

Measurement and Accuracy

Tips and Tools for Success





BMI Measurement and Accuracy



Privacy Important

- No other students present
- Only the screener observes the results
- Keep the information confidential - be careful not to speak too loudly so other students hear
- Refrain from making comments that label or diagnose, such too thin, obese, too short, etc
- If student makes a negative remark, respond with a supportive comment and meet with them privately later



Measure Weight

- Use a balance beam scale or a medical-grade digital scale that are calibrated often.
- Scales should be on an uncarpeted floor
- Calibration involves putting known weights on the scale to check accuracy
- Student should remove outer garments & shoes, empty pockets; stand still with both feet in center of scale and not be touching anything
- Measure to the nearest 0.1 kg



Measuring Height

- Calibrated vertical stadiometer with moveable headpiece
- Student should remove shoes, hats, bulky outer garment, and undo hairstyles and hair accessories
- Student stands with heels, buttock, shoulders, and head touching backboard with hands at side
- Student looks straight ahead (head may not touch backboard)
- Lower headpiece till it touches crown of the head
- Measure at eye level
- Measure to nearest 0.1 cm or 1/8 inch



Calculate BMI-for-Age

BMI-for-age is only indicator that allows us to plot a measure of weight and height with age on the same gender specific chart.

BMI is more highly correlated with body fat than weight alone

Convert height and weight to BMI by using one of the following methods:

a. Align the student's height and weight on a BMI wheel that is specific for ages 2-20, or

b. Calculate BMI using the following formula:

$$\text{BMI} = \left(\text{Weight in Kilograms} / \left(\text{Height in Meters} \right) \times \left(\text{Height in Meters} \right) \right)$$

c. Use the CDC's online BMI calculator at:

<http://www.cdc.gov/nccdphp/dnpa/bmi/calc-bmi.htm>



Calculate BMI-for-Age

- Determine student's age prior to plotting the measurements on growth chart. Student's age can be rounded to the nearest quarter of a year.
- Use a straight edge to plot results on sex-specific BMI-for-age percentile chart published in 2000 by the CDC; website for growth charts: <http://www.cdc.gov/growthcharts>.
- All measurements for one student, grades K-12, plotted on same chart.
- Screenings that fall outside established parameters ($>5^{\text{th}}$ and $<85^{\text{th}}$ percentiles) suggest the need recheck measurements.
- Encourage parents to share results of the growth screening with their child's health care provider.



Interpreting BMI-for-Age Results

- A BMI-for-age $>5^{\text{th}}$ and $\leq 85^{\text{th}}$ percentiles indicates further assessment needed
- BMI does not directly measure body fatness.
 - muscular student = high BMI-for-age and little body fat
 - student with normal percentiles can have excessive body fat



Tips for Talking with Students

- A range of weights is normal - people can be healthy at many weights and look very different from one another
- BMI does not directly measure body fatness
- Normal growth and development patterns (such as growth spurts) affect body shape and size, especially is puberty



Tips for Talking with Students

- Help students challenge media messages that only thin people are happy/attractive
- Encourage students to make healthy food choices
- Encourage daily physical activity - sedentary behaviors can contribute to weight gain
- A pattern of growth is more helpful than a single measurement