Do you have Insulin Resistance?

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Here in the U.S., insulin resistance has reached epidemic proportions: [more than half of us are now insulin resistant](http://jama.jamanetwork.com/article.aspx?articleid=2434682). Insulin resistance is a hormonal condition that sets the stage throughout the body for inflammation and overgrowth, disrupts normal cholesterol and fat metabolism, and gradually destroys our ability to process carbohydrates.

Insulin resistance puts us at high risk for many undesirable diseases, [including obesity, heart disease, cancer, and type 2 diabetes](http://www.diagnosisdiet.com/is-fructose-bad-for-you-a-summary-of-the-research/).

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#### What is insulin resistance?

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#### Insulin resistance and the [brain](https://www.psychologytoday.com/basics/neuroscience)

In the brain, it’s a different story. The brain is an energy hog that demands a constant supply of glucose. Glucose can freely leave the bloodstream, waltz across the blood-brain barrier, and even enter most brain cells—no insulin required. In fact, the level of glucose in the cerebrospinal fluid surrounding your brain is always about [60% as high](http://www.nejm.org/doi/full/10.1056/NEJMc1111080#t=article) as the level of glucose in your bloodstream—even if you have insulin resistance—so, the higher your blood sugar, the higher your brain sugar.

Not so with insulin—the higher your blood insulin levels, the more difficult it can become for insulin to penetrate the brain. This is because the receptors responsible for escorting insulin across the blood-brain barrier can become resistant to insulin, restricting the amount of insulin allowed into the brain. While most brain cells don’t require insulin in order to absorb glucose, they do require insulin in order to process glucose. Cells must have access to adequate insulin or they can’t transform glucose into the vital cellular components and energy they need to thrive.

Despite swimming in a sea of glucose, brain cells in people with insulin resistance literally begin starving to death.

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Source: Suzi Smith, used with permission

Which brain cells go first? The hippocampus is the brain's memory center. Hippocampal cells require so much energy to do their important work that they often need extra boosts of glucose. While insulin is not required to let a normal amount of glucose into the hippocampus, these special glucose surges do require insulin, making the [hippocampus particularly sensitive to insulin deficits](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4253975/). This explains why declining memory is one of the earliest signs of Alzheimer’s, despite the fact that Alzheimer’s Disease eventually destroys the whole brain.

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You can’t do anything about your genes or how old you are—but you can certainly change how you eat. It's not about eating less fat, less meat, more fiber, or more fruits and vegetables. Changing the amount and type of carbohydrate you eat is where the money's at.

#### Three steps you can take right now to minimize your risk for Alzheimer’s Disease

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