

A lighthouse costs less than shipwrecks.



Prevention costs less than disease.

## The National Insulin Resistance Council

A not-for-profit disease prevention organization

### Fitness

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Fitness is measured first by individual dimensions of muscle condition, body composition and overall health, and then in relation to age. Many objective measures are available, but no single one tells a complete story.

One group of measures focuses on muscle condition. Even very lean, if sedentary, people can have poor muscle tone. Conversely, active fat people can have good muscle tone. Good muscle tone results only from physical activity. That's why body size alone is a poor indicator of overall fitness except at the extremes. Strength and endurance measures assess muscle capacity. Endurance measures like the treadmill-based stress test are helpful, but expensive to administer. The least useful measure is muscle size, indicative neither of strength nor fitness.

Body composition is determined by knowing the proportion of a person's total weight that is stored fat. This can range from only a few percentage points for the super lean Lance Armstrong-type body to over 20% for an obese person. This measure is important in that it tells how much extra weight a person is dragging around, weight that performs no useful function and inhibits activity levels. Weight alone is also hardly adequate as a measure of fitness, except at the extremes. The most accurate measures of body fat content, like those that use water floatation, are moderately expensive to administer. A new and well-tested measure of body composition is now readily available, easy and inexpensive to use.

BMI, body-mass-index, is a calculation that compares weight to height, producing a number that has proven to be an excellent indicator of body fat for both men and women. BMI does tend to over-estimate body fat for athletes and extremely muscular people, and tends to under-estimate it for elderly individuals and others who have significant loss of muscle mass. There are just a few key BMI numbers to remember. A person with a BMI of 18.5-24.9 is considered having a normal body fat proportion for their height. One with a BMI of 25-29.9 is deemed overweight. A person with a BMI of 30 or more is deemed obese. The advantage of BMI is the ease and low cost of obtaining it. One needs only to be weighed and then read the results from a BMI table or use a BMI calculator, both available at [www.nih.gov](http://www.nih.gov).

Obviously, not being sick is also an indicator of overall health. Unfortunately, being symptom-free is not the same as being healthy. Having a thorough physical exam raises the confidence, since it is designed to find illness, even if hidden. Two caveats are important on this topic. One is that the quality of the exam matters when it comes to care and precision. The second is that not all exams look for or find all defects. NIRC believes that all exams should include screening for insulin resistance, not a standard practice now. In any event, overall health is still, and will always be a subjective assessment.

Combining individual assessments of muscle condition, body composition and overall wellness allows for a complete, if still subjective, rating of overall fitness. More important, that rating compared with statistics about the ratings of others in the same age bracket, tell as full a story about any individual as is useful. Another rule of thumb is that fitness is always in a naturally declining state. Thoughtfulness, attention and work are required just to maintain a level fitness. However, doing that is easier than what is needed to rise to a higher level. Consider this construct: striving for a higher level of fitness may be hard, but valuable if desired. Keeping that higher level, once achieved, may not be harder than keeping a former lesser level.

Everyone should know where they stand when it comes to fitness. Most of us would benefit from raising our sights and working to achieve higher goals of fitness. The four components are weight management, exercise, and periodic medical exams. If that sounds boring, it is, but it is as much a fact of modern life as traffic or television.

Of course, if you are *insulin resistant*, fitness is just that much more important, since the benefits of good fitness don't just make your daily life easier and better, they keep you out of the heart disease and diabetes woods. There is no way to overemphasize this point. [Learn more about **Insulin Resistance** [here](#)].

The goal of the National Insulin Resistance Council (NIRC) is to *prevent* millions of non-infectious disease cases tied to *insulin resistance* including diabetes, heart failure, stroke and recently-linked Alzheimer's. It sponsors, operates, and collaborates with others on programs that lead to *early identification* of affected individuals and fosters targeted *active prevention* programs.