

# Renal denervation ups insulin sensitivity in preclinical model

August 12 2016

---



(HealthDay)—Inhibiting the sympathetic nervous system (SNS) by renal

denervation (RDN) improves insulin sensitivity ( $S_I$ ) in obese canines, according to a study published in the August issue of *Diabetes*.

Malini S. Iyer, Ph.D., from the Cedars-Sinai Diabetes and Obesity Research Institute in Los Angeles, and colleagues measured  $S_I$  using a euglycemic hyperinsulinemic clamp before and after six weeks of a high-fat diet (w6-HFD) and either RDN (HFD+RDN) or sham surgery (HFD+Sham).

The researchers found that HFD induced insulin resistance in the liver at w6-HFD in sham and in HFD+RDN. The insulin resistance persisted in sham animals, but RDN completely normalized hepatic  $S_I$  in fat-fed dogs; reduction in hepatic gluconeogenic genes including G6Pase, PEPCK, and FOXO1 was observed. Hepatic gluconeogenesis was down-regulated by RDN, primarily by up-regulation of liver-X-receptor via the natriuretic peptide pathway.

"In conclusion, bilateral RDN completely normalizes hepatic  $S_I$  in obese canines," the authors write. "These preclinical data implicate a novel mechanistic role for the renal nerves in the regulation of insulin action specifically at the level of the liver and show that the renal nerves constitute a putative new therapeutic target to counteract [insulin resistance](#)."

**More information:** [Abstract](#)  
[Full Text \(subscription or payment may be required\)](#)

Copyright © 2016 [HealthDay](#). All rights reserved.

Citation: Renal denervation ups insulin sensitivity in preclinical model (2016, August 12)  
retrieved 7 May 2024 from  
<https://medicalxpress.com/news/2016-08-renal-denervation-ups-insulin-sensitivity.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.