

# Are Our Athletes Really Fat?

By ACSH Staff — March 9, 2005

A research report in the March 2 *Journal of the American Medical Association* (JAMA) pointed out that many members of National Football League (NFL) teams (57%, to be exact) had Body Mass Indices (BMIs) over 30 -- numbers that would put them in the range of body weight considered obese. Similarly, the March 9 edition of the *Kansas City Star* had an [article](#) [1] listing the BMIs of a number of National Basketball Association (NBA) players -- who also came in at or close to 30. So what gives? It's hard to believe that these men, elite athletes all, are really carrying around a lot of excess body fat, which is what a high BMI implies. Or does it?

Researchers interested in body weight and fatness have used several different ways to evaluate the relative fatness of individuals and populations. One way is to use the actuarial tables devised by the Metropolitan Life Insurance Company. Another is to measure the thickness of a person's skinfolds. The gold standard has been actually measuring body fat by a procedure known as underwater weighing, which measures the buoyancy of an individual in water (the more fat, the more buoyant the person). More recently, CT scans and bioelectric impedance (using the resistance of body tissues to a very low voltage electric current) have become more widely used. But measuring skinfolds requires some expertise, and the other procedures may require expensive equipment. The MetLife tables were divided by gender, body frame size, and height and weight. To simplify, the BMI (calculated as body weight divided by height squared), which assigns a number based on height and weight only, became more popular and is useful when used appropriately -- but that's the sticking point.

Much of the confusion about BMI comes from a misunderstanding of its intent and appropriate use. BMI is a screening tool. Like pap tests (for uterine cancer) for women, PSA tests (for prostate cancer) for men, and blood pressure measurements for anyone, BMI may be used on people who have no obvious signs of disease. Like these other tests, a finding that BMI is high should trigger additional investigation to see if the person really has other indications of risk factors for obesity-linked diseases like diabetes. For example, a person with a BMI of 31 should have waist circumference measured to see if he or she has an excess of abdominal fat (linked to a higher risk of diabetes and heart disease). The patient's blood glucose might be measured to see if there are indications of diabetes. Thus BMI is only a first step in evaluating a person's health status.

Finally, BMI correlates well with the amount of body fat in sedentary individuals. Thus its use for elite athletes, or indeed anyone who has an active lifestyle, is not particularly appropriate. Some have argued that athletes having BMIs in the nominally obese range "proves" that BMI isn't useful, and have implied that the obesity epidemic so widely discussed these days might not be real. But this argument is specious, relying on a misuse of what can be a very helpful screening test. BMI has been useful in tracking changes in the American population over time. Between 1960 and 1994, the percent of men with a BMI over 30 increased from 10 to 20%, and the percent of women

with an obese BMI has gone from 15 to 25% during the same period. Even if some of these people became athletes and thus developed a high BMI because of increased muscle weight, it is unlikely that this is true of the majority of Americans over that thirty-four-year period.

To sum up: while BMI is not the final word in assessing body fat, it's a useful first step when used as it's meant to be used.

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