

Frequently Asked Questions

1. What is BMI?

Body Mass Index (BMI) is a number calculated from a child's (age 2 and older) height and weight. BMI is an inexpensive and easy-to-perform method of screening for weight categories that may lead to health problems. For children and teens, BMI is age- and sex-specific and is often referred to as BMI-for-age. (Source: www.cdc.gov)

2. What is a BMI percentile?

After BMI is calculated for children and teens, the BMI number is plotted on the CDC BMI-for-age growth charts (for either girls or boys) to obtain a percentile ranking.

Weight Status Category	Percentile Range
Underweight	Less than the 5th percentile
Healthy Weight	5th percentile to less than the 85th percentile
Overweight	85th to less than the 95th percentile
Obese	Equal to or greater than the 95th percentile

3. How is BMI used with children and teens?

BMI is used as a screening tool to identify possible weight problems for children. CDC and the American Academy of Pediatrics (AAP) recommend the use of BMI to screen for overweight in children beginning at 2 years of age. BMI is not a diagnostic tool. For example, a child may have a high BMI for age and sex, but to determine if excess fat is a problem, a healthcare provider would need to perform further assessments. These assessments might include evaluations of diet, physical activity, family history, skin fold thickness, and other appropriate health screenings.

4. What about the growth chart?

This is where the beauty of pediatrics shines through. We love our growth charts. The tracking of BMI over time on a CDC BMI-for-age growth chart provides clinical information for assessment, education and intervention.

5. How do I calculate BMI?

Use a BMI wheel, calculator (see below for a link to the CDC) or the BMI formula:

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

BMI (Metric) = $\text{weight (kg)} \div [\text{height (m)} \times \text{height (m)}]$

BMI Percentile Calculator for Children and Teens:

<http://apps.nccd.cdc.gov/dnpabmi/Calculator.aspx>



www.multicare.org/marybridge/5210

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www.letsgo.org

Frequently Asked Questions (continued)

6. How do you take a proper height and weight measurement of a patient 2 years or older?

Measuring Weight

Children should be weighed using a platform scale. This may be a beam balance scale or a digital (electronic load cell or strain gauge) scale. Check your equipment regularly to make sure you are getting accurate measurements. Scales should be calibrated on a routine basis. Calibration involves putting known weight on the scale to check accuracy. Be sure the scale is placed on a flat, uncarpeted floor.

Procedure:

- A. Ask the child to remove shoes and bulky clothing.
- B. Place the scale in the “zero” position before the child steps on the scale.
- C. Ask the child to stand still with both feet in the center of the platform.
- D. Record the measurement to the nearest decimal fraction.
- E. Have the child step off the scale.

Measuring Height

A standing height board or stadiometer is required. This device has a vertical ruler with a sliding horizontal rod that adjusts to rest on the head. It also has a permanent surface to stand on or the entire device is mounted on the wall of a room with a level floor.

Procedure:

- A. Before you begin, ask the child to remove shoes, hats, and bulky clothing, such as coats and sweaters. Ask the child to remove or undo hair styles and hair accessories that interfere with taking a measurement. In rare cases, a child may be unwilling to undo an intricate or costly hairstyle. In these situations, care should be taken to locate the actual crown of the head.
- B. Direct the child to stand erect with shoulders level, hands at sides, thighs together, and weight evenly distributed on both feet. The child’s feet should be flat on the floor or foot piece, with heels comfortably together and touching the base of the vertical board. There are four contact points between the body and the stadiometer: head, upper back, buttocks, and heels.
- C. Ask the child to adjust the angle of his/her head by moving the chin up or down in order to align head into the Frankfort Plane. The Frankfort Plane is an imaginary line from the lower margin of the eye socket to the notch above the tragus of the ear (the fleshy cartilage partly extending over the opening of the ear). This is best viewed and aligned when the viewer is directly to the side of and at the eye level of the child. When aligned correctly, the Frankfort Plane is parallel to the horizontal headpiece and perpendicular to the vertical back piece of the stadiometer. NOTE: When the chin is correctly positioned, the back of the head may not make contact with the board. In fact, in a very few individuals, only two points will make contact with the vertical back piece.

- D. Ask the child to breathe in and maintain his/her position. Lower the headpiece until it firmly touches the crown of the head and is at a right angle with the measurement surface. Check contact points to ensure that the lower body stays in the proper position and the heels remain flat. Some children may stand up on their toes, but verbal reminders are usually sufficient to get them in proper position.
- E. Record height to the nearest 1/8th of an inch.

Adapted from the Center for Weight and Health at the University of California – Berkeley

7. How do you take a proper weight and length measurement of a patient less than 2 years old?

Measuring Weight

Infants should be weighed using a hospital-grade platform scale. This may be a beam balance scale or a digital (electronic load cell or strain gauge) scale. Check your equipment regularly to make sure you are getting accurate measurements. Scales should be calibrated on a routine basis. Calibration involves putting known weight on the scale to check accuracy. Be sure the scale is placed on a flat, uncarpeted floor.

Procedure:

- A. Remove shoes, clothing, and diaper from the infant.
- B. Place the scale in the “zero” position before you place the infant on the scale.
- C. Make sure the child is on the center of the platform.
- D. Record the measurement to the nearest decimal fraction.
- E. Remove the child from the scale.

Measuring Length

Best Practice: A platform with an attached yardstick, a fixed head plate, and a movable footplate is required. The footplate can be adjusted so it comes up to the bottom of infant’s heels. This apparatus should be used on a flat surface and requires two people to operate.

Procedure:

- A. Remove shoes, clothing, and diaper from the infant.
- B. Lay the child on the platform.
- C. Have one person hold the head of the infant.
- D. The other person should keep the infant’s knees straight and bring the adjustable footplate up to the infant’s heels.
- E. Secure the footplate.
- F. Remove the infant from the surface.
- G. Record the measurement on the yardstick to the nearest 1/8th of an inch.



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Frequently Asked Questions (continued)

Common Practice: Many clinicians measure infants by laying the patient on the paper covering the exam table and marking the positions of the head and the feet on the paper. They then remove the patient and use a measuring tape to quantify the distance between the two pen markings. While this procedure can be very inaccurate due to the incorrect positioning of the infant, movement and crumpling of the paper and failure to get perpendicular markings by the pen there are a few tips to getting good length data if this method is used in your office:

- A. Ask the caregiver who is with the patient to hold the patient as still as possible.
- B. Measure the length three times and use the average.
- C. If you notice a leveling off or a decline in the patient's length consider a more precise measurement such as the best practice noted above.

8. What does 5210 stand for?

- 5 – Eat at least five fruits and vegetables a day.
- 2 – Limit recreational TV or computer use to two hours or less.
- 1 – Get one hour or more of physical activity every day.
- 0 – Drink more water and low fat milk; limit or eliminate sugary beverages.

9. What is the science behind the 5210 message?

There is a scientific rationale supporting each component of the 5210 message. It has been used in doctors' offices in Maine for the past three years and has been used in school settings for the past one and a half years. The 5210 message is an easy way to begin an open discussion about the ways to increase physical activity and healthy eating.

5 or more fruits and vegetables

Scientific Rationale: A diet rich in fruits and vegetables provides vitamins and minerals, which are important for supporting growth and development, and for optimal immune function in children. High daily intakes of fruits and vegetables among adults are associated with lower rates of chronic diseases such as heart disease, stroke, high blood pressure, diabetes, and possibly, some types of cancers. Emerging science suggests fruit and vegetable consumption may help prevent weight gain, and when total calories are controlled may be an important aid to achieving and sustaining weight loss.

2 hours or less of recreational screen time

Scientific Rationale: According to the American Academy of Pediatrics (AAP,) the average child watches an average of 5–6 hours of television a day. Watching too much television is associated with an increased prevalence of overweight and obesity, lower reading scores, and attention problems. The AAP therefore recommends that children under age two shouldn't watch any television. In addition, the AAP recommends no TV or computer in the room in which the child sleeps, and no more than 2 hours of screen time a day.

1 hour or more of physical activity

Scientific Rationale: Regular physical activity is essential for weight maintenance and prevention of chronic diseases such as heart disease, diabetes, colon cancer, and osteoporosis. While most school age children are quite active, physical activity sharply declines during adolescence. Children who are raised in families with active lifestyles are more likely to stay active as adults than children raised in families with sedentary lifestyles.

0 sugary drinks, more water & low fat milk

Scientific Rationale: Sugar-sweetened beverage consumption has increased dramatically over the past 20 years; high intake among children is associated with overweight and obesity, displacement of milk consumption, and dental cavities. It is recommended that children 1–6 years old consume no more than 4–6 ounces of juice per day and youth 7–18 years old consume no more than 8–12 ounces. Whole milk is the single largest source of saturated fat in children’s diets. Switching to low or non-fat milk products significantly reduces dietary saturated and total fat, as well as total calories.

10. How do I use the 5210 Healthy Habits Questionnaire in my practice?

The first thing to institute in your practice is the 5210 Healthy Habits Questionnaire at all well-child checks for children 2 years and older. Questions to consider:

- When and where will the survey be handed out?
- Who will the patient/parent give the survey back to?
- Who will review the survey with the patient/family?
- Where will the survey be placed in the chart?

11. Are there discussion points for the questionnaire I can use?

Discussion Points

(Please note the questions below are from the questionnaire for Ages 10–18. The same discussion points apply to both age ranges.):

A. How many servings of fruits or vegetables do you eat a day?

5 or more servings of fruits or vegetables per day help provide a healthy diet. The palm of the child’s hand is a good reference for a serving size for meat and protein and most vegetables. A more accurate guide for each meal is:

- 3 ounces of protein, such as chicken, lean meat, fish, tofu, or 2 tablespoons of peanut butter
- ½ cup to 1 cup of a starch, such as pasta, potato, rice, or 2 slices of bread
- ½ cup to 1 cup of vegetables
- ½ cup or one small piece fresh fruit
- 1 cup milk or 1–2 ounces of low fat cheese



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Frequently Asked Questions (continued)

For more information, refer generally to the “5” tab and in particular the following patient tools: “5 Brochure”, “What’s a Healthy Portion”, “To Have Fruits and Veggies Year-Round, Add Frozen or Canned”, “Fuel Learning with Fruits and Vegetables” and “Encourage Kids to Eat More Fruits & Veggies”

B. How many times a week do you eat dinner at the table together with your family?

Family meals are associated with an increased intake of fruits, vegetables, and milk. Encourage families to eat meals together more often. Mealtime is a great opportunity for parents to connect with their kids.

C. How many times a week do you eat breakfast?

A daily breakfast is very important for a healthy diet. Skipping breakfast may be a risk factor for obesity.

For more information, reference the “5” tab, specifically the handout “Breakfast is Best!”

D. How many times a week do you eat takeout or fast food?

Eating takeout or fast food may be associated with obesity. These foods have a tendency to be fattier so children should eat them less often. If children do eat takeout or fast food, they should look for healthy options.

E. How many hours a day do you watch TV/movies or sit and play video/computer games?

F. Do you have a TV in the room where you sleep?

G. Do you have a computer in the room where you sleep?

The American Academy of Pediatrics recommends the following: 2 hours or less of recreational screen time. They also recommend: no screens in the child’s bedroom and no TV or computer under the age of 2.

H. How much time a day do you spend in active play (faster breathing/heart rate or sweating)?

1 hour or more; the time spent doing physical activity can be separated out throughout the day.

For more information, reference the “1” tab, specifically the “1 Brochure”, “Be Active Every Day!”, “Physical Activity Breaks” and “Take It Outside”

I. How many 8-ounce servings of the following do you drink a day?

100% juice:

- 4–6 ounces for children 1–6 years old
- 8–12 ounces for children 7–18 years old

- Children 6 months and under should not be given juice

Water: unlimited

Fruit or sports drinks: limited—you can use this opportunity to have a conversation about when a sports drink is needed (after 60 minutes of continuous vigorous activity).

Soda or punch: limited

Whole milk: recommended for children 1 year to 2 years. After age 2, children should be drinking low fat or skim milk. Children under 1 year should drink breast milk or formula.

Fat-free or reduced fat milk:

- Children ages 2–3: 2 cups a day
- Children ages 4–8: 3 cups a day
- Pre-teens and teens: 4 cups a day

12. Will discussion of the 5210 message lead to an increase in eating disorders such as anorexia nervosa?

There is no current evidence that bringing up healthy behaviors in a positive manner leads to disordered eating. The 5210 message provides an easy way to discuss general health subjects that apply to everyone. Its purpose is to spread healthy behaviors. A recent study in a medical journal (Austin, et al., Archives of Pediatrics and Adolescent Medicine, vol. 159: 225-230) supported the idea that interventions like Let's Go! may actually help prevent eating disorders in early adolescent girls.

13. How important is our office behavior to the success of this program's implementation?

Role modeling is a very important part of changing behaviors among children. Healthy behaviors you can model include: offering healthy snacks at office meetings, holding walking meetings when possible, promoting the use of pedometers by staff, and not using food as a reward.

14. I have obese kids in my practice. Now what?

Good question! There are many resources being put in place to help providers. Below are resources that you may find helpful to get you started.



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Frequently Asked Questions (continued)

Internet resources:

- ▶ **Let's Go!:**
Maine information for kids, teens, parents, childcare and healthcare providers, schools, and workplaces.
www.letsgo.org
- ▶ **Childhood Obesity Action Network (COAN):**
The Childhood Obesity Action Network is a web based national network aimed at rapidly sharing knowledge, successful practices and innovation.
www.nichq.org/NICHQ/Programs/ConferencesAndTraining/ChildhoodObesityActionNetwork.htm
- ▶ **Healthy Maine Partnerships:**
www.healthymainepartnerships.org

CDC

- ▶ **Growth Charts:** www.cdc.gov/growthcharts
- ▶ **Children's BMI Risk Category Dependent on Age:**
<http://www.cdc.gov/healthyweight/assessing/bmi/index.html>
- ▶ **Z Score Data Files:**
www.cdc.gov/nchs/about/major/nhanes/growthcharts/zscore/zscore.htm
- ▶ **WHO Growth Standards:** http://www.cdc.gov/growthcharts/who_charts.htm
- ▶ **Children's BMI Calculator:** <http://www.bcm.edu/cnrc/bodycomp/bmiz2.html>
- ▶ **Let's Move** www.letsmove.gov/

Local Multidisciplinary Treatment Clinics

- ▶ **WOW! Way to Optimal Weight**
http://www.emmc.org/pediatric_services.aspx?id=58902
- ▶ **Countdown to A Healthy ME Program**
http://www.mmc.org/mmp_spcare.cfm?id=5690
- ▶ **Zing! Clinic**
<http://www.pbmc.org/zing>