Part D. Chapter 6: Frequency of Meals and/or Snacking

Introduction

Eating behaviors are important determinants of dietary intake and some can be investigated as strategies to enhance health. Although eating behaviors are often characterized in terms of preferences, appetite, and types and amounts of foods ingested during meals, frequency of eating occasions can also be considered an eating behavior that may meaningfully affect health. Eating occasions include meals and snacks. Although no consensus exists on the specific definition of eating occasions, diets in many contexts, including the United States, are organized around daily meals—typically breakfast, lunch, and dinner. Meals include specific foods or types of foods served and consumed at set times of the day, with breakfast occurring in the morning, lunch in the afternoon, and dinner in the evening. In addition to providing nourishment, meals are often social occasions that include family members or friends.[1] Snacks are usually characterized by smaller amounts of food consumed outside of typical mealtimes.[1]

Definitions of meals may differ between populations. For example, people in certain life stages (such as infants who require more frequent feeding), people who follow different cultural norms for eating occasions, or people who have irregular schedules (such as shift workers) may consume meals at different times.[2] Given such inconsistencies with how people may categorize eating occasions, many dietary assessment methods rely on the participant to define the eating occasion. While this method allows a way to operationalize assessment of eating occasions, it makes it difficult to standardize meals and snacks. For example, breakfast is often defined as the first meal of the day. Although many adults eat breakfast early in the morning, others might skip breakfast or eat a small snack rather than a defined meal. The lack of standardization introduces challenges to conducting systematic reviews of the current literature; recommendations to address these challenges are discussed further in this chapter and in **Part E. Chapter 2: Future Directions**.

In addition to eating behaviors, another important factor that might influence nutritional and health status is timing and size of eating occasions. Recent interest has emerged in approaches such as intermittent fasting, where fasting periods are systematically applied to certain times during the day or to specific days of the week. Common dietary practices that represent patterns of time-restricted eating include breakfast skipping and after dinner meals or snacking, which may have implications for energy intake and risk of obesity. For example, skipping breakfast could reduce energy intake early in the day, but its effect on total daily energy intake, diet quality, and risk of obesity may be complex. A greater proportion of energy intake might be shifted to later in the day and could have implications for development of obesity. Breakfast consumption is also an important focus because it typically represents the breaking of an extended fasting period. Time-restricted eating, especially when foods are consumed earlier in the day, may be linked to improvements in metabolic conditions.[3,4]

This chapter provides data analysis highlights for frequency of meals/snacking from the What We Eat in America (WWEIA), National Health and Nutrition Examination Survey (NHANES) 2017-March 2020,[5] describes the Committee's systematic reviews across the lifespan on relationships between frequency of

meals and/or snacking and consuming a dietary pattern that is better aligned with the *Dietary Guidelines for Americans;* energy intake; and growth, body composition, and risk of obesity. The chapter also discusses and integrates the results of these reviews of the science and provides the Committee's advice to the Departments for developing the *Dietary Guidelines for Americans, 2025-2030.*

Data Analysis Highlights for Frequency of Meals/Snacking

Breakfast

Most younger children consume breakfast (96 percent among ages 2-5 years, 88 percent among ages 6-11 years), but breakfast consumption is significantly lower among older children and adolescents (72 percent among ages 12-19 years). Breakfast consumption is significantly higher among adults ages 60 years and older (93 percent) compared to adults ages 40-59 years (85 percent) and adults ages 20-39 years (77 percent). Differences in breakfast consumption also exist among different racial and/or ethnic groups as well as among family income levels, with individuals of higher family income reporting more frequent breakfast consumption compared to individuals with lower family income.

Snacking

Snacking is highly prevalent in the United States, with 93 percent of children and adolescents ages 2-19 years and 86 percent of adults ages 20 years and older reporting 1 or more snacks on a given day (excluding snacks of only plain water). Among snack consumers ages 2-19 years, snacks contribute to daily nutrient intakes, including 27 percent of total energy, 42 percent of added sugars, 26 percent of saturated fat, and 17 percent of sodium intake. Among snack consumers ages 20 years and older, snacks contribute 23 percent of total daily energy, 43 percent of daily added sugars, 21 percent of daily saturated fat, and 14 percent of daily sodium. Among adults ages 20 years and older, mean daily energy intake is higher when a greater number of snacks are consumed in a day. For instance, adults who report 0 snacks consume an average of 1,778 kcals per day, whereas adults who report 4 or more snacks consume an average of 2,353 kcals per day. Adults who report snacks consume 304 more kcals per day compared to adults who don't report snacks, with snacks contributing an average of 520 kcals per day. The most frequently reported food categories consumed during snack occasions are snacks and sweets (including savory snacks, crackers, snack/meal bars, sweet bakery products [e.g., cakes and pies, cookies and brownies], candy, and ice cream and frozen dairy desserts) and non-alcoholic beverages.

Late Evening

Late evening consumption is defined as consumption of any food or beverage other than plain water between 8:00 p.m. and 11:59 p.m. on the intake day. Late evening consumption is significantly lower among adults ages 60 years and older (57 percent) compared to adults ages 20-59 years (66 percent). Among adults ages 20 years and older who are late evening consumers, average energy intake from foods and beverages consumed in the late evening is about 550 kcals, or 25 percent of total daily energy intake. Late evening consumption provides 26 percent of total daily intake of added sugars, 26 percent of total daily saturated fat intake, and 22 percent of total daily sodium intake. Adults ages 20 years and older who are late evening consumers have a significantly higher total daily energy intake (2,243 kcal) compared to

those who are not late evening consumers (1,930 kcal). Among late evening consumers, the most commonly reported food categories consumed during the late evening period are snacks and sweets.

Setting the Systematic Review Criteria

Frequency of meals and/or snacking has been a topic of interest for multiple iterations of the *Dietary Guidelines for Americans,* with the 2010 and 2020 Committees completing systematic reviews on related topics. However, the 2025 Committee's focus on identifying strategies for individuals and families related to diet quality and weight management—a topic in which there is also public interest—led it to approach the questions presented in this chapter as new systematic reviews that included literature that met inclusion criteria and were published from 2000 to 2024. The Committee's systematic reviews on frequency of meals and/or snacking evaluated scientific literature on occasion-based measures such as meals (e.g., breakfast), snacking, frequency of meals, and number of eating occasions as defined by the studies. The Committee considered studies that enrolled participants across life stages from young children to older adults, including individuals during pregnancy and postpartum.

Consistent with the Committee's other reviews involving growth, body composition, and risk of obesity outcomes, favorable growth and body composition was distinguished from unfavorable growth and body composition. Favorable growth and body composition outcomes were increases in or greater height (children and adolescents only) or lean body mass, and reductions in or lower weight-for-age, BMI-for-age, fat mass, or waist circumference. Unfavorable growth and body composition outcomes were increases in or greater weight-for-age, BMI-for-age, fat mass, or waist circumference, and lower height (for children and adolescents only) or reductions in lean body mass. Risk of obesity included changes in incidence of overweight and obesity or increases in weight or BMI. Several key confounders were examined when interpreting results from studies of frequency of eating and/or snacking, including variables in consideration of health equity such as sex, age, race and/or ethnicity, and socioeconomic position.

List of Questions

1. What is the relationship between frequency of meals and/or snacking and consuming a dietary pattern that is better aligned with the *Dietary Guidelines for Americans*?[6]
2. What is the relationship between frequency of meals and/or snacking and energy intake?[7]
3. What is the relationship between frequency of meals and/or snacking and growth, body composition, and risk of obesity?[8]

Conclusion Statements

Question 1. What is the relationship between frequency of meals and/or snacking and consuming a dietary pattern that is better aligned with the *Dietary Guidelines for Americans*?

Approach to Answering Question: Systematic Review

A conclusion statement cannot be drawn about the relationship between frequency of meals and/or snacking and consuming a dietary pattern that is better aligned with the *Dietary Guidelines for Americans* because there is not enough evidence available. (Grade: Grade Not Assignable)

View the full systematic review, including details on the methodology and the evidence underlying these conclusion statements, at https://nesr.usda.gov/2025-dietary-guidelines-advisory-committee-systematic-reviews/frequency-meals-snacks_diet-quality

Question 2. What is the relationship between frequency of meals and/or snacking and energy intake?

Approach to Answering Question: Systematic Review

Frequency of Meals and/or Snacking in Children and Adolescents

A conclusion statement cannot be drawn about the relationship between frequency of meals and/or snacking in children and adolescents and energy intake because of substantial concerns with heterogeneity of exposures in a small body of evidence. (Grade: Grade Not Assignable)

Breakfast in Adults and Older Adults

A conclusion statement cannot be drawn about the relationship between breakfast consumption in adults and total daily energy intake because of substantial concerns with consistency and generalizability in the body of evidence. (Grade: Grade Not Assignable)

A conclusion statement cannot be drawn about the relationship between breakfast consumption in older adults and energy intake because there is no evidence available. (Grade: Grade Not Assignable)

Number of Eating Occasions in Adults and Older Adults

A conclusion statement cannot be drawn about the relationship between number of eating occasions per day in adults and older adults and energy intake because of substantial concerns with generalizability in a small body of evidence. (Grade: Grade Not Assignable)

Snacking in Adults and Older Adults

A conclusion statement cannot be drawn about the relationship between snacking in adults and older adults and energy intake because of substantial concerns with generalizability in the body of evidence. (Grade: Grade Not Assignable)

View the full systematic review, including details on the methodology and the evidence underlying these conclusion statements, at https://nesr.usda.gov/2025-dietary-guidelines-advisory-committee-systematic-reviews/frequency-meals-snacks_energy-intake

Question 3. What is the relationship between frequency of meals and/or snacking and growth, body composition, and risk of obesity?

Approach to Answering Question: Systematic Review

Breakfast

Children and Adolescents

Regular breakfast consumption by children and adolescents may be associated with favorable outcomes related to growth, body composition, and/or lower risk of obesity. This conclusion statement is based on evidence graded as moderate. (Grade: Moderate)

Adults and Older Adults

Breakfast skipping in adults and older adults is not associated with favorable outcomes related to body weight and composition and risk of obesity. This conclusion statement is based on evidence graded as limited. (Grade: Limited)

Snacking

Children and Adolescents

Frequency of daily snacking during childhood may not be associated with outcomes related to growth, body composition, and/or risk of obesity. This conclusion statement is based on evidence graded as limited. (Grade: Limited)

Adults and Older Adults

Overall snacking in adults may not be associated with outcomes related to body composition and risk of obesity. However, after dinner/evening snacking in adults may be associated with less favorable outcomes related to body composition and risk of obesity. This conclusion statement is based on evidence graded as limited. (Grade: Limited)

A conclusion statement cannot be drawn about the relationship between snacking in older adults and body composition and risk of obesity because there is not enough evidence available. (Grade: Grade Not Assignable)

Number of Eating Occasions

Children and Adolescents

Higher number of eating occasions per day during childhood may be associated with favorable outcomes related to growth, body composition, and/or lower risk of obesity. This conclusion statement is based on evidence graded as limited. (Grade: Limited)

Adults and Older Adults

Number of eating occasions per day in adults is not associated with outcomes related to change in body composition and weight. This conclusion statement is based on evidence graded as moderate. (Grade: Moderate)

A conclusion statement cannot be drawn about the relationship between number of eating occasions in older adults and body composition and risk of obesity because there is not enough evidence available. (Grade: Grade Not Assignable)

Meal Frequency

Children and Adolescents

Meal frequency/skipping by children and adolescents may not be associated with outcomes related to risk of overweight or obesity. This conclusion statement is based on evidence graded as limited. (Grade: Limited)

A conclusion statement cannot be drawn about the relationship between meal frequency/skipping by children and adolescents and growth and body composition because there is not enough evidence available. (Grade: Grade Not Assignable)

Adults and Older Adults

A conclusion statement cannot be drawn about the relationship between lunch or dinner frequency in adults and older adults and outcomes related to body composition and risk of obesity because of substantial concerns related to directness and generalizability in a small body of evidence. (Grade: Grade Not Assignable)

Frequency of Meals and/or Snacking

Individuals During Pregnancy

A conclusion statement cannot be drawn about the relationship between frequency of meals and/or snacking during pregnancy and gestational weight gain because there is not enough evidence available. (Grade: Grade Not Assignable)

During Postpartum

A conclusion statement cannot be drawn about the relationship between frequency of meals and/or snacking during postpartum and postpartum weight change because there is not enough evidence available. (Grade: Grade Not Assignable)

View the full systematic review, including details on the methodology and the evidence underlying these conclusion statements, at https://nesr.usda.gov/2025-dietary-guidelines-advisory-committee-systematic-reviews/frequency-meals-snacks_growth-obesity

Integration

The Committee developed scientific questions to comprehensively examine the relationship between frequency of meals and/or snacking and 3 outcomes: consuming a dietary pattern that is better aligned with the *Dietary Guidelines for Americans*; energy intake; and growth, body composition, and risk of obesity. Given the *Dietary Guidelines* focus on life stages, evidence was synthesized separately for children and adolescents and for adults and older adults. Evidence for individuals during pregnancy and postpartum was synthesized, if available, for each outcome. In addition, the outcomes of gestational weight gain and postpartum weight change were included in the systematic reviews on growth, body composition, and risk of obesity. When sufficient evidence was available, it was also synthesized by exposure categories: breakfast consumption or skipping, snacking, number of eating occasions, and frequency of meals. Evidence was not available for all outcomes, age groups, or exposure categories, therefore conclusions statements were developed only if sufficient evidence was available. This evidence will support development of population-level food-based recommendations to promote healthy dietary patterns and weight.

For the relationship between frequency of meals and/or snacking and consuming a dietary pattern that is better aligned with the *Dietary Guidelines*, conclusion statements could not be developed because not enough evidence was available across all life stages.

For the relationship between frequency of meals and/or snacking and energy intake, conclusion statements could not be developed. Substantial concerns with heterogeneity of exposures in a small body of evidence characterized the evidence base reviewed for children and adolescents, and substantial concerns with consistency and/or generalizability were present in the evidence base reviewed for adults and older adults.

The Committee developed conclusion statements for outcomes related to growth, body composition, and risk of obesity that were described as favorable (i.e., better growth pattern in children, lower risk of obesity), unfavorable (i.e., higher body weight, higher waist circumference, higher risk of obesity), or no association (i.e., no change in body weight or waist circumference, no change in the risk of obesity). The conclusion statements varied depending on the type and frequency of meal and/or snacking studied. For example, regular breakfast consumption by children and adolescents may be associated with favorable outcomes related to growth, body composition, and/or lower risk of obesity. In adults and older adults, the evidence on breakfast focused on breakfast skipping rather than regular breakfast consumption, and the Committee concluded that breakfast skipping was not associated with favorable outcomes related to body weight and composition and risk of obesity. With regard to number of eating occasions, a higher number of eating occasions in children may be associated with favorable outcomes related to growth, body composition, and/or lower risk of obesity, whereas in adults, number of eating occasions was not associated with body weight and composition.

Among children, frequency of daily snacking may not be associated with outcomes related to growth, body composition, and/or risk of obesity. In adults, overall snacking may not be associated with outcomes related to body composition and risk of obesity, whereas after dinner/evening snacking may be associated

with less favorable outcomes related to body composition and risk of obesity. Lastly, meal frequency/skipping by children and adolescents may not be associated with outcomes related to risk of overweight or obesity, however, not enough evidence was available to evaluate the relationship between meal frequency/skipping in children and growth and body composition. Conclusion statements could not be developed for the relationship between frequency of lunch or dinner and outcomes related to body composition and risk of obesity in adults and older adults because of substantial concerns related to directness and generalizability in a small body of evidence. Conclusion statements could not be developed for frequency of meals/snacking and outcomes related to gestational weight gain or postpartum weight change, because there was not enough evidence available.

Most of the conclusion statements were either not assigned a grade or graded as limited, although 2 were graded as moderate. Evidence was graded as moderate for regular breakfast consumption by children and adolescents and favorable outcomes related to growth, body composition, and/or lower risk of obesity, as well as for no association between number of eating occasions per day and change in body composition and weight in adults.

Summary

Taken together, the Committee found that in children and adolescents, regular breakfast consumption and higher number of eating occasions may be associated with favorable outcomes related to growth, body composition, and/or lower risk of obesity; frequency of daily snacking among children may not be associated with outcomes related to growth, body composition, and/or risk of obesity; and meal frequency/skipping among children may not be associated with risk of overweight or obesity. Heterogeneity of exposures in a small body of evidence prevented the ability to rigorously evaluate associations between frequency of meals and/or snacking with energy intake.

Among adults and older adults, breakfast skipping, overall snacking, and number of eating occasions may not be associated with outcomes related to body composition, body weight, and/or risk of obesity, but after dinner/evening snacking may be associated with less favorable outcomes related to body composition and risk of obesity. Not enough evidence and serious limitations related to generalizability made it challenging to evaluate the relationship between frequency of meals and/or snacking and energy intake.

For all life stages, not enough evidence was available to assess the frequency of meals and/or snacking and consuming a dietary pattern that is better aligned with the *Dietary Guidelines*, as measured by the Healthy Eating Index. Similarly, not enough evidence was available to assess the relationship between frequency of meals and/or snacking and gestational weight gain or postpartum weight change.

Discussion

Regarding breakfast, the Committee found that in children and adolescents, regular breakfast consumption may be associated with favorable outcomes related to growth, body composition, and/or risk of obesity. The evidence suggests that regular breakfast consumption should be encouraged for children and adolescents. In adults and older adults, the Committee concluded that breakfast skipping is not associated with favorable outcomes related to body weight and composition and risk of obesity. Due to

serious heterogeneity in the direction and the significance of the results in the 19 included articles (18 randomized controlled trials and 1 prospective cohort study) that could not be explained by participant characteristics, the Committee was unable to develop a conclusion statement on the relationship between breakfast consumption in adults and total daily energy intake.

Regarding snacking, the Committee found that in children, frequency of daily snacking may not be associated with outcomes related to growth, body composition, and/or risk of obesity, whereas in adults, after dinner/evening snacking may be associated with less favorable outcomes related to body weight and composition and risk of obesity. The Committee reviewed 19 articles in total (7 in children and adolescents and 12 in adults and older adults). This large body of evidence enabled the Committee to consider frequency of snacking, which may be more important than snacking in general for outcomes related to growth, body composition, and/or risk of obesity. An important note is that the Committee was unable to review the quality of the snack consumed, due to inconsistencies in reporting and/or description of snack quality in the included studies. Future studies should consider snack type and quality, because certain foods such as fruits, nuts, seeds, and dairy products, if consumed as a snack, will likely contribute to an overall dietary pattern that is better aligned with the *Dietary Guidelines*.

Regarding frequency of meals, the Committee found that meal frequency/skipping by children and adolescents may not be associated with risk of obesity, based on 13 studies. No conclusion statements were drawn for growth and body composition in children (5 observational studies) or for body weight, composition, and risk of obesity in adults and older adults (5 cohort studies with most finding a null relationship) due to not enough evidence.

Regarding number of eating occasions, the Committee concluded that a higher number of eating occasions may be associated with favorable outcomes related to growth, body composition, and/or risk of obesity in children, whereas number of eating occasions is not associated with outcomes related to changes in body weight and composition in adults. Although this conclusion points to the need for developing food-based guidance that takes into account number of eating occasions for children, the studies did not consistently report or describe the quality of foods consumed at the eating occasions. Therefore, future studies that evaluate the number of eating occasions in combination with food types and quality are needed to refine food-based guidance that will help align children's dietary intake to meet *Dietary Guidelines* recommendations. Nevertheless, considering that little room is available for high energy-dense foods in children's diets (particularly younger children and children during rapid growth periods), the nutritional quality of the foods consumed during each eating occasion is important.

Comparison to Other Systematic Reviews and Meta-Analyses

The Committee's conclusions for breakfast intake and outcomes related to growth, body composition, and/or risk of obesity in children agree in part with findings of other published systematic reviews.[9-12] A 2023 systematic review of 40 retrospective studies of 323,244 children found that skipping breakfast was positively associated with overweight in children and adolescents (odds ratio [OR]=1.37, 95% confidence interval [CI]: 1.23, 1.54; p<0.001).[11] A 2020 systematic review of 9 cohort studies and 36 cross-sectional studies with participants ranging from children to adults found that low frequency of weekly breakfast intake

was related to a higher risk for overweight/obesity (relative risk [RR]=1.44, 95% CI: 1.25, 1.66; I^2=61%; p=0.009) compared to high frequency of weekly breakfast intake, with no significant difference in results by age, gender, geographic region of residence, or financial status.[9] A 2021 systematic review found an 11 percent increase in relative risk for overweight/obesity when breakfast was skipped ≥3 days per week compared to ≤2 days per week based on 2 cohort studies (95% CI: 1.04, 1.19), but BMI change was not different between the breakfast skipping group and the breakfast eating group from 2 studies (β = -0.02; 95% CI: -0.05, 0.01).[12] Lastly, a 2019 meta-analysis of 13 trials examining weight change and/or energy intake found a small difference in weight among breakfast skippers compared to habitual breakfast eaters (mean difference=0.44 kg, 95% CI: 0.07, 0.82), but the results were heterogeneous (I^2=43%).[10] Individuals randomized to the breakfast eating group had a higher total daily energy intake than individuals in the breakfast skipping group (mean difference=260 kcal/day, range 79 to 441 kcal/day), but results were highly heterogeneous (I^2=80%). These trials were short in duration (2 weeks for energy intake and 7 weeks for body weight) and risk of bias concern was present in at least 1 domain.[10] Although this Committee did not conduct a meta-analysis, it similarly found that results in the body of evidence were mixed and had many limitations, including lack of diversity in the study populations, different study designs and interventions, and diversity in energy intake assessments. Study duration may be an unexplained driver of the mixed results in the trials that the Committee reviewed.

With respect to snacking, prior systematic reviews are limited. A 2024 systematic review evaluated the relationship between consumption of discretionary snacks (defined as “non-core foods that typical dietary guidance does not recommend for regular consumption and that are usually consumed outside of main meals”) and weight status. For adults, the review found a positive association between consumption of such snacks and weight status (based on 4 longitudinal studies); for children, it found a negative association between consumption of snacks and weight status (based on 3 longitudinal studies).[13] That review, however, did not specify the time during which the snack occurred, which this Committee considered an important factor. Indeed, this Committee concluded that only after dinner/evening snacking was found to be associated with less favorable body composition and risk of obesity outcomes in adults. A 2020 systematic review of 21 observational studies (most of which were cross-sectional) found that consuming snacks ≥4 times/week compared to <4 times/week was associated with lower odds of overweight or obesity in children (OR=0.84, 95% CI: 0.71, 1.00; p=0.050).[14] That finding differs from this Committee’s conclusion statement, which states that frequency of daily snacking among children may not be associated with outcomes related to growth, body composition, and/or risk of obesity. Differences in findings may be driven by the review’s population (ages 5 to 19 years), the categorization of snacking as number of snacks per day with a cut-off at 4, and inclusion of cross-sectional studies.

No previous systematic reviews were found for number of eating occasions or frequency of meals and outcomes related to growth, body composition, and/or risk of obesity. Similarly, no previous systematic reviews were found to examine relationships between frequency of meals and/or snacking and gestational weight gain or postpartum weight change.

Committee's Advice to the Departments

The Committee's advice to the Departments as they develop the *Dietary Guidelines for Americans, 2025-2030*, is to continue to recommend regular breakfast consumption as part of a dietary pattern that is better aligned with the *Dietary Guidelines*, particularly for children and adolescents. Among children and adolescents, regular breakfast consumption may be associated with favorable outcomes related to growth, body composition, and/or lower risk of obesity. Among adults, breakfast skipping was not associated with favorable outcomes related to body weight and composition, and risk of obesity. Individuals might choose not to consume breakfast for a variety of reasons. For children, these can include lack of time, not being hungry, food preferences, not understanding the benefits of consuming breakfast, and possible stigma associated with breakfast consumption at school.[15-17] The School Breakfast Program can be an important facilitator of breakfast consumption among children. Strategies to reduce stigma and increase breakfast consumption in this setting include providing universal breakfast (i.e., all children in schools participating in the School Breakfast Program receive free breakfast, regardless of family income), providing 'grab and go' breakfasts, allowing breakfast to be served after the bell, and advertising breakfast offerings along with the benefits of eating breakfast.[17,18] For adults, reasons for not consuming breakfast include using this behavior as a weight-loss strategy, limited knowledge of the potential benefits of consuming breakfast, and time constraints.[15,19] Breakfast provides an important opportunity for individuals to improve the nutritional quality of foods they consume to meet nutrient requirements as well as to consume a diet that is aligned with *Dietary Guidelines* recommendations.

The Committee advises the Departments to continue recommending nutrient-dense snacks as part of a dietary pattern that is better aligned with the *Dietary Guidelines* for children and adolescents. Nutrient-dense snacks are key opportunities for children—particularly younger children and children during periods of rapid growth—to meet intake goals for key nutrients for growth and development when meals alone might not fulfill the goals. The nutrition standards for snacks served in early care and education and after-school programs that participate in the Child and Adult Care Food Program (CACFP), National School Lunch Program (NSLP), and Summer Food Service Program (SFSP) should continue to align with the *Dietary Guidelines*.[20-22] Starting in School Year 2014-2015, all foods sold at school during the school day were required to meet nutrition standards.[23] The Smart Snacks in School regulations apply to foods sold à la carte, in the school store, vending machines, and any other venues where food is sold to students.[24] USDA's Food and Nutrition Service provides tools and resources to help schools and other organizations and programs that provide snacks to identify foods that meet Smart Snacks criteria. These tools and resources can help caregivers support and encourage children to make healthier snack choices that are consistent with the *Dietary Guidelines*. The Committee also recommends the *Dietary Guidelines for Americans*, *2025-2030* provide specific strategies to improve the nutritional quality of the foods and beverages consumed as a snack. Snacking occasions are often associated with consumption of foods and beverages high in energy density and low in nutrient density which could be replaced by nutrient-dense options such as fruits, vegetables, whole grains, and non-fat or low-fat dairy.

The Committee recommends that the Departments incorporate guidance about after dinner/evening snacking in the *Dietary Guidelines*, as the Committee found that this type of snacking may be associated with less favorable outcomes related to body composition and risk of obesity in adults, potentially because the types of snacks typically consumed after dinner or late in the evening are high in energy density and low in nutrient density. The Committee recommends including strategies such as reducing consumption of snacks high in energy density and low in nutrient density and increasing consumption of nutrient-dense snacks consumed after dinner or late in the evening to improve the quality of the foods and beverages consumed, and as part of a dietary pattern that is better aligned with the *Dietary Guidelines*.

The Committee recommends promoting diets with a higher number of eating occasions in children, as this may be associated with favorable outcomes related to growth, body composition, and/or lower risk of obesity. It is important to note that the studies did not specify the types of foods consumed during these eating occasions, but considering that little room is available for high energy-dense foods in children's diets, particularly younger children and children during rapid growth periods, the nutritional quality of the foods consumed during each eating occasion is important. Therefore, the Committee's advice includes dividing nutrient-dense foods into smaller meals/snacks throughout the day to allow children to consume key nutrients for healthy growth and development. This recommendation is in line with the finding that meal frequency/skipping in children and adolescents may not be associated with risk of obesity, therefore a higher number of eating occasions is not expected to negatively affect outcomes related to growth, body composition, and/or lower risk of obesity. In adults, the number of eating occasions was not associated with outcomes related to body composition and/or lower risk of obesity. Therefore, guidance for adults may include consuming the recommended dietary patterns in accordance with an individual's preferences and schedules.

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