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Reexamining the complex issue of obesity in childhood: A new guideline and patient-focused approach

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Abstract: *Obesity in childhood is a complex, multifaceted condition with various contributors, including genetic, environmental, socioeconomic, and physiologic factors. The latest guidelines recommend annual evaluation beginning at age 2 years. Treatment strategies should be family focused and should target nutrition, physical activity, and behavior.*

Obesity in pediatrics, now designated as a chronic disease, has become one of the most common chronic health conditions in this population, affecting more than 14 million children and adolescents in the US.¹ Prior to the COVID-19 pandemic, almost 20% of all children and adolescents met the criteria for obesity.² The pandemic has not only exaggerated global rates of obesity but has also heightened concern for obesity-related comorbidities.³ Obesity in childhood has been shown to have a positive correlation with lower socioeconomic status

(SES) and racial/ethnic minority identity.⁴ Obesity rates related to lower SES can be attributed in part to poor nutrition connected to decreased access to fruits and vegetables, increased access to fast food, or consumption of energy-dense foods that are highly processed to lengthen shelf life and therefore lower in nutritional value.⁴

It is well established that obesity in childhood is associated with a variety of health conditions including, but not limited to, dyslipidemia, hypertension (HTN), insulin resistance or prediabetes, metabolic

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syndrome, nonalcoholic fatty liver disease (NAFLD), obstructive sleep apnea (OSA), polycystic ovary syndrome (PCOS), depression, and type 2 diabetes mellitus (T2DM).^{1,5} Specific conditions more commonly associated with obesity only in the pediatric population include slipped capital femoral epiphysis (SCFE) and Blount disease.¹

In early 2023, the American Academy of Pediatrics (AAP) published a clinical practice guideline (CPG) on the evaluation and treatment of children and adolescents with obesity.¹ The CPG focuses only on children and adolescents ages 2 years and older. Additionally, the CPG does not address obesity prevention; a separate guideline is slated to be published on this topic in the future. The complexities of obesity are now better understood than they were 10 years ago, with multiple pinpointed contributors, including genetic, environmental, socioeconomic, and physiologic factors.^{1,6} Additionally, more randomized controlled trials and longitudinal studies are underway, with the latest results guiding best practice. In consideration of the changing landscape, the new 2023 AAP guideline recommends that providers consider the child's overall health status, family, community, and available resources when developing a plan of care. The guideline also takes into consideration social determinants of health (SDoH), health disparities, and health equities for pediatric patients with obesity.¹

NPs in primary care are in a unique position to address this complex issue due to the holistic approach to care that is fundamental to the nursing profession. This article discusses the latest AAP guideline for the evaluation and treatment of obesity in children and adolescents through the lens of primary care and in consideration of health equity, weight stigma, and SDoH.

■ Risk factors

Childhood obesity is a complex disease with multiple etiologies. In children and adolescents, risk factors for obesity can be grouped into four principal categories: individual factors, family environment, community environment, and policy.^{1,7} Individual factors include genetic factors, eating routines, and schedules.¹ Gene expression can be altered by epigenetic changes during prenatal development, neonatal

development, and puberty.⁸ Prader-Willi syndrome, for example, is one of the most identified genetic and epigenetic disorders that is linked to obesity in childhood, often discovered through genetic testing for children who present with severe obesity before the age of 5 years.⁹ Prenatally, the mother's nutrition during pregnancy can lead to epigenetic changes that alter gene expression in the fetus.^{1,8} Excessive maternal weight gain during pregnancy can increase the fetus's risk of obesity in childhood and adulthood, as can the infant's low birth weight.^{1,8} Additionally, introduction of complementary foods in breastfed infants prior to 4 months of age is associated with increased risk of overweight and no benefit to growth.¹⁰ Rapid weight gain resulting from overfeeding infants during their first months of life also significantly increases the risk of obesity by the age of 4 years.¹¹ Children and adolescents who eat in front of screens, frequently snack, eat meals alone rather than together with their families, and/or live in multiple households

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due to, for example, parental separation can develop unhealthy eating behaviors in view of these individual risk factors. Decreased physical activity and use of obesogenic medications also constitute individual risk factors.¹ A family history of obesity has long been identified as a risk factor for obesity in childhood.^{1,8}

Family environment, child and family interaction, and parenting feeding styles or choices (for example, use of high-calorie, low-density snacks) can contribute to unhealthy lifestyle behaviors and can affect a child or adolescent's weight trajectory.⁹ SDoH and policy also play significant roles in childhood obesity.

In terms of SDoH, obesity is more common in children and adolescents who live in poverty, under-resourced communities, or rural communities.^{1,12} Families who have immigrated to the US or who have experienced discrimination or negative stigma have higher rates of overweight and obesity among children and adolescents.¹ If a family is living in an under-resourced community, access to fresh fruits and vegetables may be limited, resulting in the purchase of high-fat and/or -sugar foods that are highly processed.

Policy plays a large part in the increase in obesity in the pediatric population. One policy contributing to obesity in childhood is the US Food, Conservation, and Energy Act (more commonly known as the 2008 US Farm Bill), which provides farm subsidies for production of commodities with lower nutritional quality.¹³ Of the top seven crops subsidized by the bill, four (corn, wheat, rice, and sorghum) are known to contribute to obesity as well as cardiovascular disease.¹³

■ Addressing obesity in childhood

Obesity in childhood has been classified as a chronic disease at the national and international levels. The benefits of addressing childhood obesity therefore expand beyond the individual child, impacting the larger family unit as well as society as a whole.^{1,7} As previously discussed, obesity in childhood is associated with several comorbidities.^{1,7,9} The effects of childhood obesity-related comorbidities escalate over time. Early identification and treatment of childhood obesity can prevent comorbidities and their associated complications. From a societal perspective, addressing childhood obesity would decrease future yearly per capita and health spending costs. The yearly per capita medical costs for a child or adolescent with overweight or obesity are approximately \$238 more than those for a child or adolescent who is not classified as overweight or obese. The difference in hospitalization costs per capita in children and adolescents with obesity vary greatly by diagnosis but range from about \$900 to \$5,500 higher per admission as compared with those costs for children and adolescents of a healthy weight.¹⁴ The excess annual direct medical costs of adolescent overweight were an estimated \$177 million for the US with an additional annual indirect cost of more than \$1 billion in lost productivity in 2020; these costs are estimated to be more than \$13 billion and \$49 billion, respectively, by 2050.¹⁴

The Supplemental Nutrition Assistance Program (SNAP) is a governmental program that provides funds for purchasing foods to individuals and families with lower income affected by food hardship. SNAP improves food sufficiency as well as food security.¹⁵ A supplement to this program, SNAP Education (SNAP-Ed), is intended to combat food insecurity in conjunction with SNAP through the use of evidence-based interventions that help people to use their SNAP dollars effectively, teaching them how to cook healthy meals and lead physically active lifestyles while

enrolled in SNAP. In one study, the use of SNAP-Ed was shown to result in weight loss for adults.¹⁶ However, significant differences in body mass index (BMI) among children were not reported, and sufficient evidence does not yet exist to prove that either SNAP alone or SNAP with SNAP-Ed is effective in preventing or fighting pediatric obesity.

■ New guideline

In 2023, the AAP published its first evidence-based CPG addressing evaluation and treatment of obesity in childhood.¹ The CPG has five main focuses: diagnosis and evaluation, comorbidities, treatment, recommendations for implementation, and gaps in evidence. This CPG does not address prevention of childhood obesity, nor does it address evaluation of obesity in children younger than the age of 2 years. These two matters are not addressed due to a lack of evidence from randomized controlled trials, high-quality longitudinal studies, and high-quality epidemiologic studies supporting broad recommendations. In the CPG, recommendations are categorized from levels A to D based on evidence quality and benefit versus harm. Grade A recommendations are based on data from well-designed trials or meta-analyses on similar populations that support a strong recommendation. Grade B recommendations are supported by trials or studies with minor limitations or by multiple observational studies and are framed as moderate to strong recommendations. Grade C recommendations are considered weak to moderate recommendations, supported by a few observational studies or multiple studies with findings that are inconsistent or have major limitations. Finally, grade D recommendations are supported by “expert opinion, case reports, [or] reasoning from first principles,” all of which are considered low-quality evidence, thus forming weak recommendations.¹⁷ In addition to providing recommendations, the CPG provides 13 Key Action Statements (KASs) to aid in evaluating and treating childhood obesity in primary care.¹

■ Diagnosis, evaluation, and comorbidities

During well-child exams, providers should work to normalize discussion of the child’s weight. An effective discussion can be achieved by always asking first for the family’s permission to discuss the child’s weight or BMI before starting the conversation. When speaking about the child, avoid labeling and stigmatization by

using person-first language (such as “child with obesity” as opposed to “obese child”), and use neutral words and phrases (such as “unhealthy weight gain” and “gaining too much weight for height”).¹ Avoid terms such as “obese,” “fat,” and “overweight” to avoid shaming both the parents and the child or adolescent. Approaching the topic in a sensitive and nonjudgmental manner can help to avoid stigmatization; generally, the AAP indicates that the benefits of this discussion outweigh the risks.

KAS 1 (grade B; moderate recommendation) of the AAP CPG indicates that pediatric providers “should measure height and [weight], calculate BMI, and assess BMI percentile using age- and sex-specific CDC growth charts or growth charts for children with severe obesity at least annually” to screen for overweight, obesity, and severe obesity in all children ages 2 to 18 years.¹ The CPG defines overweight as BMI higher than or equal to the 85th percentile to lower than the 95th percentile; obesity as BMI higher than or equal to the 95th percentile; and severe obesity as BMI higher than or equal to 120% of the 95th percentile, all for age and sex.¹

Since obesity is a multifaceted disease for which a lone cause is difficult to find, a thorough history and evaluation are critical. Because obesity confers risk for other conditions, if children ages 2 to 18 years are diagnosed with overweight, obesity, or severe obesity, KAS 2 (grade B; strong recommendation) recommends additional evaluation for obesity-related comorbidities. To screen for comorbidities, providers should collect a comprehensive patient history in addition to completing a thorough physical exam and undertaking diagnostic studies as indicated. As part of this screening process, providers should also evaluate for SDoH and undertake mental and behavioral health screening.

History and review of systems. In collecting history, the provider should inquire about the chief complaint and history of present illness; focusing on these components helps to illuminate any family concerns regarding weight and any symptoms of possible comorbidities (Box 1). A comprehensive family history also helps to show a possible genetic cause for obesity, and medication history identifies use of any medications that are associated with weight gain or altered metabolism such as glucocorticoids and progestin-based oral contraceptives. Nutritional history shows any unhealthy eating habits and should include evaluation of the patient’s

Box 1. Comprehensive history components

- Chief complaint
- History of present illness
- Past medical history
- Review of systems
- Family history
- Medication history
- Nutrition and physical activity history
- Sleep history
- Social history
- SDoH evaluation
- Unhealthy weight control practices

meals inside and outside the home; consumption of high-sugar food and drink; food portions; meal habits, including skipping meals; fruit and vegetable consumption; and cultural dietary habits. The current amount and level of physical activity as well as sedentary activities such as increased screen time should also be evaluated.

In addition, a social history should be undertaken in the context of pediatric obesity to explore the child’s eating habits, environment, stressors, and past trauma as well as the family’s relationship with food and stressors. The child or adolescent’s relationships with family members and friends should also be explored, and an evaluation of SDoH must be undertaken to aid in identifying any barriers that may be contributing to unhealthy weight gain such as poor access to grocery stores or markets for fresh foods or financial constraints. A full mental health history including for anxiety, depression, attention-deficit hyperactivity disorder, weight-based bullying and teasing, weight stigma, and past trauma can identify the need for referral to counseling, as unhealthy eating can be a coping mechanism. Additionally, some mental health medications can affect weight.^{18,19} Use of antipsychotics and antidepressants, for example, can cause weight gain.²⁰ Providers should also assess for unhealthy weight control practices such as skipping meals, use of laxatives or diet pills, and inducing vomiting, as the presence of any of these may signify the presence of an eating disorder.^{21,22} Suspected eating disorders identified during history collection should be referred to nutrition and mental health specialists for full evaluation and care.

In addition, in the presence of pediatric obesity, history collection and review of systems should assess thoroughly for comorbidities. One such comorbidity is OSA; therefore, evaluation should include a comprehensive sleep history including questions regarding

sleep patterns, snoring, daytime somnolence, morning headaches, inattention, and nocturnal enuresis to evaluate for OSA and identify whether additional testing, such as a sleep study, is warranted. Menstrual history should include any history of irregular menses or absence of menses to help rule out PCOS. History of musculoskeletal pain or discomfort including back, hip, knee, or foot pain may be a barrier to increased physical activity or indicative of a more serious medical issue, such as SCFE or Blount disease, requiring further evaluation. Headache history that reveals, for example, progressive headache with significant weight gain, visual changes, or pulsatile synchronous tinnitus

warrants referral for further evaluation to a neurologist or ophthalmologist to evaluate the child for idiopathic intracranial HTN, previously known as pseudotumor cerebri.

Physical exam. A comprehensive physical exam should be conducted to identify any signs and symptoms of comorbidities as well as to identify physical exam findings that are associated with obesity (Table 1).^{1,9,23,24} In addition to height, weight, and BMI, the patient’s respiration rate, pulse, and BP should be measured. A thorough skin exam should look for intertrigo, hidradenitis suppurativa, acanthosis nigricans, and flesh-colored striae on the abdomen or thighs. Positive exam findings of purplish abdominal striae should trigger further history and evaluation for Cushing syndrome. The head, ears, eyes, nose, and throat should be inspected for papilledema, which could indicate idiopathic intracranial HTN; positive tonsillar hypertrophy, which should trigger evaluation for OSA; dental caries, which could indicate high sugar intake or infection; and goiter, which would warrant further evaluation for thyroid disease. A cardiopulmonary exam should focus on tachypnea, dyspnea, tachycardia, peripheral edema, and wheezing or other symptoms of asthma. An abdominal exam should include notation of any liver enlargement, abdominal tenderness, and signs of constipation. A genitourinary exam should include evaluation for pubertal status, presence of a suprapubic fat pad, and skin breakdown. Providers should also assess for signs of endocrine abnormality, such as gynecomastia and dorsocervical hump. The neurologic exam should inspect for signs of papilledema and paresthesia. A comprehensive orthopedic exam includes evaluation for the presence of back pain, evaluation of gait and mobility, and inspection for knee tenderness, pes planus, genu valgum, and genu varum. The exam should include an evaluation of internal hip rotation to assess for pain or tenderness in the hip, groin, thigh, or knee, any of which would raise suspicion for SCFE or Blount disease and warrant further workup. The neuromuscular exam should include evaluation of bone structure, gait, pain, balance, coordination, strength, and flexibility.

Diagnostic testing. Several KASs from the AAP CPG address comorbidities and their screening. Namely, the guideline advises that children and adolescents with obesity should be evaluated “for lipid abnormalities, abnormal glucose metabolism, and abnormal liver function” if they are ages 10 years and

Table 1. Assessment for comorbidities^{1,9,23,24}

Physical exam components
<ul style="list-style-type: none"> • Vital signs and measurements^a <ul style="list-style-type: none"> ◦ Weight ◦ Height ◦ BMI ◦ RR ◦ Pulse ◦ BP • Skin • HEENT • Cardiopulmonary • Gastrointestinal • Genitourinary • Neurologic • Orthopedic • Neuromuscular
Tests or screening tools for comorbidity assessment (recommended by CPGs)
<ul style="list-style-type: none"> • HTN: BP (AAP CPG KAS 8) • Dyslipidemia: Fasting lipid panel (AAP CPG KASs 3, 3.1, 5) • Prediabetes and diabetes mellitus: A1C, fasting plasma glucose, or 2-hour plasma glucose after 75-g OGTT (AAP CPG KASs 3, 3.1, 6) • NAFLD: ALT (AAP CPG KASs 3, 3.1, 7) • PCOS: Consult PCOS CPG • OSA: Nocturnal polysomnography (AAP CPG; Endocrine Society CPG) • Anxiety^b: GAD-7, SCARED • Depression^b: PHQ-9-M and Columbia Depression Scale • ADHD^b: Vanderbilt ADHD rating scale
<p>Abbreviations: A1C, hemoglobin A1C; AAP, American Academy of Pediatrics; ADHD, attention-deficit hyperactivity disorder; ALT, alanine transaminase; BMI, body mass index; CPG, clinical practice guideline; GAD-7, Generalized Anxiety Disorder-7; HEENT, head, ears, eyes, nose, and throat exam; HTN, hypertension; KAS, Key Action Statement; NAFLD, nonalcoholic fatty liver disease; OGTT, oral glucose tolerance test; OSA, obstructive sleep apnea; PCOS, polycystic ovary syndrome; PHQ-9-M, Patient Health Questionnaire-9 Modified for Adolescents; RR, respiratory rate; SCARED, Screen for Child Anxiety Related Disorders.</p> <p>^aUse of most current CDC BMI growth charts is recommended.</p> <p>^bRecommended age range varies for each mental health screening tool. Providers are encouraged to review appropriate resources for more information.</p>

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older (KAS 3: grade B; strong recommendation) and may be evaluated “for lipid abnormalities” if they are ages 2 to 9 years (KAS 3.1: grade C; moderate recommendation).¹ Providers should evaluate “for lipid abnormalities” only in children ages 10 and older with overweight (KAS 3: grade B; strong recommendation), unless they have risk factors for T2DM and/or NAFLD, in which case providers may evaluate for “abnormal glucose metabolism and liver function” as well (KAS 3.1: grade C; moderate recommendation). KAS 5 states that providers should “evaluate for dyslipidemia by obtaining a fasting lipid panel” in children ages 10 years and older with overweight or obesity (grade B; strong recommendation) and that providers may evaluate children ages 2 to 9 years with obesity for dyslipidemia (grade C; moderate recommendation). The AAP recommends that providers evaluate patients “for prediabetes and/or diabetes mellitus with fasting plasma glucose, 2-h [hour] plasma glucose after 75-g oral glucose tolerance test...or glycosylated hemoglobin” (KAS 6: grade B; moderate recommendation) and for NAFLD with an alanine transaminase test (KAS 7: grade A; strong recommendation). The AAP additionally recommends assessing for HTN by measuring BP at every visit for children or adolescents age 3 years or older with overweight or obesity (KAS 8: grade C; moderate recommendation).

Treatment

The AAP CPG recommends that children and adolescents with overweight or obesity be treated for these conditions concurrently with treatment for any related comorbidities (KAS 4: grade A; strong recommendation).¹ According to the guideline, affected children and adolescents should be treated for overweight and obesity “following the principles of the medical home and the chronic care model, using a family-centered and non-stigmatizing approach that acknowledges obesity’s biologic, social, and structural drivers” (KAS 9: grade B; strong recommendation).

The treatment plan should also utilize motivational interviewing (MI) to engage patients in their own care (KAS 10: grade B; moderate recommendation). Use of MI identifies and reinforces the patient’s own motivation for change versus the traditional approach of the provider prescribing the behavior change. MI is most

successful when the person responsible for the behavior change is the focus of the MI process. If the child is at the younger end of the range or is preadolescent, the focus should instead be the parent. When the child reaches adolescence, both the adolescent and parent should be included in the MI process, and the treatment plan should be based on the family’s readiness to change.

When applicable, children and adolescents with overweight and obesity should be referred to specialists for further treatment of the condition and any related comorbidities. According to KAS 11, children ages 6 years and older with overweight and obesity should receive “intensive health behavior and lifestyle treatment” (IHBLT) as part of their care plan (grade B; moderate recommendation), whereas children ages 2

The AAP CPG recommends that treatment be based on a foundation focusing on nutrition, physical activity, and behavior interventions; the practice of “watching and waiting” is no longer recommended.



to 5 years with overweight and obesity may receive such care (grade C; moderate recommendation). According to the guideline, “health behavior and lifestyle treatment is more effective with greater contact hours; the most effective treatment includes 26 or more hours of face-to-face, family-based, multicomponent treatment” over 3 to 12 months. Consistent with the 2017 US Preventive Services Task Force (USPSTF) recommendation, the AAP CPG recommends that treatment be based on a foundation focusing on nutrition, physical activity, and behavior interventions; the practice of “watching and waiting” is no longer recommended, with the focus being placed on early high-intensity interventions, which yield the best outcomes.^{1,25,26}

Ideally, IHBLT should entail a partnership involving the patient, family, and a multidisciplinary treatment team. Family-centered treatments are recommended by both the AAP and USPSTF. Of note, at the time of publication of this article, an update to the USPSTF recommendation on interventions for high BMI in children and adolescents was in progress.²⁵ Treatment should assess for coping strategies and take into consideration family culture and available financial resources; it should also include health education, skill building, behavior modification, and counseling.^{1,25,26} Outcomes should aim to improve the child’s

Table 2. Evidence-based resources

Resource and description	Source and URL
MyPlate A visual representation of the five food groups. Offers tips, recipes, and other resources in support of healthy diets.	US Department of Agriculture www.myplate.gov
Traffic Light Diet Diet framework that uses three colors (green, yellow, and red) to categorize foods in an easy-to-understand way for kids to signify how often each category should be eaten.	University at Buffalo Department of Pediatrics https://medicine.buffalo.edu/departments/pediatrics/research_and_facilities/impact.host.html/content/shared/smb/research_highlights/traffic-light-diet.detail.html
5-2-1-0 Framework for providers to use in fostering creation of healthy environments for kids in which they can learn to make healthy choices.	United Way of Central Iowa www.unitedwaydm.org/5210dsm
“What Is Intensive Health Behavior and Lifestyle Treatment (IHBLT)?” A helpful article that serves as an online resource for patients and their families, outlining how IHBLT works and what to expect in an IHBLT program.	HealthyChildren.org www.healthychildren.org/English/health-issues/conditions/obesity/Pages/what-is-intensive-health-behavior-and-lifestyle-treatment-IHBLT.aspx
CDC-recognized family healthy weight programs A list for providers of easy-to-use, evidence-based programs recognized by the CDC for addressing pediatric obesity.	CDC www.cdc.gov/obesity/strategies/family-healthy-weight-programs.html

self-esteem and coping. The recommendations recognize that interventions may be performed in a health-care setting or at the individual, group, or community level (or some combination thereof), but all interventions should be family based and contain both a healthy eating and physical activity component. When IHBLT programs are not available, other strategies may be used as alternative treatment plans. These alternatives include recommendations to reduce sugar-sweetened beverages, engage in 60 minutes of moderate to vigorous physical activity per day, reduce sedentary behavior, sleep for an appropriate amount of time each evening, and avoid skipping meals (Table 2 and Box 2).

Implementation recommendations. Implementation of a treatment plan should be initiated as soon

as possible and should be child focused and family oriented.¹ The AAP CPG also recommends that treatment plans be coordinated by the medical home. Primary care NPs should implement the most intensive care possible through and within their clinic setting and community resources. The use of MI can guide discussions in identifying goals for treatment to ensure that the patient, family, and provider all agree on and work toward the same goal for the patient’s weight loss.

Significant barriers continue to exist for primary care NPs as well as pediatric patients with obesity and their families. Barriers can be at the provider, clinic site, community, or policy level. Inconsistent policies regarding payment for evaluation and treatment of childhood obesity continue to be a challenge for care. Evidence-based strategies are not reimbursed consistently between private and public provider networks. Often, the cost for the treatment program falls to the patient’s family, and it can be significant or untenable, especially for those of lower SES. Barriers are often noted at the practice site. Providers consistently report lack of time, resources, and knowledge to adequately evaluate and treat a child or adolescent who meets criteria for being overweight or obese.¹ Implementation of recommended interventions, such as the use of MyPlate, also requires time and resources.²⁷ In particular, the use of MI presents barriers that are difficult to overcome

Box 2. General intervention guidelines

- Gradually work to change family eating habits and activity levels versus focusing on child’s weight
- Encourage parents to model eating healthy foods and engaging in physical activity
- Limit screen time (phones, computers, television) to less than 2 hours daily
- Encourage eating slowly and only when hungry
- Avoid using food as a reward or withholding food as punishment
- Encourage consumption of water rather than beverages with added sugar, including fruit juice
- Encourage 60 minutes of moderate to vigorous physical activity most days of the week (for example, walking, biking, playing outside)

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including lack of staff training and insufficient delivery time for the intervention, which generally requires more time than providers have.²⁸

Other treatment options and referral. Treatment beyond the scope of this article includes the use of adjunctive pharmacotherapy and bariatric surgery. Use of pharmacotherapy warrants referral to a pediatric provider specializing in treatment of childhood obesity. KAS 12 (grade B; moderate recommendation) of the 2023 AAP CPG suggests offering pharmacotherapeutic options to adolescents ages 12 years and older with obesity in conjunction with IHBLT.¹ In terms of weight loss surgery, the literature suggests that this intervention is safe and effective in pediatric patients. KAS 13 (grade C; moderate recommendation) recommends referral of adolescents ages 13 years and older with severe obesity to comprehensive metabolic and bariatric surgery centers specializing in treating individuals under the age of 18 years for a full evaluation.

NP practice implications

All children and adolescents should be evaluated annually for unhealthy weight gain. A comprehensive history should include evaluation of medical, social, and cultural history as well as past and current behaviors. The physical exam should evaluate the level of unhealthy weight gain as well as evaluate for possible comorbidities associated with obesity in children and adolescents. Treatment of unhealthy weight gain should include a plan that is developed using MI and should entail a family-centered approach. Partnering with other providers or communities often provides families with multiple treatment strategies.

Gaps in evidence

Gaps in the evidence include the influence of race, ethnicity, and SDoH on the epidemiology of obesity. The trajectory of BMI on the development of comorbidities or the long-term response to treatment remains unknown. The evidence is not clear on the best intervention components, duration of treatment, and dose of treatment for long-term control of weight. Evidence is also lacking on cost-effective and sustainable treatment interventions that are able to meet the individual needs of patients and families.

Conclusion

Evaluation for unhealthy weight gain should occur annually for children ages 2 to 18 years. Children and

adolescents who are identified as being overweight or obese should undergo comprehensive history collection and a physical exam that include identifying social drivers of health as well as screening for comorbidities. MI should be used to develop and implement a treatment program. Treatment goals should be developed in collaboration among the patient, parent, and provider and be tailored to meet the ongoing needs of the patient and family. Programs should include IHBLT strategies and should be interdisciplinary. Building collaborations with programs in the community and relationships with specialists can help to deliver the most effective management strategies for childhood obesity. NP

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