

Binge drinking increases risk of Type 2 diabetes by causing insulin resistance

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Binge drinking causes insulin resistance, which increases the risk of Type 2 diabetes, according to the results of an animal study led by researchers at the Diabetes Obesity and Metabolism Institute at the Icahn School of Medicine at Mount Sinai. The authors further discovered that alcohol disrupts insulin-receptor signaling by causing inflammation in the hypothalamus area of the brain.

The results are published in the January 30 issue of the journal *Science Translational Medicine*.

"Insulin resistance has emerged as a key metabolic defect leading to [Type 2 diabetes](#) and coronary artery disease (CAD)," said Christoph Buettner, MD, PhD, senior author of the study and Associate Professor of Medicine (Endocrinology, Diabetes and Bone Disease). "Someone who regularly binge drinks even once a week, over many years, may remain in an insulin resistant state for an extended period of time, potentially years," said Dr. Buettner.

In this study, researchers treated rats with alcohol for three consecutive days to simulate human [binge drinking](#). A control group received the same amount of calories. Once alcohol was no longer detectable in blood, [glucose metabolism](#) was studied through either glucose-tolerance tests or through controlled-insulin infusions. The rats treated with alcohol were found to have higher concentrations of plasma insulin than the control group, suggesting that insulin resistance may have been the cause of the impaired glucose tolerance.

High plasma insulin levels are a major component of the metabolic syndrome, a group of risk factors that occur together and increase the risk for Type 2 diabetes, [coronary artery disease](#), and stroke.

"Previously it was unclear whether binge drinking was associated with an increased risk for diabetes, since a person who binge drinks may also tend to binge eat, or at least eat too much. Our data show for the first time that binge drinking induces [insulin resistance](#) directly and can occur independent of differences in caloric intake," said Claudia Lindtner, MD, first author of the study and an Associate Researcher of Medicine, Endocrinology, Diabetes and Bone Disease at the Icahn School of Medicine.

Provided by The Mount Sinai Hospital

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