

# Men's Health

## THE TRUTH ABOUT BMI

Americans think the body mass index can tell them if they're at a healthy weight. But they're wrong

The next time you happen to catch a Minnesota Vikings game, take a look at Adrian Peterson, the team's 6'1, 217-pound running back. Now ask yourself: what kind of physical characteristics would you attribute to him? Athletic? Lean? Fit? All of these certainly sound like valid answers to us—but his clinical classification might surprise you.

By any normal standards, Peterson is one of the fittest men on the planet. But by our country's system of measuring body fat, he's overweight. If you're like most people, you've probably heard of the 'body mass index,' or, as it's more informally known, BMI. It's a popular formula used to not only gauge if a person is overweight or obese, but also how great their risk is for future health problems.

BMI is a relatively straightforward equation that measures a person's body fat by comparing their weight to their height:

$(\text{Weight in pounds}) / (\text{Height in inches}) (\text{Height in inches}) \times 703$

There are four different categories a person can fall into, ranging from underweight to obese. They are:

- \*18.4 or lower: Underweight.
- \*18.5 to 24.9: Normal weight.
- \*25 to 29.9: Overweight.
- \*30 or higher: Obese.

According to the National Institutes of Health, being overweight or obese by this measure can put you at risk for heart disease, type II diabetes, and even some cancers.

But BMI doesn't work well for individual people. One of the formula's obvious flaws, explains Alan Aragon, the *Men's Health* Weight Loss Coach and a nutritionist in California, is that it has no way of discriminating between fat and muscle—which is the case with Peterson.

Part of the problem is that BMI was never designed as a tool for judging any individual person's weight—either by physicians or the general public, says Timothy Church, a professor of health at Pennington Biomedical Research Center. In fact, the formula was originally intended to measure the collective weight of an entire population, but because of its straightforward math and distinctive categories (i.e., if you score a 25 on the BMI scale, you're overweight), it soon also took off.

Here's how BMI was born: In the early part of the 20th century, medical studies began to show a link between excess weight and an early death. So doctors and insurance companies started to seek out an easy method to determine a person's body-fat percentage. Insurance companies were especially concerned with this task, and devoted portions of their budget to discovering an obesity-determining calculation.

It wasn't, however, until physiology researcher Ancel Keys published a study in 1972 called "Indices of Relative Weight and Obesity," that the modern version of BMI came about. Keys conducted a series of studies on male populations in order to test if any pre-existing mathematical equations could measure a group's relative amount of body-fat. Fortunately for him, one did. The "Quetelet Index," (a.k.a., weight

divided by height, squared) which was developed by Belgian statistician Adolphe Quetelet in the mid-1800s, proved to be successful.

To Keys' credit, he never intended for physicians or insurance companies to use this equation—but BMI was just too perfect. Because it was simply a math equation, it was quicker, easier, and cheaper to use than more direct and accurate measures—like the underwater weighing test, which measures how much you weigh by how much water you displace, and the skin fold measurements, which calculates how much fat you have beneath your skin.

"BMI was really pushed by [companies like] Metropolitan Life," Church said. "It was meant to give them an excuse to charge [their clients] more."

The formula received its official stamp of approval in 1985, when the NIH cited it as the index of obesity. Ever since then, BMI has gradually become more and more accepted—now it's the standard, go-to formula for determining what makes a healthy weight, even among regular people, says Frank Hu, Ph.D., professor of health and nutrition at the Harvard School for Public Health.

Another issue is gender. The Quetelet Index—and corresponding Keys study—were both created from research on male populations. An entirely different formula was originally used for determining obesity in female populations, and yet, doctors use the same equation for both genders, says Church. In the beginning, the NIH differentiated between men and women by establishing different "thresholds" for one's BMI, to account for the variance between men and women in the equation. But even that difference dissolved in 1998. When pressed for the reasons why, an NIH spokesperson declined to comment.

So why has no one tried to change the system? One reason is that imprecise numbers from BMI aren't dangerous, says Hu. And besides, doctors are able to determine risk factors using other measurements.

Still, the alternatives to BMI aren't perfect either. The most common of which is the waist circumference test, which measures abdominal obesity (a.k.a., the fat around your stomach). It's slightly better than BMI at measuring someone's risk for illnesses like heart disease and diabetes, say our experts, because it measures fat specifically, instead of taking into account the weight of a person's muscle mass.

The truth is, people know if they're overweight—so be your own judge. Look in the mirror, monitor your jean size, and talk to your doctor. But don't rely on a flawed formula to determine your health status.