

Prevention, Assessment and Treatment of Child and Adolescent Overweight and Obesity

Clinical Practice Guideline

MedStar Health

“These guidelines are provided to assist physicians and other clinicians in making decisions regarding the care of their patients. They are not a substitute for individual judgment brought to each clinical situation by the patient’s primary care provider-in collaboration with the patient. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication but should be used with the clear understanding that continued research may result in new knowledge and recommendations”.

Key components of these recommendations:

Primary care providers should universally assess children for obesity risk to improve early identification and management of increased Body Mass Index (BMI), co-morbidities, and unhealthy eating and physical activity habits.

Background:

1. The prevalence of obesity in children in the US has been increasing since 1988, with particularly sharp increases in adolescents and 2 to 5-year-olds.
2. Obesity in childhood is a result of complex genetic, social and environmental influences (AAP 2023)
3. Disparities exist in obesity prevalence with Hispanic and African American children having the highest rates; children with a higher rates of adverse childhood events and lower socio-economic status have higher rates of obesity (AAP 2023)
4. Health care providers should be aware of how weight bias and stigma may impact family’s engagement in care and be aware of their own potential biases towards children who are obese and work to have a clinical space that is welcoming of all children (AAP 2023)
5. Definitions
 - a. Underweight: Age-and sex-specific BMI <5th percentile
 - b. Healthy weight: Age-and sex-specific BMI 5% - <85th percentile
 - c. Overweight: Age-and sex-specific BMI ≥85th percentile
 - d. Obesity: Age-and sex-specific BMI ≥95th percentile
 - i. Class I Obesity: Age- and sex-specific BMI ≥95th percentile but <120% of the 95th percentile
 - ii. Class II Obesity: BMI ≥120% of the 95th percentile or a BMI of ≥35 (whichever is lower)
 - iii. Class III Obesity: BMI ≥140% of the 95th percentile or a BMI of ≥40 or greater (whichever is lower)
6. Obesity during childhood is associated with high blood pressure, dyslipidemia, insulin resistance, asthma, obstructive sleep apnea, orthopedic difficulties, early maturation, polycystic ovarian syndrome (PCOS), and hepatic steatosis;
7. Risk Class II and III obesity have the strongest association with greater cardiovascular and metabolic disease risk.
8. Childhood obesity increases the risk of adult obesity.

Assessment:

Biometrics:

- BMI to screen for obesity for all children for obesity at all well care visits 2-18 years; (USPSTF Grade B Recommendation) -says 6 years and older) BMI generally correlates with direct measures of body fat but may under- or overestimate excess fat in some groups.
 - Accurately measure height & weight
 - Plot BMI on growth chart
 - Make a weight category diagnosis using BMI percentile
 BMI Calculator:
<https://www.cdc.gov/healthyweight/bmi/calculator.html>
- AAP 2023 Guideline 3 key factors to have a non-stigmatizing conversation about BMI with families
 - (1) Ask permission to discuss BMI/weight
 - (2) Avoid labeling (Child with obesity rather than obese child)
 - (3) Use neutral terms such as “unhealthy weight, gaining too much weight for age”; most offensive words were “obese, morbidly obese, large, fat, overweight, chubby”. AAP 2023
- Measure blood pressure beginning at age 3 years old
 - Use appropriate cuff size
 - Identify and manage hypertension
 - References
 BP Norms:
http://www.nhlbi.nih.gov/files/docs/guidelines/child_tbl.pdf
 Pediatric Hypertension Calculator:
<https://www.mdcalc.com/aap-pediatric-hypertension-guidelines>
 AAP Blood Pressure Management Guidelines:
 Flynn JT, Kaelber DC, Baker-Smith CM, et al. Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents. *Pediatrics*. 2017;140(3):E20171904
<http://pediatrics.aappublications.org/content/early/2017/11/28/peds.2017-3035>

History:

1. Medical History

- **Children with special needs and unmedicated children with ADHD have higher rates of obesity**
- **Medications such as antipsychotics, insulin, TCAs, antiepileptic medications are associated with weight gain**
- Assess individual, structural and contextual risk factors (AAP 2023)
- Impact of Special Needs – ASD, ADHD associated increased risk of obesity (AAP 2023)
- Medication use (glucocorticoids, sulfonyleureas, insulin, antipsychotics, antiepileptic medications)
- Mental health concerns – increased rates of obesity with depression; patient with disordered eating

2. Behaviors and attitudes and access

Nutrition (daily consumption/behaviors)

- Fruit and vegetable consumption
- Eating out and family meals
- Consumption of excessive portion sizes
- Breakfast consumption
- Sugar-sweetened beverage or juice consumption
- Portion size and proportions of food types (MyPlate.gov as model)
- Access to healthy food

Physical activity behaviors

- Amount of moderate physical activity; 60 minutes per day recommended
- Level of screen time and other sedentary activities, <2 hours recommended
- Access to physical activity

Attitudes

- Self-perception or concern about weight
- Readiness to change
- Successes, barriers, and challenges

Psychosocial assessment including family dynamics, environmental stressors, enrollment in food assistance programs

2. Focused family history

1. Obesity
2. Type 2 diabetes
3. Cardiovascular disease (hypertension, hyperlipidemia)
4. Early death from heart disease or stroke

ROS and Physical Exam: looking for co-morbidities and obesity-related conditions:

Prediabetes/Diabetes: fatigue, polyuria, polydipsia, acanthosis nigricans

PCOS: irregular menses, hirsutism, excessive acne, striae

Hypothyroid: attenuated height velocity

Genetic Syndromes: developmental delay

a. extreme hyperphagia (Prader-Willi)

b. syndactyly/brachydactyly/polydactyly (Bardet/Biedl), leptin deficiency

Precocious puberty

Gastrointestinal: cholelithiasis, constipation, GERD

Neurologic: headaches, facial numbness (pseudotumor cerebri)

Orthopedic: mild knee pain, in-toeing, leg bowing (Blount's Disease), hip or knee pain (slipped capital femoral epiphysis)

Psychological/Behavioral Health: anxiety, binge eating disorder, depression, teasing/bullying, family interaction

Obstructive Sleep Apnea: snoring, daytime sleepiness, witnessed apneic episodes

Laboratory tests (fasting or non-fasting):

- To encourage a pragmatic and efficient evaluation strategy, recommend that, for

children with obesity, evaluation for lipid abnormalities, abnormal glucose metabolism, and liver dysfunction be obtained at the same time and begin at age 10 years.(aap2023)

- For children 2 to 9 years of age with obesity, evaluation for lipid abnormalities may be considered ([KAS 3.1](#)).
- 85th-94th percentile (overweight) **without** risk factors
 - Lipid profile
- 85th-94th percentile (overweight) **with** risk factors OR ≥95th percentile (obese)
 - Lipid profile and ALT, AST, HgbA1c
- Other lab tests per clinical indications
 - Thyroid studies (TSH, free T4) for attenuated growth velocity
 - PCOS studies (free and total testosterone, SHBG) if signs/symptoms
 - Genetic testing as indicated
 - Sleep studies for patients with obesity and at least 1 symptom of disordered breathing (snoring, daytime somnolence, nocturnal enuresis, morning headaches, inattention)

Additional Screening: Mental Health Screening using a standardized tool (SDQ or PHQ9-A preferred)

Management Principles:

- New recommendation: to refer to IHBLT as soon as possible, no evidence to support watchful waiting or delaying in children with obesity or for selective referral based on severity of obesity (AAP)

“The most consistently effective Intensive Health Behavior and Lifestyle Treatment (IHBLT) programs deliver 26 or more hours of face-to-face, family-based counseling on nutrition and physical activity over at least a 3- to 12-month period, for children aged for children 6 years and older with overweight and obesity, with more limited evidence for children 2 to 5 years of age”

- Major driving factor of success of behavioral intervention is the amount of hours of intervention
- Physical activity component more effective when children engaged in aerobic and nonaerobic physical activity when compared with counseling alone
- Nutrition skill building using direct meal preparation or tasting were more effective

When intensive programs are not available:

- Access availability of local dietitians, exercise specialists

Evidence-based counseling:

Identify and set behavioral goals with child and family

Identify barriers, motivation, and confidence in reaching goals

Content:

- Consume at least 5-6 servings of fruits and vegetables daily.
 - Avoid calorie-dense, nutrient poor foods.
 - Eliminate sugar-sweetened beverages and minimize juice intake.
 - Choose water when thirsty.
 - Minimize refined carbohydrates.
 - Eliminate trans fats; limit saturated fat; include healthy fats such as olive and canola oils.
 - Prepare more meals at home as a family (goal of 5-6 times week).
 - Limit meals outside of the home and choose healthy options.
 - Eat a healthy breakfast daily.
 - Avoid constant snacking and choose healthy snacks.
 - Be mindful of eating patterns related to emotions or boredom.
 - Healthy self-esteem and body image
 - Involve the whole family in lifestyle changes and positive modeling.
 - Positive family communication
 - Be physically active 1 hr or more each day.
 - Decrease screen time to 2 hrs/day or less.
 - Ensure adequate sleep (8-11 hours for children and adolescents).
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Motivational interviewing:

Empathize/ elicit – provide – elicit to improve the effectiveness of counseling

- *Empathize/elicit:* Assess self-efficacy and readiness to change
 - Reflect
 - What is your understanding?
 - What do you want to know?
 - How ready are you to make a change (1-10 scale)?
- *Provide*
 - Advice or information
 - Choices and/or options
- *Elicit*
 - What do you make of that?
 - Where does that leave you?

Referrals, community-clinical linkages and advocacy

- Refer/consult with behavioral health providers, cardiologist, nutritionist, endocrinologist, or geneticist as needed for underlying or co-morbid concerns.
- Refer to community resources as indicated for improved access to healthy food, fresh fruits and vegetables, and safe physical activity (WIC, SNAP, etc).
- Work with community partners to advocate for increased activity and access to healthy nutrition in schools and the community.

Use of Pharmacotherapy:

- “May offer children ages 8 through 11 years of age with obesity weight loss pharmacotherapy, according to medication indications, risks, and benefits, as an adjunct to health behavior and lifestyle treatment.” AAP 2023
 - Limited evidence at this time, much stronger evidence for intensive behavioral interventions
 - Consider metformin (patients 10 and older), GLP-1 medications (ages 10 and older) in combination with behavioral interventions
 - Consider referral to pediatric endocrine for guidance
- Should offer adolescents 12 y and old weight loss pharmacotherapy

Pediatric Metabolic and Bariatric Surgery:

- For Class 2 obesity (BMI > 35 kg/m² of the 95th percentile for age and sex whichever is lower)
- Expanding evidence supports a durable reduction in BMI for pediatric patients

MedStar Health has adopted the recommendations from:

1. Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity, 2023
<https://publications.aap.org/pediatrics/article/151/2/e2022060640/190443/Clinical-Practice-Guideline-for-the-Evaluation-and?autologincheck=redirected>
2. The Pediatric Endocrine Society 2017 Practice Guideline; Pediatric Obesity—Assessment, Treatment, and Prevention: An Endocrine Society Clinical Practice Guideline
<https://doi.org/10.1210/jc.2016-2573>
3. AAP Institute for Healthy Weight Management Childhood Obesity Algorithm
https://ihcw.aap.org/Documents/Assessment%20and%20Management%20of%20Childhood%20Obesity%20Algorithm_FINAL.pdf
4. Obesity Medicine Association Pediatric Obesity Algorithm:
<http://obesitymedicine.org/wp-content/uploads/2019/07/Pediatric-Obesity-Algorithm-2018-2020.pdf>
5. US Preventive Services Task Force. Screening for Obesity in Children and Adolescents US Preventive Services Task Force Recommendation Statement. *JAMA*. 2017;317(23):2417–2426. doi:10.1001/jama.2017.6803
<https://jamanetwork.com/journals/jama/fullarticle/2632511>

Additional helpful tools and articles:

1. AAP Institute for Healthy Weight Professional Resources and Training Modules
https://ihcw.aap.org/Pages/Resources_ProEd.aspx
2. AAP Bright Futures: Promoting Healthy Weight
https://brightfutures.aap.org/Bright%20Futures%20Documents/BF4_HealthyWeight.pdf
3. Let’s Go Motivational Interview Guide
<https://mainehealth.org/-/media/lets-go/files/childrens-program/pediatric-family-practices/letsgomotivationalinterviewingguide.pdf?la=en>
4. Prevalence of Obesity and Severe Obesity in US Children, 1999–2016, Skinner et al *Pediatrics* March 2018, VOLUME 141 / ISSUE 3
<http://pediatrics.aappublications.org/content/141/3/e20173459>

5. Skinner AC, Perrin EM, Moss LA, Skelton JA. Cardiometabolic risks and severity of obesity in children and young adults. *N Engl J Med*. 2015;373(14):1307–1317
<http://www.nejm.org/doi/full/10.1056/NEJMoa1502821>
6. ChoseMyPlate
<https://www.choosemyplate.gov/>

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