



# Executive Summary: Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity

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## INTRODUCTION AND APPROACH

Obesity is a common, complex, and often persistent chronic disease associated with serious health and social consequences if not treated.<sup>1</sup> Yet, despite the disease's complexity, treatment of obesity can be successful.<sup>2–4</sup> The current and long-term health of 14.4 million children and adolescents is affected by obesity,<sup>5,6</sup> making it one of the most common pediatric chronic diseases in the United States.<sup>5,7,8</sup>

Obesity has long been stigmatized as a reversible consequence of personal choices but has, in reality, complex genetic, physiologic, socioeconomic, and environmental contributors. An increased understanding of the impact of social determinants of health (SDOHs) on the chronic disease of obesity—along with heightened appreciation of the impact of the chronicity and severity of obesity-related comorbidities—has enabled broader and deeper understanding of the complexity of both obesity risk and treatment.<sup>9,10</sup>

This clinical practice guideline (CPG) aims to inform pediatricians and other pediatric health care providers (PHCPs) about the standard of care for evaluating and treating children with overweight and obesity and related comorbidities. The CPG promotes an approach that considers the child's health status, family system, community context, and resources for treatment to create the best evidence-based treatment plan. The medical home should coordinate the evaluation and treatment of obesity and related conditions; however, the CPG

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recommendations are child-centric and not specific to a particular health care setting. The term “pediatricians and other PHCPs” includes pediatric primary and specialty care providers as well as allied health care professionals, all of whom will encounter and may treat children with overweight, obesity, and obesity-related comorbidities.

The CPG is based on a comprehensive evidence review of controlled and comparative effectiveness trials and high-quality longitudinal and epidemiologic studies. The accompanying technical reports (<https://doi.org/10.1542/peds.2022-060642> and <https://doi.org/10.1542/peds.2022-060643>) provide detailed descriptions of the evidence review supporting the CPG’s development. Based on this evidence, the CPG contains Key Action Statements (KASs), which represent evidence-based recommendations from randomized controlled and comparative effectiveness trials and high-quality longitudinal and epidemiologic studies. The CPG details an evidence table for each KAS (Table 1) and Appendix 1 in the CPG contains a helpful algorithm to guide care based on these KASs. KASs are supplemented by Consensus Recommendations to provide expert opinion on topics that were not part of the TRs. These Consensus Recommendations are supported by American Academy of Pediatrics (AAP)-endorsed guidelines, clinical guidelines, and/or position statements from professional societies in the field of obesity, and an extensive literature review (see Methodology section of CPG [<https://doi.org/10.1542/peds.2022-060640>]).

The CPG does not include guidance for overweight and obesity evaluation and treatment of children younger than 2 years of age. Nor does the CPG discuss primary

obesity prevention, which will be addressed in a forthcoming AAP policy statement.

### **Obesity is a Chronic Disease With Complex Contributing Factors**

Childhood obesity results from a multifactorial set of socioecological, environmental, and genetic influences that act on children and families (see Epidemiology section of CPG [<https://doi.org/10.1542/peds.2022-060640>]). The CPG describes risk factors for overweight and obesity, many of which are SDoHs. These SDoHs include factors related to broader policies and systems; institutions and organizations (ie, schools); neighborhoods and communities; and family, socioeconomic, environmental, ecological, genetic, and biological factors<sup>2,3</sup> (see Risk Factors section of CPG [<https://doi.org/10.1542/peds.2022-060640>]). These risk factors often overlap and/or influence one another and can operate chronically throughout childhood and adolescence, initiating weight gain and escalating degrees of existing obesity. The subcommittee recommends that pediatricians and other PHCPs perform initial and longitudinal assessment of individual, structural, and contextual risk factors to provide individualized and tailored treatment of the child/adolescent with overweight/obesity.

The term “disparities” is commonly used to describe differences in disease prevalence and outcomes in populations, defined by ethnicity, race, gender, and/or age. This word, however, does not acknowledge the causes of these disease prevalence differences, better labeled “inequities,” a term that includes structural racism and the lack of “economic, civil-political, cultural, or environmental conditions that are required to generate parity and equality.”<sup>4</sup>

This distinction between health disparities and inequities is particularly important when

considering obesity because obesity-related risk factors are embedded in the socioecological and environmental fabric of children’s lives. There is a danger of stigmatizing children with obesity and their families on the basis of race or ethnicity, age, and/or sex based on the disparities of outcome—without recognizing the systemic challenges that cause and maintain inequities.<sup>11,12</sup> Inequities are often associated with each other<sup>13</sup> and result in disparities in obesity risk and outcomes across the socioecological spectrum. Importantly, they represent neighborhood-, community-, and population-level factors that can be changed.<sup>14</sup> Inequities that promote obesity in childhood can have a longitudinal effect, which leads to disparities in adult health and contributes to adult obesity and other chronic diseases.<sup>15</sup>

Attainment of health equity for children with obesity requires addressing inequities in available resources and systemic barriers to quality health care services.<sup>16</sup> To that end, “practice standards must evolve to support an equity-based practice paradigm,” and payment strategies must promote this approach to care.<sup>17</sup>

Individuals with overweight and obesity experience weight stigma and weight-based victimization, teasing, and bullying. This experience contributes to binge eating, social isolation, avoidance of health care services, and decreased physical activity, further complicating the health trajectory.<sup>11,17</sup> It is important for pediatricians and other PHCPs to communicate support and alliance with children, adolescents, and parents/caregivers as they evaluate patients, diagnose obesity and overweight, and guide obesity treatment. Discussions about weight and obesity—even when conducted using nonstigmatizing language and preferred terms—can elicit strong emotional responses, including

**TABLE 1** Summary of Key Action Statements and Consensus Recommendations for the Evaluation and Treatment of Children and Adolescents with Overweight and Obesity

KAS	Evidence Quality/Strength	CPG Section
<b>KAS 1.</b> Pediatricians and other PHCPs should measure height and wt, 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 for all children 2 to 18 y of age to screen for overweight (BMI $\geq$ 85th percentile to <95th percentile), obesity (BMI $\geq$ 95th percentile), and severe obesity (BMI $\geq$ 120% of the 95th percentile for age and sex).	Grade B, Moderate	Diagnosis & Measurement
<b>KAS 2.</b> Pediatricians and other PHCPs should evaluate children 2 to 18 y of age with overweight (BMI $\geq$ 85th percentile to <95th percentile) and obesity (BMI $\geq$ 95th percentile) for obesity-related comorbidities by using a comprehensive patient history, mental and behavioral health screening, SDoH evaluation, physical examination, and diagnostic studies.	Grade B, Strong	Evaluation
<b>KAS 3.</b> In children 10 y and older, pediatricians and other PHCPs should evaluate for lipid abnormalities, abnormal glucose metabolism, and abnormal liver function in children and adolescents with obesity (BMI $\geq$ 95th percentile) and for lipid abnormalities in children and adolescents with overweight (BMI $\geq$ 85th percentile to <95th percentile).	Grade B, Strong	Comorbidities
<b>KAS 3.1.</b> In children 10 y and older with overweight (BMI $\geq$ 85th percentile to <95th percentile), pediatricians and other PHCPs may evaluate for abnormal glucose metabolism and liver function in the presence of risk factors for T2DM or NAFLD. In children 2 to 9 y of age with obesity (BMI $\geq$ 95th percentile), pediatricians and other PHCPs may evaluate for lipid abnormalities.	Grade C, Moderate	Comorbidities
<b>KAS 4.</b> Pediatricians and other PHCPs should treat children and adolescents for overweight (BMI $\geq$ 85th percentile to <95th percentile) or obesity (BMI $\geq$ 95th percentile) and comorbidities concurrently.	Grade A, Strong	Comorbidities
<b>KAS 5.</b> Pediatricians and other PHCPs should evaluate for dyslipidemia by obtaining a fasting lipid panel in children 10 y and older with overweight (BMI $\geq$ 85th percentile to <95th percentile) and obesity (BMI $\geq$ 95th percentile) and may evaluate for dyslipidemia in children 2 through 9 y of age with obesity.	Grade B (children $\geq$ 10 y with obesity), Strong; Grade C (children 2–9 y), Moderate	Comorbidities
<b>KAS 6.</b> Pediatricians and other PHCPs should evaluate for prediabetes and/or diabetes mellitus with fasting plasma glucose, 2-h plasma glucose after 75-g oral glucose tolerance test (OGTT), or glycosylated hemoglobin (HbA1c). <sup>a</sup>	Grade B, Moderate	Comorbidities
<b>KAS 7.</b> Pediatricians and other PHCPs should evaluate for NAFLD by obtaining an alanine transaminase (ALT) test. <sup>b</sup>	Grade A, Strong	Comorbidities
<b>KAS 8.</b> Pediatricians and other PHCPs should evaluate for hypertension by measuring blood pressure at every visit starting at 3 y of age in children and adolescents with overweight (BMI $\geq$ 85 to <95th percentile) and obesity (BMI $\geq$ 95th percentile).	Grade C, Moderate	Comorbidities
<b>KAS 9.</b> Pediatricians and other PHCPs should treat overweight (BMI $\geq$ 85th percentile to <95th percentile) and obesity (BMI $\geq$ 95th percentile) in children and adolescents, following the principles of the medical home and the chronic care model, using a family-centered and nonstigmatizing approach that acknowledges obesity's biologic, social, and structural drivers.	Grade B, Strong	Treatment
<b>KAS 10.</b> Pediatricians and other PHCPs should use motivational interviewing (MI) to engage patients and families in treating overweight (BMI $\geq$ 85th percentile to <95th percentile) and obesity (BMI $\geq$ 95th percentile).	Grade B, Moderate	Treatment
<b>KAS 11.</b> Pediatricians and other PHCPs should provide or refer children 6 y and older (Grade B) and may provide or refer children 2 through 5 y of age (Grade C) with overweight (BMI $\geq$ 85th percentile to <95th percentile) and obesity (BMI $\geq$ 95th percentile) to intensive health behavior and lifestyle treatment. 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 a 3- to 12-mo period.	Grade B: Ages 6 y and older, Moderate; Grade C: Ages 2–5 y, Moderate	Treatment
<b>KAS 12.</b> Pediatricians and other PHCPs should offer adolescents 12 y and older with obesity (BMI $\geq$ 95th percentile) wt loss pharmacotherapy, according to	Grade B	Treatment

TABLE 1 Continued

KAS	Evidence Quality/Strength	CPG Section
<p>medication indications, risks, and benefits, as an adjunct to health behavior and lifestyle treatment.</p>		
<p><b>KAS 13:</b> Pediatricians and other PHCPs should offer referral for adolescents 13 y and older with severe obesity (BMI <math>\geq</math>120% of the 95th percentile for age and sex) for evaluation for metabolic and bariatric surgery to local or regional comprehensive multidisciplinary pediatric metabolic and bariatric surgery centers.</p>	Grade C	Treatment
Consensus Recommendations		Location
<p><i>The CPG authors recommend that pediatricians and other pediatric health care providers:</i></p>		
<p>1. Perform initial and longitudinal assessment of individual, structural, and contextual risk factors to provide individualized and tailored treatment of the child/adolescent with overweight/obesity.</p>		Risk Factors
<p>2. Obtain a sleep history, including symptoms of snoring, daytime somnolence, nocturnal enuresis, morning headaches, and inattention, among children and adolescents with obesity to evaluate for OSA.</p>		Comorbidities
<p>3. Obtain a polysomnogram for children and adolescents with obesity and at least one symptom of disordered breathing.</p>		Comorbidities
<p>4. Evaluate for menstrual irregularities and signs of hyperandrogenism (ie, hirsutism, acne) among female adolescents with obesity to assess risk for PCOS.</p>		Comorbidities
<p>5. Monitor for symptoms of depression in children and adolescents with obesity and conduct annual evaluation for depression for adolescents 12 y and older with a formal self-report tool.</p>		Comorbidities
<p>6. Perform a musculoskeletal review of systems and physical examination (eg, internal hip rotation in growing child, gait) as part of their evaluation for obesity.</p>		Comorbidities
<p>7. Recommend immediate and complete activity restriction, non-wt-bearing with use of crutches, and refer to an orthopedic surgeon for emergent evaluation, if SCFE is suspected. PHCPs may consider sending the child to an emergency department if an orthopedic surgeon is not available.</p>		Comorbidities
<p>8. Maintain a high index of suspicion for IIH with new-onset or progressive headaches in the context of significant wt gain, especially for females.</p>		Comorbidities
<p>9. Deliver the best available intensive treatment to all children with overweight and obesity.</p>		Treatment
<p>10. Build collaborations with other specialists and programs in their communities.</p>		Treatment
<p>11. May offer children ages 8 through 11 y of age with obesity wt loss pharmacotherapy, according to medication indications, risks, and benefits, as an adjunct to health behavior and lifestyle treatment.</p>		Treatment
Implementation Consensus Recommendations		
<p>1: The subcommittee recommends that the AAP and its membership strongly promote supportive payment and public health policies that cover comprehensive obesity prevention, evaluation, and treatment. The medical costs of untreated childhood obesity are well-documented and add urgency to provide payment for treatment. There is a role for AAP policy and advocacy, in partnership with other organizations, to demand more of our government to accelerate progress in prevention and treatment of obesity for all children through policy change within and beyond the health care sector to improve the health and well-being of children. Furthermore, targeted policies are needed to purposefully address the structural racism in our society that drives the alarming and persistent disparities in childhood obesity and obesity-related comorbidities.</p>		Barriers & Implementation Recommendations
<p>2: The subcommittee recommends that public health agencies, community organizations, health care systems, health care providers, and community members partner with each other to expand access to evidence-based pediatric obesity treatment programs and to increase community resources that address social determinants of health in promoting healthy, active lifestyles.</p>		Barriers & Implementation Recommendations
<p>3: The subcommittee recommends that EHR vendors, health systems, and practices implement CDS systems broadly in EHRs to provide prompts and facilitate best practices for managing children and adolescents with obesity.</p>		Barriers & Implementation Recommendations
<p>4: The subcommittee recommends that medical and other health professions schools, training programs, boards, and professional societies improve education and training opportunities related to obesity for both practicing providers and in preprofessional schools and residency/fellowship programs. Such training includes the underlying physiologic basis for wt dysregulation, MI, wt bias, the social and emotional impact of obesity on patients, the need to tailor management to SDoHs that impact wt, and wt-related outcomes and other emerging science.</p>		Barriers & Implementation Recommendations

AAP, American Academy of Pediatrics; BMI, body mass index; CDC, Centers for Disease Control and Prevention; IIH, idiopathic intracranial hypertension; KAS, Key Action Statement; MI, myocardial infarction; NAFLD, pediatric health care provider; OSA, obstructive sleep apnea; PCOS, polycystic ovarian syndrome; PHCP, pediatric health care provider; SCFE, slipped capital femoral epiphysis; SDoH, social determinant of health; T2DM, type 2 diabetes mellitus; wt, weight.

<sup>a</sup> Per KAS 3 and 3.1: Pediatricians and other PHCPs should evaluate children 10 y and older with obesity (BMI  $\geq$ 95th percentile) for abnormal glucose metabolism and may evaluate children 10 y and older with overweight (BMI  $\geq$ 85th percentile to <95th percentile) with risk factors for T2DM or NAFLD for abnormal glucose metabolism. (Refer to evidence tables for KAS 3 and 3.1.)

<sup>b</sup> Per KAS 3 and 3.1: Pediatricians and other PHCPs should evaluate children 10 y and older with obesity (BMI  $\geq$ 95th percentile) for abnormal liver function and may evaluate children 10 y and older with overweight (BMI  $\geq$ 85th percentile to <95th percentile) with risk factors for T2DM or NAFLD for abnormal liver function. (Refer to evidence tables for KAS 3 and 3.1.)

sadness and anger. Acknowledging and validating these responses, while keeping the focus on the child's health, can help to strengthen the relationship between the pediatrician or other PHCP and patient to support ongoing care.

All services and supports for children and youth with obesity and their families should be implemented and delivered in a linguistically appropriate and accessible manner that recognizes cultural values. The AAP statement on weight bias offers steps to provide supportive and nonbiased behavior, including recognition of the complex genetic and environmental influences on obesity.<sup>17</sup>

### Diagnosis and Evaluation

Following comprehensive systematic reviews, the US Preventive Services Task Force issued a Grade B recommendation that pediatricians and other PHCPs screen children and adolescents aged 6 years or older annually for obesity—defined by body mass index (BMI) percentile (**KAS 1**).<sup>18</sup> In clinical practice, BMI is frequently used as both a screening and diagnostic tool for detecting excess body fat because of its ease of use and low cost. BMI is a validated proxy measure of underlying adiposity that is replicable and can track weight status in children and adolescents<sup>19–21</sup> (see Diagnosis/Measurement section of CPG [<https://doi.org/10.1542/peds.2022-060640>]).

Measuring BMI and assessing weight classification (**KAS 1**) is a screening step that allows the pediatrician or other PHCP to initiate obesity evaluation. Each child with a BMI  $\geq$ 85th percentile is then evaluated with a comprehensive history, physical examination, and diagnostic studies.

Elements of the history include but are not limited to nutrition, physical

activity and sedentary time behaviors, unhealthy weight control practices, sleep patterns, social history (including SDoHs), and mental/behavioral health (**KAS 2**). Specific assessment tools exist for primary care. The purpose of the evaluation is to determine the child's individual health status, including the presence and extent of obesity-related comorbidities, the extent of obesity risk factors present in the child's history and environment, and the resources available to the family to engage in obesity treatment. A timely and comprehensive evaluation is instrumental in tailoring and individualizing care for each patient and family (see Evaluation section of CPG [<https://doi.org/10.1542/peds.2022-060640>]).

### Comorbidities

Children and adolescents with obesity have higher prevalence of comorbidities and a greater risk for obesity during adulthood, morbidity, and premature death (see Comorbidities section of CPG [<https://doi.org/10.1542/peds.2022-060640>]),<sup>22–25</sup> The risk for obesity-related comorbidities increases with age and severity of obesity and is impacted by a variety of socioecological, environmental, and genetic influences.<sup>26</sup>

Substantial evidence supports concurrent treatment of obesity and related comorbidities to achieve weight loss, avoid further excess weight gain, and improve obesity-related comorbidities (**KAS 4**). Studies report improvement in comorbidities with intensive lifestyle treatment, weight loss medication, and/or metabolic and bariatric surgery.<sup>26–31</sup> BMI reduction in children with obesity can lead to clinically meaningful improvements in obesity-related comorbidities.<sup>31–35</sup>

The CPG provides specific KASs on initial evaluation and diagnostic tests for several common comorbidities: dyslipidemia, type 2 diabetes mellitus (T2DM),

nonalcoholic fatty liver disease (NAFLD), and hypertension (**KAS 3, 3.1, 5, 6, 7, 8**). Appendices provide additional information on treatment of these common comorbidities.

The CPG also describes additional comorbidities potentially associated with pediatric obesity, including obstructive sleep apnea, polycystic ovarian syndrome, depression, slipped capital femoral epiphysis, Blount disease, and idiopathic intracranial hypertension (formerly known as pseudotumor cerebri). Consensus Recommendations are provided for addressing these comorbidities; appendices offer a framework for evaluation, reevaluation, and initial management of these comorbidities (see Appendix 3 in the CPG [<https://doi.org/10.1542/peds.2022-060640>]).

### Treatment

Obesity is a chronic disease and should be treated through the medical home with intensive and long-term care strategies, provision of ongoing medical monitoring, and treatment of associated comorbidities and ongoing access to obesity treatment (see Treatment section in CPG [<https://doi.org/10.1542/peds.2022-060640>]). Comprehensive obesity treatment includes integration and coordination of weight management components and strategies across appropriate disciplines. Comprehensive treatment can include nutrition support, physical activity treatment, behavioral therapy, pharmacotherapy, and metabolic and bariatric surgery.

The CPG recommends that pediatricians and other PHCPs treat overweight and obesity in children and adolescents following the principles of the medical home, and the chronic care model, using a family-centered and nonstigmatizing approach that acknowledges obesity's biologic, social, and structural drivers (**KAS 9**). The

chronic care model requires patient-centered care to be delivered with consideration of the child's household and familial influences, access to healthy food and activity spaces, and other SDOHs. Recommendations for obesity treatment should be integrated within existing community and social systems.<sup>36</sup> No evidence exists to exclude children with special health care needs, complex disease, or developmental limitations from the treatment options outlined in the CPG, except where specifically noted (see Treatment Considerations for Children and Youth with Special Health Care Needs section in CPG [<https://doi.org/10.1542/peds.2022-060640>]).

There is no evidence to support either watchful waiting or unnecessary delay of appropriate treatment of children with obesity. Multiple studies have demonstrated that, although obesity and self-guided dieting place children at high risk for weight fluctuation and disordered eating patterns,<sup>37</sup> participation in structured, supervised weight management programs decreases current and future eating disorder symptoms (including bulimic symptoms, emotional eating, binge eating, and drive for thinness) up to 6 years after treatment.<sup>37-39</sup> The CPG's KASs and Consensus Recommendations share components with effective eating disorder programs, including a focus on increasing healthful food consumption, participation in physical activity for enjoyment and self-care reasons, and improvement in self-esteem and self-concept.

The natural course of obesity across the lifespan is characterized by responses to treatment and relapse when treatment ends<sup>26</sup>; thus, children and adolescents with obesity will need appropriate reassessments of medical and psychological risks and comorbidities and appropriate

modifications to their treatment plan throughout childhood and adolescence into young adulthood (**KAS 9**).<sup>36</sup>

Obesity treatment should be delivered by pediatricians and other PHCPs and their teams in collaboration with (where available) community partners, allied health professionals, pediatric obesity specialists, and metabolic and bariatric surgery teams. The medical home model is the preferred standard of care for children who have chronic conditions; this care coordination should also be accompanied by advocacy for the patient and the family and support for the patient's transition to adult care.

The foundation of all comprehensive obesity treatment is helping the child/adolescent and the family change lifestyle, behavioral, and environmental factors that will allow them to manage their obesity in their individual health and environmental context. Families should be active and core partners in decision-making in all levels of care. Parents/caregivers play a crucial role in obesity treatment through strategies including monitoring, limit-setting, reducing barriers, managing family conflict, and modifying the home environment.<sup>40-43</sup> Medium- to high-intensity parental involvement is associated with weight-related measures of treatment effectiveness.<sup>43</sup> Parents can serve as role models and provide support in obesity treatment. In addition, an enhanced parent-child relationship functions as a mediator in development of healthier behaviors and weight control.<sup>44</sup> Parents themselves and family relationships may also benefit from children's obesity treatment.

Motivational interviewing is a collaborative approach to conversation about change and is a core component of delivering all

levels of comprehensive obesity treatment (**KAS 10**), including engaging patients and families in addressing overweight and obesity, setting goals, and promoting participation in available resources and programs.

Intensive health behavior and lifestyle treatment (IHBLT), although challenging to deliver and not universally available, is the most effective known behavioral treatment of child obesity. The CPG uses "IHBLT" rather than previous terms including "intensive lifestyle/behavioral modification" or "weight management." Pediatricians and other PHCPs should provide or refer children aged 6 years and older—and may provide or refer children 2 through 5 years of age—with overweight and obesity to IHBLT (**KAS 11**). IHBLT is more effective with greater contact hours; the most effective treatments include 26 or more hours of face-to-face, family-based, multicomponent treatment over a 3- to 12-month period. IHBLT should include nutrition, physical activity, and behavioral change support and should be delivered by pediatricians or other PHCPs and their teams in collaboration with pediatric obesity specialists, allied health providers, and community partners.<sup>18</sup>

When an IHBLT program is not available, pediatricians and other PHCPs should provide the most intensive program possible. They can build capacity for obesity treatment by collaborating and connecting families with community resources to support nutrition and address food insecurity (eg, food provision programs), physical activity (eg, local parks, recreation programs), and other SDOHs. Pediatricians and other PHCPs should familiarize themselves with resources and actively collaborate with other specialists and community programs. Registered

dietitian nutritionists can complement the care of medical providers and may be the most widely available specialist with whom pediatricians and other PHCPs can provide more intensive, comprehensive obesity treatment. Behavioral health specialists, ideally integrated into primary care, can focus on the process of behavior change, including parenting skills, role modeling, and consistent reinforcement techniques. Exercise specialists can provide counseling and training to engage children and families in noncompetitive, cooperative, and fun activities.<sup>18,26,45</sup>

Pediatricians and other PHCPs should offer adolescents aged 12 years and older with obesity weight loss pharmacotherapy, according to medication indications, risks, and benefits, as an adjunct to health behavior and lifestyle treatment (**KAS 12**). Pharmacotherapy is an adjunct treatment to improve weight loss outcomes. In most studies, pharmacotherapy applies to children with more severe degrees of obesity and/or comorbidities. Pharmacotherapy for obesity treatment, similar to management of ADHD or depression, is most effective when prescribed along with ongoing health behavior and lifestyle treatment.

Pediatricians and other PHCPs should offer referral for adolescents aged 13 years and older with severe obesity for evaluation for metabolic and bariatric surgery to local or regional comprehensive multidisciplinary pediatric metabolic and bariatric surgery centers (**KAS 13**).<sup>46</sup> Although no lower age limit exists to define the safety or effectiveness of surgery among children, there are currently limited data among children younger than age 13 years. Multiple studies support that metabolic and bariatric

surgery is safe and effective for adolescents in comprehensive metabolic and bariatric surgery settings that have experience working with youth and their families.

### **Recommendations for CPG Implementation and Evidence Gaps**

Comprehensive obesity treatment requires ongoing evaluation and capacity-building of both practice and community resources. Pediatricians and other PHCPs and families face numerous barriers to promoting healthy and active lifestyles and to supporting obesity treatment among children. The successful implementation of this CPG into routine practice requires careful consideration of barriers and facilitators that can modify implementation, effectiveness, and sustainability. It is anticipated that a pediatrician's or other PHCP's setting, training, and expertise may moderate how elements of the CPG are implemented. Helpful resources can be found in accompanying implementation materials.

The CPG describes changes needed at the policy, community, practice, and provider levels. The CPG offers several Consensus Implementation Recommendations designed to facilitate pediatric obesity treatment. Specifically, the subcommittee recommends that the AAP and its membership should strongly promote supportive payment and public health policies that cover comprehensive multicomponent obesity prevention, evaluation, and treatment, including policy changes within and beyond the health care sector; combat structural racism, which drives disparities and inequities in childhood obesity and obesity-related comorbidities; expand access to evidence-based pediatric obesity treatment

programs and helpful community resources; improve electronic health records to facilitate best practices; and improve education and training opportunities related to obesity (see Implementation Barriers section of CPG [<https://doi.org/10.1542/peds.2022-060640>]).

Research in the field of pediatric overweight and obesity has progressed in recent years; nonetheless, significant gaps remain. The CPG describes these gaps, which include the need to develop the evidence base on the duration and heterogeneity of treatment effects, to understand how specific treatment components interact, and to conduct epidemiologic and longitudinal studies on specific age ranges, comorbidity prevalence, and optimal age and BMI ranges to begin evaluation and progression of comorbidities (see Evidence Gaps section of CPG [<https://doi.org/10.1542/peds.2022-060640>]).

### **CONCLUSION**

Obesity in children and adolescents is a chronic, complex, multifactorial, and treatable disease. This CPG recommends early evaluation and treatment at the highest intensity level that is appropriate and available. In addition, understanding the wider determinants of obesity should enable pediatricians and other PHCPs to "raise awareness of the relevance of social and environmental determinants of childhood obesity in their communities."<sup>4</sup> The subcommittee urges pediatricians, other PHCPs, health systems, community partners, payers, and policy makers to work together to advance the equitable and universal provision of evaluation and treatment of children and adolescents with the chronic disease of obesity.

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