Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity

Hampl SE, et al. Pediatrics. 2023;151(2):e2022060640.

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Rhythm PHARMACEUTICALS

Guideline at a glance

Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity.

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Aim:

This is the American Academy of Paediatrics' first clinical practice guideline (CPG) outlining evidence-based evaluation and treatment of children and adolescents with obesity.

The guideline is intended to provide paediatricians and paediatric health care providers with a more complete understanding of the issues, factors and needs of patients combatting obesity, as well as treatment options to assist them.

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Background

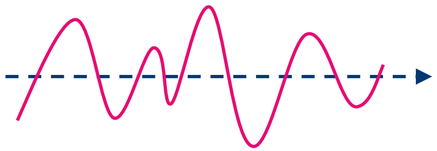
- In the United States, the current and long-term health of 14.4 million children and adolescents is affected by obesity, making it one of the most common paediatric chronic diseases
- The scientific and medical community's understanding of obesity is constantly evolving
- The knowledge and skills to treat childhood obesity have become necessities for clinical teams in paediatric primary and subspecialty care
- This is the AAP's first CPG outlining evidence-based evaluation and treatment of children and adolescents with overweight and obesity
- The guideline describes comprehensive obesity treatment in the context of the longitudinal care required to address this chronic disease and the social and contextual factors involved

Treatment Experience of Obesity as a Chronic Disease

Longitudinal Non-Stigmatizing Care Coordinated Patient Centred Treatment Across Lifespan

- Shared decision making with patient and family
- Culturally competent care
- Treatment coordinated in the medical home
- Transition planning

Patient & Family & PCP/PHCP Partnership



Treatment intensity and support vary to address relapsing and remitting nature of obesity as a chronic disease

Structural and Contextual Factors That Impede and Influence Health and Treatment

- Access to Care
- Weight Bias and Stigma
- Obesogenic Environments
- Adverse Child Experiences
- Racism
- Health Inequities

AAP, American Academy of Pediatrics; CPG, clinical practice guideline

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Methodology

The CPG contains Key Action Statements (KASs)

- These are recommendations based on evidence from randomised controlled and comparative effectiveness trials as well as high-quality longitudinal and epidemiologic studies
- The KASs are graded A to D according to a matrix relating to the quality of evidence supporting each statement.

Consensus Recommendations

- These are based on expert opinion and address issues that were not part of the supporting technical reports
- These consensus recommendations are supported by AAP-endorsed guidelines, clinical guidelines, and/or position statements from professional societies in the field and an extensive literature review

Grading Matrix

Aggregate Evidence Quality	Benefit or Harm Predominates	Benefit or Harm Balanced
Level A Intervention: well designed and conducted trials, meta-analyses on applicable populations Diagnosis: independent gold standard studies of applicable populations	**Strong recommendation**	**Weak recommendation** (based on balance of benefit and harm)
Level B Trials or diagnostic studies within minor limitations; consistent findings in from multiple observational studies	**Moderate recommendation**	
Level C Single or few observational studies or multiple studies with inconsistent findings or major limitations	**Weak recommendation** (based on low quality evidence)	**No recommendation** may be made
Level D Expert opinions, case reports, reasoning from first principles		
Level X Exceptional situations in which validating studies cannot be performed, and there is a clear preponderance of benefit or harm	**Strong recommendation** / **Moderate recommendation**	

AAP, American Academy of Pediatrics; CPG, clinical practice guideline; KAS, Key Action Statement
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Approach and methodology (1)

Childhood obesity results from a multifactorial set of socioecological, environmental, and genetic influences

The recommendations in the CPG are child-centric and not specific to a particular health care setting and are written to inform paediatricians and other PHCPs about the standard of care for evaluating and treating children with overweight and obesity and related comorbidities

The CPG committee considered the following aspects:

- Health Equity
- Racism
- Weight bias and stigma
  - Individuals with overweight and obesity experience weight stigma, victimisation, teasing, and bullying, which contribute to binge eating, social isolation, avoidance of health care services, and decreased physical activity
- Adverse childhood experiences
  - Adverse childhood experiences are negative experiences caused by situations or events in the lives of children and adolescents that can pose threats to their current and future physical and mental health

AAP, American Academy of Pediatrics; CDC, The Centers for Disease Control and Prevention; CPG, Clinical Practice Guideline; PHCP, paediatric health care provider
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Approach and methodology (2)

- In 2017, the CDC supported the AAP's Institute for Healthy Child Weight to conduct an evidence review of obesity treatment and obesity-related comorbidities

- The Institute convened an evidence review committee consisting of paediatricians and researchers which created two technical reports which capture the evidence review committee's findings and detail the search criteria, systematic review process, and research history
  - Overweight and obesity treatment
  - Overweight and obesity comorbidities

- A CPG writing subcommittee was formed, which included a range of paediatric primary and tertiary care providers; behavioural health, nutrition, and public health researchers; a paediatric surgeon; medical epidemiologists from the CDC Division of Nutrition, Physical Activity and Obesity; an implementation scientist; a parent representative; and a representative from the AAP Partnership for Policy Implementation

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Epidemiology of childhood and adolescent obesity

- Obesity is a common, complex, and often persistent chronic disease associated with serious health and social consequences
- **Childhood obesity** is typically defined as having a **BMI of ≥95th percentile** for age and sex
- **Severe obesity** is defined as **BMI ≥120% of the 95th percentile** for age and sex
- The percentage of US children and adolescents affected by obesity has more than tripled from 5% in 1963–1965 to 19% in 2017–2018
- In 2017 to 2018, the rise in obesity prevalence slowed in children younger than 6 years of age, but increases continued among certain populations, including adolescents and non-Hispanic Black and Mexican American youth
- A predictive epidemiologic model estimates that if 2017 obesity trends hold, **57% of children aged 2 to 19 years will have obesity by the time they are 35 years of age, in 2050**
- Disparities exist among children and youth with obesity, including, but not limited to, lower level of parental education, lower income, less access to healthier food options and safe and affordable physical activity opportunities, and higher incidence of adverse childhood experiences

BMI, body mass index; US, United States

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Risk factors for obesity (1)

Obesity is a chronic disease that has a multifactorial aetiology

Policy factors:

- Marketing of unhealthy foods
- Underresourced communities
  - Socioeconomic status
  - Children in families that have immigrated
- Food insecurity

Neighbourhood and community environment influences or contributors to obesity:

- School environment
- Lack of fresh food access
- Presence of fast-food restaurants
- Access to safe physical activity

Family and home environment factors:

- Parenting feeding styles
- Family home environment organization
- Sugar-sweetened beverages
- Portion sizes
- Snacking behaviour
- Dining out and family meals
- Screen time
- Sedentary behaviour
- Sleep duration
- Environmental smoke exposure
- Psychosocial stress
- Adverse childhood experiences

Individual-level influences or contributors to obesity:

- Genetic factors
  - Early onset of severe obesity and the presence of hyperphagia are the two clinical characteristics that distinguish genetic disorders of obesity
  - “Early onset” refers to the presence of obesity before age 5 years

MC4R, melanocortin 4 receptor; POMC, proopiomelanocortin; SRC, steroid receptor coactivator
This is not an exhaustive list of risk factors in the guideline
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Risk factors for obesity (2)

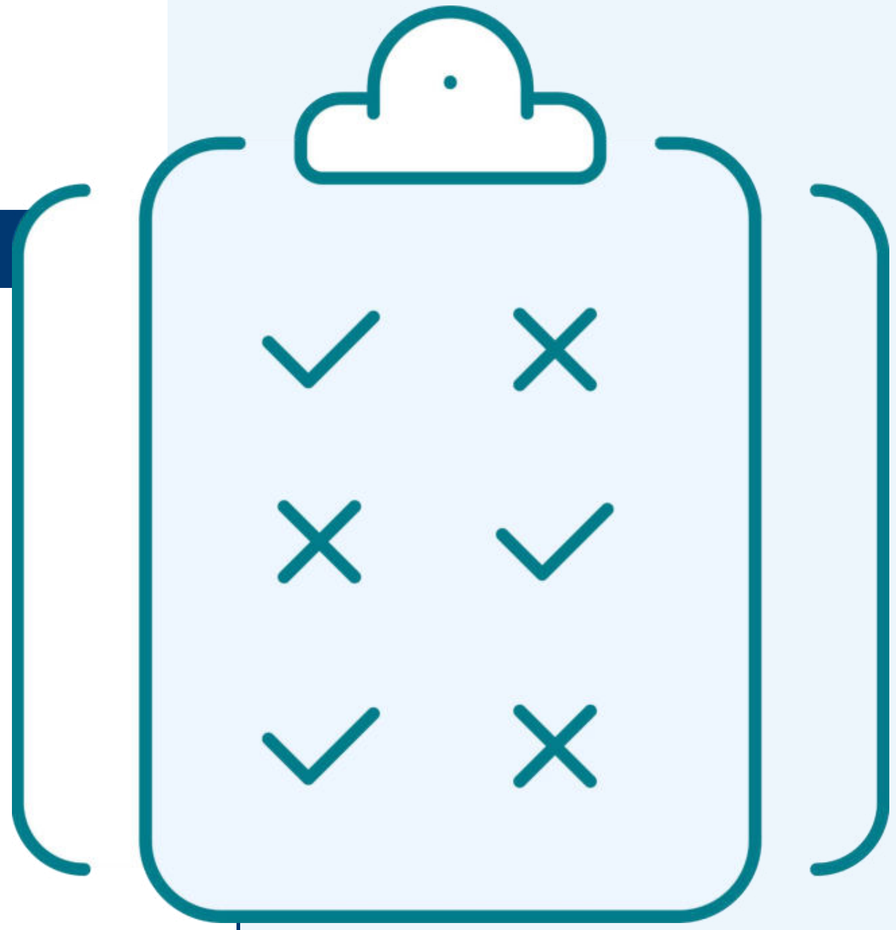
Selected monogenetic causes and syndromes associated with obesity

Syndromic forms of obesity:

- Prader-Willi syndrome
- Alström syndrome
- Bardet-Biedl syndrome
- Smith-Magenis syndrome
- SH2B1 deficiency
- Sim1 deficiency
- 16p11.2 microdeletion syndrome
- Brain-derived neurotrophic factor deficiency
- Albright's hereditary osteodystrophy
- Cohen syndrome
- Beckwith-Wiedemann syndrome

Monogenetic disorders:

- MC4R deficiency
- Leptin deficiency
- Leptin receptor deficiency
- POMC deficiency
- Proprotein subtilisin or kexin type 1 deficiency
- SRC1 deficiency



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Diagnosis and evaluation of comorbidities

Key Action Statement 1.
(Grade B)

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** for all children 2 to 18 years of age to screen for overweight, obesity, and severe obesity.

Key Action Statement 2.
(Grade B)

Evaluate children 2 to 18 years of age with overweight and obesity **for obesity-related comorbidities** by using a comprehensive patient history, mental and behavioural health screening, SDoH evaluation, physical examination, and diagnostic studies.

Key Action Statement 3.
(Grade B)

In children 10 years and older, **evaluate for lipid abnormalities, abnormal glucose metabolism, and abnormal liver function** in children and adolescents with obesity and for lipid abnormalities in children and adolescents with overweight.

BMI, body mass index; CDC, The Centers for Disease Control and Prevention; SDoH, social determinants of health
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Specific guidelines for initial evaluation for comorbidities

Key Action Statement 5.
(Grade B: Children ≥10 years of Age With Obesity. Grade C: Children 2 Through 9 years of Age)

Evaluate for dyslipidaemia by obtaining a fasting lipid panel in children 10 years and older with overweight and obesity and may evaluate for dyslipidaemia in children 2 through 9 years of age with obesity.

Key Action Statement 6.
(Grade B)

Evaluate for prediabetes and/or diabetes mellitus with fasting plasma glucose, 2-h plasma glucose after 75-g oral glucose tolerance test, or glycosylated haemoglobin.*

Key Action Statement 7.
(Grade A)

Evaluate for non-alcoholic fatty liver disease by obtaining an ALT test.*

Key Action Statement 8.
(Grade C)

Evaluate for hypertension by measuring blood pressure at every visit starting at 3 years of age in children and adolescents with overweight and obesity.

ALT, alanine transaminase; NAFLD, non-alcoholic fatty acid disease; T2DM, type 2 diabetes mellitus
*Per Key Action Statement 3: evaluate children 10 years and older with obesity for abnormal glucose metabolism and may evaluate children 10 years and older with overweight with risk factors for T2DM or NAFLD for abnormal glucose metabolism/liver function
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Management

Key Action Statement 4.
(Grade A)

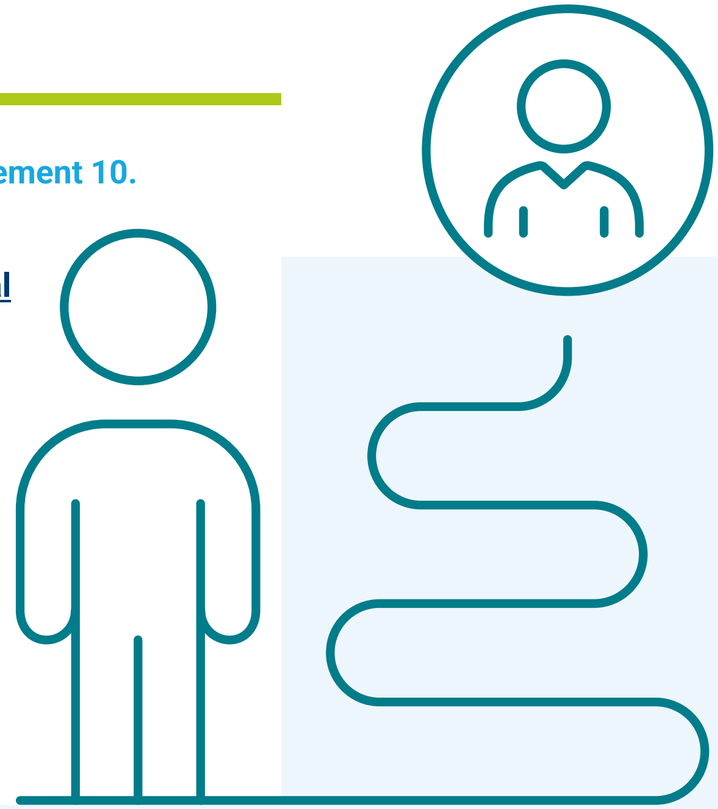
Treat children and adolescents **for overweight or obesity and comorbidities concurrently**.

Key Action Statement 9.
(Grade B)

Treat overweight and obesity in children and adolescents, following the **principles of the medical home and the chronic care model, using a family-centred and non-stigmatising approach** that acknowledges obesity's biologic, social, and structural drivers.

Key Action Statement 10.
(Grade B)

Use motivational interviewing to engage patients and families in treating overweight and obesity.



*This Key Action Statement was given a Grade C recommendation, as available evidence is from observational and case-controlled studies. As described in the methods section for the evidence review, only randomised and comparative effectiveness studies were included for the Clinical Practice Guideline. The Evidence Review Panel made the decision to include observational and case-control studies specifically for surgical interventions only, because of ethical considerations and practical challenges to randomization.
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Management

Key Action Statement 11.
(Grade B: Children ≥6 years of Age. Grade C: Children 2 Through 5 years of Age)

Provide or refer children 6 years and older (Grade B) and may provide or refer children 2 through 5 years of age (Grade C) with overweight and obesity to **intensive health behaviour and lifestyle treatment**. Health behaviour 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-month period.

Key Action Statement 12.
(Grade B)

Offer adolescents 12 years and older with obesity weight loss pharmacotherapy, according to medication indications, risks, and benefits, as an adjunct to health behaviour and lifestyle treatment.

Key Action Statement 13.
(Grade C*)

Offer referral for adolescents 13 years and older with severe obesity for evaluation for metabolic and bariatric surgery to local or regional comprehensive multidisciplinary paediatric metabolic and bariatric surgery centres.

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Summary

- Obesity in children and adolescents is a complex, multifactorial, and treatable disease
- Evidence for successful treatment, despite stated gaps and complexities, gives hope to patients and families that paediatricians and PHCPs can successfully assess and address the disease of obesity with an individualised and compassionate approach
- In contrast to earlier practices of watchful waiting or following a staged approach to intensifying treatment, **this CPG supports early treatment at the highest level of intensity appropriate for and available to the child**
- The CPG committee hopes that paediatricians and other PHCPs, health systems, community partners, payers, and policy makers will recognise the significance and urgency outlined by this CPG to advance the equitable and universal provision of treatment of the chronic disease of obesity in children and adolescents

CPG, clinical practice guideline; PHCP, paediatric health care provider

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