cluster Randomized Controlled Trial. *Asia Pac J Public Health*. 2021. 33:196-204. doi:10.1177/1010539520977311 .	Int/Exp: Not relevant
434	Wong, VCH, Maguire, JL, Omand, JA, Dai, DWH, Lebovic, G, Parkin, PC, O'Connor, DL, Birken, CS. A Positive Association Between Dietary Intake of Higher Cow's Milk-Fat Percentage and Non-High-Density Lipoprotein Cholesterol in Young Children. *J Pediatr*. 2019. 211:105-111.e2. doi:10.1016/j.jpeds.2019.03.047 .	Outcome
435	Wright, JM, Hoffman, CS, Savitz, DA. The relationship between water intake and foetal growth and preterm delivery in a prospective cohort study. *BMC Pregnancy Childbirth*. 2010. 10:48. doi:10.1186/1471-2393-10-48	Outcome; Population
436	Wright, LS, Rifas-Shiman, SL, Oken, E, Litonjua, AA, Gold, DR. Prenatal and Early Life Fructose, Fructose-Containing Beverages, and Midchildhood Asthma. *Ann Am Thorac Soc*. 2018. 15:217-224. doi:10.1513/AnnalsATS.201707-530OC	Outcome
437	Wrottesley, SV, Stacey, N, Mukoma, G, Hofman, KJ, Norris, SA. Assessing sugar-sweetened beverage intakes, added sugar intakes and BMI before and after the implementation of a sugar-sweetened beverage tax in South Africa. *Public Health Nutr*. 2021. 24:2900-2910. doi:10.1017/s1368980020005078 .	Country
438	Wu, AJ, Aris, IM, Rifas-Shiman, SL, Oken, E, Taveras, EM, Hivert, MF. Longitudinal associations of fruit juice intake in infancy with DXA-measured abdominal adiposity in mid-childhood and early adolescence. *Am J Clin Nutr*. 2021. 114:117-123. doi:10.1093/ajcn/nqab043 .	Population at Intervention/exposure
439	Wuni R, Lakshmipriya N, Abirami K, et al. Higher Intake of Dairy Is Associated with Lower Cardiometabolic Risks and Metabolic Syndrome in Asian Indians. *Nutrients*. 2022;14(18):3699. Published 2022 Sep 7. doi:10.3390/nu14183699	Int/Exp: Not relevant; Country
440	Xie, Y, Madkour, AS, Harville, EW. Preconception Nutrition, Physical Activity, and Birth Outcomes in Adolescent Girls. *J Pediatr Adolesc Gynecol*. 2015. 28:471-6. doi:10.1016/j.jpag.2015.01.004	Outcome; Population
441	Yamakawa, M, Wada, K, Koda, S, Mizuta, F, Uji, T, Oba, S, Nagata, C. High Intake of Free Sugars, Fructose, and Sucrose Is Associated with Weight Gain in Japanese Men. *J Nutr*. 2020. 150:322-330. doi:10.1093/jn/nxz227 .	Int/Exp: Not relevant
442	Yan T, Shi L, Xu K, Bai J, Wen R, Liao X, Dai X, Wu Q, Zeng L, Peng W, Wang Y, Yan H, Dang S, Liu X. Habitual intakes of sugar-sweetened beverages associated with gut microbiota-related metabolites and metabolic health outcomes in young Chinese adults. *Nutr Metab Cardiovasc Dis*. 2023;33(2):359-368. doi:10.1016/j.numecd.2022.10.016.	Study design

	Citation	Rationale
443	Yang Y, Na X, Xi Y, Xi M, Yang H, Li Z, Zhao A. Association between dairy consumption and the risk of diabetes: A prospective cohort study from the China Health and Nutrition Survey. *Front Nutr*. 2022;9:997636. doi:10.3389/fnut.2022.997636.	Int/Exp: Not relevant; Outcome
444	Yapici H, Gülü M, Yagin FH, Ugurlu D, Comertpay E, Eroglu O, Kocoğlu M, Aldhahi MI, Karayigit R, Badri Al-Mhanna S. The effect of 8-weeks of combined resistance training and chocolate milk consumption on maximal strength, muscle thickness, peak power and lean mass, untrained, university-aged males. *Front Physiol*. 2023;14:1148494. doi:10.3389/fphys.2023.1148494.	EXCLUDE
445	Yong, HY, Shariff, ZM, Mohd Yusof, BN, Rejali, Z, Bindels, J, Tee, YYS, van der Beek, EM. Associations between the dietary patterns of pregnant Malaysian women and ethnicity, education, and early pregnancy waist circumference: A prospective cohort study. *Nutr Res Pract*. 2019. 13:230-239. doi:10.4162/nrp.2019.13.3.230	Intervention/Exposure; Outcome
446	Yoon, Lara, Corvalán, Camila, Pereira, Ana, Shepherd, John, Michels, KarinB. Sugar-sweetened beverage consumption and breast composition in a longitudinal study of Chilean girls. *Breast Cancer Research*. 2022. 24:1-11. doi:10.1186/s13058-021-01495-8 .	Duplicate
447	Yoon, Lara, Corvalán, Camila, Pereira, Ana, Shepherd, John, Michels, KarinB. Sugar-sweetened beverage consumption and breast composition in a longitudinal study of Chilean girls. *Breast Cancer Research*. 2022. 24:1-11. doi:10.1186/s13058-021-01495-8 .	Other; Duplicate
448	Yoshitomi, R, Yamamoto, M, Kumazoe, M, Fujimura, Y, Yonekura, M, Shimamoto, Y, Nakasone, A, Kondo, S, Hattori, H, Haseda, A, Nishihira, J, Tachibana, H. The combined effect of green tea and α-glucosyl hesperidin in preventing obesity: a randomized placebo-controlled clinical trial. *Sci Rep*. 2021. 11:19067. doi:10.1038/s41598-021-98612-6 .	Int/Exp: Not relevant
449	Younis, NT, Abdulmawjood, SA. The Effectiveness of Soft Drinks on Some Biochemical Variables in Human Body. *Biochemical and Cellular Archives*. 2021. 21:1069-1073.	Study design; Country
450	Yu, D, Shu, XO, Li, H, Xiang, YB, Yang, G, Gao, YT, Zheng, W, Zhang, X. Dietary carbohydrates, refined grains, glycemic load, and risk of coronary heart disease in Chinese adults. *Am J Epidemiol*. 2013. 178:1542-9. doi:10.1093/aje/kwt178	Intervention/exposure; Country
451	Yuan S, Sun J, Lu Y, Xu F, Li D, Jiang F, Wan Z, Li X, Qin LQ, Larsson SC. Health effects of milk consumption: phenome-wide Mendelian randomization study. *BMC Med*. 2022;20(1):455. doi:10.1186/s12916-022-02658-w.	Study design; Outcome
452	Yuan, S, Carter, P, Mason, AM, Burgess, S, Larsson, SC. Coffee Consumption and Cardiovascular Diseases: A Mendelian Randomization Study. *Nutrients*. 2021. 13:#pages#. doi:10.3390/nu13072218 .	Outcome
453	Zapata-Londoño, MB, Ramos Polo, A, Alzate-Arbelaez, AF, Restrepo-Betancur, LF, Rojano, BA, Maldonado-Celis, ME. Effect of mango (Mangifera indica) cv. azÚcar juice consumption on plasma antioxidant capacity and oxidative stress biomarkers. *Vitae.* 2020. 27:1-10. doi:10.17533/udea.vitae.v27n1a03 .	Outcome
454	Zefreei, AA, Taghian, F, Dehkordi, KJ. Effect of 8 weeks aerobic exercises and green coffee supplement on serum myonectin, meteorin-like, and insulin resistance in obese women. *Journal of mazandaran university of medical sciences*. 2020. 30:58-67.	Language
455	Zhang Y, Liu C, Xu Y, Wang Y, Zhang Y, Jiang T, Zhang Q. The relationship between sugar-sweetened beverages, sleep disorders, and diabesity. *Front Endocrinol (Lausanne)*. 2023;13:1041977. Published 2023 Jan 9. doi:10.3389/fendo.2022.1041977.	Study design
456	Zhang, J, Oxinos, G, Maher, JH. The effect of fruit and vegetable powder mix on hypertensive subjects: a pilot study. *J Chiropr Med*. 2009. 8:101-6. doi:10.1016/j.jcm.2008.09.004	Intervention/exposure; Outcome

	Citation	Rationale
457	Zhang, X, Li, L, Xu, J, Xu, P, Yang, T, Gan, Q, Pan, H, Hu, X, Cao, W, Zhang, Q. Association between milk consumption and the nutritional status of poor rural Chinese students in 2016. *Asia Pac J Clin Nutr*. 2020. 29:813-820. doi:10.6133/apjcn.202012_29(4).0017 .	Study design; Int/Exp: Not relevant
458	Zheng M, Rangan A, Allman-Farinelli M, Rohde JF, Olsen NJ, Heitmann BL. Replacing sugary drinks with milk is inversely associated with weight gain among young obesity-predisposed children. *Br J Nutr*. 2015;114(9):1448-1455. doi:10.1017/S0007114515002974	Duplicate
459	Zhou, B, Ichikawa, R, Parnell, LD, Noel, SE, Zhang, X, Bhupathiraju, SN, Smith, CE, Tucker, KL, Ordovas, JM, Lai, CQ. Metabolomic Links between Sugar-Sweetened Beverage Intake and Obesity. *J Obes*. 2020. 2020:7154738. doi:10.1155/2020/7154738 .	Study design
460	Zhu, K, Greenfield, H, Du, X, Zhang, Q, Ma, G, Hu, X, Cowell, CT, Fraser, DR. Effects of two years' milk supplementation on size-corrected bone mineral density of Chinese girls. *Asia Pac J Clin Nutr*. 2008. 17 Suppl 1:147-50.	Outcome; Country
461	Zhu, K, Greenfield, H, Zhang, Q, Du, X, Ma, G, Foo, LH, Cowell, CT, Fraser, DR. Growth and bone mineral accretion during puberty in Chinese girls: a five-year longitudinal study. *J Bone Miner Res*. 2008. 23:167-72. doi:10.1359/jbmr.071006	Intervention/exposure; Country
462	Zhu, Y, Olsen, SF, Mendola, P, Halldorsson, TI, Rawal, S, Hinkle, SN, Yeung, EH, Chavarro, JE, Grunnet, LG, Granstrom, C, Bjerregaard, AA, Hu, FB, Zhang, C. Maternal consumption of artificially sweetened beverages during pregnancy, and offspring growth through 7 years of age: a prospective cohort study. *Int J Epidemiol*. 2017. 46:1499-1508. doi:10.1093/ije/dyx095	Outcome; Population
463	Zulfiqar, T, Strazdins, L, Dinh, H, Banwell, C, D'Este, C. Drivers of Overweight/Obesity in 4-11 Year Old Children of Australians and Immigrants; Evidence from Growing Up in Australia. *J Immigr Minor Health*. 2019. 21:737-750. doi:10.1007/s10903-018-0841-3 .	Duplicate

Appendix 6: Meta-analysis supplementary materials

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Table A 14. Data transformations and assumptions for meta-analyses*

Reference Observation	Extracted Data	Transformation and Assumptions	Transformed Effect Estimates
Carlson, 2012[7] BMI z-score	2y change in BMI z-score per 8 oz/d increase in juice β (95% CI) -0.04 (-0.21, 0.13), P=0.631	Converted 95% CI to SE	β (SE) -0.04 (0.087)
Field, 2003[10] dBMI z-score, females, TEI adjusted	Annual change in BMI z-score per svg/d juice β (95% CI) 0.003 (0.001, 0.005)	Converted 95% CI to SE Serving size NR, assumed 8 oz/svg	β (SE) 0.003 (0.001)
Field, 2003[10] dBMI z-score, males, TEI adjusted	Annual change in BMI z-score per svg/d juice β (95% CI) 0.002 (0.000, 0.005)	Converted 95% CI to SE Serving size NR, assumed 8 oz/svg	β (SE) 0.0020 (0.0013)

* **Abbreviations**: β: regression coefficient; BMI: body mass index; CI: confidence interval; d: day; dBMI z-score: change in body mass index z-score; kcal: kilocalorie; MJ: megajoule; mo: month; NR: not reported; NS: non-significant; OWO: overweight/obesity; oz: ounce; SE: standard error; svg: serving; TEI: total energy intake; vs: versus; y: year; Z: z-value

Reference Observation	Extracted Data	Transformation and Assumptions	Transformed Effect Estimates
Field, 2003[10] dBMI z-score, females, TEI unadjusted	Annual change in BMI z-score per svg/d juice β (95% CI) -0.000 (-0.002, 0.001)	Converted 95% CI to SE Serving size NR, assumed 8 oz/svg	β (SE) 0.0000 (0.0008)
Field, 2003[10] dBMI z-score, males, TEI unadjusted	Annual change in BMI z-score per svg/d juice β (95% CI) 0.000 (-0.002, 0.002)	Converted 95% CI to SE Serving size NR, assumed 8 oz/svg	β (SE) 0.0000 (0.0010)
Guerrero, 2016[12] BMI z-score	BMI for any juice vs. none β (SE) -0.101 (0.053), P=NS	BMI was converted to BMI z-score using the LMS method.* LMS values at 60.5 months were used and the average of boys and girls were calculated for the β and SE.	β (SE) -0.06 (0.032)
Libuda, 2008[16] BMI z-score, males	BMI z-score per MJ/d juice*time β 0.033, P=0.310	Estimated SE from p-value and β using SE=β/Z. Coefficients were converted from MJ (~240 kcal) to 8 oz servings by dividing estimates by 2 (assumed juice averages ~15.3 kcal/oz)†	β (SE) 0.02 (0.033)
Libuda, 2008[16] BMI z-score, females	BMI z-score per MJ/d juice*time β -0.046, P=0.161	Estimated SE from p-value and β using SE=β/Z. Coefficients were converted from MJ (~240 kcal) to 8 oz servings by dividing estimates by 2 (assumed juice averages ~15.3 kcal/oz)†	β (SE) -0.02 (0.023)
Mahoney, 2018[3] BMI z-score	BMI z-score for any juice vs. none β (95% CI) -0.05 (-0.20, 0.10), P=0.53	Converted 95% CI to SE	β (SE) -0.05 (0.077)
Marshall, 2019[17] BMI z-score	BMI z-score per 8 oz/d juice β (95% CI) 0.044 (-0.038, 0.125)	Converted 95% CI to SE	β (SE) 0.04 (0.042)
Newby, 2004[19] dBMI z-score, TEI adjusted	Change in BMI per oz/d juice β (SE) 0.01 (0.00), P=0.20	Estimated a non-zero SE from p-value and β using SE=β/Z BMI was converted to BMI z-score using the LMS method.* LMS values at 34.5 months were used and the average of boys and girls were calculated for the β and SE. Coefficients were converted from 1 oz to 8 oz servings by multiplying estimates by 8	β (SE) 0.0595 (0.046)

* Growth Charts – Percentile Data Files with LMS Values (https://www.cdc.gov/growthcharts/percentile_data_files.htm)

† FoodData Central (https://fdc.nal.usda.gov/)

Reference Observation	Extracted Data	Transformation and Assumptions	Transformed Effect Estimates
Sakaki, 2021a[21] Change in weight, males	Change in weight (kg) per category of orange juice intake Mean (SE) 11.7 (7.4),11.5 (7.6),11.3 (7.4), 11.1 (6.9)	Estimated kg change per 2 y per 6 oz serving/mo via regression of Table 2 data. Coefficients were converted from to kg change per year per 8 oz/d by multiplying by 20.	β (SE) -0.358 (6.028)
Sakaki, 2021a[21] Change in weight, females	Change in weight per 6 oz/d orange juice Mean (SE) 6.1 (6.4), 6.1 (6.1), 6.0 (5.7), 6.0 (5.3)	Estimated kg change per 2 y per 6 oz serving/mo via regression of Table 2 data, presuming 0.5, 2, 14, and 30 servings/mo across categories. Coefficients were converted from to kg change per year per 8 oz/d by multiplying by 20.	β (SE) -0.358 (6.028)
Sakaki, 2021b[20] All juice, males	2y change in BMI per 10 oz/d juice β (SE) -0.020 (0.038), P=0.59	BMI was converted to BMI z-score using the LMS method.* LMS values for boys at 180.5 months were used for the β and SE. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) -0.055 (0.0105)
Sakaki, 2021b[20] All juice, females	2y change in BMI per 10 oz/d juice β (SE) -0.102 (0.038), P=0.008	BMI was converted to BMI z-score using the LMS method.* LMS values for girls at 180.5 months were used for the β and SE. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) -0.0265 (0.0098)
Sakaki, 2021b[20] Continuous OJ intake, males, without OWO	2y change in BMI per 10 oz/d juice β (SE) 0.079 (0.057), P=0.169	BMI was converted to BMI z-score using the LMS method.* LMS values for boys at 180.5 months were used for the β and SE. BMI at the 50th percentile was used to approximate BMI among boys without OWO. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) 0.02 (0.02)
Sakaki, 2021b[20] Continuous OJ intake, males, with OWO	2y change in BMI per 10 oz/d juice β (SE) -0.207 (0.182), P=0.255	BMI was converted to BMI z-score using the LMS method.* LMS values for boys at 180.5 months were used for the β and SE. BMI at the 85th percentile was used to approximate BMI among boys with OWO. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) -0.04 (0.03)

Reference Observation	Extracted Data	Transformation and Assumptions	Transformed Effect Estimates
Sakaki, 2021b[20] Continuous OJ intake, females, without OWO	2y change in BMI per 10 oz/d juice β (SE) -0.105 (0.054), P=0.052	BMI was converted to BMI z-score using the LMS method.* LMS values for boys at 180.5 months were used for the β and SE. BMI at the 50th percentile was used to approximate BMI among girls without OWO. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) -0.03 (0.02)
Sakaki, 2021b[20] Continuous OJ intake, females, with OWO	2y change in BMI per 10 oz/d juice β (SE) -0.388 (0.206), P=0.060	BMI was converted to BMI z-score using the LMS method.* LMS values for boys at 180.5 months were used for the β and SE. BMI at the 85th percentile was used to approximate BMI among girls with OWO. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) -0.06 (0.03)
Sakaki, 2021b[20] Continuous other juice intake, males, without OWO	2y change in BMI per 10 oz/d juice β (SE) -0.073 (0.063), P=0.247	BMI was converted to BMI z-score using the LMS method.* LMS values for boys at 180.5 months were used for the β and SE. BMI at the 50th percentile was used to approximate BMI among boys without OWO. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) -0.02 (0.02)
Sakaki, 2021b[20] Continuous other juice intake, males, with OWO	2y change in BMI per 10 oz/d juice β (SE) 0.019 (0.199), P=0.924	BMI was converted to BMI z-score using the LMS method.* LMS values for boys at 180.5 months were used for the β and SE. BMI at the 85th percentile was used to approximate BMI among boys with OWO. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) 0.00 (0.03)
Sakaki, 2021b[20] Continuous other juice intake, females, without OWO	2y change in BMI per 10 oz/d juice β (SE) -0.047 (0.059), P=0.420	BMI was converted to BMI z-score using the LMS method.* LMS values for boys at 180.5 months were used for the β and SE. BMI at the 50th percentile was used to approximate BMI among girls without OWO. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) -0.01 (0.02)

Reference Observation	Extracted Data	Transformation and Assumptions	Transformed Effect Estimates
Sakaki, 2021b[20] Continuous other juice intake, females, with OWO	2y change in BMI per 10 oz/d juice β (SE) -0.154 (0.215), P=0.472	BMI was converted to BMI z-score using the LMS method.* LMS values for boys at 180.5 months were used for the β and SE. BMI at the 85th percentile was used to approximate BMI among girls with OWO. Coefficients were converted from 10 oz to 8 oz servings by multiplying estimates by 0.8	β (SE) -0.02 (0.03)
Skinner, 2001[23] BMI z-score	BMI per oz/d juice β -0.057, P=0.099	Estimated SE from p-value and β using SE=β/Z BMI was converted to BMI z-score using the LMS method.* LMS values at 72.5 months were used and the average of boys and girls were calculated for the β and SE. Coefficients were converted from 1 oz to 8 oz servings by multiplying estimates by 8	β (SE) -0.306 (0.183)
Striegel-Moore, 2006[24] BMI z-score, females	BMI per 100 g/d juice β (SE) 0.005, (0.007), P>0.05	BMI was converted to BMI z-score using the LMS method.* LMS values for girls at 120.5 months were used for the β and SE. Coefficients were converted from 100 g to 8 oz servings by multiplying estimates by 2.48 (juice averages 31 g/oz)†	β (SE) 0.01 (.017)
Zheng, 2015a[28] CAPS, TEI adjusted	3.5y change in BMI z-score per 100 g/d juice β (SE) 0.07 (0.05), P=0.12	Coefficients were converted from 100 g to 8 oz servings by multiplying estimates by 2.48 (juice averages 31 g/oz)†	β (SE) 0.1736 (0.124)
Zheng, 2015a[28] CAPS, TEI unadjusted	3.5y change in BMI z-score per 100 g/d juice β (SE) 0.07 (0.05), P=0.15	Coefficients were converted from 100 g to 8 oz servings by multiplying estimates by 2.48 (juice averages 31 g/oz)†	β (SE) 0.1736 (0.124)
Zheng, 2015b[29] EYHS, TEI adjusted	6y change in BMI z-score per 100 g/d juice β (SE) 0.03 (0.03), P=0.34	Coefficients were converted from 100 g to 8 oz servings by multiplying estimates by 2.48 (juice averages 31 g/oz)†	β (SE) 0.0744 (0.0744)
Zheng, 2015b[29] EYHS, TEI adjusted	6y change in BMI z-score per 100 g/d juice β (SE) 0.02 (0.03), P=0.39	Coefficients were converted from 100 g to 8 oz servings by multiplying estimates by 2.48 (juice averages 31 g/oz)†	β (SE) 0.0496 (0.0744)

100% Juice intake at baseline and BMI z-score at follow-up

In addition to the **main analysis** reported above, the following subgroup analyses for 100% juice intake at baseline (measured continuously) and BMI z-score at follow-up were conducted: by total energy intake adjustment (**Figure A 1**) and by baseline weight status (**Figure A 2**). Note, subgroup analyses by age group at baseline and baseline weight status were not completed because no effects were included for infants and young children up to age 24 months.

The main analysis of 100% juice intake at baseline (measured categorically) and BMI z-score at follow-up is pictured in **Figure A 3**. Subgroup analyses by age group at baseline (up to age 24 months, ages 2 up to 19 years) and baseline weight status were not completed because there was only one observation in each category. Likewise, subgroup analyses by total energy intake adjustment were not conducted because no observations adjusted for total energy intake.

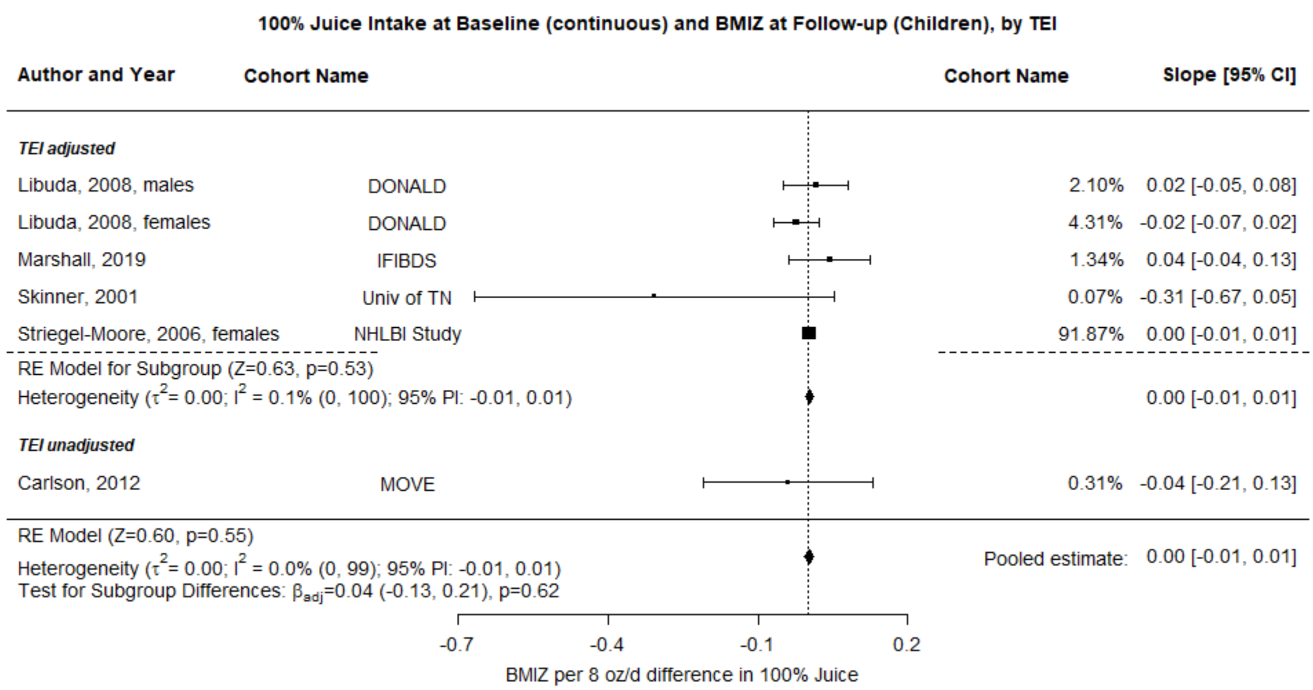

Figure A 1. Meta-analysis of 100% juice intake at baseline, measured continuously (8 oz/d), and BMI z-score at follow-up, by total energy intake adjustment.[*]

[*] adj: adjusted; BMIZ: body mass index z-score; CI: confidence interval; RE: random effects; CI: confidence interval; d: day; oz: ounce; RE: random effects; TEI: total energy intake; vertical dotted line shows null effect

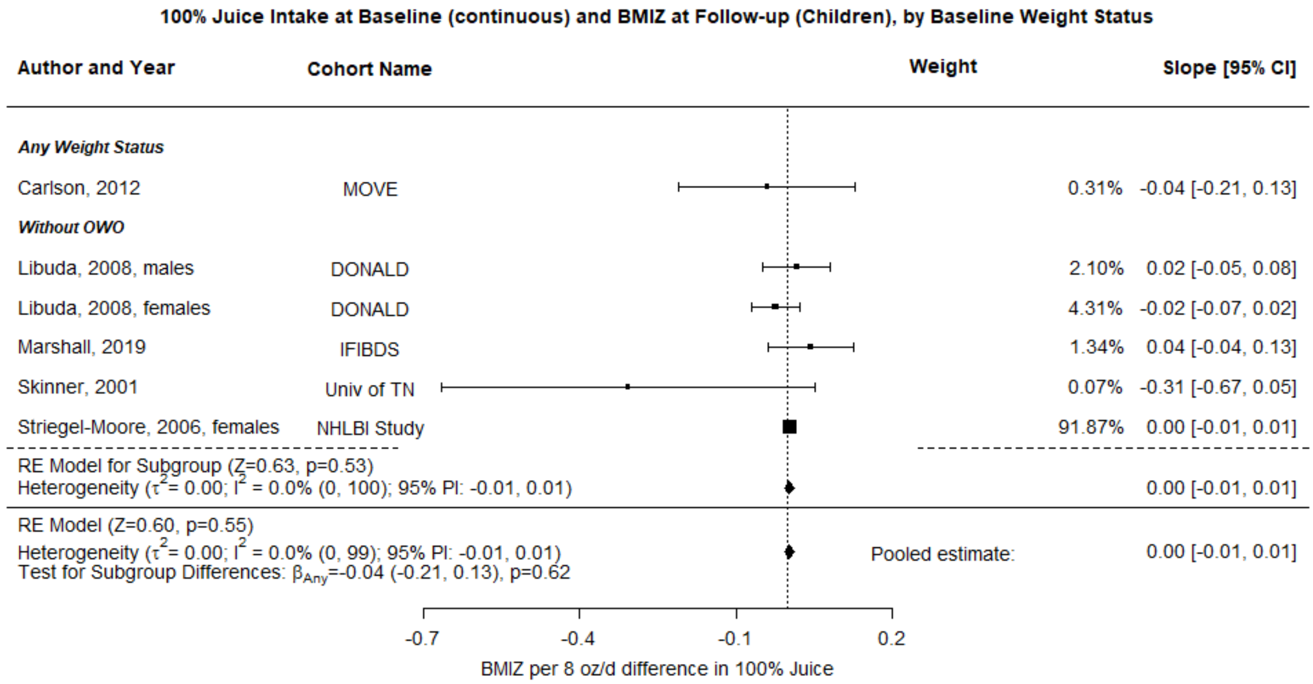

Figure A 2. Meta-analysis of 100% juice intake at baseline, measured continuously (8 oz/d), and BMI z-score at follow-up, by baseline weight status.†

† BMIZ: body mass index z-score; CI: confidence interval; RE: random effects; CI: confidence interval; d: day; OWO: overweight or obesity; oz: ounce; RE: random effects; vertical dotted line shows null effect

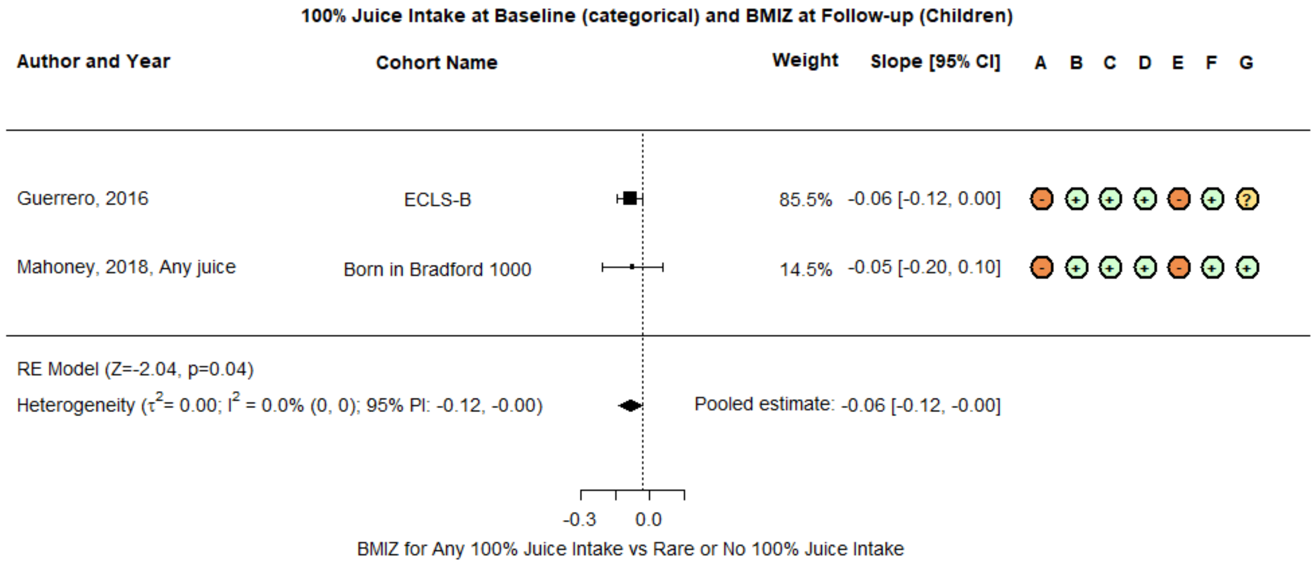

Figure A 3. Meta-analysis of 100% juice intake at baseline, measured categorically (any vs rare or no intake), and BMI z-score at follow-up.‡

100% Juice intake at baseline and change in BMI z-score

The main analysis for 100% juice intake at baseline (measured continuously) and change in BMI z-score is depicted in **Figure A 4**. Subgroup analyses by adjustment for total energy intake (**Figure A 5**) and baseline weight status (**Figure A 6**) were completed, but not analyses for age group at intervention/exposure because no observations were available for infants and young children up to age 24 months.

The results for 100% juice intake at baseline (measured categorically) and change in BMI z-score are shown in **Figure A 7** (main analysis) and **Figure A 8** (by adjustment for total energy intake). Subgroup analyses by age group at baseline and baseline weight status were not completed because there were an insufficient number of observations in each subgroup.

‡Risk of bias due to **A**: confounding; **B**: selection of participants into the study; **C**: measurement of the exposure; **D**: post-exposure interventions; **E**: missing data; **F**: measurement of the outcome; **G**: selection of the reported result; +: Low risk of bias; ?: Some concerns of risk of bias; -: High risk of bias; BMIZ: body mass index z-score; CI: confidence interval; RE: random effects; vertical dotted line shows null effect

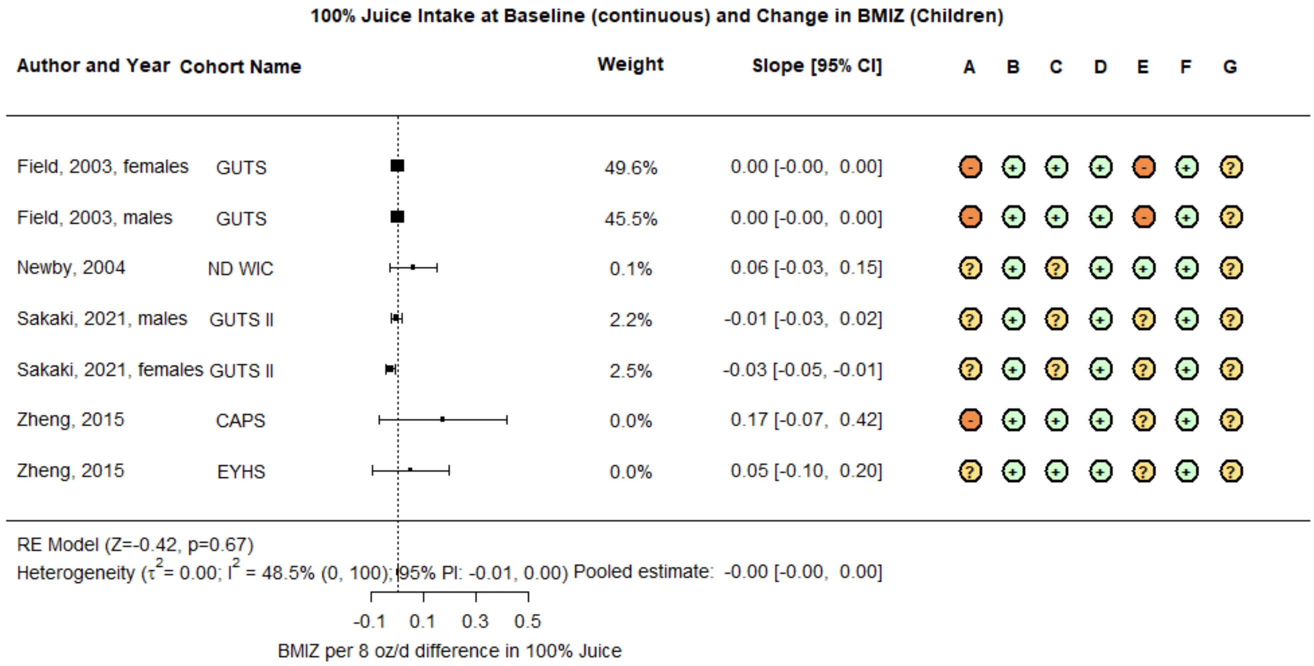

Figure A 4. Meta-analysis of 100% juice intake at baseline, measured continuously (8 oz/d), and change in BMI z-score.§

Note that subgroup analyses by age group at baseline and baseline weight status were not completed because there were an insufficient number of observations.

§Risk of bias due to **A**: confounding; **B**: selection of participants into the study; **C**: measurement of the exposure; **D**: post-exposure interventions; **E**: missing data; **F**: measurement of the outcome; **G**: selection of the reported result; +: Low risk of bias; ?: Some concerns of risk of bias; -: High risk of bias; BMIZ: body mass index z-score; CI: confidence interval; d: day; oz: ounce; RE: random effects; vertical dotted line shows null effect

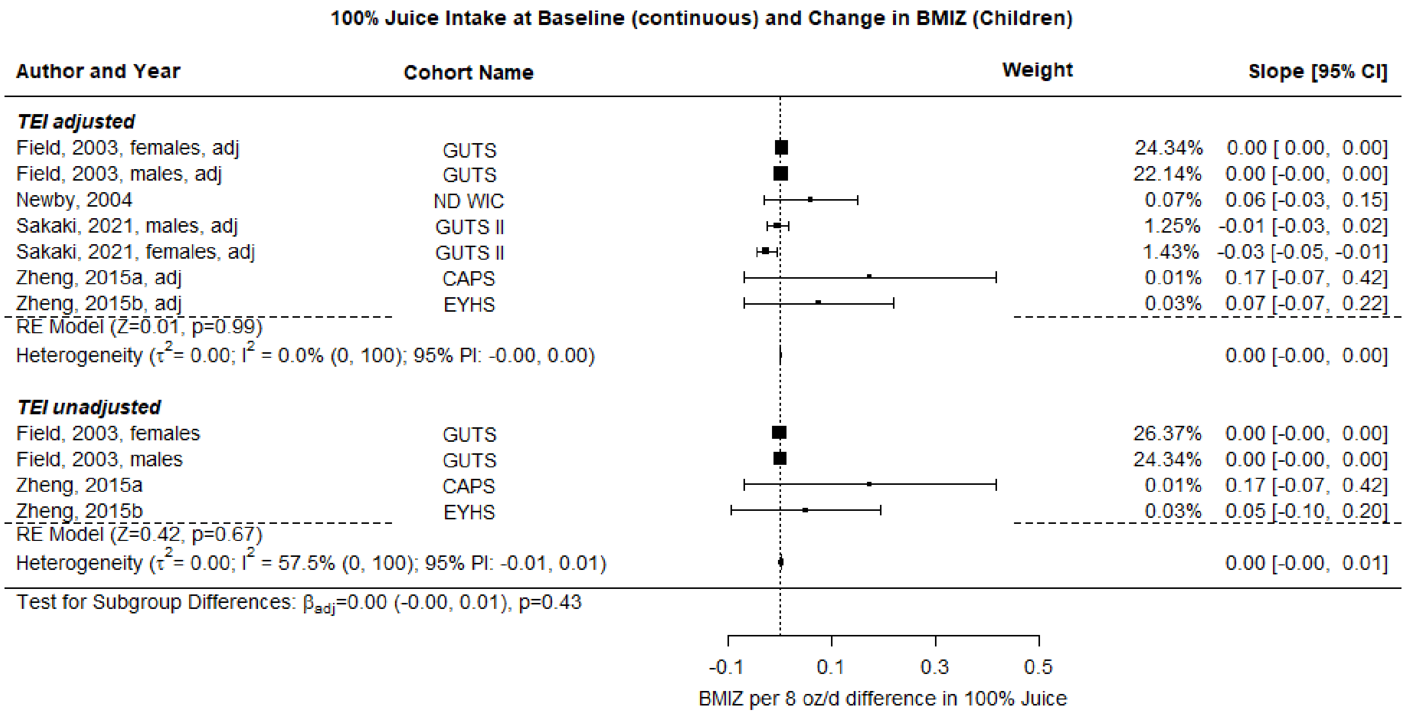

Figure A 5. Meta-analysis of 100% juice intake at baseline, measured continuously (8 oz/d), and change in BMI z-score, by total energy intake adjustment.[**]

[**] adj: adjusted; BMIZ: body mass index z-score; CI: confidence interval; d: day; oz: ounce; RE: random effects; TEI: total energy intake; vertical dotted line shows null effect

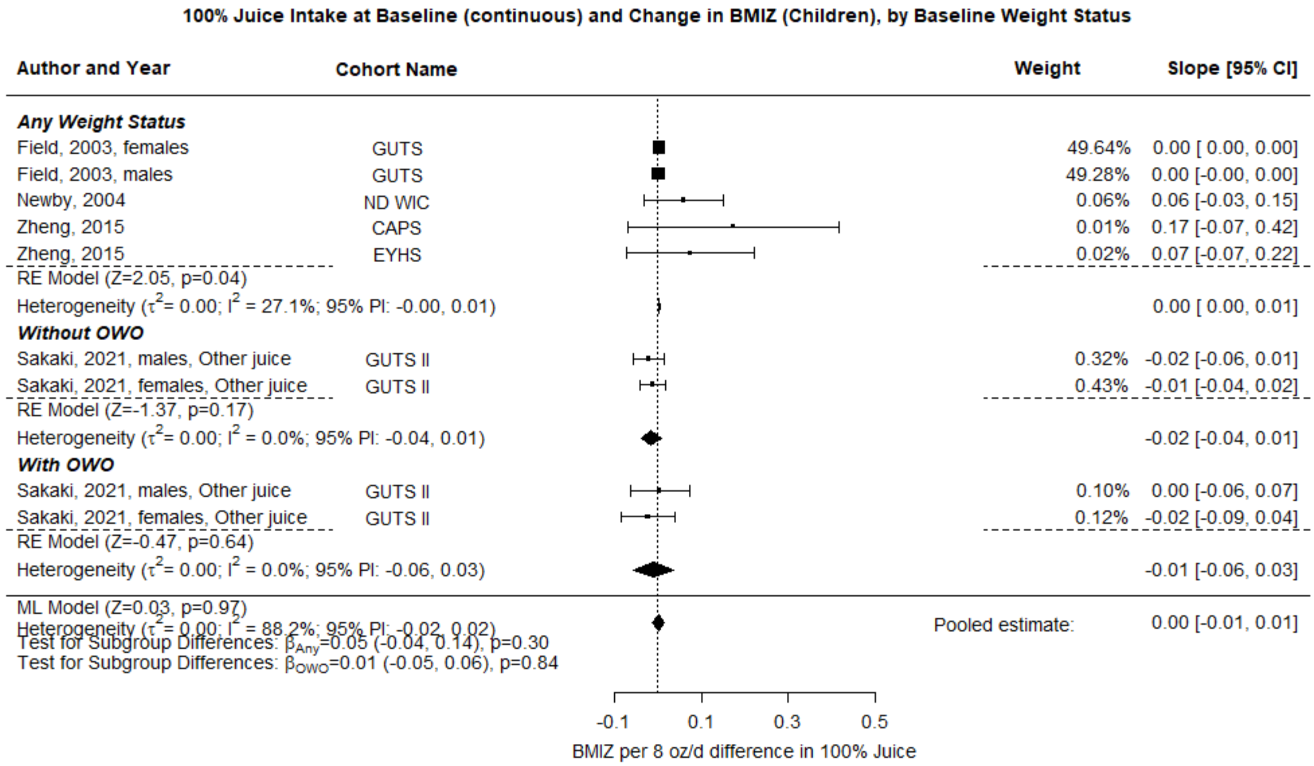

Figure A 6. Meta-analysis of 100% juice intake at baseline, measured continuously (8 oz/d), and change in BMI z-score, by baseline weight status.[††]

[††] BMIZ: body mass index z-score; CI: confidence interval; d: day; ML: multilevel; OWO: overweight or obesity; oz: ounce; RE: random effects; vertical dotted line shows null effect

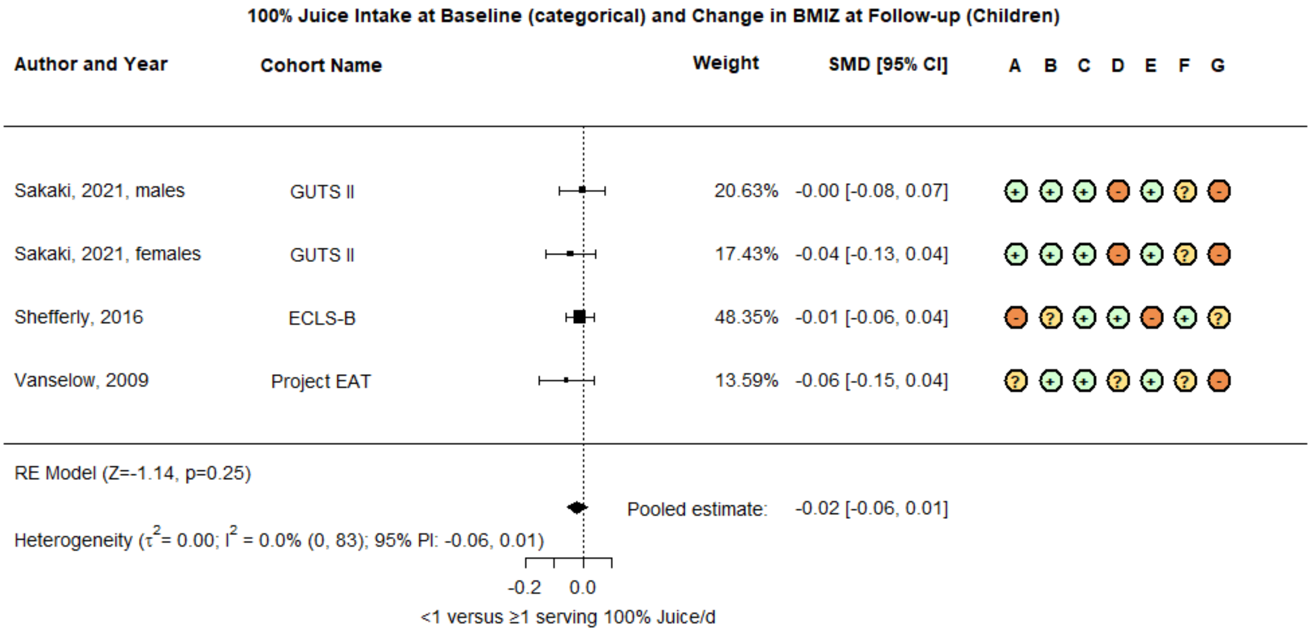

Figure A 7. Meta-analysis of 100% juice intake at baseline, measured categorically (<1 versus ≥1 servings/day), and change in BMI z-score.‡‡

‡‡Risk of bias due to **A**: confounding; **B**: selection of participants into the study; **C**: measurement of the exposure; **D**: post-exposure interventions; **E**: missing data; **F**: measurement of the outcome; **G**: selection of the reported result; +: Low risk of bias; ?: Some concerns of risk of bias; -: High risk of bias; BMIZ: body mass index z-score; CI: confidence interval; d: day; RE: random effects; vertical dotted line shows null effect

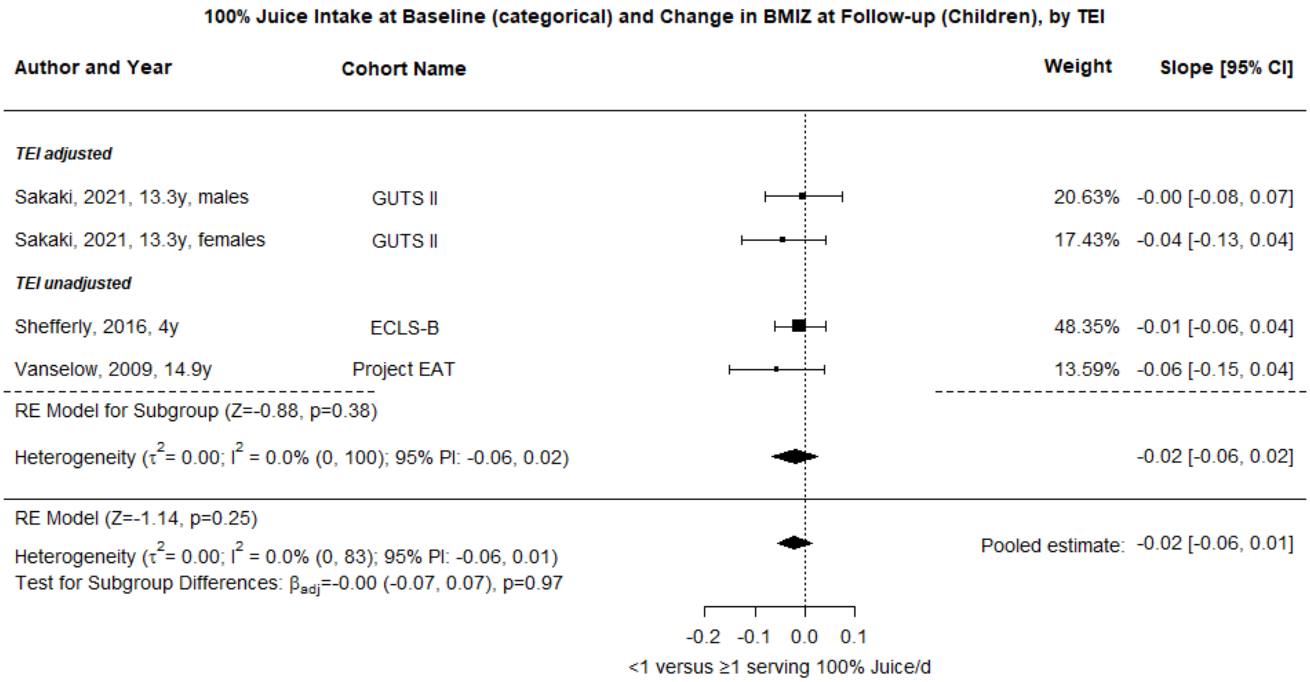

Figure A 8. Meta-analysis of 100% juice intake at baseline, measured categorically (<1 versus ≥1 servings/day), and change in BMI z-score, by total energy intake adjustment.[§§]

100% Juice intake at baseline and change in weight

Meta-analyses examining the relationship between 100% juice intake at baseline and change in weight were conducted (**Figure A 9**), including subgroup analyses by total energy intake adjustment (**Figure A 10**) and baseline weight status (**Figure A 11**). A subgroup analysis was not completed for age group at baseline because no results were reported for infants and young children up to age 24 months.

[§§]adj: adjusted; BMIZ: body mass index z-score; CI: confidence interval; d: day; RE: random effects; TEI: total energy intake; vertical dotted line shows null effect

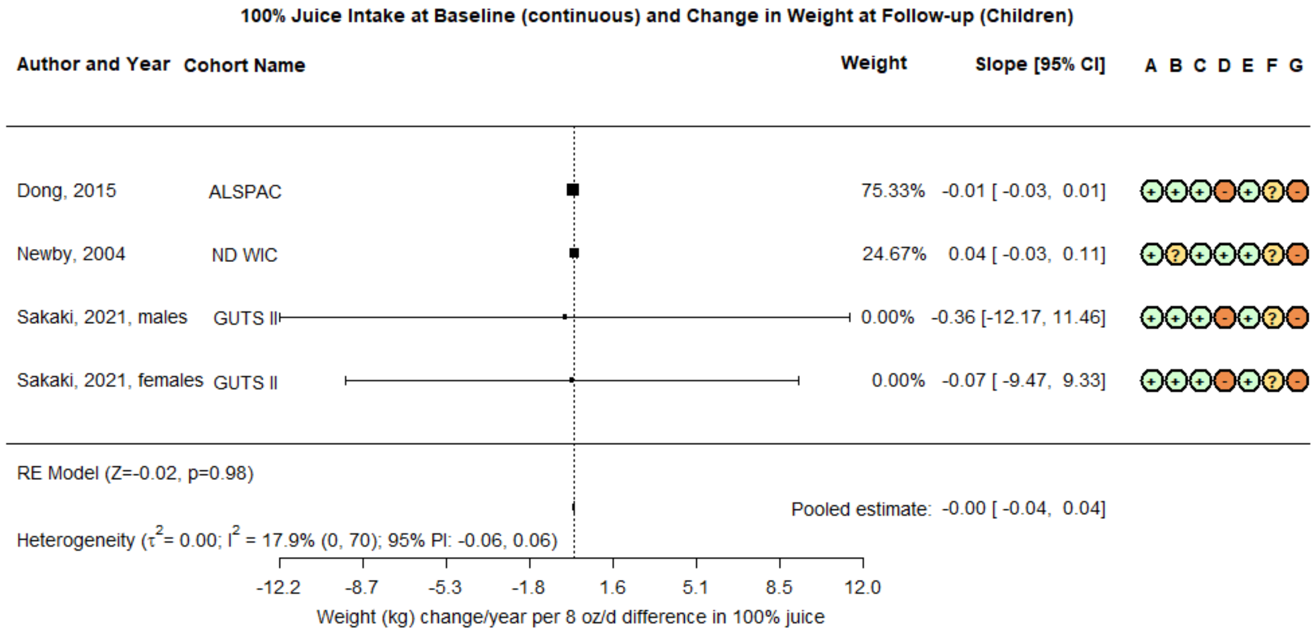

Figure A 9. Meta-analysis of 100% juice intake at baseline, measured continuously (8 oz/day), and change in weight.***

***Risk of bias due to **A**: confounding; **B**: selection of participants into the study; **C**: measurement of the exposure; **D**: post-exposure interventions; **E**: missing data; **F**: measurement of the outcome; **G**: selection of the reported result; +: Low risk of bias; ?: Some concerns of risk of bias; -: High risk of bias; CI: confidence interval; d: day; oz: ounce; RE: random effects; vertical dotted line shows null effect

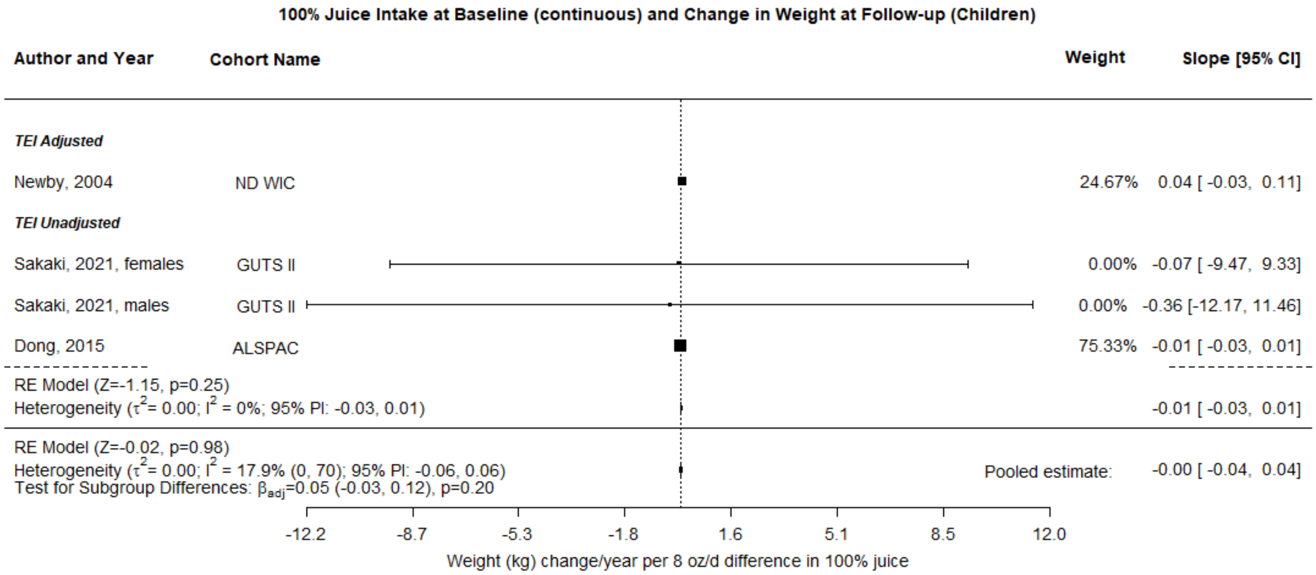

Figure A 10. Meta-analysis of 100% juice intake at baseline, measured continuously (8 oz/day), and change in weight, by total energy intake adjustment.[†††]

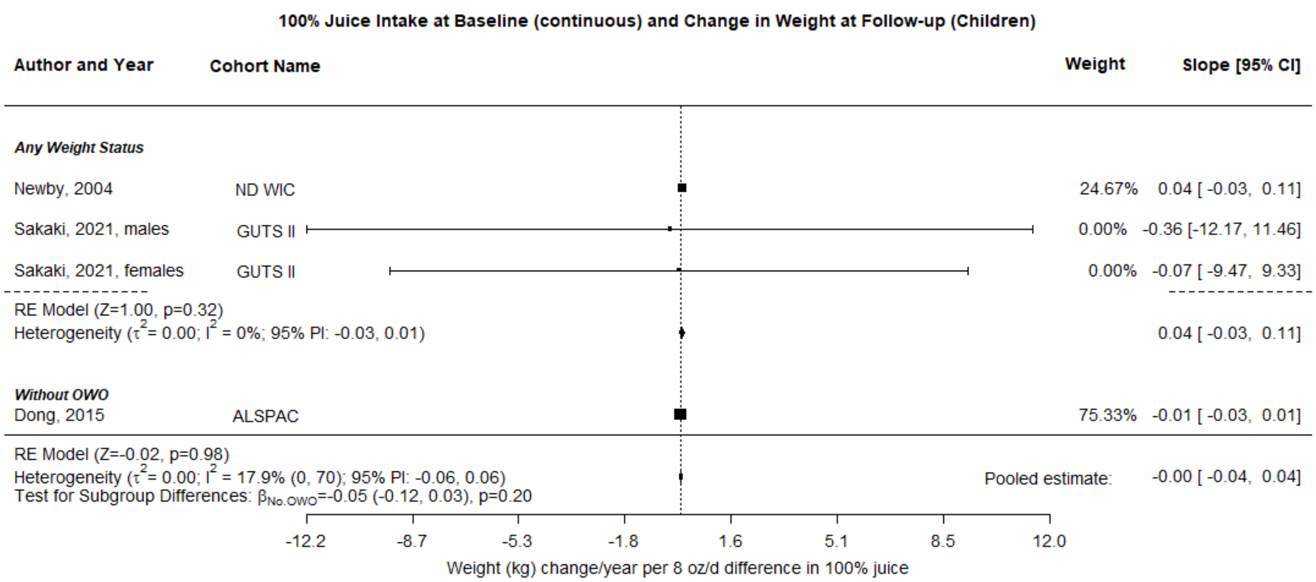

Figure A 11. Meta-analysis of 100% juice intake at baseline, measured continuously (8 oz/day), and change in weight, by baseline weight status.[‡‡‡]

[†††]adj: adjusted; CI: confidence interval; d: day; oz: ounce; RE: random effects; TEI: total energy intake; vertical dotted line shows null effect

[‡‡‡]CI: confidence interval; d: day; oz: ounce; OWO: overweight or obesity; RE: random effects; vertical dotted line shows null effect