

About BMI-for-age for Children and Teens

What is BMI-for-age?

Body Mass Index (BMI) –for-age is a number calculated from a child's weight and height and evaluated using an age and sex specific growth chart. BMI is a reliable indicator of body fatness for most children and teens. Despite that no single body fat value clearly distinguishes health from disease or risk of disease, high levels of body fat in children and adults are associated with increased health risks. ^(1,2,3)

When did BMI-for-age become recommended practice?

The development of the BMI-for-age growth charts in 2000 was a collaborative effort between the Division of Health Examination Statistics in the National Center for Health Statistics (NCHS) and the Division of Nutrition and Physical Activity (DNPA) in the National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) at the Centers for Disease Control and Prevention (CDC).

In November 2007, the American Academy of Pediatrics (AAP) endorsed the shift from simple identification of obesity, which often occurred when the condition was obvious and intractable, to *universal* assessment by screening all children for overweight and obesity beginning at 2 years using BMI-for-age. ⁽⁴⁾

Why is BMI-for-age used to assess obesity prevalence in a population?

BMI is an inexpensive and easy-to-perform method of screening for weight categories. BMI-for-age is easily calculated from the four simple measures: age, sex, height and weight.

Are the other measures that are more accurate than BMI?

BMI does not measure body fat directly, but BMI correlates to direct measures of body fat, such as underwater weighing and dual energy x-ray absorptiometry (DXA). ⁽⁵⁾ A recent comparison of the magnitudes of association of BMI and alternative measures adiposity (bioimpedance, skinfold thickness, waist circumference, waist-hip ration or waist-height ratio) with coronary heart disease, diabetes, cardiovascular disease risk factors and all-cause mortality determined that there was no evidence to support replacing BMI in clinical or public health practice with any of these other adiposity measures. ⁽⁶⁾

Do we have a better way to measure obesity prevalence trends in large groups of school children?

BMI is the simplest, non-invasive, affordable way to measure obesity prevalence trends in a large population.

Is BMI interpreted the same way for children and teens as it is for adults?

Although the BMI number is calculated the same way for children and adults, the criteria used to interpret the meaning of the BMI number for children and teens are different from those used for adults. For children and teens, BMI age- and sex-specific percentiles are used for two reasons:

1. The amount of body fat changes with age.
2. The amount of body fat differs between girls and boys.

The CDC BMI-for-age growth charts take into account these differences and allow translation of a BMI number into a percentile for a child's sex and age. For adults, on the other hand, BMI is interpreted through categories that do not take into account sex or age.⁽⁷⁾

Can BMI be used to diagnose obesity in an individual?

At an individual level, BMI can be used as a screening tool but by itself is not diagnostic of the body fatness or health of an individual. A trained healthcare provider should perform appropriate health assessments in order to evaluate an individual's health status and risks. These assessments might include skinfold thickness measurements, evaluations of diet, physical activity, family history, and other appropriate health screenings.⁽⁷⁾

References

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