



**Promoting Good Nutrition and Healthy Eating in Schools:
An Important Strategy for Promoting Oral Health and Preventing Dental Caries
Policy Statement
Association of State and Territorial Dental Directors (ASTDD)**

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Abstract

To reduce dental caries (tooth decay) and promote oral health, the Association of State and Territorial Dental Directors (ASTDD) fully supports promoting good nutrition and healthy eating in schools through effective nutrition education, policies, and procedures, and by serving healthy foods and beverages in school cafeterias and throughout school campuses.

Dental caries is one of the most common chronic diseases of childhood in the United States and can negatively affect health throughout life. One behavior associated with dental caries in children and adolescents is the consumption of large quantities of sugar-sweetened foods and beverages. Sugar-sweetened beverages (SSBs) include soda/pop, fruit drinks, sports drinks, sweetened coffee and tea, energy drinks, sweetened milk or milk alternatives, and other beverages to which sugar, generally high-fructose corn syrup or sucrose (table sugar), has been added.

Schools are ideal settings to reach children and adolescents for health promotion and to instill healthy behaviors. In 2019, 56 million children and adolescents attended a public or private school in the United States. Encouraging children and adolescents to consume healthy foods and beverages can help them in learning behaviors that support achieving healthy lifestyles. In addition, evidence-based and age-appropriate nutrition and oral health education can help promote oral health and overall health. Schools can also serve as vital two-way channels of communication with communities by modeling good nutrition practices and involving communities in setting policies and designing strategies that promote good nutrition.

The marketing of unhealthy foods and beverages to children and adolescents is a major public health concern. Schools should promote and serve only foods and beverages that meet nutrition criteria such as those developed by Healthy Eating Research, a national program of the Robert Wood Johnson Foundation or the Smart Snack standards of the U.S. Department of Agriculture, Food and Nutrition Service.

The objectives of this policy statement are to:

- Reinforce awareness of the close relationship between nutrition and oral health, and that nutrition and diet can affect overall health and well-being as well as the development and progression of oral diseases.
- Provide strategies to reduce children’s and adolescents’ frequent consumption of large quantities of sugar-sweetened foods and beverages; eliminate marketing and advertising of unhealthy foods and beverages to student populations; and promote school districts’ practices and policies related to the availability of healthy foods and beverages in school settings and school meal programs.
- Discuss how state and territorial oral health programs can work in collaboration with others to provide supportive environments for promoting oral health as well as good nutrition and healthy eating in schools.

State and territorial oral health programs can be essential partners in promoting nutrition and oral health education and healthy eating practices among children and adolescents by (1) helping to develop programs to ensure the integration of nutrition and oral health education into school curricula; (2) promoting healthy food choices to help children adopt healthy eating practices; and (3) supporting strategies to encourage consumption of water and other beverages with low or no added sugar; and (4) to limit the availability of SSBs.

Problem

Dental caries (tooth decay) is one of the most common chronic diseases of childhood in the United States and can negatively affect oral health throughout life. Left untreated, the pain and infection caused by dental caries can result in problems with eating, speaking and learning.¹ Nutrition and oral health are closely related. Nutrition can affect the development and integrity of the mouth and teeth, and the progression of oral diseases.² Good oral health, particularly healthy teeth and gums, enables chewing foods such as fresh fruits and vegetables, whole grains, and lean proteins that contribute to good nutrition.

Bacteria in the mouth consume sugars in food and beverages that create acids as a by-product which can break down tooth surfaces and create dental caries (tooth decay). Evidence supports a relationship between the amount and frequency of sugar consumed in food and beverage intake in the development of dental caries.³

Data from national surveys provide a snapshot of oral health problems that children and adolescents have experienced:

- Approximately 23 % of children ages 2–5 had dental caries in primary teeth.⁴
- Almost three in five adolescents ages 12–19 (57 %) had dental caries in permanent teeth.⁵
- One in six (17 %) of adolescents ages 12–19 had at least one untreated decayed tooth.⁵
- Adolescents ages 12–19 from families with low incomes were twice as likely to have untreated tooth decay, compared with their peers from families with higher.⁵
- Children from households experiencing food insecurity had significantly higher caries rates than children living in fully food-secure households.⁶

One behavior associated with dental caries in children and adolescents is the consumption of large quantities of sugar-sweetened foods and beverages. Sugar-sweetened beverages (SSBs) include soda/pop, fruit drinks, sports drinks, sweetened coffee and tea, energy drinks, sweetened milk or milk alternatives, and other beverages to which sugar, generally high-fructose corn syrup or sucrose (table sugar), has been added.

Consumption of 100% fruit juice, rather than other fruit drinks with added sugars, is a preferred nutritional choice for children and adults. One cup of 100% fruit juice is the equivalent of a one cup serving of fruit. However, there is continuing debate regarding intake of 100% fruit juice particularly for children.⁷ The American Academy of Pediatrics recommends a limit of 4 ounces per day for children ages 1 to 3, 4 to 6 ounces per day for children ages 4 to 6, and a limit of 8 ounces per day for children and adolescents ages 7 to 18.⁸

Children and adolescents' SSB consumption in the United States increased from 242 calories per day between 1988 and 1994 to 270 calories per day between 1999 and 2004.⁹ Adolescents whose parents had low educational attainment (defined as high school or less) had higher total SSB consumption and higher energy (caloric) intake from SSBs than those with parents with higher educational attainment.¹⁰ For individuals ages older than age 1, average consumption of added sugar represents 13% of daily calorie intake.

Reducing the amount of added sugar in the diet, either through changes in consumer behavior or in how food is produced and sold, is an achievable objective that could improve population health. Reducing sugar in the diet aligns with the 2020–2025 Dietary Guidelines for Americans Committee recommendation to consume less than 6% of calories per day from added sugar.¹¹ It also aligns with the American Heart Association recommendation that children older than age 2 should consume no more than six teaspoons (25 grams) of added sugar per day.¹²

Research consistently has demonstrated the effects of food advertising on children's and adolescents' brand preferences, food choices, and requests to parents. Marketing and advertising of high-calorie, low-nutrient foods and beverages increases children's and adolescents' preference for and intake of unhealthy foods and beverages.¹³ A 2012 study shows that in 2009, 48 reporting companies spent \$1.79 billion on marketing

directed toward children and adolescents.¹⁴ In-school expenditures accounted for nearly \$82.3 million (21%) of expenditures for carbonated beverage marketing directed toward children and adolescents. Such marketing and advertising are significant contributors to poor diet quality and to chronic diseases such as coronary heart disease, stroke, diabetes, and obesity.^{15,16,17}

Growing public pressure has led U.S. food and beverage companies to take self-regulatory measures, resulting in fewer food-related websites with child-oriented content. However, the sites that remain are replete with downloadable or internet-based video games that advertise a brand-name product by featuring it as part of the game (advergames), thus promoting foods likely to contribute to obesity.¹⁸

Findings from the 2016 School Health Policies and Practice Study (SHPPS), the most recent study on these topics, provides information about a nationally representative sample of public school districts' practices and policies related to foods and beverages outside the school meal program.¹⁹ The study showed that:

- Accessing vending machines during the school day was prohibited as a requirement in about 40% of all school districts, including elementary, middle and high school levels.
- About one-third (33.2 %) of school districts required and 27.5 % recommended that schools prohibit sales of foods and beverages that do not meet Smart Snack standards (see below) as part of fundraising for schools or organizations.
- Almost two-thirds (60.9 %) of school districts had policies or practices related to selling soft drinks to students after the official school day at any venue.
- Slightly more than one-third (38.1 %) of school districts had policies or practices related to the school districts receiving a specified percentage of soft drink sale receipts.
- Over half to two-thirds of school districts had policies or practices requiring the districts to provide free drinking water to students in the cafeteria during mealtimes; the gymnasium or other indoor physical activity facilities; outdoor physical activity facilities and sports fields; and hallways throughout the school buildings.

Method

Nutritional behaviors, beliefs and attitudes develop during childhood and adolescent years. This age group is receptive to new information. The earlier healthy eating habits are established, the greater the impact on oral health, particularly in preventing dental caries, along with drinking plain water instead of beverages with added sugars, practicing good oral hygiene and receiving oral health care services.

Schools are ideal settings to reach children and adolescents for health promotion. In 2019, 56 million children and adolescents attended a public or private school in the United States.²⁰ Schools can provide supportive environments for promoting good nutrition and healthy eating through effective nutrition education, policies, procedures and support services.²¹ In turn, such efforts can help promote oral health and prevent dental caries.

The Centers for Disease Control and Prevention's Whole School, Whole Community, Whole Child model emphasizes integrating the following 10 components into school health programs: (1) physical education and physical activity; (2) nutrition environment and services; (3) health education; (4) social and emotional school climate; (5) physical environment; (6) health services; (7) counseling, psychology, and social services; (8) employee wellness; (9) community involvement; and (10) family engagement. The Association of State and Territorial Dental Directors (ASTDD) fully supports and endorses a strategic effort within school health programs to integrate oral health into the Whole School, Whole Community, Whole Child school health model.²² The school environment provides students the opportunity to receive nutrition education and messages about healthy foods and beverages and to choose healthy foods and beverages, including water, in the cafeteria and throughout the campus.²³ Nutrition education can be incorporated throughout the school

day through age-appropriate activities. This provides flexibility for schools to tailor programs for their environment, daily schedule and resources.²⁴

To promote healthy eating, schools should:²⁵

- Establish nutrition standards that promote healthy foods and beverages.
- Ensure availability of appealing, healthy food and beverage options that enable students to comply with recommendations in the *Dietary Guidelines for Americans*,²⁶ including those related to fresh fruits and vegetables, whole grains and lean proteins.
- Use presentation, marketing, and education techniques to encourage students to eat more fruits and vegetables, whole grains and lean proteins, and encourage students to drink more water and low-fat or non-fat beverages.
- Make sure safe drinking water is readily available at school.
- Limit high-calorie snack options, including sugar-sweetened beverages, in vending machines.

The marketing of unhealthy foods and beverages by manufacturers to children and adolescents is a major public health concern. Schools should promote and serve only foods and beverages that meet nutrition criteria recommended by a panel of experts convened by Healthy Eating Research, a national program of the Robert Wood Johnson Foundation. School marketing includes food and beverage advertising and other marketing, such as the name or depiction of products, brands, logos, trademarks, spokespersons, or character, on any property or facility owned or leased by the school district or school (e.g., school buildings, athletic fields, school buses) and used at any time for school-related activities. Examples include but are not limited to:²⁷

- Educational materials (e.g., textbooks, websites, mobile device apps).
- Vending machines, food or beverage cups or containers, food display racks, or coolers.
- Equipment, uniforms, or school supplies.
- Advertisements in school media (e.g., publications, in-school radio or television, on computer screen savers and internet sites, broadcasted announcements).
- On- and off-campus fundraisers and corporate-sponsored fund-raising or incentive programs.

The Child Nutrition Act (CNR) of 1966 was created to support federal nutrition assistance programs to meet the nutritional needs of children. Every five years, the CNR provides Congress the opportunity to improve and strengthen the child nutrition and school meals program. In 2004, the Child Nutrition and WIC Reauthorization Act mandated that each local education agency (public school district) participating in the National School Lunch Program and/or School Breakfast Program should establish a local school wellness policy. As part of the policy, schools were required to include goals for nutrition education and establishment of nutrition guidelines for all foods and beverages available on each campus during the school day, with the objective of promoting student wellness.²⁸

The current law, the Healthy, Hunger-Free Kids Act of 2010, expired in 2015; however, programs continue to operate. The Act expanded local school wellness policy requirements, including policies for marketing of foods and beverages on the school campus during the school day consistent with nutrition standards for Smart Snacks.²⁹ The regulations apply to foods and beverages sold à la carte, in a school store, in vending machines, and at any other venue where food is sold to students.

The U.S. Food and Drug Administration's (USDA) Nutrition Facts Label was updated in 2020 to include sugars naturally present in foods and beverages, such as milk and fruit, and sugars (e.g., sweeteners, sugars from syrups and honey, and sugars from concentrated fruit or vegetable juices) added during the processing of foods and beverages. The word "includes" before "added sugars" on a product's Nutrition Facts Label indicates that added sugars are included in the product's total sugars.³⁰

State and territorial oral health programs (S/TOHPs) can be essential partners in promoting nutrition and oral health education in the school curricula and healthy eating practices among children and adolescents to reduce the risk of nutrition-related chronic dental caries. Example of activities include:

- Promote awareness of this ASTDD policy statement and recommendations to state agency departments/programs (e.g., department of child and family services, department of education, school and adolescent health) to provide education to their staff.
- Promote awareness of the policy statement and recommendations to state associations (e.g., association of school nurses, board of education, school-based health alliance) to incorporate information into policy and procedure manuals.
- Collaborate and coordinate with state government agencies and other stakeholders to encourage integration of policy statement recommendations into state plans (e.g., nutrition, physical activity and obesity plan; oral health plan).
- Work with the state department of health, the state department of education, the state school-based health alliance, and others to coordinate the development and distribution of consistent and coordinated educational messages and resources about healthy eating practices to children and adolescents and their families.
- Serve as a resource to help the state department of education and local school personnel integrate nutrition and oral health into the school curricula.
- Serve as a resource to help the state department of education and local school personnel develop strategies to encourage consumption of water and other beverages with low or no added sugar and promote limiting the availability of SSBs.³¹ Strategies for reducing consumption of SSB in schools include:³²
 - Ensure access to safe drinking water, especially fluoridated tap water when available.
 - Limit access to SSBs; promote access to and consumption of healthy alternatives to SSBs.
 - Decrease the relative cost of healthy beverage alternatives by pricing SSBs higher than healthy alternatives.

S/TOHPs can work with their state WIC (Special Supplemental Nutrition Program for Women, Infants, and Children) or other nutrition programs to promote policy, systems, and environmental change (PSE) interventions that support healthy eating in schools. The SNAP-Ed Toolkit, developed as a collaborative effort including the USDA Food and Nutrition Service, provides examples of programs and resources including nutrition education curricula, seasonal produce guides, and recipes.³³ Student gardens, farm-to-school activities, and other initiatives provide two-way opportunities for school-based nutrition education.³⁴ S/TOHPs can collaborate with the appropriate education agency to support the integration of nutrition education in schools as a strategy to promote good oral health.

Policies ensuring that healthy foods and beverages are offered at school meals, in vending machines, and at school events promote healthy eating beginning at an early age and throughout the school years. Encouraging children and adolescents to consume healthy foods and beverages can help them learn and practice behaviors for making good decisions to promote good nutrition. Using a common risk factor strategy, policies and education promoting good nutrition and oral health have the potential to decrease dental caries rates, promote healthy weight, mitigate the development of chronic diseases, and thus can positively impact population health. Schools can also serve as vital two-way channels to communities by modeling health promotion activities, including those that promote good nutrition, to communities.

Policy Statement

The Association of State and Territorial Dental Directors fully supports promoting good nutrition and healthy eating in schools through effective nutrition and oral health education, policies, and procedures as well as by serving healthy foods and beverages in school cafeterias and throughout school campuses. State and territorial oral health programs can be essential partners in helping to develop and disseminate effective strategies for implementing school nutrition practices that will reduce dental caries and promote oral health.

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