

Do You Know Your Insulin Levels?

You have no doubt heard of insulin, probably in association with Type I or Insulin Dependent Diabetes Mellitus (IDDM). For those with IDDM, insulin is a life-saving hormone that must be supplemented, usually by injection, so that the body can properly metabolize sugars. For the rest of us, insulin is just as vital, and natural production by our pancreas allows for proper metabolism of blood sugar, or glucose.

However, insulin levels can rise too high, which is a more common problem for most of us. There is growing evidence that rising levels might be the first warning sign for impending metabolic syndrome, Type II (non-insulin dependent diabetes), and heart disease. Moreover, high insulin levels can alter hormones and lead to other symptoms as well. Do you know your levels?

To understand the importance of insulin levels, we must first understand its role. In a normal working pancreas, insulin is released in a slow drip, as well as in increased amounts every time glucose is detected in the bloodstream. Insulin's primary function is to couple with glucose. This glucose/insulin complex is then attracted to and accepted by an insulin receptor on each cell. Without this process, "energy" from food would never make it to the cellular level, where it is used as fuel. Without insulin, we can't survive.

But, again, as important as adequate insulin is, for the vast majority of us, it is an excess insulin level that likely leads to disease. This typically occurs in a progression of insulin resistance. Some people have a genetic tendency towards insulin resistance, and others develop the problem over time through poor lifestyle choices. Meals and snacks high in sugar lead to blood sugar spikes that are met with surges of insulin. Conversely, fasting can also lead to excessive insulin if your normal levels of insulin are not being met with glucose to process. Over time, cells are overexposed to insulin and they begin to "resist" its entry into the cells. Eventually, we start to see a rise in blood glucose levels as well, which is what we often use to diagnose metabolic syndrome or NIDDM (Non- Insulin Dependent Diabetes Mellitus).

For many, however, a rising insulin level can reveal a metabolic risk factor long before glucose levels begin to rise. This possibility of early detection for diabetes can greatly improve treatment outcomes. Not only can an elevated insulin level tell of us impending blood sugar risk, but the elevated level itself is also related to other disease, likely because of its little-understood relationship to other hormones. High insulin levels have been associated with acne, breast and colon cancers, depression and mood swings, and decreased estrogen levels. Furthermore, people with higher levels of insulin are more likely to report insomnia, infertility, irritable bowel, and migraines. Elevated insulin also signals the body to store glucose as fat, or triglycerides, which is why we often see easy weight gain and elevated triglycerides as metabolic issues progress.

For all of the above reasons, it is becoming more accepted and prudent to measure insulin levels, but unfortunately what the level should be is still in question. Serum insulin should be monitored in the fasting state, just as we assess fasting glucose, and it is measured on serum labs in microunits/milliliter (mcU/ml). A normal level on traditional labs is between 5-20. Some references suggest that we should have much tighter control on insulin and that levels should ideally be under 5.

Eventually, better serum levels for insulin will be determined, but even so, this is a screening test that is encouraged now. If for no other reason, an abnormal result could inspire you to make the lifestyle changes to prevent future illness, or to control present symptoms. Exercise has been shown to decrease insulin resistance. Diets high in fiber and protein result in less insulin resistance.

If your treating physician notices that you are trending towards metabolic syndrome with high insulin, he or she might decide to alter medications implicated to elevate insulin, including birth control pills, thiazide diuretics, and steroids. There are also simple nutrient and herb treatments to help decrease insulin resistance including berberine, Gymnena, fenugreek, bitter melon, and chromium. You may also want to have further hormone testing if your insulin levels are high.

Insulin is a vital hormone for sugar metabolism, hormone balance, and in realms that we don't yet understand. Serum levels of insulin are a diagnostic tool that we are just learning to appreciate in new ways. It is not yet a perfect science, but in a country where one in four of us will eventually be diagnosed with a metabolic illness early detection is always a good step.

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