

## Screening and Treatment of Child and Adolescent Overweight and Obesity

### Step 1: Assess Weight Status

At a minimum, weight status (BMI for age) should be assessed yearly for all children and adolescents.

#### Calculating Body Mass Index (BMI)

**Step 1:** Measure weight and height then calculate BMI using the BMI calculator wheel (included in toolkit) or the following formula:

$$\text{BMI} = [\text{weight (lb)} \div \text{height (in)} \div \text{height (in)}] \times 703$$

**Step 2:** After BMI is calculated, plot it on the CDC BMI-for-age-and-gender percentile charts (included in toolkit; also found at: <http://www.cdc.gov/growthcharts>).

BMI is evaluated using the following percentile cutoffs (2-18 years old)	
<b>Underweight</b>	BMI-for-age-and-gender < the 5th percentile.
<b>Overweight</b>	BMI-for-age-and-gender between the 85th and 94th percentiles.
<b>Obese</b>	BMI-for-age-and-gender ≥ 95th percentile or BMI exceeding 30 (whichever is smaller).

**Blood Pressure 95% by Age, Sex and Height %**

AGE	BOYS HEIGHT %		GIRLS HEIGHT %	
	50%	90%	50%	90%
<b>2 Yr</b>	106/61	109/63	105/63	108/65
<b>5 Yr</b>	112/72	115/74	110/72	112/73
<b>8 Yr</b>	116/78	119/79	115/76	118/78
<b>11 Yr</b>	121/80	124/82	121/79	123/81
<b>14 Yr</b>	128/82	132/84	126/82	129/84
<b>17 Yr</b>	136/87	139/88	129/84	131/85

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### Step 2: Assess Behaviors

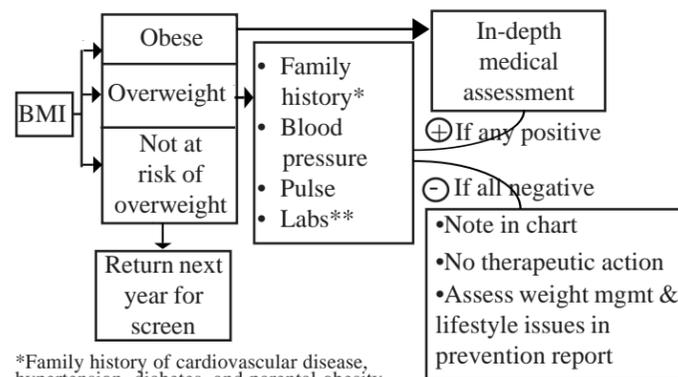
**Dietary practices that may be targets for change:**

- Frequent meals outside the home
- Excessive intake of fruit juice or sweetened beverages
- Intake of excessive portions for age
- Excessive intake of high energy density foods
- Low intake of fruits and vegetables
- Meal frequency and snacking patterns (including quality)
- Breakfast consumption (frequency and quality)

**Activity practices that may be targets for changes:**

- Less than 1 hour of at least moderate physical activity per day
- More than 2 hours per day of sedentary activities, including watching television, playing video games, and using the computer
- Barriers to physical activity such as environment and social support

#### Screening Guidelines



\*Family history of cardiovascular disease, hypertension, diabetes, and parental obesity.  
Elevated blood pressure: see high blood pressure tables in toolkit.  
Elevated total cholesterol: see classification of cholesterol levels in toolkit.

\*\*Laboratory Tests:  
• Overweight with no risk factors - fasting lipid profile  
• Overweight with risk factors - also obtain AST and ALT, fasting glucose  
• Obese - fasting lipid profile, AST and ALT, fasting glucose, BUN, creatinine

### Step 3: Assess Attitudes

**Assessment of self-efficacy and readiness to change:**

*How ready are you to make a change toward a healthier lifestyle?*

**Not ready**-----**Ready**  
0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10

0-2 = What would make you more ready

3-7 = What might your next steps be?

8-10 = What is your plan?

#### Motivational Interviewing Tips:

##### Ask permission:

- Would you be willing to spend a few minutes discussing ways to stay healthy and energized?
- How do you feel about your weight?
- What have you tried so far to work toward a healthier weight?

##### Share BMI/weight:

- Your current weight puts you at increased risk for developing heart disease and diabetes.
- Your BMI is at the \_\_\_%. The recommendation for your age is 85 or below.
- What do you make of this?

##### Negotiate dietary and physical activity behaviors that could be targeted for change:

- There are a number of ways to help you achieve a healthy weight. Is there one of these you'd like to discuss further today?

##### Assess readiness:

- On a scale of 0-10, how ready are you to consider (option chosen above)?

- Why a \_\_\_(# chosen)? Why are you a \_\_\_ and not a (backward)/(forward) # on readiness scale?

##### Explore and summarize ambivalence:

- What are the things you like/dislike about \_\_\_?

- What are the advantages of keeping things the same/making a change?
- Let me see if I understand what you have told me so far. Did I get it all? Did I get it right?

**Close the encounter:**

- Our time is almost up. Thank you for being willing to discuss \_\_\_\_.
- I strongly encourage you to \_\_\_\_\_. The choice is, of course, entirely yours.
- I am confident that if you decide to \_\_\_\_\_, you can be successful.
- Confirm next steps: follow up appointment/referral to specialist.

**Treatment Recommendations for Children Age 2-19 with BMI  $\geq$  85th Percentile:**

**Stage 1: Prevention Plus protocol:**

1. Family visits with provider or health professional based on family needs and risk behaviors.
2. Encourage healthy dietary habits and physical activity
  - At least 2 1/2 cups of fruits and vegetables per day
  - Less than 2 hours of screen time per day, and no television in the child's room
  - 1 hour or more of daily physical activity
  - No sugar-sweetened beverages
  - Serve a healthy breakfast daily
  - Limit meals outside the home
  - Serve family meals at least 5-6 times per week
  - Allow child to self-regulate intake and avoid overly restrictive behaviors

Goal: weight maintenance and monthly follow-up.

After 3-6 months, if no improvement in BMI/weight status, advance to Stage 2.

**Stage 2: Structured Weight Management protocol:**

1. Dietary and physical activity behaviors:
  - Develop a balanced diet plan emphasizing low amounts of energy-dense foods
  - Structure daily meals and snacks
  - Supervise active play of at least 1 hour per day
  - Limit screen time to 1 hour or less per day
  - Increase behavior monitoring (e.g., screen time, physical activity, dietary intake, restaurant logs) by provider, patient and/or family

Goal: weight maintenance or weight loss not to exceed 1 lb/month in children aged 2-11 years, or an average of 2 lb/wk in older overweight/obese children and adolescents.

After 3-6 months, if no improvement in BMI/weight, advance to Stage 3.

**Stage 3: Comprehensive Multidisciplinary protocol:**

1. Eating and activity goals are the same as in Stage 2.
2. Activities in this stage should also include:
  - Structured behavioral modification program, including food and activity monitoring and development of short-term diet and physical activity goals

Children with BMI > 95th percentile, with significant comorbidities and who have not been successful with Stages 1-3 or children > 99th percentile who have shown no improvement under Stage 3, advance to Stage 4.

**Stage 4: Tertiary Care protocol:**

Referral to pediatric tertiary weight management center with access to a multidisciplinary team with expertise in childhood obesity and which operates under a designed protocol. For more information on Stages 3 and 4, please see Expert Committee Recommendations.

**Recommendations for Weight Goals for Age**

**Goal: BMI < 85th Percentile**

**Age 2-5 Years**

- BMI 85th-94th percentile - weight maintenance or slowing of weight gain
- BMI > 95th percentile - weight maintenance or weight loss not to exceed 1 lb/month
- BMI > 21 or 22 percentile - gradual weight loss not to exceed 1 lb/month

**Age 6-11 Years**

- BMI 85-94th percentile - weight maintenance or slowing of weight gain
- BMI 95th-98th percentile - weight maintenance or weight loss not to exceed 1 lb/month
- BMI > 99th percentile - weight loss not to exceed 2 lb/week

**Age 12-18 Years**

- BMI 85th-94th percentile - weight maintenance or slowing of weight gain
- BMI 95th - 98th percentile - weight loss, not to exceed an average of 2 lbs/week
- BMI > 99th percentile - weight loss, not to exceed an average of 2 lbs/week

Reference:

<http://www.ama-assn.org/ama/pub/category/11759.html>



Missouri Council for Activity and Nutrition

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