

Brain glucose responses diminish with diabetes, obesity

November 20 2017



(HealthDay)—The rise of brain glucose levels is blunted during

hyperglycemia in adults with obesity and type 2 diabetes mellitus (T2DM), according to a study published online Oct. 19 in *JCI Insight*.

Janice J. Hwang, M.D., from the Yale School of Medicine in New Haven, Connecticut, and colleagues conducted ^1H magnetic resonance spectroscopy scanning of the occipital lobe to measure the change in intracerebral glucose levels during a two-hour hyperglycemic clamp (glucose ~ 220 mg/dl) among 25 participants (nine healthy participants, 10 obese participants without diabetes, and six patients with poorly controlled, insulin- and metformin-treated T2DM).

The researchers found that after they controlled for age and sex, despite similar plasma [glucose levels](#) at baseline and during hyperglycemia, the change in intracerebral glucose was significantly different across groups. Brain glucose increments were lower in participants with obesity and T2DM compared with lean participants. In addition, during hyperglycemia, the change in brain glucose was inversely correlated with plasma free fatty acid levels.

"These data suggest that obesity and poorly controlled T2DM progressively diminish brain [glucose](#) responses to hyperglycemia, which has important implications for understanding not only the altered feeding behavior, but also the adverse neurocognitive consequences associated with [obesity](#) and T2DM," conclude the authors.

Several authors disclosed financial ties to the pharmaceutical industry.

More information: [Abstract/Full Text](#)

Copyright © 2017 [HealthDay](#). All rights reserved.

Citation: Brain glucose responses diminish with diabetes, obesity (2017, November 20) retrieved

19 April 2024 from

<https://medicalxpress.com/news/2017-11-brain-glucose-responses-diminish-diabetes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.