BPA Linked to Insulin Resistance, Diabetes in Humans

A new study now links “safe” levels of Bisphenol-A (BPA) and the development of type-2 diabetes, insulin resistance, and other metabolic disorders. The Food and Drug Administration considers BPA safe at oral exposure levels of 50 micrograms per every kilogram of body weight every day. Published in the *Journal of the Endocrine Society,* researchers based at the University of Missouri wanted to determine if humans exposed to BPA exhibited the same symptoms as mice. Frederick vom Saal, an endocrinologist at the MU College of Arts and Science and co-author on the study, thinks this study provides a compelling argument that they might.

> *This exploratory study needs to be replicated because it suggests that BPA exposure at a dose considered safe by U.S. regulators could alter glucose-stimulated insulin responses in humans…Our study is an initial step toward investigating whether exposure to endocrine disrupting chemicals, such as BPA, contributes to insulin resistance and eventually Type 2 diabetes.”*

Methods

For this study, researchers gave non-diabetic men and postmenopausal women oral doses of the FDA’s safe level of BPA. They also administered a placebo. Those who were given the BPA had altered insulin responses. Those results occurred both when scientists used an oral glucose tolerance test and a hyperglycemic clamp.

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Bad News BPA

Most people know BPA is bad, even if they don't know why it's bad. In addition to insulin resistance, the chemical has been associated with inflammatory bowel disease, obesity, cancer, and a whole host of hormonal issues. It's been banned in the majority of children's products, but the alternatives to BPA aren't much better. A recently released Washington State University study found that BPA alternatives like bisphenol-S caused genetic abnormalities similar to those caused by the product they're replacing.

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Even something as simple as a cash register receipt can be a big deal. The BPA found in register receipts is unbounded, meaning it is loose and more readily absorbed through the skin. The Minnesota Pollution Control Agency conducted receipts tests in 2014 and found that the thermal paper used in 18 hospitality business had from 54–79 micrograms of BPA per square centimeter of paper. That's more than the accepted safe oral dose of BPA.

Death By a Thousand Cuts

At this point, it's plastics. There are several different types of plastic, and not all of them have inspired a cause for concern. Part of that can be attributed to a desire from good enough by plastics manufacturers and government officials. But good enough has so far led to a steady increase in mystery illnesses that linger and seriously impact a person's quality of life.

Sources:

- *BPA exposure in U.S.-approved levels may alter insulin*

response in non-diabetic adults – MU News Bureau
- *Experimental BPA Exposure and Glucose-Stimulated Insulin Response in Adult Men and* Women – Oxford Academic
- *How to Detox From Plastics and Other Endocrine Disruptors* – Organic Lifestyle Magazine
- *BPA in thermal paper* – Minnesota Pollution Control Agency