
The following are key components of these recommendations:

Primary care providers should universally assess children for obesity risk to improve early identification of elevated BMI, medical risks, and unhealthy eating and physical activity habits. Providers can provide obesity prevention messages for most children and suggest weight control interventions for those with excess weight.

1. Assess all children for obesity at all well care visits 2-18 years
   a. Provider should perform yearly

2. Use body mass index to screen for obesity
   a. Accurately measure height & weight
   b. Calculate BMI
   c. Plot BMI on growth chart
   d. Skinfold thickness or waist circumference measurements not recommended

3. Make a weight category diagnosis using BMI percentile
   a. <5% (underweight)
   b. 5-84% (healthy weight)
   c. 85-94% (overweight)
   d. 95-98% (obesity)
   e. >99% (severe obesity)

4. Measure blood pressure
   a. Make sure appropriate cuff size is used
   b. Measure pulse
   c. Identify hypertension
d. Manage hypertension according NHLBI recommendation

5. Take a focused family history
   a. Look for
      i. Obesity
      ii. Type 2 diabetes
      iii. Cardiovascular disease (hypertension, cholesterol)
      iv. Early death from heart disease or stroke

6. Take a focused review of systems
      i. Includes symptoms such as anxiety, school avoidance, social isolation, depression, polyuria, polydipsia, weight loss, headaches, night breathing difficulties, daytime sleepiness, abdominal pain, hip or knee pain, oligomenorrhea or amenorrhea
      ii. Includes signs such as poor linear growth, dysmorphic features, acanthosis nigricans, hirsutism and excessive acne, violaceous striae, papilledema, cranial nerve VI paralysis, tonsillar hypertrophy, abdominal tenderness, hepatomegaly, undescended testicle, limited hip range of motion, lower leg bowing

7. Assess behaviors and attitudes
   a. Assess diet behaviors
      i. Fruit and vegetable consumption
      ii. Frequency of eating out and family meals
      iii. Consumption of excessive portion sizes
      iv. Daily breakfast consumption
   b. Physical activity behaviors
      i. Amount of moderate physical activity
      ii. Level of screen time and other sedentary activities
   c. Attitudes
      i. Self perception or concern about weight
      ii. Readiness to change
      iii. Successes, barriers, and challenges

8. Perform a thorough physical examination
   a. Provider to perform at least yearly
9. Order the appropriate laboratory tests and behavioral intervention
   a. 85-94 percentile (overweight) without risk factors
      i. Nutrition and exercise counseling
      ii. Fasting lipid profile
   b. 95-98 percentile (obesity) with risk factors
      i. Nutrition and exercise counseling
      ii. ALT and AST
      iii. Fasting glucose and HgbA1c
      iv. Lipid profile
   c. >99 percentile (severe obesity)
      i. Nutrition and exercise counseling
      ii. ALT and AST
      iii. Fasting glucose and HgbA1c
      iv. Other tests as indicated by health risks such as thyroid
      v. Lipid profile

10. Give consistent evidence based messages for all children regardless of weight
    a. Limit sugar sweetened beverages
    b. Eat at least 5 servings of fruit and vegetables
    c. Moderate to vigorous physical activity for at least 60 minutes every day
    d. Limit screen time to no more than 2 hrs./day
    e. Remove television from children’s bedrooms
    f. Eat breakfast every day
    g. Limit eating out, especially at fast food
    h. Have regular family meals
    i. Limit portion sizes

11. Use motivational interviewing to engage patients
    a. Empathize/elicit – provide – elicit to improve the effectiveness of your counseling
    b. Assess self efficacy and readiness to change with empathize/elicit
       i. Reflect
       ii. What is your understanding?
       iii. What do you want to know?
       iv. How ready are you to make a change (1-10 scale)?
    c. Provide
       i. Advice or information
       ii. Choices and/or options
    d. Elicit
       i. What do you make of that?
       ii. Where does that leave you?
12. Develop an office based approach for follow up of overweight and obese children
   a. Prevention Plus
      i. Family visits with provider who has some training in pediatric weight management/behavioral counseling
      ii. Can be individual or group visits
      iii. Frequency – individualized to family needs and risk factors, consider monthly
   b. Behavioral goals
      i. Decrease screen time to 2 hrs./day or less
      ii. No sugar sweetened beverages
      iii. Consume at least 5 servings of fruits and vegetables daily
      iv. Be physically active 1 hr or more each day
      v. Prepare more meals at home as a family (goal of 5-6 times week)
      vi. Limit meals outside of the home
      vii. Eat a healthy breakfast daily
      viii. Involve the whole family in lifestyle changes
      ix. Frequent follow up and focused attention to lifestyle changes are Prevention Plus strategies
   c. Weight goals
      i. Long term goals is <85% ile
      ii. Once at goal, advance to weight management strategies

13. Use motivational interviewing at prevention plus visits for ambivalent families and to improve the success of action planning
   d. Use patient centered counseling and motivational interviewing

14. Develop a reimbursement strategy for prevention plus visits
   e. Develop coding strategies that can help with reimbursement for Prevention plus visits
   f. Advocacy through professional organizations to address reimbursement policies is another strategy

15. Advocate for improved access to fresh fruits and vegetables and safe physical activity in your community and schools
   g. Advocate for increased activity in schools to create an environment that supports physical activity in general
   h. Support efforts to preserve and enhance parks as areas for physical activity

16. Identify and promote community services which encourage healthy eating and physical activity
   i. Promote physical activity in schools and child care settings

17. Identify or develop more intensive weight management interventions for your families who do not respond to prevention plus
j. Structured weight management
k. Comprehensive, multidisciplinary interventions

18. Join the Childhood Obesity Action Network to learn from your colleagues and accelerate progress

m. Support the Childhood Obesity Action Network at [www.NICHQ.org](http://www.NICHQ.org)
n. Implementation Guide Contact: obesity@nichq.org

The work of the expert committee and writing groups addresses all stages of care, from normal-weight, low-risk children to severely obese children. **Figure below presents** an overview of the process to assess obesity risk.

**Universal assessment of obesity risk and steps to prevention and treatment.**

<table>
<thead>
<tr>
<th>Identification</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculate and plot BMI at every well child visit</td>
<td>Medical Risk</td>
<td>Prevention</td>
</tr>
<tr>
<td><strong>BMI 5&lt;sup&gt;th&lt;/sup&gt;-84&lt;sup&gt;th&lt;/sup&gt; percentile</strong></td>
<td>Child history &amp; exam Child growth Parental obesity Family history</td>
<td>Sedentary time Eating Physical activity</td>
</tr>
<tr>
<td><strong>BMI 85&lt;sup&gt;th&lt;/sup&gt;-94&lt;sup&gt;th&lt;/sup&gt; percentile</strong></td>
<td>Child history &amp; exam Child growth Parental obesity Family history Laboratory, as needed</td>
<td>Sedentary time Eating Physical activity</td>
</tr>
<tr>
<td><strong>BMI ≥ 95&lt;sup&gt;th&lt;/sup&gt; percentile</strong></td>
<td>Child history &amp; exam Child growth Parental obesity Family history Laboratory</td>
<td>Sedentary time Eating Physical activity</td>
</tr>
</tbody>
</table>

**Target behavior**
- Identify problem behaviors
- If no problem behaviors, praise current practice

**Patient/family counseling**
- Review any risks (e.g., DM)
- Use patient-directed techniques to encourage behavior change (see algorithm table)

**Intervention for Treatment**
- Advance through stages based on age and BMI

**Stage 1 Prevention Plus**
- Primary care office

**Stage 2 Structured Weight Management**
- Primary care office with support

**Stage 3 Comprehensive Multidisciplinary Intervention**
- Pediatric weight management center

**Stage 4 Tertiary Care Intervention (select patients)**
- Tertiary care center
References:
