

## Insulin Sensitivity Is Critical for Health

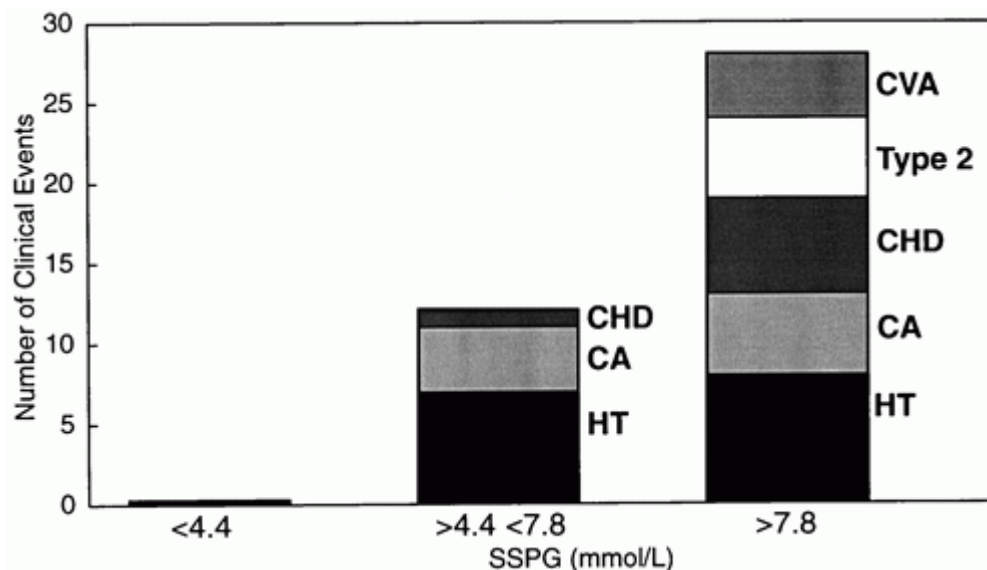
Insulin is the hormone that promotes uptake of nutrients into cells; it rises after eating, especially with consumption of carbohydrates and protein, and the amount of insulin required for this task varies depending on the individual's insulin sensitivity. Insulin sensitivity is critical for health.

Insulin binds to receptors on cell membranes, and when only minimal amounts of insulin are required for the task of facilitating nutrient uptake and controlling blood sugar (glucose), an individual is said to be insulin sensitive. When greater amounts of insulin are needed, this is insulin resistance; when even a high amount of insulin can't control blood sugar, an individual has type 2 diabetes.

Type 2 diabetes is associated with greatly increased risks of coronary heart disease, kidney disease, Alzheimer's, infections, and [cancer](#). Most people are at least vaguely aware of this, but the most important point for this discussion is that **insulin resistance occurs on a continuum, and most people have some degree of it.**

How important is insulin sensitivity and its converse, insulin resistance?

Check out the chart below, which I discussed [here](#).



A group of 208 “apparently healthy”, non-obese volunteers (98 men, 110 women), had their level of insulin resistance determined. The subjects were divided into tertiles (thirds) of insulin resistance, low, medium, and high.

Doctors then followed the subjects for an average of 6.3 years each and looked for the “clinical endpoints” of **hypertension, coronary heart disease, stroke, type 2 diabetes, or cancer**. They found a total of 40 clinical endpoints in 37 of the subjects.

All of the disease was found in subjects with some degree of insulin resistance. Those with little to no insulin resistance had zero clinical endpoints, those in the middle had some disease, and those with the highest insulin resistance (lowest insulin sensitivity) had the greatest number of clinically significant diseases.

Keep in mind that these people were “apparently healthy”, non-obese, and that the researchers merely divided them into 3 equally sized groups.

[Up to 80% of people with a normal glucose tolerance test, i.e. they are not diabetic, have some degree of insulin resistance.](#) These people are at high risk for the diseases of aging and of civilization: heart disease, cancer, and the rest.

Insulin resistance is like an iceberg in which most of the risk is submerged and out of sight.

The [fasting insulin](#) test is a reasonable proxy for insulin resistance; all things equal, the lower the better.

The Kitavans, the South Pacific people who are well-known for the complete absence of cardiovascular disease, [have much lower fasting insulin than comparable people in Sweden](#), and it does not increase with age.

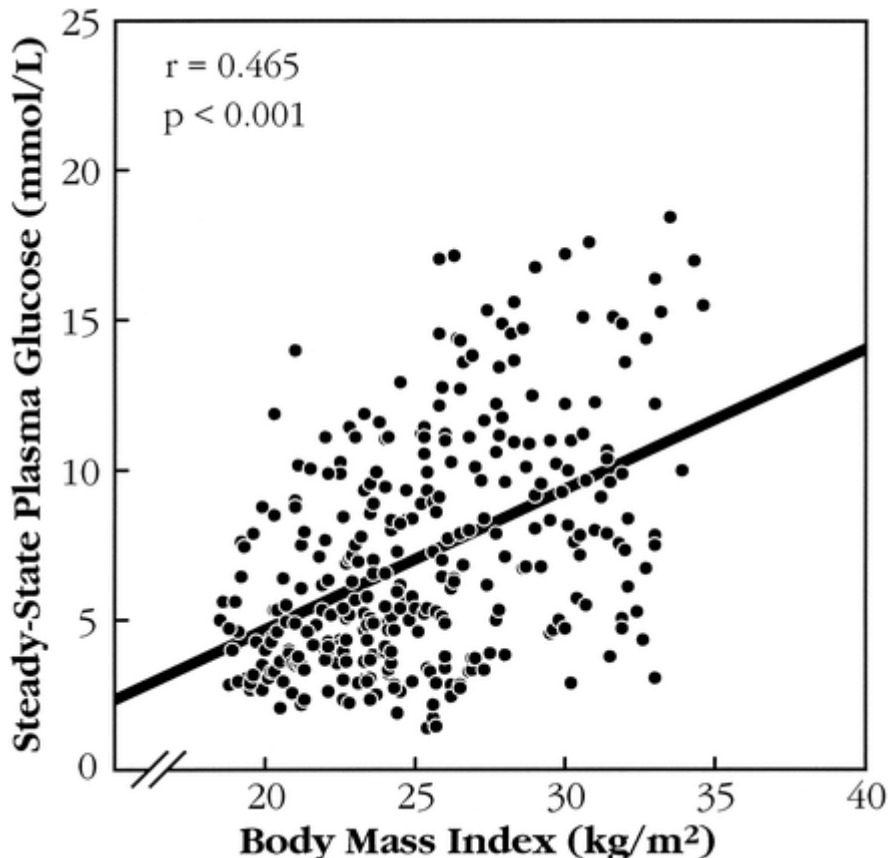
American adolescents have much higher insulin levels, about 3 times as high as Kitavans, and it’s much worse (higher) in obese adolescents.

# How to get and maintain good insulin sensitivity

Insulin sensitivity is highly related to being lean.

Kitavan men, with their low fasting insulin, had an average BMI of 20, the women, 18, compared to 26 for both men and women in Sweden.

Obesity is highly related to insulin resistance, which rises monotonically with increasing body mass index. See chart below. ([Source.](#))



[Lean mass, i.e. muscle mass, is associated with better insulin sensitivity. Low muscle mass is associated with insulin resistance, the metabolic syndrome, and diabetes.](#) There's even a negative feedback loop such that [insulin resistance means more muscle loss](#).

While the relation between carbohydrate intake and insulin resistance is [less clear](#), it is clear that [high sugar intake, especially of sugar-sweetened beverages \(soda and the like\) leads to obesity](#), which is in turn associated with insulin resistance.

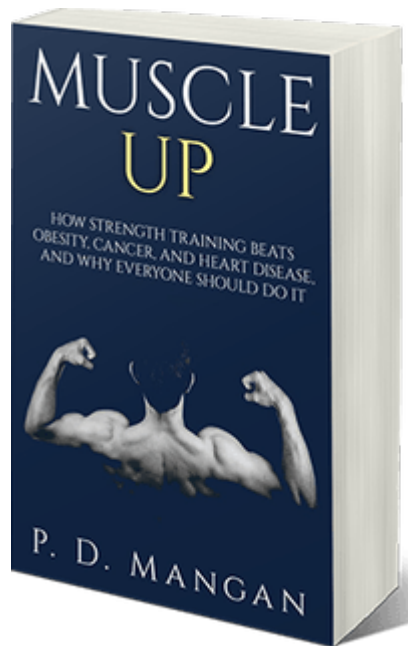
So, to maintain good insulin sensitivity and avoid the diseases of civilization and of aging:

- stay lean
- increase and maintain muscle mass
- avoid sugar.

You can do this by:

- eating a diet of whole foods, low in refined carbohydrates and sugar, and avoiding processed food
- lifting weights with intensity and consistency.

See my book, [Muscle Up](#), for more on how lifting weights is one of the healthiest things you can do.



PS: [Check out my Supplements Buying Guide for Men.](#)