

## Study finds link between obesity, type 2 diabetes and neurodegeneration

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New research from Rhode Island Hospital found that obesity and Type 2 Diabetes Mellitus (T2DM) can contribute to mild neurodegeneration with features common with Alzheimer's disease (AD) – the first study to show that obesity can cause neurodegeneration. The study appeared in the *Journal of Alzheimer's Disease* Volume 15:1 (September 2008) .

In a study on animal models, lead researcher Suzanne de la Monte, MD, MPH, of Rhode Island Hospital, utilized chronic high fat diets to cause a two-fold increase in mean body weight. In these animal models, there was a marginally reduced mean brain weight and a significantly reduced mean brain weight/body weight ratio, providing evidence that obesity with T2DM is sufficient to cause mild global atrophy in the brain.

De la Monte says, "In essence, the brain shrinks and several biochemical and molecular abnormalities found in patients with AD, including brain insulin resistance, develop with chronic obesity and T2DM. However, the extent of the abnormalities in no way matches AD." Researchers note that the neuropathological abnormalities were mild and the associated brain insulin resistance could serve as a co-factor in the development and progression of AD.

Overall, the study found that that the effects of obesity and T2DM can essentially aggravate or contribute to the severity or progression of AD, but cannot be the sole cause of the condition. The findings suggest that strategies to reduce obesity and prevent or control T2DM could modify the clinical course of mild cognitive impairment and AD.

De la Monte also notes, "We don't know yet if these effects of T2DM/obesity are reversible with weight loss. However, we're fairly sure that the abnormalities are related to the T2DM that accompanies obesity and not just increased weight."

Source: Lifespan

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