Assessment

Body Mass Index (BMI)

The most common way to assess weight and obesity risk among children is body mass index (BMI). BMI is not perfect, yet it is the most practical screening tool available to providers.

BMI offers an estimate of a person's risk for obesity based on his or her weight relative to height. The formula for BMI is weight in kilograms divided by height in meters squared, or $kg/m2$.

A BMI calculator for children and teens age 2 to 19 can be found on the Centers for Disease Control and Prevention (CDC) website. To assess weight status for infants younger than age 2, use the CDC and World Health Organization (WHO) growth charts.

While BMI does not measure body fat directly, research has shown that BMI is closely associated with more direct measures of body fat, such as skinfold thickness, bioelectrical impedance, densitometry (underwater weighing), and dual energy X-ray absorptiometry (DXA).

Here are the BMI categories for children age 2 to 19 based on percentile.

- **Underweight**: < 5th percentile
- **Healthy weight:** 5th to 84th percentile
- **Overweight:** 85th to 94th percentile
- **Obesity:** 95th to 99th percentile or BMI > 30 kg/m^2
- **Severe obesity:** > 99th percentile or BMI > 35 kg/m^2

Measure BMI and weight at all wellness visits. BMI results that cross major percentiles merits anticipatory guidance at a minimum.

Weight loss targets

The following table adapted from the AAP Healthy Weight Initiative can help manage overweight and obese children based on their BMI results. Advise parents that short-term weight loss for children does not always predict long-term success. Generally, behaviors that target dietary changes should be part of any wellness strategy since they have the most immediate effect on weight loss management.

Age	BMI 85th to 94th Percentile No Risks	BMI 85th to 94th Percentile With Risks	BMI 95th to 99th Percentile	BMI ≥99th Percentile
2 to 5	Maintain weight velocity	Decrease weight velocity or weight maintenance	Weight Maintenance	Gradual weight loss of up to 1 lb./mo. if BMI is very high (>21 or 22 kg/m^2)

6 to 11	Maintain weight velocity	Decrease weight velocity or weight maintenance	Weight maintenance or gradual loss (1 lb./mo.)	Weight loss not to exceed an average of 2 lb./wk[a]
12 to 19	Maintain weight velocity. After linear growth is complete, maintain weight	Decrease weight velocity or weight maintenance	Weight loss not to exceed an average of 2 lb./wk[a]	Weight loss not to exceed an average of 2 lb./wk[a]

[a] If significant weight loss is noted, monitor for causes.