The body mass index (BMI) and being overweight

Dear Alice,

Could you clarify the Body Mass Index deal? According to one BMI chart, I am "slightly overweight" because I am 5’ 5-1/2” tall and weigh 160 lb. I am also very muscular and have a large frame. The lower BMI readings are labeled "ideal," but I've heard muscle weighs more than fat, so if the chart does not include the muscle factor, is it basically saying that it's "ideal" NOT to have extra muscle? I look slender and have never been told by a doctor to lose weight. I'm a twenty-four-year-old female, lacto-ovo-vegetarian, and get lots of exercise, including walking and frequent "sweaty" workouts.

--Scales

Answer

Dear Scales,

You've encountered an issue with the body mass index (BMI) that many others have encountered, too! A tremendous amount of press has been given to the BMI charts and the "strict" standards many people feel the U.S. government has imposed upon the population. The truth is most of these articles and news reports don't tell the entire story. To set the record straight, keep reading.

BMI is a ratio of weight to height. BMI is frequently used as a measure of overweight and obesity because it's a quick, easy, and inexpensive measure that correlates pretty accurately with body fat percentage for most people. The key word here is "most." As you've discovered, it doesn't work for everyone. The major shortcoming and the primary point of contention among health care providers is that it cannot decipher between fat and muscle weight. It's a rather simplistic measure that does not take into account other factors such as age, build, and body composition.

The rationale behind these numbers is that, across large population groups, there is an increased prevalence of certain diseases in people with a BMI over 25, and a much greater risk of disease and death in those with a BMI over 30. BMI is calculated as follows:

\[
\text{BMI} = \frac{\text{weight (kg)}}{\text{[height (m)]}^2}
\]

OR
BMI=weight (lb) / [height (in)]^2 x 703.

The standard weight calculations for overweight and obese adults are as follows: a person with a BMI of 25.0 to 29.9 is classified as overweight; those with a BMI greater than 30 are classified as obese.

When BMI measurements are taken into account with other factors such as family history, gender, race, age, and dietary and exercise habits, it may help health care providers determine a person's risk for developing the following conditions:

- Hypertension (high blood pressure)
- Coronary heart disease
- Type 2 diabetes (adult diabetes)
- Stroke
- Gallbladder disease
- Osteoarthritis
- Sleep apnea and other respiratory problems
- Endometrial, breast, and colon cancers

List adapted from the [Centers for Disease Control and Prevention](https://www.cdc.gov)

An important point here is the relationship between being overweight or, better yet, "overfat", and disease development. BMI often doesn't tell the entire story. A better tool is a person's waist-to-hip measurement ratio (measuring around the widest part of the hips then dividing this number by the measurement around the widest part of the abdomen). The recommended threshold ratio for these two measurements is equal to or less than 1.0 for men and 0.8 for women. Increased risk for the diseases listed above is associated with lower ratios and thus excess abdominal fat - the apple body shape (vs. pear where body fat is primarily carried on the hips and buttocks). When using either this ratio or BMI measurements, other risk factors for developing disease are important to assess. Considering these factors together, health care providers must use their clinical judgment to determine whether or not a person really does need to lose weight.

Many web sites, books, and articles that publish BMI charts tend to simplify this message. A trained athlete or physically fit individual is NOT the target of this message. These BMI charts are a tool to be used as one part of an overall health assessment. Over large population groups, many people with BMIs in the upper range, and high waist measurements or waist-to-hip ratios, are the folks with whom health care providers need to discuss various aspects of health. A fit, well-nourished person with developed muscles may have a higher BMI, but it's likely due to increased muscle mass.

Hopefully, this answer has clarified some of the misunderstanding about BMI. Overall, it is a very limited and highly criticized measure of overweight and obesity; therefore, focus on your overall health, fitness level, dietary variety, and self-satisfaction. Your well-being is certainly much more than just an absolute number.

Alice!
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