

# Enzyme protects against obesity-related heart disease

June 8 2018, by Sanjay Mishra

---

Saturated fats found in high-fat diets increase the risk of heart failure. Now Manisha Gupte, PhD, Hind Lal, PhD, and colleagues show that the presence of an enzyme called GSK-3beta in the heart is crucial to protect against obesity-related cardiac dysfunction.

To better understand the role of GSK-3beta, the scientists generated mice in which the gene for the enzyme was "knocked out" in heart cells. When fed a high-fat diet, the [knockout mice](#) developed severe heart disease compared to normal controls even though there was no difference in obesity.

On a normal diet, the related enzyme GSK-3alpha compensated for the absence of GSK-3beta in the knockout mice. On a high-fat diet, however, this protection was lost. The absence of GSK-3beta led to excessive accumulation of beta-catenin, a signaling molecule associated with heart abnormalities.

These findings, published recently in the *International Journal of Cardiology*, point to the potential adverse cardiac consequences of chronic GSK-3 inhibition.

**More information:** Manisha Gupte et al. Cardiomyocyte-specific deletion of GSK-3 $\beta$  leads to cardiac dysfunction in a diet induced obesity model, *International Journal of Cardiology* (2018). [DOI: 10.1016/j.ijcard.2018.01.013](https://doi.org/10.1016/j.ijcard.2018.01.013)

Provided by Vanderbilt University

Citation: Enzyme protects against obesity-related heart disease (2018, June 8) retrieved 18 April 2024 from <https://medicalxpress.com/news/2018-06-enzyme-obesity-related-heart-disease.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.