



The Role of the Pediatrician in the Promotion of Healthy, Active Living

Natalie D. Muth, MD, RDN, MPH, FAAP, FACSM,^a Christopher Bolling, MD, FAAP,^b Tamara Hannon, MD, MS, FAAP,^c Mona Sharifi, MD, MPH, FAAP,^d SECTION ON OBESITY; COMMITTEE ON NUTRITION

Few children and adolescents meet federal nutrition or physical activity recommendations, and many experience poor or inadequate sleep and negative health effects from screen use and social media. These lifestyle factors exacerbate physical and mental health risks for children and adolescents. This clinical report provides guidance to help pediatricians address the nutritional, physical activity, sleep, media and screen use, and social-emotional factors that affect child and adolescent health and wellness. The recommendations in this clinical report aim to promote health and wellness practices for infants, children, and adolescents across several domains of influence, including the individual, interpersonal, institutional, community, and public policy levels.

INTRODUCTION

This clinical report replaces the 2015 American Academy of Pediatrics clinical report “The Role of the Pediatrician in the Primary Prevention of Obesity.”¹ It complements the fourth Edition of *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*² and the 2023 “Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity.”³ This clinical report provides guidance to help pediatricians promote healthy, active living in all children and adolescents. Healthy, active living includes behavioral patterns supporting high-quality nutrition, physical activity, sleep, screen use, and social-emotional wellness.

Practical strategies to promote healthy, active living are urgently needed. Few children and adolescents meet federal recommendations for nutrition⁴ or physical activity,⁵ and rates of poor or inadequate sleep,⁶ negative health effects from screen use and social media,⁷ and mental health concerns⁸ in children and adolescents have increased. Childhood obesity and disordered eating, including binge eating disorder and atypical anorexia nervosa, remain complex biopsychosocial illnesses with many genetic, environmental, and social drivers; healthy lifestyle remains an important component of both prevention and treatment. Currently, families and social media

abstract

^aChildren's Primary Care Medical Group, Carlsbad, California and Department of Community Health Sciences, UCLA Fielding School of Public Health, Los Angeles, California; ^bDepartment of Pediatrics, University of Cincinnati College of Medicine, Cincinnati, Ohio; ^cDivision of Pediatric Endocrinology and Diabetology, Department of Pediatrics, Indiana University School of Medicine, Bloomington, Indiana; and ^dDepartments of Pediatrics and Biostatistics, Yale School of Medicine, New Haven, Connecticut

Drs Muth, Bolling, and Hannon conceptualized, wrote, and revised the statement; Dr Sharifi provided important guidance and revisions on behalf of the AAP Partnership for Policy Implementation; and all authors are jointly responsible for its content.

This document is copyrighted and is property of the American Academy of Pediatrics and its Board of Directors. All authors have filed conflict of interest statements with the American Academy of Pediatrics. Any conflicts have been resolved through a process approved by the Board of Directors. The American Academy of Pediatrics has neither solicited nor accepted any commercial involvement in the development of the content of this publication.

Clinical reports from the American Academy of Pediatrics benefit from expertise and resources of liaisons and internal (AAP) and external reviewers. However, clinical reports from the American Academy of Pediatrics may not reflect the views of the liaisons or the organizations or government agencies that they represent.

The guidance in this report does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

All clinical reports from the American Academy of Pediatrics automatically expire 5 years after publication unless reaffirmed, revised, or retired at or before that time.

DOI: <https://doi.org/10.1542/peds.2023-065480>

Address correspondence to Natalie D. Muth, MD, RDN, MPH. E-mail: NMuth@rchsd.org

To cite: Muth ND, Bolling C, Hannon T, et al; American Academy of Pediatrics, Section on Obesity; Committee on Nutrition. The Role of the Pediatrician in the Promotion of Healthy, Active Living. *Pediatrics*. 2024;153(3):e2023065480

may harbor myths or misinterpret definitions of “healthy.” Pediatricians and other primary pediatric health care providers have a crucial role in helping to promote lifestyle factors beneficial for the health of children of all weights, shapes, and sizes.

This clinical report addresses the multiple factors—nutritional, physical activity, sleep, media and screen use, and social emotional wellness—that promote healthy, active living for infants, children, and adolescents across several domains of influence, including the individual, interpersonal, institutional, community, and public policy levels. This framework is based on the socioecological model (Fig 1), a proposed model to use in the delivery of pediatric preventive care.⁹

Pediatricians and other primary pediatric health care providers play an essential role in the promotion of healthy, active living for infants, children, and adolescents across each domain of the socio-ecological model. At the individual and interpersonal levels, pediatricians often have a long-term relationship with children and their families, in many cases helping to monitor and support a child’s health and well-being from infancy through adolescence. As leaders of the patient-centered medical home, pediatricians can promote the prevention and early identification of conditions

such as childhood obesity, eating disorders, modifiable and unmodifiable risk factors for chronic disease, and related comorbidities influenced by lifestyle factors. Outside the clinical setting, pediatricians can be influential role models and advocates for institutional, community, and policy changes that help promote a healthier environment for children and adolescents to live, grow, and thrive.

SOCIAL DETERMINANTS OF HEALTH

Social determinants of health (SDOHs) are the conditions in the environment where children are born, live, learn, work, play, and worship that affect a wide range of health and quality of life outcomes.¹⁰ SDOHs affect everyone and may be supportive or detrimental. SDOHs warrant special consideration as they impact and may be addressed at every level of the socioecological model. They heavily influence health behaviors, including nutrition, physical activity, sleep, screen use, and social and emotional wellness. They are impacted most by upstream institutional, community, and policy factors.¹⁰

SDOHs include economic stability and factors, such as education, income, employment, poverty, and food insecurity; social and community context, including support systems and nurturing relationships, community engagement,

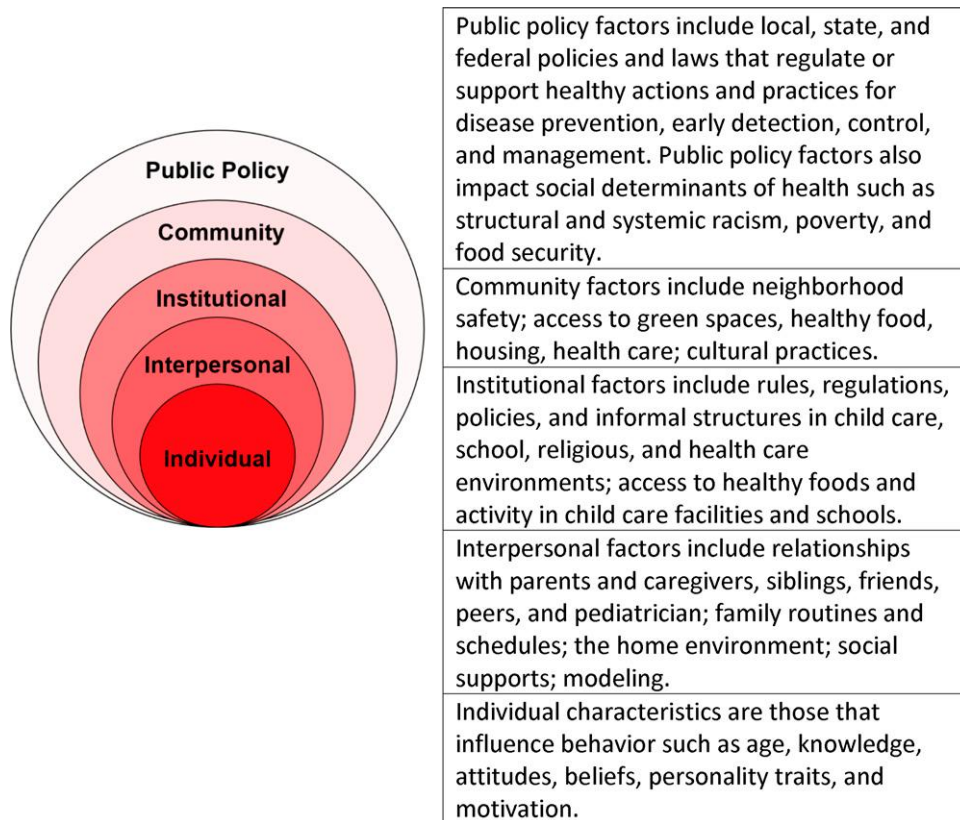


FIGURE 1
The Socioecological Model serves as a framework for promoting healthy, active living.

discrimination, the effects of trauma, toxic stress, and adverse childhood experiences (ACEs); neighborhood and built environment, including safety, housing, walkability, healthy food access, transportation, and accessibility and accommodations for children and adolescents with disabilities; education access and quality, including literacy, language, and higher education; and health care system factors, including access, quality, linguistic concordance, and cultural humility.¹⁰ Cultural humility includes clinician self-questioning, openness and inquiry, active listening, and flexibility to foster a greater understanding of a child's and family's perspective while also increasing awareness of one's own cultural biases and assumptions.¹¹

Racism is an SDOH that strongly impacts child and adolescent health as a driver of poverty and health inequities.¹²⁻¹⁴ Systemic racism limits access to society's resources, including economic opportunities, safe housing, and capital accumulation, all of which impact the resources families have to support child health. Racism also negatively affects access to preventive care and quality evidence-based treatments, education opportunities, and participation in extracurricular activities conducive to maintaining good health in youth.¹⁵

Inequitable care contributes to higher morbidity and mortality among individuals of racial and ethnic groups disproportionately affected by many chronic diseases, including obesity¹⁶ and disordered eating.¹⁷ Strategies are needed to advance equity and inclusion to promote the well-being of minoritized families and eliminate structural barriers to economic security. Costs of health care and lack of access to resources, healthy foods, and space for physical activity exacerbate disparities in preventive care. Equitable preventive care requires the practice of cultural humility and family- and patient-centered care that is supportive of the values and cultural practices of the community, family, and child or adolescent. Partnering with community-based organizations and families to codesign solutions to problems that are endorsed by the community is a strategy grounded in the socioecological model.¹⁶ Increasing the diversity of organizations and leaders who address healthy, active living can improve outcomes and policy.^{16,18}

Pediatricians can implement screening in the clinical setting to help identify SDOHs, such as poverty, food insecurity,¹⁹ and exposure to trauma or adverse experiences^{20,21} together with referral sources in place to help connect with community resources such as 2-1-1; the Special Supplemental Nutrition Program for Women, Infants, and Children; the Supplemental Nutrition Assistance Program (SNAP); and mental health supports, as applicable. One of Healthy People 2030s 5 overarching goals is related to SDOHs: create social, physical, and economic environments that promote attaining the full potential for health and well-being for all.¹⁰

INDIVIDUAL AND INTERPERSONAL APPROACHES TO THE PROMOTION OF HEALTHY, ACTIVE LIVING

Individual-level factors, including genetics and in utero environment, early childhood exposures and experiences, knowledge, and attitudes shape a child's taste preferences and nutrition choices,^{22,23} activity level,²⁴ sleep,²⁵ and temperament.²⁶ Many individual-level factors are influenced by interpersonal considerations, including family and home environments, routines, structure, and relationships with family members, siblings, peers, and other caregivers.^{27,28} Additionally, the relationship a child or adolescent or family has with a pediatrician can affect how health promotion messages are received and acted upon. In the clinical setting, pediatricians have a great and unique opportunity to impact a child's health behaviors through supportive guidance and education around modifiable individual and interpersonal factors.

GROWTH AND DEVELOPMENT

Normal growth and development are essential physical health indicators in children and adolescents. Thus, a fundamental component of each primary care visit is monitoring growth.² Pediatricians are encouraged to not only track a child's growth measurements and growth trends, but also review them in a family-centered and nonstigmatizing way to identify areas of potential concern, such as poor or excess weight gain in the first year of life, the crossing of growth percentiles over time, abnormal weight loss or weight gain, increased weight for length $\geq 97^{\text{th}}$ percentile for sex and age in children younger than 2 years, or BMI $\geq 85^{\text{th}}$ percentile for sex and age in children 2 years and older.^{2,29-32} For children 2 years and older, "overweight" is defined as BMI $\geq 85^{\text{th}}$ percentile and $< 95^{\text{th}}$ percentile for age; "obesity" is defined as BMI $\geq 95^{\text{th}}$ percentile; and "severe obesity" is defined as BMI $\geq 120\%$ above the 95^{th} percentile for age and sex. BMI is correlated with direct measures of body fat and is feasible to assess in the clinical setting, although it is a measure of excess weight rather than excess fat mass and should be considered in the context of a child or adolescent's growth trends and body habitus.³³

Obesity is a chronic, multifactorial disease characterized by excess fat mass accumulation reflecting a disorder of the energy regulatory system, resulting in medical complications that can impact every organ system and overall health. Although common obesity is polygenic in origin, multiple risk factors have been identified that increase the likelihood of developing obesity in the context of this genetic predisposition. These risk factors include being exclusively formula fed, prenatal tobacco exposure, rapid weight gain in infancy, short sleep duration, depression, having a developmental disability, energy imbalance, and excessive antibiotic use in the first 2 years of life.³⁴⁻³⁸ Obesity attributable to caloric overconsumption is associated with average to accelerated linear growth velocity.³⁷ When children develop severe

obesity before 5 years of age, pediatricians should consider syndromic or monogenetic causes of obesity resulting from rare genetic mutations along the leptin-POMC-melanocortin pathway, which cause impaired appetite regulation.^{37,39}

When discussing weight, pediatricians should be careful to use person-first language (eg, child with obesity rather than “obese child”) and avoid weight bias and stigma.²⁹ One study found that parents of children with high BMI preferred the term “unhealthy weight” and that words such as “fat,” “obese,” and “extremely obese” were rated the most undesirable, stigmatizing, blaming, and least motivating.⁴⁰ Another study that interviewed children and adolescents 10 to 17 years of age found similar results, with youth preferring the term “healthy weight” and disliking “obese,” “fat,” and “large,” which induced feelings of sadness, shame, and embarrassment.⁴¹

FAMILY AND SOCIAL HISTORY, INCLUDING SOCIAL DETERMINANTS OF HEALTH

Obtaining a family history of chronic health conditions, such as cardiovascular disease, hypertension, diabetes, obesity, fatty liver disease, sleep apnea, eating disorders, and mental health concerns, such as anxiety or depression, aids in assessing risk for developing chronic disease and increases insight into a family’s understanding, experience, and attitudes around factors such as nutrition and physical activity.

Familiarity with a child’s racial, ethnic, cultural, and socioeconomic background and SDOHs can help increase sensitivity to sociocultural context and guide conversations around behavioral routines and practices to best support healthy, active living. Additionally, the Agency for Healthcare Research and Quality notes that clinicians who learn about the SDOHs of the communities they serve may be more likely to participate in community-level efforts to address them, such as establishing farmers markets in food deserts, safe exercise space, or affordable housing.⁴²

CURRENT AND RECOMMENDED HEALTH BEHAVIORS

Pediatricians are encouraged to assess a child’s nutrition, physical activity, sleep, screen use, and social-emotional wellness at each well-child visit. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*, fourth edition, offers specific sample questions and approaches that are tailored to each well visit.² This assessment can be conducted with patient-answered questionnaires in the electronic health record, paper questionnaires, or clinician interviews. Some examples are included in the Resources at the end of this report. Online and electronic screening methods that integrate into the electronic health record can help simplify information gathering and improve documentation and decision support. However, obtaining permissions to integrate copyrighted questionnaires may be cost prohibitive, and some questionnaires may not be available in a family’s first language. Additionally, although adolescents respond well to online and electronic screening

methods, it is important to ensure that the adolescent is the person answering the questions, that confidentiality is maintained, and that there are systems in place to respond to a positive screen asynchronously and from a remote location if the questionnaire is completed outside of the office visit.

This baseline information enables pediatricians to compare an infant’s, child’s, or adolescent’s current reported behaviors with age-appropriate recommendations to assess where opportunities may exist to tailor guidance or work with a child or adolescent and their family to establish behavior change goals, when appropriate. Some children and adolescents will benefit from self-monitoring of dietary intake, physical activity, sleep routines, and screen use to increase their own awareness of typical habits or routines and identify priorities for behavioral change.

Federal guidelines provide age-based recommendations for nutrition and physical activity behaviors. The 2020 to 2025 Dietary Guidelines for Americans offer nutrition recommendations for optimal health for infants, children, and adolescents,⁴³ and the 2018 Physical Activity Guidelines provide recommendations for physical activity levels.⁴⁴ The American Academy of Sleep Medicine and the National Sleep Foundation provide recommended sleep patterns for infants, children, and adolescents.^{45,46} The American Academy of Pediatrics (AAP) statements on media offer screen time recommendations for infants, children, and adolescents and advise families to develop a Family Media Plan.^{47,48} *Bright Futures* provides guidance on promoting mental health and emotional well-being from infancy through adolescence.²

For each health behavior, pediatricians are encouraged to take a family-centered approach in providing guidance that includes parents or caregivers and children or adolescents in a developmentally appropriate and culturally sensitive manner, focusing on the home environment. Additionally, pediatricians may encourage communication among the family and include other caregivers such as grandparents and child care providers.⁴⁹ Generally, authoritative parenting approaches in which a parent or caregiver demonstrates high respect for the child and emotional responsiveness as well as high control and demandingness through clear and strict boundaries are associated with improved outcomes. Authoritative parenting has been associated with increased consumption of fruits and vegetables and physical activity and reduced sedentary behavior and prevalence of smoking in adolescence.⁴⁹ Additionally, pediatricians should encourage parents and caregivers to role model healthy patterns around nutrition, physical activity, sleep, and screen use. In one study, children and adolescents whose caregivers modeled positive habits that promote well-being were more likely to adopt these behaviors.⁵⁰ Pediatricians also can serve as an important role model in these areas.

An overview of health behaviors is detailed below. Resources for additional information and clinical support are available at the end of this report.

NUTRITION

Promotion of optimal nutrition in infants, children, and adolescents includes providing guidance on both what and how to eat.

What to Eat

The 2020 to 2025 Dietary Guidelines for Americans include dietary recommendations for the generally healthy population across the life course.⁴³ Pediatricians are able to access specific nutrient recommendations for children and adolescents by age, sex, and activity level using the USDA's Dietary Reference Intakes calculator for health professionals at <https://www.nal.usda.gov/human-nutrition-and-food-safety/dri-calculator>. Breast milk is the optimal first food with the well-established short- and long-term health benefits for both infant and mother.⁵¹ Pediatricians can play an important role in helping families to attain support for a positive breastfeeding experience by providing breastfeeding supportive office practices, which are detailed in the AAP clinical report "The Breastfeeding Friendly Office".⁵² As solids are introduced and advanced, dietary patterns that emphasize plant-based foods (vegetables, fruits, whole grains, nuts and seeds), lean sources of protein (poultry, fish, legumes), and moderate amounts of dairy products while strictly limiting or eliminating sugary drinks and highly-processed foods are associated with better long-term health outcomes across the life span.⁵³ Many traditional cultural food practices are consistent with these recommendations. Pediatricians can counsel families to focus on consuming appropriate portions of a wide variety of foods they both enjoy eating and that support their health and well-being. MyPlate is the translation of the Dietary Guidelines into an easy-to-understand visual (Fig 2). Families can obtain individualized MyPlate guidance at myplate.gov/myplateplan. It is generally appropriate for all age groups to reduce added sugars, saturated fat, and sodium.⁴³

Many children, adolescents, and families consume large amounts of ultraprocessed foods—ready-to-consume products made with refined ingredients and additives extracted from foods or derived from food constituents but containing little or no whole foods.⁵⁴ Ultraprocessed foods are typically high in added sugars, sodium, and refined starches and low in fiber, protein, vitamins, and minerals. The ingredients and processes used to make ultraprocessed foods make them hyperpalatable and shelf stable.⁵⁴ An analysis of the NHANES found that children and adolescents 2 to 19 years of age consumed approximately 67% of their total caloric intake from ultraprocessed foods.⁵⁵ Meta-analyses show that high consumption of ultraprocessed foods is associated with a greater risk of overweight, obesity, all-cause mortality, metabolic syndrome, depression in adults, metabolic syndrome in adolescents, and dyslipidemia in children.⁵⁶ Although more studies are needed to better define the health impacts of ultraprocessed foods in children and adolescents, there is

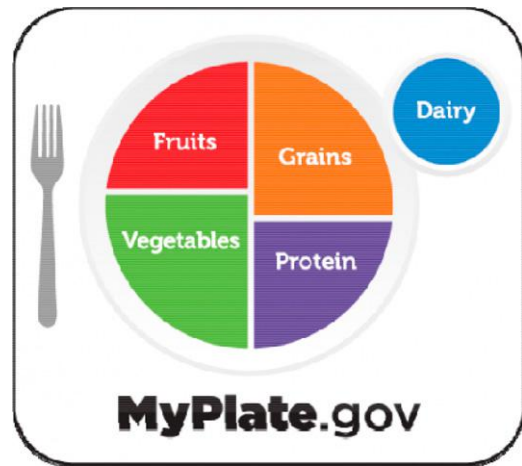


FIGURE 2

MyPlate [<https://www.myplate.gov/resources/graphics/myplate-graphics>].

little benefit to consumption of ultraprocessed foods, and potential risks are high; therefore, pediatricians are advised to encourage families to limit their intake.

The Dietary Guidelines advise that children younger than 2 years consume no added sugars and that children and adolescents 2 years and older consume less than 10% of total calories from added sugars. Sugary drinks are the largest sources of added sugars consumed, accounting for 24% of added sugar intake in the US diet in people 1 year and older.⁴³ Consumption of sugary drinks contributes significantly to excess caloric intake and increased cardiovascular disease risk, childhood overweight and obesity, dental caries, type 2 diabetes mellitus, and other health risks.^{57,58} Water and unflavored milk are preferred beverage choices for children and adolescents. Juice is not recommended for children younger than 1 year and should be strictly limited for older children and offered only when a child does not have access to whole fruit (fresh, frozen, canned, or dried).⁵⁹

How to Eat

Parenting approaches play an important role in the establishment of a child's eating practices. The authoritative parenting style provides structure and consistency to meal and snack times and supports a child's use of hunger and fullness cues to guide their own intake. Responsive feeding is an authoritative parenting approach applied to feeding in infancy. It is a reciprocal process between parent and child in which an infant or young child communicates hunger and fullness cues and the caregiver recognizes and responds to those cues. This helps an infant or child to rely on hunger cues to guide intake and satiety. A randomized controlled trial found that teaching parents to feed in response to hunger and satiety cues, use alternatives to food to soothe, provide age-appropriate portion sizes, and delay introduction of solids until after 4 months of age resulted in significant positive behavioral changes. Parents were more likely to

use structure-based feeding practices, including limit setting and consistent feeding routines, and less likely to use non-responsive feeding practices like pressuring the infant to finish the bottle, using food to soothe, propping the bottle, and putting the baby to bed with the bottle at 1 year of age.⁶⁰ Pediatricians have an important role in helping caregivers engage in responsive feeding and recognition of cues for hunger and fullness. Resources to facilitate this process are included at the end of this report.

Implementing a division of responsibility model is an authoritative parenting approach. In this approach, a parent determines what foods are offered (ideally in alignment with the Dietary Guidelines), when (such as 3 meals and 1–2 snacks per day), and where (such as at the table in the kitchen without distractions such as electronic devices or other media), and the child is allowed to determine what and how much they will eat of the food that is offered. This approach provides a child with autonomy in a structured environment supporting healthy eating.⁶¹ When children reject a particular food (such as a green vegetable), parents are encouraged to avoid forcing the child to eat the food. Instead, parents should continue to offer it in the future, because repeated exposures of 8 to 10 times or more can facilitate acceptance of a previously rejected food.⁶² Additionally, children may be more likely to try a food if they have a role in helping to choose, grow, or prepare it.⁶³

Family mealtimes and frequent home-cooked meals support improved dietary intake in children and adolescents of all ages and their caregivers. A review found that children with a higher frequency of family meals had less fussiness and emotional eating, more food enjoyment, and better nutrient intake.⁶⁴ Children and adolescents in another study in which family meals took place at least 3 times per week had healthier eating patterns and were more likely to have a healthy weight.⁶⁵ Additionally, a literature review found higher family meal frequency to be inversely associated with disordered eating, alcohol and substance use, violence, and feelings of depression or thoughts of suicide.⁶⁶ A population-based survey found that frequent family meals were associated with higher family functioning, greater self-esteem, and lower depressive symptoms and stress levels among parents and adult caregivers.⁶⁷ Links to tools and resources that pediatricians can share to promote increased family mealtimes and home-cooked meals, such as *Cooking Matters* and *Chop-Chop*, are included in the Resources at the end of this report.

PHYSICAL ACTIVITY

The 2018 Physical Activity Guidelines advise that preschool-aged children (3–5 years of age) be physically active throughout the day to enhance growth and development, with the goal of 15 minutes of physical activity per 1 hour. Adult caregivers should encourage active play of a variety of activity types. Children and adolescents 6 to 17 years of age should engage in at least 60 minutes of physical activity

per day, with the majority of time being moderate- or vigorous-intensity cardiovascular activity with at least 3 days per week of vigorous-intensity exercise. Part of their 60 minutes should include muscle strengthening and bone strengthening activities at least 3 days per week.⁴⁴ Although the Physical Activity Guidelines do not address physical activity in children 0 to 2 years of age, the AAP recommends that pediatricians monitor and encourage the development of gross motor skills and physical literacy throughout childhood. Specific guidance is available in the AAP statement on assessing and promoting physical activity in the pediatric clinical setting.⁶⁸

Habitual physical activity and reduced sedentary time promote better cardiovascular, metabolic, and musculoskeletal health as well as optimal cognitive functioning and positively impact mental health and social functioning in all children and adolescents, including those with disabilities, in whom the benefits of physical activity are often overlooked by pediatricians and caregivers.^{44,69} The AAP clinical report “Promoting the Participation of Children and Adolescents With Disabilities in Sports, Recreation, and Physical Activity” provides pediatricians with tools to better support and promote activity.⁶⁹

Promotion of activity at early ages involves providing time for children to explore independently and safely. Pediatricians should discuss and encourage physical activity starting in infancy with an emphasis on tummy time.⁶⁸ Initially, this means avoiding restriction of movement by minimizing time in confining equipment such as strollers, car seats, walkers, and “exersaucers.” In toddlers, active play facilitates improved gross motor development and the development of physical literacy. Working on ball skills, jumping, and climbing encourages continued activity and preparation for preschool joint play. Play in toddlerhood is followed by joint play with family members and others, including other children. As children progress developmentally from parallel play to joint play, pediatricians can help families develop activity regimens incorporating community resources and personal interests and preferences. Pediatricians can encourage both organized activities and free play for school-aged children to build enjoyable and accessible physical activities into daily routines. For many families, walking can be an ideal physical activity that can be done together as a family at low or no cost with numerous physical and mental health benefits, provided families have access to safe places to walk.

The pediatrician has an essential role in protecting unstructured play time and promoting the safety and importance of outdoor play. The pediatrician can encourage families to avoid early commitment to a single sport for children participating in organized activities.⁷⁰ In adolescence, the focus should be on the development of a habit promoting a lifetime of sustainable activity. As is often said, “the best exercise plan is the one you can follow.”

Encouragement of physical activity should not be limited to athletic children and adolescents. Moderate physical activity promotes health, and more prolonged and vigorous activity should be encouraged for children and adolescents across all ability levels, taking into account and addressing family, financial, and societal barriers to participation.⁶⁹

As with advice around nutrition, pediatricians should tailor advice on increasing physical activity to individual children, adolescents, and their families. The AAP encourages pediatricians to create “physical activity prescriptions” for children and adolescents based on their interests, abilities, need for adaptation of the activity, and opportunities available in their community.⁶⁹ Additionally, pediatricians are encouraged to advocate for low- and no-cost sports and recreation programs in their communities, so all children and adolescents have the opportunity to be active.

SLEEP

The American Academy of Sleep Medicine and the National Sleep Foundation advise the following age-based sleep recommendations:

- Newborns and young infants (0–3 months old): 14 to 17 hours of sleep per day
- Older infants (4–11 months): 12 to 16 hours of sleep (including naps)
- Toddlers (1–2 years): 11 to 14 hours (including naps)
- Preschool-age children (3–5 years): 10 to 13 hours (including naps)
- School-age children (6–12 years): 9 to 12 hours
- Adolescents (13–18 years): 8 to 10 hours^{45,46}

These recommendations allow for a wide range of healthy sleep duration. Whether a child or adolescent feels well rested upon waking and throughout the day can help determine whether they got enough sleep. Sleeping the recommended number of hours is associated with improved health and academic outcomes including improved attention, behavior, learning, memory, emotional regulation, quality of life, and mental and physical health.⁴⁶ Inadequate or excessive sleep is associated with adverse health outcomes including obesity, hypertension, diabetes, and depression.⁴⁶ A study of 8300 children 9 to 10 years of age participating in the Adolescent Brain Cognitive Development study observed that sleeping less than 9 hours per night was linked to changes in brain regions associated with depression, thought problems, and memory.⁷¹ Sleep disorders, insufficient sleep, and poor sleep habits are widespread among children and adolescents, with the prevalence of obstructive sleep apnea ranging from 1% to 3% in the pediatric population and 20% to 30% of children affected by pediatric insomnia.^{72,73} The AAP clinical practice guideline on the diagnosis and management of obstructive sleep apnea advises pediatricians to screen all children for snoring and

refer those who demonstrate signs of obstructive sleep apnea for polysomnography or referral to a specialist if polysomnography is not available.⁷⁴ Pediatricians may also provide guidance or referral to children and adolescents who express other sleep problems, such as difficulty going to sleep or staying asleep, excessive daytime sleepiness, awakenings during the night, or irregular wake and bedtimes.⁷⁵ Pediatricians can help support healthy sleep by encouraging children and families to provide a sleep-promoting environment, including infants and children learning to fall asleep by themselves in their own bed and following a consistent bedtime routine free of screen time, such as the “4Bs” of bathe, brush (teeth), (read) books, and bedtime.

SCREEN TIME AND MEDIA USE

AAP recommendations for screen use include the following guidance:

- For children younger than 18 months, discourage screen media except for interactive video chatting.
- For children 18 months to 2 years of age, encourage parents to choose high-quality programs viewed together with their children and avoid allowing children to use media by themselves.
- For children 2 to 5 years of age, limit media to 1 hour or less per day of high-quality programming.
- For children and adolescents 6 years and older, adopt an individualized Family Media Plan (www.healthychildren.org/MediaUsePlan) that outlines the boundary between screen time and other activities and can be tailored by a child’s age.⁴⁷

Notably, only 1 in 4 children younger than 2 years and 1 in 3 children 2 to 5 years of age meet these screen time guidelines.⁷⁶ Screen use among children and adolescents is high, with a cross-sectional analysis conducted early in the coronavirus disease 2019 (COVID-19) pandemic finding mean total daily screen use of 7.7 hours per day, an increase from 3.8 hours per day prepandemic.⁷⁷ A nationally representative sample of 1000 children and adolescents found that 32.6% of children 6 to 10 years of age and 38.8% of 11- to 17-year-olds engaged in media use classified as “problematic” based on the Problematic Media Use Measure-short form, which measures behaviors such as media preoccupation, withdrawal, and unsuccessful parental attempts to control use. Children and adolescents with parents who were employed full-time, were present at home (eg, working from home), had low levels of formal education, and had higher psychological distress were more likely to have problematic media use.⁷⁸

Overall, the relationship between screen time and health is complex and believed to result from a combination of factors, including screen time displacing physical activity and contributing to inadequate sleep, and exposure to

food commercials impacting dietary intake and quality.⁷⁹ A systematic review of the effects of screen time on health and well-being of children and adolescents found the following:

- Moderately strong evidence of an association between increased screen time and greater risk of obesity and more significant depressive symptoms
- Moderate evidence for an association between increased screen time and increased caloric intake, decreased diet quality, and decreased quality of life
- Weak evidence for an association of increased screen time with behavior problems, anxiety, hyperactivity and inattention, poorer self-esteem, poorer well-being and poorer psychological health, metabolic syndrome, poorer cardiorespiratory fitness, poorer cognitive development and lower educational attainment, and poor sleep outcomes
- Weak evidence that small amounts of daily screen use are not harmful and may have some benefits⁷

Although trends of increased screen time may be challenging to reverse, the AAP Family Media Plan provides prompts to help families develop a positive approach to screen use and cope with screen use challenges. Best practices include having areas of the home that are “screen free zones,” such as bedrooms and the kitchen or dining area, and “screen free time,” such as in the 1 hour before bed or during meal-times. These strategies facilitate improved sleep and reduced grazing or “mindless eating.” The Family Media Plan also has suggestions for balancing online and offline time to incorporate more physical activity and in-person social connections in the course of the day. These strategies improve active time, reduce sedentary time, and buffer against social and emotional mental health effects that can result from excess screen time, especially in adolescents. Prompts and strategies for digital citizenship, online safety, and manners are also included in the plan.

Evidence for and further discussion of this tailored approach to media use is described in detail in the AAP policy statement “Media Use in Children and Adolescents.”⁴⁷ The AAP partnered with AT&T to offer additional resources for families, including the online PhoneReady Questionnaire to help parents determine whether their child is ready for a cell phone, information on parental controls, and parent guides (<https://screenready.att.com/digital-parenting/>).

SOCIAL-EMOTIONAL WELLNESS

Anxiety, depression, and eating disorder symptoms are increasingly prevalent and severe among children and adolescents since the onset of the COVID-19 pandemic.^{80,81} In 2021, the AAP, the American Academy of Child and Adolescent Psychiatry, and the Children’s Hospital Association

declared a National State of Emergency in Children’s Mental Health⁸² and the Surgeon General released an advisory on youth mental health.⁸

Mental health and social-emotional wellness are intricately linked to other health behaviors and outcomes. Overall, there is an association between healthy dietary patterns, lower levels of depression, and improved mental health.⁸³ Physical activity is associated with lower concurrent depressive symptoms⁸⁴ and may be an effective treatment of depression for some children and adolescents.⁸⁵ In fact, a systematic review and meta-analysis of 21 studies including 2441 participants found that supervised exercise programs were associated with significant reductions in symptoms of depression among children and adolescents.⁸⁶ Depression and childhood obesity often coexist and show a bidirectional association.³⁵ High social media use is associated with higher rates of anxiety and depression, poorer sleep quality, and lower self-esteem.⁸⁷ Likewise, poor sleep is associated with multiple adverse health impacts, including mood disorders and worsened mental health.⁸⁸

The Surgeon General’s advisory outlined several recommendations to address youth mental health that apply to pediatricians in the clinical setting, including:

- Recognize that mental health is an essential part of overall health.
- Empower youth and their families to recognize, manage, and learn from difficult emotions.²¹
- Ensure that every child has access to high-quality, affordable, and culturally competent mental health care.
- Address the economic and social barriers that contribute to poor mental health for young people, families, and caregivers.⁸

The AAP recommends pediatricians receive education and training in depression identification and treatment, establish collaborations with community-based mental health resources, and screen adolescents 12 years and older annually for major depressive disorder using a formal screening tool on paper or electronically.⁸⁹ The US Preventive Services Task Force recommends screening adolescents 12 to 18 years of age for depression and suicide risk⁹⁰ as well as screening children and adolescents 8 years and older for anxiety disorders.⁹¹ The AAP also advises pediatricians to develop competency and efficacy in identifying and treating eating disorders, including care coordination and advocacy for access to appropriate services.⁹² Depression, anxiety, and disordered eating frequently cooccur, and the prevalence of all 3 conditions increased with the COVID-19 pandemic.^{80,81,93} Delayed recognition of disordered eating in youth with obesity can result in life-threatening medical complications similar to those that occur with delayed recognition of youth who are underweight.^{92,94}

At the individual and interpersonal levels, addressing existing mental health concerns and providing guidance that leads to improved nutrition, physical activity, sleep, and screen use behaviors is likely to improve social-emotional wellness and mental health among children and adolescents.

Table 1 summarizes age-based strategies pediatricians can deploy in the clinical setting to address nutrition, physical activity, sleep, screen use, and social-emotional wellness while taking into account stressors and SDOHs that may be impacting a child or family's behaviors, routines, and physical and mental health. The central role of the family in impacting health behaviors, including material, emotional, and educational resources, should be emphasized at all ages and developmental stages and within each health behavior domain.

STRATEGIES FOR ANTICIPATORY GUIDANCE AND COUNSELING

Children, adolescents, and their families arrive for medical care in varying stages of readiness to make behavioral changes. These stages of change have been well described in the transtheoretical model of behavioral change. In summary, they are precontemplation (not ready), contemplation (considering or ambivalent about change), preparation (planning for change in the next 6 months), action (in the process of making change), maintenance (has maintained a change for more than 6 months), and termination (change ingrained). Lapses frequently occur throughout the stages of change.⁹⁵ Pediatricians may consider assessing a child's or family's readiness to change and match anticipatory guidance and tailor anticipatory guidance and counseling approaches to a child's, adolescent's, or family's stage of change to help a family move toward the next stage.

Motivational interviewing (MI) provides a helpful framework to guide conversations on behavioral change. The spirit and tools of MI apply across all stages of change. The spirit of MI includes 4 components: compassion, collaboration, autonomy, and evocation. It emphasizes the partnership between child or adolescent and clinician in that, ultimately, the child and family are the experts on themselves and their lives and the clinician's role is as a guide.⁹⁶ For children and families in precontemplation, clinicians may deploy the spirit of MI by acknowledging that a child or family may not be ready for change at this time, asking for permission to provide some information (often in the form of a handout), offering to be a resource if the child or family have any questions or would like to explore further, and arranging for follow-up, at which time the clinician may reassess a child or family's readiness for change.

MI is most effective in helping people who are ambivalent (contemplation stage) to develop increased readiness for change. MI consists of 4 processes of change: engaging, focusing, evoking, and planning.⁹⁶ Engaging consists of establishing a connection with a child or family and gaining a deeper understanding of their values and life experience.

The engaging process might uncover the impacts of SDOHs on health behaviors or underlying personal or cultural beliefs surrounding nutrition or physical activity. Focusing, the second process of MI, involves selection of appropriate priorities for behavior change. In families in which several behaviors regarding nutrition, activity, sleep, or screen use might benefit from the change, focusing might include providing a menu of possible priorities for change and the family choosing one area of focus. Evoking, the third process, uses open questions, affirmations, reflective listening, and summarizing to help bring forth a person's own internal motivation for change. Planning, the fourth process of MI, refers to pediatricians and families collaborating to create and implement an effective plan that promotes healthy, active living. At this point, families are at the preparation stage of change. Plans can involve small changes, and the emphasis should be on practical changes that are likely to be sustainable for the child and family.⁹⁶

MI is a learned communication approach that pediatricians can develop through training, reading, and practice.

INSTITUTIONAL AND COMMUNITY APPROACH TO HEALTHY, ACTIVE LIVING

Community settings, such as child care systems, preschools, elementary and high schools, health care settings, and a child's local neighborhood or community significantly shape a child's health habits. Pediatricians are able to influence these settings and help decrease rates of childhood obesity and chronic disease with a focus on food choice and behavior, physical activity, sleep, and screen use recommendations at the level of child care systems, preschools, and school systems.^{97,98} The evidence for these recommendations from randomized-controlled trials has largely focused on changing individual behaviors in child care settings, schools, and homes. Only 15% of the reported obesity prevention outcomes are from community-based interventions.⁹⁹ Nevertheless, for family-level or person-level behaviors to be maintained in the broader community (outside of school and home), it will be increasingly important to consider policies that impact the community in a more general sense, such as later school start time for increasing sleep.¹⁰⁰

FOOD ENVIRONMENT

The AAP has previously published guidance on nutrition standards to support healthy school food environments.¹⁰¹ Dietary behaviors adopted in childhood track throughout life, and community-wide policies promote small but sustainable changes toward dietary patterns conducive to good health.¹⁰² Generally, these dietary patterns emphasize the consumption of vegetables, fruits, whole-grain and plant-based carbohydrates, lean proteins and dairy products, and the limited availability of sugary drinks and ultraprocessed food products.⁵³ The availability and proximity of retailers supplying

TABLE 1 A Developmental Approach for Promotion of Healthy, Active Living

Stage	Nutrition	Activity	Sleep	Media Use	Social-Emotional Wellness
Infancy	Aim for exclusive breastfeeding in the first 6 mo and continued to 2 y or beyond, as mutually desired by mother and child. Practice responsive feeding. Introduce complementary foods around 6 mo of age. Include a variety of tastes and textures. Avoid juice.	Encourage tummy time and opportunities for gross motor skill development. Limit time in confining equipment such as car seats, swings, bouncing seats, strollers.	Anticipate newborns and young infants will sleep 14–17 h per day, whereas older infants will sleep 12–16 h per day. Establish sleep routines, including putting infants to bed drowsy but not yet fully asleep and in their own bed.	Avoid screen time and media use other than interactive video chatting (for older infants to 18 mo).	Establish a strong bond and attachment through healthy parent-child interactions.
Toddlerhood	Recognize neophobia (fear of trying new things) is normal and continue to offer a variety of tastes and textures. Practice division of responsibility. Eat the same family meals together. Keep mealtimes relaxing and enjoyable. Avoid or strictly minimize juice. Avoid added sugars before age 2. Avoid food as a reward.	Promote active play and development of fundamental movement skills.	Aim for 11–14 h of sleep per day including naps. Promote the “4B”s (bathe, brush, book, bed) and sleep hygiene. Help children learn to fall asleep on their own in their own bed.	From 18 mo–2 y, choose only high-quality programming viewed together with child; for ages 2–5, limit media to 1 h or less of high-quality programming. Avoid screen time “baby-sitting.”	Practice positive parenting discipline practices and authoritative parenting strategies. Develop healthy nutrition, activity, sleep, and screen use practices, which also will help benefit social-emotional well-being. Link to behavioral health supports when needed.
Preschool	Continue to offer a variety of healthful options and exposure to many fruits and vegetables. Prioritize family mealtimes. Keep mealtimes relaxing and enjoyable. Minimize or avoid juice and avoid sugary drinks. Avoid food as a reward.	Encourage outside play. Aim for at least 15 min of movement per hour during the day.	Aim for 10–13 h of sleep per day including naps. Promote the 4Bs and sleep hygiene. Avoid screen time before bed.	For ages 2–5, limit media to 1 h per less of high-quality programming. Keep television and other media out of the bedroom. Avoid screentime within 1 h of bedtime.	Recognize, manage, and learn from difficult emotions. Build emotional literacy by teaching a child words for feelings. Develop healthy nutrition, activity, sleep, and screen use practices, which also will help benefit social-emotional health. Link to behavioral health supports when needed.
School age	Learn about MyPlate and how to choose a healthy, balanced meal. Encourage family mealtimes. Keep mealtimes relaxing and enjoyable. Avoid food as a reward. Be mindful of signs of eating disorders and body image concerns.	Encourage free play and organized sports, if interested. Avoid early sport specialization. Aim for at least 60 min of moderate to vigorous physical activity per day. Include bone- and muscle-strengthening activities at least 3 times per week.	Aim for 9–12 h of sleep per day. Promote the 4Bs and sleep hygiene. Avoid screen time for at least 1 h before bed. Avoid televisions, tablets, phones, or other media in the bedroom at night.	Adopt an individualized Family Media Plan. Keep television and other media out of the bedroom. Avoid screentime within 1 h of bedtime.	Recognize, manage, and learn from difficult emotions. Develop healthy nutrition, activity, sleep, and screen use practices, which also will help benefit social-emotional health. Screen children ages 8 and older for anxiety disorders. Link to behavioral and mental health supports when needed.

TABLE 1 Continued					
Stage	Nutrition	Activity	Sleep	Media Use	Social-Emotional Wellness
Adolescence	Promote regular, balanced meals. Discourage meal skipping. Be mindful of signs of eating disorders and body image concerns, regardless of weight and shape. Encourage family mealtimes as often as possible. Develop awareness of meal quality outside of home such as at school, during or after sports activities, and when with friends.	Encourage continued athletics and enjoyable physical activities while incorporating more movement into activities of daily living. Aim for at least 60 min of moderate to vigorous physical activity per day. Include bone- and muscle-strengthening activities at least 3 times per week.	Aim for 8–10 h of sleep per day. Plan for adequate sleep in the context of busy schedules. Promote the 4Bs and sleep hygiene. Avoid screen time within 1 h of bedtime. Avoid televisions, tablets, phones, or other media in the bedroom at night.	Adopt an individualized Family Media Plan. Keep television and other media out of the bedroom. Avoid screentime within 1 h of bedtime.	Screen adolescents for anxiety disorders (ages 8 and over) and for major depressive disorder and suicide risk (ages 12 and over). Recognize, manage, and learn from difficult emotions. Help adolescents and their families develop healthy nutrition, activity, sleep, and screen use practices, which also will help benefit social-emotional health. Link to behavioral and mental health supports when needed.

sugary drinks and processed meals (fast food) in or near schools is a deterrent to the recommendations to follow a dietary pattern conducive to good health.¹⁰² Further research should include a broader range of community settings for children and adolescents who spend more time with peers and adults outside the school system (eg, in faith-based settings or work programs).

A review of interventions to reduce the consumption of sugary drinks that included 58 studies and more than 1 million individuals found the following to be effective: interpretative nutrition labeling (traffic-light labeling, nutrition rating scores), promotion of noncaloric beverages in retail, limiting availability of sugary drinks in schools and homes, not allowing government-issued food benefits (eg, SNAP) to be used for the purchase of sugary drinks, and increased purchase price of sugary drinks.¹⁰³

ACCESS TO OPPORTUNITIES FOR PHYSICAL ACTIVITY

As recommended by the National Academy of Medicine, pediatricians are encouraged to advocate that children and adolescents obtain the majority of the recommended 60 minutes of physical activity per day within the school day or in a combination of activities at school and after school activities.¹⁰⁴ Pediatricians can advocate for safe places and green spaces for children in which to be active and engage in recreational physical activity. Pediatricians also can assist children to connect with community resources that support physical activity, such as local Ys, Boys and Girls Clubs of America, and municipal parks and recreation.

PUBLIC POLICY APPROACH TO HEALTHY, ACTIVE LIVING

Policies at the federal, state, and local levels can promote or impede the efforts of children and families to pursue healthy, active lives. Pediatricians can support policies that promote healthy, active living for all children and adolescents, such as Safe Routes to School programs; Complete Streets transportation policies; school cafeteria standards, including what is available “a la carte”; policies in workplaces and communities that encourage and support breastfeeding; and policies that advance well-being in urban and rural environments. Pediatricians have an essential role in advocating for appropriate nutrition labeling on foods and beverages that pose a significant health risk to children and adolescents, such as ultraprocessed foods and sugary drinks.⁵⁶ The AAP statement on public policies to reduce sugary drinks consumption in children and adolescents details several additional strategies.⁵⁸ Moreover, pediatricians can exert pressure on food manufacturers to reformulate products to make them healthier.

In its statement on the impact of racism on child and adolescent health, the AAP recommends that pediatricians advocate for policies and partnerships to improve medical, economic, environmental, housing, judicial, and educational

equity.¹⁴ Policy interventions to improve early childhood education parent support programs, urban planning and community development, housing, income enhancements and supplements, and employment are associated with improved population health and reduced health disparities.¹⁰⁵

In the health care setting, there should be adequate payment for preventive care services and team-based care to support guidance for healthy, active living and prevention of chronic disease in infants, children, and adolescents.

RECOMMENDATIONS

Recommendations of this clinical report to help guide pediatricians in the promotion of healthy, active living among all infants, children, and adolescents include the following:

1. Assess social determinants of health such as poverty; food insecurity; exposure to racism; trauma and toxic stress; and the built environment, including safety, walkability, green spaces, and healthy food access.
2. Assess parenting practices and baseline nutrition, physical activity, sleep, and screen use and compare with recommended levels of both quality and quantity of each behavior. When a gap exists between advised and reported behaviors, assess a child, adolescent, and family's readiness to make a change, and work together to develop a change plan, when appropriate.
3. Use respectful, nonstigmatizing language when addressing a child or adolescent's weight, behaviors, or need for behavioral change.
4. Learn and implement communication approaches such as motivational interviewing to help support children, adolescents, and families to make a behavioral change.
5. Be a role model for healthy patterns around nutrition, physical activity, sleep, screen use, and self-care.
6. Refer children and adolescents to community resources such as 211, Special Supplemental Nutrition Program for Women, Infants, and Children, SNAP, Cooking Matters, Ys, Boys and Girls Clubs of America, and municipal parks and recreation.
7. Support policies to eradicate racism, address SDOHs, improve nutrition, decrease intake of sugary drinks, increase physical activity, and reduce marketing of sugary drinks and foods to children and adolescents.
8. Advocate for adequate payment for preventive care service and team-based care to support guidance for healthy active living.

CONCLUSIONS

Pediatricians play an important role in effectively promoting healthy, active living through focused advocacy and in supporting children, adolescents, and families with healthy lifestyles while navigating the current environment. The ubiquitous presence of devices, stress, and disrupted sleep habits; food environments that do not support healthy

choices; and neighborhood safety concerns that limit physical activity are very real barriers that can present an exhausting challenge as front-line pediatricians promote healthy behaviors in current society. However, the evidence shows that offering guidance in a nonjudgmental manner, knowing the many social drivers underlying family life, and providing support for positive behaviors will help to engage and encourage children, adolescents, and their families. This strategy is anticipated to help raise a healthier generation of children and prevent or mitigate chronic diseases such as childhood obesity, eating disorders, and other related comorbidities.

PRACTICAL RESOURCES

- ACEs Aware Initiative (Toolkit and resources to help pediatricians screen for Adverse Childhood Experiences facilitated by the University of California ACEs Aware Family Resilience Network [UCAAN]): <https://acesaware.org>
- AAP Institute for Healthy Childhood Weight (provides responsive feeding, healthy/active living, and obesity prevention and treatment resources for clinicians and families): <https://ihcw.aap.org>
- AHRQ SDOH and Practice Improvement (list of tools to help health care organizations address SDOHs): <https://www.ahrq.gov/sdoh/practice-improvement.html>
- BEARS sleep screening tool (5-item sleep screening tool for sleep disorders in children and adolescents ages 2-18): <https://www.med.upenn.edu/cbti/assets/user-content/documents/BEARS%20Sleep%20Screening%20Tool.pdf>
- *Bright Futures Guidelines for Health Supervision of Infants, Children, and Adolescents*: <http://brightfutures.aap.org>
- Childhood Obesity Cost-Effectiveness Study (CHOICES) (identifies which prevention policies and programs will help more kids achieve and maintain a healthy weight and deliver the best results for the dollars invested): <https://choicesproject.org>
- Choose My Plate (contains dietary recommendations to the public based on the Dietary Guidelines for Americans as well as tailored MyPlate plans): <https://choosemyplate.gov>
- ChopChop Family (includes resources to help kids learn to cook, recipes, ChopChop magazine, Eatable Alphabet cards, and more): <https://www.chopchopfamily.org/>
- Cooking Matters (a national campaign run by Share Our Strength that aims to help parents and caregivers develop skills when shopping for and cooking healthy foods on a budget): <https://cookingmatters.org>
- Dietary Guidelines for Americans (provides dietary recommendations for infants, children, adolescents, and adults): <https://dietaryguidelines.gov>
- Exercise is Medicine (contains recommendations and tools for physicians to include physical activity prescription as part of their practice): <https://www.exerciseismedicine.org>

- Family Media Plan (helps families select media priorities and goals to promote healthy screen use): <https://www.healthychildren.org/English/fmp/Pages/MediaPlan.aspx>
- Family Nutrition Physical Activity Screening Questionnaire (a validated screening questionnaire that can help assess behaviors that increase risk of childhood obesity): <http://www.myfnpa.org>
- Food Research and Action Center (FRAC)/AAP Food Insecurity Screening Toolkit (a toolkit to help pediatricians address food insecurity): <https://frac.org/aaptoolkit>
- Healthychildren.org (contains dietary, activity, sleep, and screen use tips and information as well as parenting skills advice): <https://healthychildren.org>
- Healthdrinkshealthykids.org (an initiative of Healthy Eating Research to provide parents and caregivers and professionals resources to support healthy drinks in children ages 0–5): <https://healthdrinkshealthykids.org>
- Let's Go! 5210 Questionnaire (an obesity prevention initiative that developed the 5210 anticipatory guidance and the 5210 healthy habits screening questionnaire): <https://www.mainehealth.org/Lets-Go>
- Physical Activity Guidelines (contains physical activity recommendations for children, adolescents, and adults): <https://health.gov/our-work/nutrition-physical-activity/physical-activity-guidelines>
- PhoneReady Questionnaire, developed by AT&T in collaboration with the AAP (a 10-question online tool that helps parents assess whether their child is ready for the responsibilities of a cell phone): <https://screenready.att.com/digital-parenting>
- Problematic Media Use Measure (helps to measure indicators of screen addiction in children and adolescents): <http://sarahdomoff.com/wp-content/uploads/2019/11/Domoff-et-al-2019-2.pdf>

LEAD AUTHORS

Natalie D. Muth, MD, RDN, MPH, FAAP, FACSM
 Christopher Bolling, MD, FAAP
 Tamara Hannon, MD, MS, FAAP
 Mona Sharifi, MD, MPH, FAAP

SECTION ON OBESITY EXECUTIVE COMMITTEE, 2022–2023

Sarah C. Armstrong, MD, FAAP, Chairperson
 Sarah E. Barlow, MD, FAAP
 Claudia Fox, MD, MPH, FAAP
 Jennifer Ann Groos, MD, FAAP
 Matthew Allen Haemer, MD, MPH, FAAP

Fatima Cody Stanford, MD, MPH, MBA, MPA, FAAP
 Joani Lea Jack, MD, FAAP, Program Chairperson

LIAISONS

Andrew Alan Bremer, MD, PhD – *National Institutes of Health*
 Kirk Reichard, MD, FAAP – *Section on Surgery*

STAFF

Mala Thapar, MPH
 Stephanie Womack, MA

COMMITTEE ON NUTRITION, 2022–2023

Mark Richard Corkins, MD, FAAP, Chairperson
 Cynthia Liudmilla Blanco, MD, FAAP
 George Joseph Fuchs, III, MD, FAAP
 Ellen S. Rome, MD, MPH, FAAP
 Praveen Sundaraj Goday, MD, FAAP
 Tamara S. Hannon, MD, FAAP
 Amy Lynn Peterson, MD, MS, FAAP

LIAISONS

Andrew Alan Bremer, MD, PhD – *National Institutes of Health*
 Cheryl Funanich – *US Department of Agriculture*
 Andrea Lotze, MD – *US Food and Drug Administration*
 Heather Hamner, PhD, MS, MPH – *Centers for Disease Control and Prevention*
 Cria Perrine, PhD – *Centers for Disease Control and Prevention*
 Ana Sant'Anna, MD – *Canadian Paediatric Society*

STAFF

Debra Burrowes, MHA
 Pia Daniels, MPH, PMP
 Madeline Curtis, JD
 Tamar Haro

ABBREVIATIONS

AAP: American Academy of Pediatrics
 MI: motivational interviewing
 SDOH: social determinants of health

PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

Copyright © 2024 by the American Academy of Pediatrics

FUNDING: No external funding.

FINANCIAL/CONFLICT OF INTEREST DISCLOSURE: The authors have indicated they have no potential conflicts of interest to disclose.

REFERENCES

1. Daniels SR, Hassink SG; Committee on Nutrition. The role of the pediatrician in primary prevention of obesity. *Pediatrics*. 2015; 136(1):e275–e292
2. Hagan JS, Duncan PM; eds. *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*. 4th ed. American Academy of Pediatrics; 2017
3. Hampf SE, Hassink SG, Skinner AC, et al. Clinical practice guideline for the evaluation and treatment of children and adolescents with obesity. *Pediatrics*. 2023;151(2):e2022060640
4. US Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion. Average healthy eating index - 2015 scores for children and adolescents by age groups. Available at: https://fns-prod.azureedge.us/sites/default/files/media/file/HEI-2015_ChildrenAndAdolescents_NHANES2017-2018.pdf. Accessed January 7, 2023
5. Katzmarzyk PT, Denstel KD, Beals K, et al. Results from the United States 2018 Report Card on Physical Activity for Children and Youth. *J Phys Act Health*. 2018;15(S2):S422–S424
6. Lewien C, Genuneit J, Meigen C, Kiess W, Poulain T. Sleep-related difficulties in healthy children and adolescents. *BMC Pediatr*. 2021;21(1):82
7. Stiglic N, Viner RM. Effects of screentime on the health and well-being of children and adolescents: a systematic review of reviews. *BMJ Open*. 2019;9(1):e023191
8. Office of the Surgeon General. Protecting youth mental health: the U.S. Surgeon General's advisory. Available at: <https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf>. Accessed January 7, 2023
9. Graif C, Meurer J, Fontana M. An ecological model to frame the delivery of pediatric preventive care. *Pediatrics*. 2021;148(Suppl 1):s13–s20
10. Office of Disease Prevention and Health Promotion HP. Social determinants of health. Available at: <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>. Accessed May 24, 2021
11. Kibakaya EC, Oyeku SO. Cultural humility: a critical step in achieving health equity. *Pediatrics*. 2022;149(2):e2021052883
12. Heard-Garris N, Boyd R, Kan K, Perez-Cardona L, Heard NJ, Johnson TJ. Structuring poverty: how racism shapes child poverty and child and adolescent health. *Acad Pediatr*. 2021;21(8S):S108–S116
13. Boyd RL, Lindo EG, Weeks LD, McLemore, MR. On racism: a new standard for publishing on racial health inequities. Available at: <https://www.healthaffairs.org/doi/10.1377/forefront.20200630.939347/>. Accessed June 14, 2022
14. Trent M, Dooley DG, Dougé J; Section on Adolescent Health; Council on Community Pediatrics; Committee on Adolescence. The impact of racism on child and adolescent health. *Pediatrics*. 2019;144(2):e20191765
15. FitzGerald C, Hurst S. Implicit bias in healthcare professionals: a systematic review. *BMC Med Ethics*. 2017;18(1):19
16. Dhaliwal R, Pereira RI, Diaz-Thomas AM, Powe CE, Yanes Cardozo LL, Joseph JJ. Eradicating racism: an endocrine society policy perspective. *J Clin Endocrinol Metab*. 2022;107(5):1205–1215
17. Brown KL, Graham AK, Perera RA, LaRose JG. Eating to cope: advancing our understanding of the effects of exposure to racial discrimination on maladaptive eating behaviors. *Int J Eat Disord*. 2022;55(12):1744–1752
18. Carson TL, Cardel MI, Stanley TL, et al. Racial and ethnic representation among a sample of nutrition- and obesity-focused professional organizations in the United States. *Obesity (Silver Spring)*. 2022;30(2):292–296
19. Council on Community Pediatrics; Committee on Nutrition. Promoting food security for all children. *Pediatrics*. 2015;136(5):e1431–e1438
20. Loveday S, Hall T, Constable L, et al. Screening for adverse childhood experiences in children: a systematic review. *Pediatrics*. 2022;149(2):e2021051884
21. Forkey H, Szilagyi M, Kelly ET, Duffee J; Council on Foster Care, Adoption, and Kinship Care; Council on Community Pediatrics; Council on Child Abuse and Neglect; Committee on Psychosocial Aspects of Child and Family Health. Trauma-informed care. *Pediatrics*. 2021;148(2):e2021052580
22. Spahn JM, Callahan EH, Spill MK, et al. Influence of maternal diet on flavor transfer to amniotic fluid and breast milk and children's responses: a systematic review. *Am J Clin Nutr*. 2019; 109(Suppl_7):1003S–1026S
23. Leng G, Adan RAH, Belot M, et al. The determinants of food choice. *Proc Nutr Soc*. 2017;76(3):316–327
24. Schnurr TM, Stallknecht BM, Sørensen TIA, Kilpeläinen TO, Hansen T. Evidence for shared genetics between physical activity, sedentary behaviour and adiposity-related traits. *Obes Rev*. 2021;22(4):e13182
25. Garfield V, Llewellyn CH, Wichstrøm L, Steinsbekk S. Shared genetic architecture underlying sleep and weight in children. *Sleep Med*. 2021;83:40–44
26. Takegata M, Matsunaga A, Ohashi Y, Toizumi M, Yoshida LM, Kitamura T. Prenatal and intrapartum factors associated with infant temperament: a systematic review. *Front Psychiatry*. 2021;12:609020
27. Bates CR, Bohnert AM, Buscemi J, Vandell DL, Lee KTH, Bryant FB. Family entropy: understanding the organization of the family home environment and impact on child health behaviors and weight. *Transl Behav Med*. 2019;9(3):413–421
28. Bates CR, Buscemi J, Nicholson LM, Cory M, Jagpal A, Bohnert AM. Links between the organization of the family home environment and child obesity: a systematic review. *Obes Rev*. 2018;19(5):716–727
29. Pont SJ, Puhl R, Cook SR, Slusser W; Section on Obesity; Obesity Society. Stigma experienced by children and adolescents with obesity. *Pediatrics*. 2017;140(6):e20173034
30. Barlow SE; Expert Committee. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. *Pediatrics*. 2007;120(Suppl 4):S164–S192
31. Taveras EM, Rifas-Shiman SL, Sherry B, et al. Crossing growth percentiles in infancy and risk of obesity in childhood. *Arch Pediatr Adolesc Med*. 2011;165(11):993–998

32. Grummer-Strawn LM, Reinold C, Krebs NF; Centers for Disease Control and Prevention (CDC). Use of World Health Organization and CDC growth charts for children aged 0-59 months in the United States. *MMWR Recomm Rep*. 2010;59(RR-9):1–15
33. Freedman DS, Sherry B. The validity of BMI as an indicator of body fatness and risk among children. *Pediatrics*. 2009; 124(Suppl 1):S23–S34
34. Woo Baidal JA, Locks LM, Cheng ER, Blake-Lamb TL, Perkins ME, Taveras EM. Risk factors for childhood obesity in the first 1,000 days: a systematic review. *Am J Prev Med*. 2016;50(6):761–779
35. Mannan M, Mamun A, Doi S, Clavarino A. Prospective associations between depression and obesity for adolescent males and females- a systematic review and meta-analysis of longitudinal studies. *PLoS One*. 2016;11(6):e0157240
36. Phillips KL, Schieve LA, Visser S, et al. Prevalence and impact of unhealthy weight in a national sample of US adolescents with autism and other learning and behavioral disabilities. *Matern Child Health J*. 2014;18(8):1964–1975
37. Styne DM, Arslanian SA, Connor EL, et al. Pediatric obesity-assessment, treatment, and prevention: an endocrine society clinical practice guideline. *J Clin Endocrinol Metab*. 2017;102(3): 709–757
38. Miller SA, Wu RKS, Oremus M. The association between antibiotic use in infancy and childhood overweight or obesity: a systematic review and meta-analysis. *Obes Rev*. 2018;19(11): 1463–1475
39. Malhotra S, Sivasubramanian R, Srivastava G. Evaluation and management of early onset genetic obesity in childhood. *J Pediatr Genet*. 2021;10(3):194–204
40. Puhl RM, Peterson JL, Luedicke J. Parental perceptions of weight terminology that providers use with youth. *Pediatrics*. 2011; 128(4):e786–e793
41. Puhl RM, Lessard LM, Foster GD, Cardel MI. Patient and family perspectives on terms for obesity. *Pediatrics*. 2022;150(6): e2022058204
42. Agency for Healthcare Research and Quality. SDOH and practice improvement. Available at: <https://www.ahrq.gov/sdoh/practice-improvement.html>. Accessed January 7, 2023
43. US Department of Agriculture, US Department of Health and Human Services. Dietary guidelines for Americans, 2020-2025, 9th edition. Available at: [DietaryGuidelines.gov](https://www.dietaryguidelines.gov). Accessed January 7, 2023
44. Physical Activity Guidelines Advisory Committee. 2018 Physical activity guidelines scientific advisory committee scientific report. Available at: https://health.gov/sites/default/files/2019-09/PAG_Advisory_Committee_Report.pdf. Accessed January 7, 2023
45. Hirshkowitz M, Whiton K, Albert SM, et al. National Sleep Foundation's updated sleep duration recommendations: final report. *Sleep Health*. 2015;1(4):233–243
46. Paruthi S, Brooks LJ, D'Ambrosio C, et al. Recommended amount of sleep for pediatric populations: a consensus statement of the American Academy of Sleep Medicine. *J Clin Sleep Med*. 2016;12(6):785–786
47. Reid Chassiakos YL, Radesky J, Christakis D, Moreno MA, Cross C; Council on Communications and Media. Children and adolescents and digital media. *Pediatrics*. 2016;138(5):e20162593
48. Council on Communications and Media. Media and young minds. *Pediatrics*. 2016;138(5):e20162591
49. Vedanthan R, Bansilal S, Soto AV, et al. Family-based approaches to cardiovascular health promotion. *J Am Coll Cardiol*. 2016;67(14): 1725–1737
50. Scaglioni S, De Cosmi V, Ciappolino V, Parazzini F, Brambilla P, Agostoni C. Factors influencing children's eating behaviours. *Nutrients*. 2018;10(6):706
51. Meek JY, Noble L; Section on Breastfeeding. Policy statement: breastfeeding and the use of human milk. *Pediatrics*. 2022; 150(1):e2022057988
52. Meek JY, Hatcher AJ; Section on Breastfeeding. The breastfeeding-friendly pediatric office practice. *Pediatrics*. 2017;139(5): e20170647
53. 2020 Dietary Guidelines Advisory Committee. Scientific report of the 2020 Dietary Guidelines Advisory Committee. Available at: https://www.dietaryguidelines.gov/sites/default/files/2020-07/ScientificReport_of_the_2020DietaryGuidelinesAdvisoryCommittee_first-print.pdf. Accessed January 7, 2023
54. Food and Agriculture Organization of the United Nations. Ultra-processed foods, diet quality, and health using the NOVA classification system. Available at: <https://www.fao.org/3/ca5644en/ca5644en.pdf>. Accessed January 7, 2023
55. Wang L, Martínez Steele E, Du M, et al. Trends in consumption of ultraprocessed foods among US youths aged 2-19 years, 1999-2018. *JAMA*. 2021;326(6):519–530
56. Lane MM, Davis JA, Beattie S, et al. Ultraprocessed food and chronic noncommunicable diseases: a systematic review and meta-analysis of 43 observational studies. *Obes Rev*. 2021;22(3): e13146
57. Vos MB, Kaar JL, Welsh JA, et al; American Heart Association Nutrition Committee of the Council on Lifestyle and Cardiometabolic Health; Council on Clinical Cardiology; Council on Cardiovascular Disease in the Young; Council on Cardiovascular and Stroke Nursing; Council on Epidemiology and Prevention; Council on Functional Genomics and Translational Biology; and Council on Hypertension. Added sugars and cardiovascular disease risk in children: a scientific statement from the American Heart Association. *Circulation*. 2017;135(19):e1017–e1034
58. Muth ND, Dietz WH, Magge SN, Johnson RK; American Academy of Pediatrics; Section on Obesity; Committee on Nutrition; American Heart Association. Public policies to reduce sugary drink consumption in children and adolescents. *Pediatrics*. 2019;143(4):e20190282
59. Heyman MB, Abrams SA; Section on Gastroenterology, Hepatology, and Nutrition; Committee on Nutrition. Fruit juice in infants, children, and adolescents: current recommendations. *Pediatrics*. 2017;139(6):e20170967
60. Savage JS, Hohman EE, Marini ME, Shelly A, Paul IM, Birch LL. IN-SIGHT responsive parenting intervention and infant feeding practices: randomized clinical trial. *Int J Behav Nutr Phys Act*. 2018;15(1):64

61. Satter EM. The feeding relationship. *J Am Diet Assoc.* 1986; 86(3):352–356
62. Spill MK, Johns K, Callahan EH, et al. Repeated exposure to food and food acceptability in infants and toddlers: a systematic review. *Am J Clin Nutr.* 2019;109(Suppl_7):978S–989S
63. Landry MJ, van den Berg AE, Hoelscher DM, et al. Impact of a school-based gardening, cooking, nutrition intervention on diet intake and quality: the TX Sprouts Randomized Controlled Trial. *Nutrients.* 2021;13(9):3081
64. Verhage CL, Gillebaart M, van der Veek SMC, Vereijken CMJL. The relation between family meals and health of infants and toddlers: a review. *Appetite.* 2018;127:97–109
65. Hammons AJ, Fiese BH. Is frequency of shared family meals related to the nutritional health of children and adolescents? *Pediatrics.* 2011;127(6):e1565–e1574
66. Harrison ME, Norris ML, Obeid N, Fu M, Weinstangel H, Sampson M. Systematic review of the effects of family meal frequency on psychosocial outcomes in youth. *Can Fam Physician.* 2015;61(2): e96–e106
67. Utter J, Larson N, Berge JM, Eisenberg ME, Fulkerson JA, Neumark-Sztainer D. Family meals among parents: associations with nutritional, social and emotional wellbeing. *Prev Med.* 2018;113:7–12
68. Lobelo F, Muth ND, Hanson S, Nemeth BA; Council on Sports Medicine and Fitness; Section on Obesity. Physical activity assessment and counseling in pediatric clinical settings. *Pediatrics.* 2020;145(3):e20193992
69. Carbone PS, Smith PJ, Lewis C, LeBlanc C. Promoting the participation of children and adolescents with disabilities in sports, recreation, and physical activity. *Pediatrics.* 2021;148(6): e2021054664
70. Brenner JS; Council on Sports Medicine and Fitness. Sports specialization and intensive training in young athletes. *Pediatrics.* 2016;138(3):e20162148
71. Yang FN, Xie W, Wang Z. Effects of sleep duration on neurocognitive development in early adolescents in the USA: a propensity score matched, longitudinal, observational study. *Lancet Child Adolesc Health.* 2022;6(10):705–712
72. Owens J. Classification and epidemiology of childhood sleep disorders. *Prim Care.* 2008;35(3):533–546, vii
73. Trosman I, Ivanenko A. Classification and epidemiology of sleep disorders in children and adolescents. *Child Adolesc Psychiatry Clin N Am.* 2021;30(1):47–64
74. Marcus CL, Brooks LJ, Draper KA, et al; American Academy of Pediatrics. Diagnosis and management of childhood obstructive sleep apnea syndrome. *Pediatrics.* 2012;130(3):e714–e755
75. Owens JA, Dalzell V. Use of the 'BEARS' sleep screening tool in a pediatric residents' continuity clinic: a pilot study. *Sleep Med.* 2005;6(1):63–69
76. McArthur BA, Volkova V, Tomopoulos S, Madigan S. Global prevalence of meeting screen time guidelines among children 5 years and younger: a systematic review and meta-analysis. *JAMA Pediatr.* 2022;176(4):373–383
77. Nagata JM, Cortez CA, Cattle CJ, et al. Screen time use among us adolescents during the COVID-19 pandemic: findings from the Adolescent Brain Cognitive Development (ABCD) Study. *JAMA Pediatr.* 2022;176(1):94–96
78. Kroshus E, Tandon PS, Zhou C, Johnson AM, Steiner MK, Christakis DA. Problematic child media use during the COVID-19 pandemic. *Pediatrics.* 2022;150(3):e2021055190
79. Robinson TN, Banda JA, Hale L, et al. Screen media exposure and obesity in children and adolescents. *Pediatrics.* 2017; 140(Suppl 2):S97–S101
80. J Devoe D, Han A, Anderson A, et al. The impact of the COVID-19 pandemic on eating disorders: a systematic review. *Int J Eat Disord.* 2023;56(1):5–25
81. Jones EAK, Mitra AK, Bhuiyan AR. Impact of COVID-19 on mental health in adolescents: a systematic review. *Int J Environ Res Public Health.* 2021;18(5):2470
82. American Academy of Pediatrics. AAP-AACAP-CHA declaration of a national emergency in child and adolescent mental health [press release]. <https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/>. Accessed January 7, 2023
83. Khalid S, Williams CM, Reynolds SA. Is there an association between diet and depression in children and adolescents? A systematic review. *Br J Nutr.* 2016;116(12):2097–2108
84. Korczak DJ, Madigan S, Colasanto M. Children's physical activity and depression: a meta-analysis. *Pediatrics.* 2017;139(4): e20162266
85. Kvam S, Kleppe CL, Nordhus IH, Hovland A. Exercise as a treatment for depression: a meta-analysis. *J Affect Disord.* 2016; 202:67–86
86. Recchia F, Bernal JDK, Fong DY, et al. Physical activity interventions to alleviate depressive symptoms in children and adolescents: a systematic review and meta-analysis. *JAMA Pediatr.* 2023;177(2):132–140
87. Woods HC, Scott H. #Sleepyteens: social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *J Adolesc.* 2016;51:41–49
88. Owens JA, Weiss MR. Insufficient sleep in adolescents: causes and consequences. *Minerva Pediatr.* 2017;69(4):326–336
89. Zuckerbrot RA, Cheung A, Jensen PS, Stein REK, Laraque D; GLAD-PC Steering Group. Guidelines for adolescent depression in primary care (GLAD-PC): part i. practice preparation, identification, assessment, and initial management. *Pediatrics.* 2018; 141(3):e20174081
90. Mangione CM, Barry MJ, Nicholson WK, et al; US Preventive Services Task Force. Screening for depression and suicide risk in children and adolescents: US preventive services task force recommendation statement. *JAMA.* 2022;328(15):1534–1542
91. Mangione CM, Barry MJ, Nicholson WK, et al; US Preventive Services Task Force. Screening for anxiety in children and adolescents: US preventive services task force recommendation statement. *JAMA.* 2022;328(14):1438–1444

92. Hornberger LL, Lane MA; Committee on Adolescence. Identification and management of eating disorders in children and adolescents. *Pediatrics*. 2021;147(1):e2020040279
93. Kemper AR, Letostak TB, Hostutler CA, Stephenson KG, Butter EM. Screening for anxiety in pediatric primary care: a systematic review. *Pediatrics*. 2021;148(4):e2021052633
94. Ralph AF, Brennan L, Byrne S, et al. Management of eating disorders for people with higher weight: clinical practice guideline. *J Eat Disord*. 2022;10(1):121
95. Prochaska JO. *Systems of Psychotherapy: a Transtheoretical Analysis. The Dorsey Series in Psychology*. Dorsey Press; 1979
96. Miller WR, Rollnick S. *Motivational Interviewing: Helping People Change*. 3rd ed. Guilford Press; 2013:xii, 482
97. World Health Organization. *Consideration of the Evidence on Childhood Obesity for the Commission on Ending Childhood Obesity: Report of the Ad Hoc Working Group on Science and Evidence for Ending Childhood Obesity*. World Health Organization; 2016
98. Rutter H, Savona N, Glonti K, et al. The need for a complex systems model of evidence for public health. *Lancet*. 2017; 390(10112):2602–2604
99. Brown T, Moore TH, Hooper L, et al. Interventions for preventing obesity in children. *Cochrane Database Syst Rev*. 2019;7(7):CD001871
100. Adolescent Sleep Working Group; Committee on Adolescence; Council on School Health. School start times for adolescents. *Pediatrics*. 2014;134(3):642–649
101. Council on School Health; Committee on Nutrition. Snacks, sweetened beverages, added sugars, and schools. *Pediatrics*. 2015;135(3):575–583
102. Atanasova P, Kusuma D, Pineda E, Frost G, Sassi F, Miraldo M. The impact of the consumer and neighbourhood food environment on dietary intake and obesity-related outcomes: a systematic review of causal impact studies. *Soc Sci Med*. 2022; 299:114879
103. von Philipsborn P, Stratil JM, Burns J, et al. Environmental interventions to reduce the consumption of sugar-sweetened beverages and their effects on health. *Cochrane Database Syst Rev*. 2019;6(6):CD012292
104. Institute of Medicine. *Educating the Student Body: Taking Physical Activity and Physical Education to School*. National Academies Press; 2013
105. Thornton RL, Glover CM, Cené CW, Glik DC, Henderson JA, Williams DR. Evaluating strategies for reducing health disparities by addressing the social determinants of health. *Health Aff (Millwood)*. 2016;35(8):1416–1423