SENTARA HEALTH PLANS CLINICAL PRACTICE GUIDELINE:

PREVENTION AND MANAGEMENT OF OBESITY IN ADOLESCENTS & CHILDREN

Guideline History

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Guideline Change Summary

Date	Description
1/2026	Guideline review and recommendations completed by Dr. Ryan Fulton for presentation to the committee on 1/16/2026. Updates made to the Guidelines include Table of Contents, Identification of Overweight and Obesity, Epidemiology, Screening and Evaluation, Behavioral Treatment, Pharmacotherapy, Surgical Intervention, Follow-Up and Chronic Care, and references. Committee discussion completed and approval received on 1/16/2026.

PREVENTION AND MANAGEMENT OF OBESITY IN CHILDREN AND ADOLESCENTS

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Identification of Overweight and Obesity

Growth Assessment

- Recommend to use the CDC 2000 BMI-for-age growth charts for children and adolescents ages 2–19.
- Calculate and document BMI percentile at all preventive and appropriate problem-focused visits.

BMI Categories and Severity

BMI Category	Definition	Age Range	Alternative Definition (Older Adolescents)
Healthy weight	BMI <85th percentile	2-18 years	N/A
Overweight	BMI ≥85th to <95th percentile for age and sex	2-18 years	N/A
Obesity	BMI ≥95th percentile for age and sex	2-18 years	BMI ≥30 kg/m² (if lower than 95th percentile)
Severe obesity	BMI ≥120% of 95th percentile for age and sex	2-18 years	Approximates 99th percentile

The American Academy of Pediatrics recommends using CDC Growth Charts to track BMI patterns for children and adolescents aged 2 to 18 years, with annual screening at minimum to identify overweight, obesity, and severe obesity. For older adolescents, the adult cutoff of BMI ≥30 kg/m² can define obesity if this value is less than the 95th percentile for age and sex.

The severe obesity category (BMI ≥120% of 95th percentile) is particularly important because it improves identification of children at highest risk and enables better monitoring of weight status changes over time. The CDC Growth Charts were not designed to track extremely high BMI values, and percentiles beyond the 97th could not be reliably generated due to limited reference population data. This limitation led to the development of separate growth charts specifically for children with severe obesity.

BMI z-scores have limitations for tracking children with severe obesity because compression of z-scores at extremely high BMI values into a narrow range may not accurately detect meaningful changes in

weight status or comorbidity risk over time. The 120% of 95th percentile metric provides a more clinically useful measure for this population.

For children older than 18 years, most pediatric providers transition to adult BMI calculation and categorization, though CDC Growth Charts can technically be used through age 21 years.

Epidemiology

- Approximately 20 percent of U.S. children and adolescents have obesity.
- Since the COVID-19 pandemic, BMI acceleration and obesity severity have increased, particularly in preschool and elementary-aged children.
- Obesity in childhood strongly predicts obesity in adulthood.

Health Effects of Childhood Obesity

Childhood obesity is associated with significant medical and psychosocial morbidity, often persisting into adulthood.

Common associated conditions include:

- Hypertension and dyslipidemia
- Insulin resistance and type 2 diabetes
- Metabolic dysfunction–associated steatotic liver disease (MASLD)
- Obstructive sleep apnea and asthma
- Musculoskeletal pain and orthopedic complications
- Gastroesophageal reflux disease and gallbladder disease
- Depression, anxiety, reduced quality of life, and weight-based stigma
- Earlier pubertal development

Causes of Childhood Obesity

Childhood obesity results from a complex interaction of biologic, environmental, and social factors rather than individual behavior alone.

Contributing factors include:

- **Biologic susceptibility:** Genetic and neurohormonal influences on appetite, satiety, and energy regulation
- **Nutrition environment:** High availability of calorie-dense foods, sugar-sweetened beverages, and large portion sizes
- **Physical inactivity:** Reduced opportunities for routine activity at school and home
- **Screen time and sleep:** Sedentary behavior and insufficient sleep
- **Family and social factors:** Household stress, time constraints, and caregiving patterns
- **Community and socioeconomic factors:** Limited access to safe activity spaces and affordable nutritious foods

Language implying blame should be avoided.

Screening and Evaluation

Screening

1. **USPSTF Recommendation (2024):**
    a. Screen children and adolescents **age 6 years and older** for obesity using BMI.
    b. Children with obesity should be **referred to intensive behavioral interventions**.

Age Group	BMI Category	Lipid Screening Recommend...	Strength	Test Type
2-9 years	Obesity (BMI ≥95th percentile)	**May evaluate** for dyslipidemia	Moderate (Grade C)	Fasting lipid panel preferred
2-9 years	Overweight (BMI 85th-<95th percentile)	Not routinely recommended	N/A	N/A
≥10 years	Overweight (BMI 85th-<95th percentile)	**Should evaluate** for dyslipidemia	Strong (Grade B)	Fasting lipid panel
≥10 years	Obesity (BMI ≥95th percentile)	**Should evaluate** for dyslipidemia	Strong (Grade B)	Fasting lipid panel

The American Academy of Pediatrics recommends obtaining a fasting lipid panel for children ≥10 years with overweight or obesity (strong recommendation) and considers screening for children 2-9 years with obesity (moderate recommendation). The stronger recommendation for older children reflects a higher prevalence of lipid abnormalities and stronger evidence linking childhood dyslipidemia to adult cardiovascular risk.

The most common dyslipidemia pattern in children with obesity is high triglycerides and low HDL cholesterol, driven by insulin resistance. NHANES data show that 43% of children with obesity have abnormal lipid levels, compared with 14% of those with a healthy BMI. Even young children ages 3-5 years with obesity show a 10% prevalence of elevated triglycerides and low HDL.

Fasting lipid panels (8-12 hours fasting) are preferred because dietary fats and carbohydrates significantly affect triglyceride levels, and nonfasting values will not accurately reflect the typical dyslipidemia pattern seen with obesity.[1] When fasting testing is not feasible, a nonfasting panel using non-HDL cholesterol (total cholesterol minus HDL) may be obtained; if non-HDL ≥145 mg/dL or HDL <40 mg/dL, a fasting panel should follow for diagnosis.[1]

The rationale for screening is that cardiovascular risk factors track from childhood into adulthood, and early identification allows lifestyle interventions and family education about long-term cardiovascular disease risk.[1] This aligns with 2011 NHLBI and 2018 American

Heart Association/American College of Cardiology guidelines recommending early atherosclerotic cardiovascular disease risk assessmen

Behavioral Treatment

Intensive Health Behavior and Lifestyle Treatment (IHBLT)

First-line therapy for children and adolescents with obesity.

USPSTF 2024 recommendation:

- Refer children age **6 years and older** to **intensive behavioral interventions**.
- Effective programs include:
    - **≥26 contact hours**
    - Multicomponent approach (nutrition, physical activity, behavior change)
    - Family involvement

What does the USPSTF recommend?	**Children and adolescents 6 years or older:** Clinicians should provide or refer children and adolescents 6 years or older with a high body mass index (BMI) (≥95th percentile for age and sex) to comprehensive, intensive behavioral interventions. **Grade: B**
To whom does this recommendation apply?	This recommendation applies to all children and adolescents 6 years or older.
What's new?	This recommendation is consistent with the 2017 USPSTF recommendation statement on screening for obesity in children and adolescents.
How to implement this recommendation?	• To achieve benefit, it is important that children and adolescents 6 years or older with a high BMI receive intensive (≥26 contact hours) behavioral interventions. • Comprehensive, intensive behavioral interventions of 26 or more contact hours resulted in weight loss. Effective interventions consisted of multiple components, including sessions targeting both the parent and child (separately, together, or both); offering group sessions in addition to individual or single-family sessions; providing information about healthy eating, safe exercising, and reading food labels; and incorporating behavior change techniques such as problem solving, monitoring diet and physical activity behaviors, and goal setting. • These types of interventions are often delivered by multidisciplinary teams, including pediatricians, exercise physiologists or physical therapists, dietitians or diet assistants, psychologists or social workers, or other behavioral specialists.
What additional information should clinicians know about this recommendation?	The USPSTF recognizes the challenges that the families of children and adolescents encounter in accessing effective, intensive behavioral interventions for high BMI. Identifying high BMI and how to address it are important steps in helping children and adolescents and their families obtain the support they need.
Why is this recommendation and topic important?	Approximately 19.7% of children and adolescents aged 2 to 19 years in the US have a BMI at or above the 95th percentile for age and sex, based on Centers for Disease Control and Prevention growth charts from 2000. The prevalence of high BMI increases with age and is higher among Hispanic/Latino, Native American/Alaska Native, and non-Hispanic Black children and adolescents and children from lower-income families.
What are other relevant USPSTF recommendations?	The USPSTF has issued recommendation statements on screening for high blood pressure in children and adolescents, screening for lipid disorders in children and adolescents, and screening for prediabetes and type 2 diabetes in children and adolescents. Current versions of these and other related USPSTF recommendations are available at https://www.uspreventiveservicestaskforce.org/uspstf/.
What are additional tools and resources?	• The Community Preventive Services Task Force recommends several interventions in youth addressing physical activity, access to affordable healthy food and beverages, making healthy food and beverage choices, reducing sedentary screen time, and using digital health interventions for weight management (https://www.thecommunityguide.org/pages/task-force-findings-obesity.html). • The US Department of Health and Human Services published the "Physical Activity Guidelines for Americans," which provide recommendations for how physical activity can help promote health and reduce the risk of chronic disease for Americans 3 years or older (https://health.gov/our-work/nutrition-physical-activity/physical-activity-guidelines). • The Centers for Disease Control and Prevention has resources available for families and clinicians addressing high BMI (https://www.cdc.gov/obesity/).
Where to read the full recommendation statement?	Visit the USPSTF website (https://www.uspreventiveservicestaskforce.org/uspstf/) or the JAMA website (https://jamanetwork.com/collections/44068/united-states-preventive-services-task-force) to read the full recommendation statement. This includes more details on the rationale of the recommendation, including benefits and harms; supporting evidence; and recommendations of others.

The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision-making to the specific patient or situation.

Pharmacotherapy

Pharmacotherapy should be offered to adolescents ≥12 years with obesity (BMI ≥95th percentile) as an adjunct to intensive health behavior and lifestyle treatment and may be considered for children ages 8-11 years with obesity according to medication indications, risks, and benefits. Medications should not be withheld if the recommended 26 or more hours of lifestyle therapy is not available, and there is no evidence supporting pharmacotherapy as monotherapy—all clinical trials have included concurrent lifestyle modification.

Table 3. Antiobesity Medications for Adolescents, Ordered by Efficacy

Medication	FDA approval	Dosing	Treatment outcomes: mean BMI reduction and additional benefits	Most common adverse events (treatment vs placebo)	Monitoring[a]	Contraindications	30-d Cost, $ (dose)[b]
Semaglutide, 2.4 mg (once weekly subcutaneous injection)[8]	Ages ≥12 y; BMI ≥95th percentile	Starting dose: 0.25 mg weekly subcutaneous for 4 wk Titration: 0.5 mg weekly for 4 wk, then 1 mg weekly for 4 wk, then 1.7 mg weekly for 4 wk, then 2.4 mg weekly	Treatment: −16.1% Placebo: +0.6% Difference: −16.7% with 2.4 mg at 68 wk Improvements in cardiometabolic risk factors (glycosylated hemoglobin, lipids, and alanine aminotransferase) and weight-related quality of life	Gastrointestinal (61.7% vs 41.8%) Nausea (42% vs 18%) Vomiting (36% vs 10%) Diarrhea (22% vs 19%)	Blood glucose if also taking insulin Heart rate Dehydration especially with severe gastrointestinal symptoms Worsening or emergence of suicidal ideation Signs or symptoms of gall bladder or pancreatic disease	Personal or family history of medullary thyroid carcinoma or multiple endocrine neoplasia syndrome type 2	1301 (2.4 mg)
Phentermine/ topiramate extended release 7.5 mg/46 mg (mid-dose) or 15 mg/92 mg (high-dose) (once daily oral)[7]	Ages ≥12 y; BMI ≥95th percentile	Starting dose: 3.75 mg/ 23 mg daily for 14 d; then 7.5 mg/46 mg daily for 12 wk If BMI has not decreased by 3% from baseline, increase to 11.25 mg/69 mg daily for 14 d, then 15 mg/92 mg daily	Treatment (15/92 mg): −7.1% Placebo: +3.3% Difference: −10.4% with 15 mg/92 mg at 56 wk About 20% decrease in triglycerides and about 10% increase in HDL cholesterol with both doses of phentermine/ topiramate	Incidence ≥4% and greater than placebo: depression, dizziness, arthralgia, influenza, and ligament sprain	Heart rate Insomnia Suicidal ideation Cognitive impairment Metabolic acidosis	Pregnancy, glaucoma, hyperthyroidism	149 (15 mg/92 mg)
Liraglutide, 3 mg (once daily subcutaneous injection)[6]	Ages ≥12 y; body weight >60 kg and BMI corre-sponding to 30 for adults	Starting dose: 0.6 mg/d subcutaneous Titration: increase dose by 0.6 mg every 4 wk to maximum tolerated dose or 3 mg/d	Treatment: −4.3% Placebo: +0.4% Difference: −4.6% with 3 mg at 56 wk No significant improvements in cardiometabolic risk factors or weight-related quality of life	Nausea (42.4% vs 14.3%) Vomiting (34.4% vs 4.0%) Diarrhea (22.4% vs 14.3%)	Blood glucose if also taking insulin Heart rate Dehydration especially with severe gastrointestinal symptoms Worsening or emergence of suicidal ideation Signs and symptoms of gall bladder or pancreatic disease	Personal or family history of medullary thyroid carcinoma or multiple endocrine neoplasia syndrome type 2	1008 (3 mg)
Orlistat, 120 mg[42]	Ages ≥12 y; BMI ≥95th percentile	120 mg by mouth 3 times daily with meals (also available over-the-counter as 60 mg 3 times daily with meals)	At 1 y: Treatment: −0.55 Placebo: +0.31 No clinically significant improvements in cardiometabolic risk factors	Gastrointestinal: fatty/oily stool, 50.3% vs 8.3%; oily spotting, 29% vs 3.9%; oily evacuation, 23.3% vs 1.7%; abdominal pain, 21.9% vs 11%	Take multivitamin supplement 2 h apart from dose	Pregnancy, chronic malabsorption, cholestasis	532 (120 mg)

Abbreviations: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); FDA, Food and Drug Administration; HDL, high-density lipoprotein.

[a] See full prescribing information for each medication for more details on adverse effects and monitoring.

[b] Data taken from Veterans Affairs' Office of Procurement, Acquisition, and Logistics (https://www.va.gov/opal/nac/fss/pharmPrices.asp).

The USPSTF notes limited long-term safety and outcome data, and medications are not included in its formal recommendation. Use should follow specialty guidance and individual risk assessment.

Off-Label Considerations:

Metformin: Frequently used off-label for obesity in adolescents, particularly when other indications are present (prediabetes, PCOS, insulin resistance); modest and inconsistent BMI reduction (approximately 3%)[2][5][7]

Safety Monitoring:

A 2025 meta-analysis of 18 randomized trials (1,402 participants) found GLP-1 receptor agonists significantly improved glycemic control, weight, and cardiometabolic outcomes with no significant differences in suicidal ideation/behaviors or depression compared to placebo, though gastrointestinal adverse events were more common. Long-term safety data beyond 1-2 years remain limited, and future research should examine longer-term outcomes, optimal treatment duration, and effects of medication withdrawal.

Important Limitations:

Weight regain commonly occurs after medication discontinuation, as demonstrated in the liraglutide trial where both groups experienced BMI increases during the 26-week follow-up period after stopping treatment. This underscores that obesity pharmacotherapy, like treatment for other chronic diseases, may require indefinite use to maintain benefits.

Metabolic and Bariatric Surgery

The 2023 American Academy of Pediatrics guideline provides the most current framework for surgical referral, recommending that pediatricians refer adolescents ≥13 years with severe obesity (BMI ≥120% of the 95th percentile) to comprehensive multidisciplinary pediatric metabolic and bariatric surgery centers (moderate-strength recommendation, Grade C evidence).

Evidence Indicates the following:

- The comprehensive evaluation process at specialized centers must involve multidisciplinary assessment of longitudinal BMI trajectory, comorbidity status, physiologic readiness, and psychosocial factors.
- Specific weight and comorbidity criteria define surgical candidacy
- Certain surgeries have shown substantial and sustained benefits
- Long-term monitoring requirements are substantial: vitamin deficiencies are common and necessitate ongoing surveillance

Follow-up and chronic care

The 2024 USPSTF recommendation and supporting evidence reviews provide additional implementation guidance for delivering comprehensive, intensive behavioral interventions as the foundation of chronic obesity care. Effective programs require ≥26 contact hours delivered over 2-12 months, with 71% of high-intensity interventions (26-51 contact hours) demonstrating BMI reduction compared to only 25% of low-intensity interventions (<5 contact hours). The magnitude of treatment effect ranges from 3-5% BMI reduction with the most effective interventions.

Classify severity

- **Measure height and weight** using age- and sex-specific CDC body mass index (BMI) growth curves to classify obesity severity
- **Consider genetic testing** if severe obesity onset before age 5 y

Overweight: BMI ≥85th to <95th percentile
Obesity: BMI ≥95th to <120% of the 95th percentile
Severe obesity: BMI ≥120% of the 95th percentile

Assess risk

- **Assess medical and mental health risks**
  - Comprehensive medical and family history
  - Review of systems
  - Physical examination
  - Validated screening (eg, depression, social drivers of health)
  - Targeted laboratory screening (eg, ALT, lipids, HbA_{1c} for adolescents with obesity or overweight with risk factors)
- **Assess lifestyle behaviors** using a non-weight-biased and strengths-based approach, identifying healthy behaviors on which to build

Respect autonomy

- **Explore patient and family preference** for discussing weight
- **Use patient-centered communication** to enhance motivation for change
- **Use patient-first and nonstigmatizing language and images** in clinical settings
- **Use shared decision-making** when exploring treatment options

Engage in treatment

- **Address comorbidities, complications, and social drivers of health** (eg, food insecurity resources)
- **Offer intensive health behavior and lifestyle treatment** (>26 h over 3-12 mo period) as available in the community
- **Offer antiobesity medications** per FDA-approved indications, currently for adolescents aged ≥12 y with obesity
- **Offer referral to a high-quality, comprehensive metabolic and bariatric surgery program** with adolescent experience as available for adolescents aged ≥13 y with obesity with comorbidities or complications, or with severe obesity with or without comorbidities

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