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LEGISLATIVE HEALTH NOTE

Propositions LL and MM: Colorado Healthy School Meals for All

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Background

In 2022, Colorado became one of the first states in the nation to pass a universal free school meal program (UFSM) when Proposition FF created Colorado Healthy School Meals for All (HSMA). In May 2025, the Colorado General Assembly passed HB25-1274 to fully fund the HSMA program, which has been referred to two ballot measures in the November 2025 election (Proposition LL to retain current funding and Proposition MM to increase funding). If both ballot measures are approved, the state would raise more revenue for HSMA by increasing state taxable income for households earning over \$300,000 per year. This revenue would also secure wage increases for school food service employees and specific funding for schools to procure Colorado-produced ingredients.¹ This health note reviewed recent literature on the impacts of universal free school meal programs (i.e., free breakfast and lunch for children) on school meal participation, child nutrition, food security, financial wellbeing, academic outcomes, and food waste.

Methods summary

The Health in All Policies Initiative research team developed this legislative health note to identify the potential health and equity impacts of fully funding the Colorado Healthy School Meals for All program. To do so, the team hypothesized pathways between the program and additional changes described in the bill, health determinants, and health outcomes. The team then conducted an expedited literature review using a systematic approach to minimize bias and identify recently published studies to answer each of the identified research questions. Two subject matter experts reviewed the draft note and provided feedback. A detailed description of the methodology is available in the appendix.

Summary of findings

In light of significant federal budget cuts to the Supplemental Nutrition Assistance Program (SNAP) and Medicaid from the budget reconciliation law enacted in July 2025, state-run UFSM programs will become even more critical as many families stand to lose their benefits. These cuts will increase financial hardship and food insecurity for children and families. Simultaneously, school meal programs will become more costly for states to operate as fewer meals will be reimbursed through federal programs. Shoring up state sources of funding for this program, including through tax revenues, is timely and will bear short and long-term health benefits for Colorado residents.

The relationship between access to school meals and wellbeing is well established in the public health literature,² and evidence shows that healthy diets and food security are associated with improved cognitive function and better academic performance.³

- School meals are a key source of nutrition for all students who participate. There is **strong evidence** that UFSM programs increase school meal participation, thereby expanding nutritional benefits to more children. They address key barriers such as stigma, cost, and administrative burden.

- There is **strong evidence** that school meals improve children’s dietary intake, regardless of their food security status.
- Despite concerns that UFSM may encourage excess eating in children, a **fair amount of evidence** indicates that they are associated with a decrease in overweight or obesity, or have no effects on weight.
- **Strong evidence** demonstrates that universal school meals reduce childhood food insecurity and insufficiency and save families money.
- There is **mixed evidence** regarding the link between universal school meals and academic outcomes. Some studies examining UFSM and academic performance found improvements in test scores, while others did not identify any effects. However, links between food insecurity and academic and behavioral challenges are well-established. To the extent that these ballot measures prevent or alleviate childhood food insecurity, they may improve or prevent declines in academic performance for children at greatest risk of food insecurity.
- The evidence regarding links between UFSM and attendance is **mixed**. While several studies have identified a positive association between UFSM and attendance, others found no significant effects. Effects of UFSM on behavior are **not well researched**.
- A **fair amount of evidence** shows that the free and reduced-price meal (FRPM) programs fail to meet the needs of all households with children who experience food insecurity or insufficiency.
- This health note did not identify evidence regarding links between UFSM and food waste.

School meal programs

The National School Lunch Program (NSLP), administered by the U.S. Department of Agriculture (USDA), offers free and reduced-price school meals (FRPM) to U.S. school children of families whose income falls below 130% or 185% of federal poverty guidelines, respectively. Many families automatically qualify for FRPM through their enrollment in Medicaid and SNAP. Starting in the 2014-2015 school year, the Community Eligibility Provision (CEP) of the NSLP, allows schools in high poverty areas across the US with at least 25% of students eligible for free school meals to provide free school meals to all students.

When U.S. schools closed in response to the COVID-19 pandemic in 2020, the USDA issued waivers allowing states to provide free meals to all students and granting them the ability to feed them outside the classroom. When those waivers expired in 2022, some states opted to implement universal school meal programs, some expanded CEP enrollment, and others reverted to pre-COVID standard school meal programs. As of 2025, nine other states have passed laws establishing universal school meals programs (California, Colorado, Illinois, Massachusetts, Maine, Michigan, Minnesota, New Mexico, Nevada, and Vermont) providing free breakfast and lunch during 2023-2024, whereas Connecticut and the District of Columbia did so for only breakfast.⁴

Health effects of universal school meal programs

Effects on nutrition and food security

School meal participation

School meals are a key source of nutrient-rich foods for children of all socioeconomic backgrounds, and increasing participation in school meal programs can expand those benefits to more children. For some children, school meals are their only guaranteed meals of the day. One in five U.S. children experience hunger, and Black, Latino, and Indigenous children and those in single-parent households are at increased risk.⁵ The NSLP's FRPM model does not reach all the families it intends to serve. Furthermore, as SNAP and Medicaid benefits are rolled back for many families because of federal legislation passed this year, fewer families will automatically qualify for FRPM and more will have to submit annual applications for benefits. Universal school meal programs would prevent a gap in coverage for families unfamiliar with the FRPM application process or who might lose eligibility due to these changes and ensure meal access for the families that currently qualify but do not participate. Approximately 20-55% of students who qualify for free school meals do not participate.⁶

- Strong evidence shows that universal school meals are associated with increased school meal participation. Since Colorado implemented HSMA, participation in school breakfast and lunch have increased by 36% and 31%, respectively.⁷ A systematic review of studies examining universal free school meal programs found that they are associated with a 21% increase in school meal participation among students who qualify for reduced-price meals and a 36% increase among students who would not have qualified for either free or reduced-price meals, compared to a 5% increase among students who qualified for free meals.⁸ One study found that universal free breakfast programs increased school meal participation more in schools with lower percentages of students eligible for FRPM than in schools with already high percentages of eligible students. The authors posit that this may be due to reduced stigma around consuming free meals where low-income students are in the minority and a reduction of cost barriers to students who wouldn't qualify for FRPM but otherwise couldn't afford to pay for school meals.⁹
- Conversely, a study that examined the effects of ending universal free school meal program after COVID-19-era waivers expired found significant declines in participation as reported by school food administrators, compared to schools in states that continued to offer the program.¹⁰

Barriers to school meal participation

Stigma and immigration status

UFSM programs such as Colorado's HSMA can increase school meal participation by addressing several key barriers, such as stigma and financial and administrative burdens for families.¹¹

Qualitative evidence shows that UFSM can protect children and families from the experience of stigma,¹² which is consistently identified as a key barrier to FRPM participation.¹³ Research indicates that children may even skip meals due to shame.¹⁴

- Parents also experience and ascribe stigma to school meals, potentially limiting their children's participation.¹⁵ Parents from households experiencing food insecurity are more likely to report stigma around school meals.¹⁶ In a survey of parents of school-aged children, 32.7% of

respondents said that school meals were “for children whose parents did not care enough.”¹⁷ Parents have noted that universal school meals mitigate the shame of asking schools for assistance.¹⁸

Applying for FRPM benefits can be onerous for families who are not directly certified through their SNAP and Medicaid participation, but households with mixed immigration statuses may avoid interacting with government agencies altogether to avoid the risk of family separation or deportation. As anti-immigrant policing and rhetoric increases, UFSM could ensure that children in low-income mixed-status households, non-citizen children, or children of non-citizen parents maintain access to a key source of nutrition without fear of applying for services.

- Research indicates that recent anti-immigration legislation and policies may have discouraged families with irregular or mixed immigration status from participating in vital social safety net programs that they qualify for. One study that examined American Community Survey data found significant declines in SNAP participation among Hispanic and Latino children who were noncitizens or from mixed-status families, when compared to Hispanic and Latino citizen children whose parents were born in the U.S., beginning in 2017.¹⁹

Timing and implementation

Breakfast after the Bell programs—or programs that serve breakfast after the start of the school day, rather than requiring participants to come in early—are a promising approach to increasing school breakfast participation by addressing key barriers.

- A systematic review analyzing the effects of Breakfast after the Bell programs found that these alternative feeding models resulted in increased student participation. In particular, Breakfast in the Classroom was associated with higher participation and students eating a more substantive breakfast including more whole grains and fruits, compared with peers who ate breakfast in the cafeteria or at home, and, according to one study, decreased food waste.²⁰ These findings demonstrate the nutritional value of school meals in addition to the importance of where and when they are served.
- Breakfast after the Bell can increase student meal participation without affecting academic performance. Although concerns have been raised that eating breakfast in class may distract from schoolwork, a study comparing test scores of 3rd grade students in Arkansas in BATB and non-BATB schools found that implementing this program did not lower test scores over time.²¹

Dietary intake and nutrition

Good nutrition affects health, growth, and development, especially in childhood. School meals are a critical source of nutrition for U.S. schoolchildren regardless of food security status and are subject to strict nutrition regulations and standards.

- One key study found that school foods provided higher quality dietary intakes for children across food security groups than meals consumed outside of school.²² Using data from the National Health and Nutrition Examination Survey NHANES, a study of 7,800 children aged 5–18 years found that, for the 448 children who participated in both SBP and NSLP, school meals accounted for nearly half (47%) of their total daily energy intake. Additionally, school meals

provided a significant proportion of students' daily intake from major food groups, including fruit (57.7%), vegetables (40.6%), legumes (37.8%), grains (52.4%), dairy (69.9%), and lean proteins (37.9%).²³

- A systematic review that analyzed the impacts of UFSM on a variety of outcomes found that free school lunch programs were associated with improved dietary quality and food security, whereas evidence around school breakfast programs was mixed.²⁴
- A cross-sectional study found that children from families experiencing marginal, low, and very low food security consumed less fruit, vegetables, and dairy during summer months when many lose regular access to school meals.²⁵
- The Healthy, Hunger-Free Kids Act established strict nutrition standards for school meals in 2010, but implementation has been met with challenges. School meal standards are also not aligned with the current Dietary Guideline for Americans (DGA). A comparative risk analysis found that updating those standards to comply with the 2020-2025 DGA could reduce added sugar and sodium intake while increasing consumption of whole grains, thereby potentially decreasing elementary school children's body mass index and blood pressure in the near term. The authors calculated that these changes could have significant long-term benefits, preventing 9,110 annual deaths related to cardiovascular disease, diabetes, and certain cancers in adulthood, and reducing disability-adjusted life years by 302,000. These changes could save \$15.9 billion per year in healthcare costs in the long term.²⁶
- Past research has indicated that when healthier school meal and snack standards were implemented, children consumed less sugar overall and fewer unhealthy snacks outside of school.²⁷

The ballot measures' proposal to promote locally produced ingredients in school meals could further enhance their benefits by integrating higher quality, fresher produce and dairy.

- A study found that scratch-made school meals and greater use of locally grown or organic foods were associated with fewer reports of students abstaining from school meals.²⁸ A study of middle and high school students from a racially and economically diverse sample discovered that students value and desire fresh and healthy school lunches.²⁹

Weight

Researchers have posited that universal school meals could lead to excessive calorie consumption and subsequent unhealthy weight gain, for example if children eat breakfast at home and again at school.³⁰ This is an emerging area of research, but the studies identified either found no effects on body mass index or decreased likelihood of overweight and obesity.³¹

- A narrative review found that UFSM helped to halt the rise or even reduce rates of childhood obesity, likely through improving dietary intake, with children living in poverty benefiting the most.³² Research examining a nationally representative study of U.S. elementary school students found that children from low-income families had a 3.1% lower likelihood of being overweight in CEP schools, indicating the important nutritional contributions of school meals for low-income children in particular.³³
- A study examining data from CEP-eligible public schools in California from 2013–2019 found a relative decrease of 2.4% in obesity prevalence among 5th, 7th, and 9th graders in participating schools compared to eligible schools that did not participate.³⁴

Family finances and food security

Universal free school meals can improve all families' financial and food security, including that of households that would not otherwise qualify for free or reduced school meals. They are an important safeguard against hunger for children in households experiencing food insecurity.

- The traditional FRPM model may fail to serve all children in need of free meals. A survey of California households with K-12 students conducted in 2022 found that 38.3% of parents surveyed whose children were ineligible for FRPM reported food insecurity.³⁵ In a survey of parents in Massachusetts—another state that has implemented a UFSM program—households eligible or nearly eligible for FRPM were significantly more likely to report that it would be harder to feed their families without UFSM, compared with high-income respondents.³⁶
- Students who do not qualify for FRPM but cannot afford school meals face a different kind of stigma, as do their parents. When students have accumulated meal debt, schools may give them stickers, stamp their hand to remind parents to pay, or be denied a meal.³⁷ Parents of children with meal debt are portrayed negatively in news media.³⁸ Arguably, the existence of school meal debt in the face of such stigma indicates that many families who need and rely on school meals are not eligible to receive them for free through the NSLP.
- Food security and sufficiency increases with the availability of UFSM programs. One analysis found that rates of very low food sufficiency among households with children were 22% lower in states with UFSM programs compared to states that reverted to standard FRPM policies (after excluding states with high CEP participation).³⁹
- Furthermore, households with children in states with statewide UFSM policies had a 12% lower prevalence of food insecurity than those without UFSM.⁴⁰ This association was most pronounced among households eligible for free meals and those near FRPM eligibility thresholds.⁴¹
- Data from the Household Pulse Survey indicates that children in states that did not extend UFSM were 1.5 percentage points more likely to experience food insufficiency relative to those in states that did.⁴² Another found that the rate of households with children experiencing food insecurity reduced by over 2% when their state adopted the CEP.⁴³
- Households surveyed in California with and without food insecurity both stated that school meals were beneficial because they save parents money and time, reducing stress.⁴⁴

There is strong evidence that universal free school meals save families money. Hunger Free Colorado estimates that HSMA will save families more than \$1,250 per child each year.⁴⁵

- More than half of Massachusetts parents surveyed reported their household finances would be hurt, and 42% of households eligible for FRPM said their child would be less likely to eat school meals if the UFSM program ended.⁴⁶
- UFSM also eliminates unpaid school meal charges and debt, which can compound stress for families.⁴⁷ Nationwide, the average annual school meal debt is \$556 per child.⁴⁸

Effects on academic performance

Academic outcomes

Nourishment is key for focus in school, and food insecurity is associated with poorer academic outcomes. Children of all ages who experience food insecurity have more emotional and behavioral

challenges, which can affect learning and ability to participate in class in school, and delayed or reduced academic skills such as reading, mathematics, and critical thinking.⁴⁹ The evidence regarding the relationship between UFSM and academic outcomes is mixed. Limited research on this topic examines the effects of universal meals through CEP, which may or may not be an accurate predictor of a statewide UFSM program's impacts on academic performance. The studies show either slight or no improvements to test scores.

- A systematic review of UFSM identified three U.S.-based studies showing positive associations between CEP—which is not necessarily indicative of the effects of a statewide UFSM—and academic performance. The studies analyzing universal breakfast were mixed, showing either modest improvements to test scores for limited subsets of students, or no change.⁵⁰
- A national study of elementary school students found a slight increase in reading scores among Hispanic children in CEP schools.⁵¹
- A study that examined longitudinal data from the Adolescent Diet Study found that food insecurity was associated with lower academic skills (e.g. reading, math, and critical thinking) over time.⁵²

Attendance, tardiness, and behavior

Researchers posit that UFSM programs could increase attendance by enticing students to come to school for meals and by reducing absences due to illness through improved nutrition.⁵³ However, evidence regarding this association is mixed.

- One systematic review identified five studies reporting a positive association between UFSM and attendance, primarily among sub-populations, and four that found no association, among U.S. studies.⁵⁴ Another systematic review found mixed evidence regarding the association between UFSM in CEP schools and attendance.⁵⁵
- One study that observed the attendance records of Wisconsin elementary school children over the course of three years found that implementing universal school meals through the CEP found no effects on attendance in the first year. By the second year, however, there was a three-and-a-half percentage point decrease in low attendance for economically disadvantaged students—defined as missing more than five percent of available school days—in CEP schools compared to eligible schools that did not implement the program.⁵⁶
- A study analyzing universal free breakfast programs found no discernible effects on attendance or tardiness rates.⁵⁷

Although they do not examine UFSM, studies show that Breakfast after the Bell programs can increase attendance. Notably, one study found a seven percent decrease in chronic absenteeism among high school students.⁵⁸ A nationally representative study found that kindergarten and first grade students who receive Breakfast in the Classroom experience less chronic absenteeism than those who do not.⁵⁹

This health note identified limited evidence on the association between universal school meals and behavior. One study found that the rollout of UFSM through CEP was linked to a 17% reduction in suspension rates among white male elementary school students but saw no statistically significant effects for Black students and smaller, not statistically significant effects for other subgroups.⁶⁰ These results were most significant in elementary schools in high-poverty areas.⁶¹

Universal Free School Meals and Food Waste

One criticism of UFSM programs is their potential to generate food waste by providing meals to students who do not need them. Although food waste remains a concern for all school meal programs, this research did not yield evidence indicating that UFSM programs would exacerbate this problem.

Qualitative evidence highlights opportunities to reduce food waste in all types of school feeding programs.

- The NSLP's Offer versus Serve provision requires schools to offer all five required meal components while allowing children to decline some of the food, potentially reducing food waste.⁶²
- One review suggested that bulk preparation of meals for schools has the potential to minimize waste by reducing individual packaging and can have further environmental benefits when prioritizing local ingredients, shortening the food supply chain and encouraging local producers to diversify their products.⁶³

Other opportunities to increase sustainability and reduce waste include purchasing raw and locally produced foods, as is proposed in this bill, offering vegetarian or vegan menus, editing portion sizes, and composting or donating unused food.⁶⁴

Who is most likely to benefit from universal free school meals?

Universal free school meals are important sources of high-quality meals for children from all income levels, but they are particularly critical for low-income households that qualify or nearly qualify for FRPM. Colorado's HSMA program has the potential to make an extensive impact on families across the state. The Colorado Department of Education enrolls about 881,065 PK-12 students,⁶⁵ and the program served almost 101 million meals in its first year.⁶⁶

Families just above FRPM eligibility are exposed to meal costs when universal access is eliminated. Colorado is home to an estimated 172,540 food insecure children.⁶⁷ About 46% of students qualified for FRPL in 2023-2024,⁶⁸ which implies 54% did not and would face full prices absent HSMA or CEP.

Policies that add paperwork or stigma can depress participation for mixed-status families. In the context of increasing anti-immigrant policies and policing, universal school meals can ensure food access for children from mixed or irregular immigration status families by reducing their need to interact with state agencies and government officials. Children in immigrant families are a sizeable share of Colorado students. About 245,400 children in Colorado have at least one immigrant parent,⁶⁹ and 24,800 were born abroad.⁷⁰

Beyond Colorado public school students and their families, school food service workers and the Colorado agriculture sector stand to benefit from this bill through increased wages and business, respectively. The initial program created a local food procurement grant, which was delayed due to a budget shortfall. A report from the Urban Institute shows that local food procurement is more financially and administratively burdensome for schools, highlighting the importance of dedicated funding.⁷¹ The research summarized above indicates that locally produced food is healthier and more appealing to students and can help to minimize waste associated with school food programs.

HSMA relies heavily on CEP for funding, but in the wake of 2025 federal budget cuts to SNAP and Medicaid and potential changes to CEP eligibility, a state-generated funding source will be necessary to sustain the program.⁷²

Implementation considerations

As summarized in this note, there are several characteristics that make school meal programs effective at reducing food insecurity and improving child nutrition. Key factors that were summarized in this review include: aiming to meet current nutritional standards established in the DGA and by the HHFKA; using locally produced ingredients where possible; and offering children the opportunity to eat breakfast during regular school hours. Focusing on these factors could help ensure that these programs can support children's health as intended.

Appendix: Methodology

Once the bill referred to these ballot measures was selected for analysis, a research team from the Health in All Policies Initiative hypothesized connections, or pathways, between the original bill, health determinants, and health outcomes. The research team developed these hypothesized pathways using their expertise and a preliminary literature review. The team mapped the selected bill components to steps on these pathways, then developed research questions and a list of keywords to search for. The research team reached a consensus on the final conceptual model, research questions, contextual background questions, keywords, and keyword combinations. The conceptual model, research questions, search terms, list of literature sources, and draft health note were peer-reviewed by two external subject matter experts. The experts also reviewed a draft of the health note. A copy of the conceptual model is available upon request. The Health in All Policies Initiative developed and prioritized 10 research questions related to the bill components examined:

- To what extent do universal school meal programs affect childhood food security or food insufficiency?
- To what extent does immigration status affect government benefits/services seeking?
- To what extent do universal school meal programs affect school meal participation among children of immigrants?
- To what extent does child food insecurity affect academic performance or educational attainment?
- To what extent do free school meals affect school attendance?
- To what extent does child hunger affect behavioral challenges in school and subsequent suspension rates?
- To what extent do universal school meal programs contribute to food waste?
- To what extent do need-based school meal programs create stigma or cause stress for low-income children?
- To what extent do universal school meal programs affect nutrition (healthy eating and diet quality)?
- To what extent do universal school meal programs affect weight, obesity and health outcomes resulting from overweight and obesity, such as diabetes?

The research team next conducted an expedited literature review using a systematic approach to minimize bias and answer each of the identified research questions.ⁱ The team limited the search to systematic reviews and meta-analyses of studies first since they provide analyses of multiple studies or address multiple research questions. If the team did not find appropriate systematic reviews or meta-analyses for a specific question, they searched for nonsystematic research reviews, original articles, and research reports from U.S. agencies and nonpartisan organizations. The team limited the search to electronically available sources published between 2020 and 2025. The research team searched PubMed and EBSCO databases along with the following leading journals in public health, as well as sector-specific journals suggested by subject matter experts for this analysis to explore each research question: American Journal of Public Health; Social Science & Medicine; Health Affairs; Children and Youth Services Review; Journal of School Health; JAMA Network Open; Journal of the Academy of Nutrition and Dietetics; Nutrients; The Journal of Nutrition; and the American Journal of Clinical Nutrition.ⁱⁱ For all searches, the team used the following search terms: universal school meals; free school meals; child hunger; child nutrition; food security; child food insecurity or insufficiency; academic performance; behavioral challenges; food waste; social stigma; attendance; overweight; obesity. The team also searched Urban Institute, Center on Budget and Policy Priorities; Food Research and Action Center; and U.S. Department of Agriculture for additional resources outside the peer-reviewed literature. After following the above protocol, the team screened 1171 titles and abstracts,ⁱⁱⁱ identified 105 abstracts for potential inclusion, and reviewed the full text corresponding to each of these abstracts. After applying the inclusion criteria, 67 articles were excluded. Seven additional sources were identified upon review of the included articles. A final sample of 45 articles, including five systematic reviews, was used to create the health note. In addition, the team used 11 references to provide contextual information.

Of the studies included the Health in All Policies Initiative qualitatively described and categorized the strength of the evidence as not well researched, mixed evidence, a fair amount of evidence, strong evidence, or very strong evidence. They adapted the evidence categories from a similar approach from Washington State.⁷³

- **Very strong evidence:** the literature review yielded robust evidence supporting a causal relationship with few, if any, contradictory findings. The evidence indicates that the scientific community largely accepts the existence of the relationship.
- **Strong evidence:** the literature review yielded a large body of evidence on the association, but the body of evidence contained some contradictory findings or studies that did not incorporate

ⁱ Expedited reviews streamline traditional literature review methods to synthesize evidence within a shortened timeframe. Prior research has demonstrated that conclusions of a rapid review versus a full systematic review did not vary greatly. M.M. Haby et al, "What Are the Best Methodologies for Rapid Reviews of the Research Evidence for Evidence-Informed Decision Making in Health Policy and Practice: A Rapid Review," *Health Research Policy and Systems* 14, no. 1 (2016): 83, <https://doi.org/10.1186/s12961-016-0155-7>.

ⁱⁱ American Journal of Public Health, Social Science & Medicine, and Health Affairs were selected using results from a statistical analysis completed to determine the leading health research journals between 1990 and 2014 and in consultation with policing and criminal justice experts. Merigó, José M, and Alicia Núñez. (2016). "Influential Journals in Health Research: A Bibliometric Study." *Globalization and Health* 12.1, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4994291/>.

ⁱⁱⁱ Many of the searches produced duplicate articles. The number of sources screened does not account for duplication across searches in different databases.

the most robust study designs or execution or had a higher-than-average risk of bias or some combination of those factors.

- **A fair amount of evidence:** the literature review yielded several studies supporting the association, but a large body of evidence was not established, or the review yielded a large body of evidence, but findings were inconsistent with only a slightly larger percentage of the studies supporting the association; or the research did not incorporate the most robust study designs or execution or had a higher-than-average risk of bias.
- **Mixed evidence:** the literature review yielded several studies with contradictory findings regarding the association.
- **Not well researched:** the literature review yielded few, if any, studies or yielded studies that were poorly designed, poorly executed, or had a high risk of bias.

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