

# the numbers game

By Karen J. Bannan

The best methods for measuring your fitness level.

If you were born before 1980, you probably remember being weighed and measured during gym class. Your height and weight were compared to numbers on a big chart. Twenty years later, school nurses have a new measurement tool—Body Mass Index, or BMI. Your doctor or personal trainer might use it, too.

BMI is computed by taking your weight in kilograms and dividing it by your height in meters squared. The results range anywhere from 19 to 40. Experts say the optimal range is between 17 and 22. But not unlike the weight charts of yesterday, some fitness professionals are saying that BMI measurements are flawed.

"The use of BMI is very widespread. The thing with BMI, though, is that it doesn't address how weight is distributed in the body," explains Dr. Steve Petrucelli, an assistant professor of biomedical engineering at Rutgers University in New Jersey. "Muscle is denser than fat, so it weighs more."

Here's the problem: if you take two women of the same height and weight, chances are good that their fitness levels will vary widely. One may wear a size 12, while the other sports an eight. The main difference

between the two is that the size eight-wearing woman has more muscle mass—and less fat—than the woman who wears a 12. The leaner woman is also more likely to be in better cardiovascular shape.

For this reason, many professional athletic trainers use a tool they say better defines how fit you are: body fat analysis, something that's finally

"People think they should be thinner and thinner, but that's not always true. We need fat for our bodies to work correctly."  
—Dr. Petrucelli

made it into the gym and the home.

There are three types of body fat assessment tools. The first, hydrostatic weighing, is called the gold standard of body fat analysis because it's the most accurate method available. Unfortunately, it's also expensive and time-consuming since it requires total immersion into a tank of water. Body



fat is calculated based on how much water flows out of the tank compared to height and weight.

Caliper testing, which uses a device that looks like a vice and literally pinches an inch (or two or three), is less exact and can vary depending on the skill of the tester. Finally, some testers use Bioelectrical Impedance Analysis, or BIA. Using a small charge of electricity, testers can determine body fat depending on how quickly the current moves through the body. Fat acts like insulation—it's not the best substance to conduct electricity. The higher the fat content, the slower the charge moves.

Which method should you use? Looking at a combination of factors may be your best option, say experts. Balance your weight equally with how strong and healthy you feel and how much body fat you've got. Most importantly, though, don't get hung up on the numbers, whether it's on the scale, a BMI chart, or a body fat analysis tool. 