	Baseline insulin		
	Low (%)	High (%)	R
	5.5	11.4	
mia	2.6	8.9	
	16.2	26.3	
	16.4	20.1	
	2.2	12.2	

[Fasting Insulin](#)

A blood test for fasting insulin can be one of the most important that you get.

It's important because it shows the degree of insulin resistance: the higher the number, the more insulin resistant. A very high number generally means type 2 diabetes. A number merely higher than normal can signify metabolic syndrome or pre-diabetes.

[Hyperinsulinemia, or too much insulin in the blood, is one of the main causes of chronic disease in the modern world](#), including heart disease, cancer, kidney disease, and of course diabetes.

Being sedentary leads to insulin resistance, and exercise can prevent it.

Insulin resistance is strongly associated with obesity, but normal weight people, especially those who are [skinny-fat](#), can have it too.

A diet high in sugar and refined carbohydrates, especially when combined with [seed oils](#), leads to hyperinsulinemia and insulin resistance.

My fasting insulin test

Doctors don't routinely test for fasting insulin; they normally do so only if they suspect diabetes.

I've had a few tests of fasting blood glucose that were high, in the range of 100 to 110. That's an odd result, because I eat a low-carbohydrate diet and lift weights, and have a body fat percentage that I don't know exactly but is likely <15%.

It's probably due to the so-called [dawn phenomenon](#), or physiological insulin resistance, which is normal. When on a low-carbohydrate diet, the liver can

become insulin resistant in order to make glucose for the rest of the body. To be honest, the causes of the dawn phenomenon are not fully elucidated, and experts give varying explanations. But the fact is that many people who eat low-carb report it.

Another reason for a high fasting glucose can be stress and cortisol; if you go for a blood draw on a morning when you're rushing off to work, for instance, that could elevate your glucose.

Not being clear on whether I should be concerned about my high fasting glucose, I decided to get a fasting insulin test from Life Extension.

Result: 2.9 µIU/ml. Normal range is 2.6 to 24.9. (On this scale, 1 µIU/ml = 6.9 pmol/L.) Ideal is <3. The odds ratio for prediabetes rises sharply with increased fasting insulin.

My result was close to ideal. I think I'm going to live another few years.

Should I remain concerned about my fasting glucose test? Probably not; my non-fasting glucose is actually lower than my fasting glucose, which would seem to indicate, together with my insulin test, that I have no risk of diabetes. It would indeed be strange if I did have increased risk, for the reasons mentioned above: low-carb diet, weight lifting, low body fat, plenty of muscle too.

If you do have a high fasting insulin, then you need to get to work. Below are relative risks of hypertension, high triglycerides, and diabetes based on fasting insulin levels. (Source.)

Relationship of Fasting Insulin Levels to Relative Risk for Multiple Metabolic Disorders

| Disorder	Baseline insulin Low (%)	High (%)	Relative risk	P value
Hypertension	5.5	11.4	2.04	.020
Hypertriglyceridemia	2.6	8.9	3.46	<.001
Low HDL-C	16.2	26.3	1.63	.012
High LDL-C	16.4	20.1	1.23	.223
Type 2 diabetes	2.2	12.2	5.62	<.001

Haffner SM et al. *Diabetes* 1992;41:715-722.

To lower a fasting insulin value, two interventions are important:

1. Avoid sugar and refined carbohydrates
2. Exercise.

You can order a fasting insulin test [through Life Extension](#); blood is drawn at no extra charge at LabCorp.

PS: Read my book, [Stop the Clock](#), for why insulin sensitivity is important.
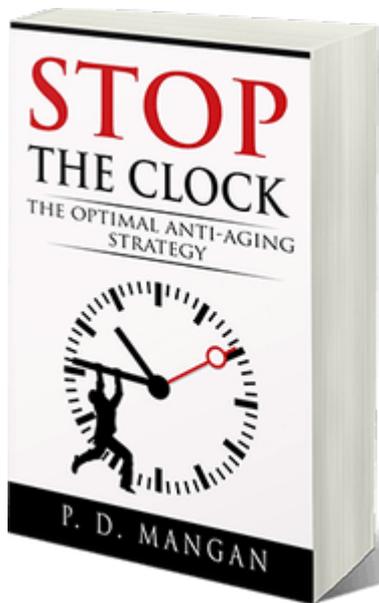
PPS: [Check out my Supplements Buying Guide for Men.](#)