

Sedentary lifestyle and sugary diet more detrimental to men, study finds

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A new study from the University of Missouri School of Medicine is the first evidence in humans that short-term lifestyle changes can disrupt the response to insulin of blood vessels. It's also the first study to show men and women react differently to these changes.

Vascular [insulin](#) resistance is a feature of obesity and type 2 diabetes that contributes to vascular disease. Researchers examined vascular insulin resistance in 36 young and healthy men and women by exposing them to 10 days of reduced [physical activity](#), cutting their step count from 10,000 to 5,000 steps per day. The participants also increased their sugary beverage intake to six cans of soda per day.

"We know that incidence of insulin resistance and cardiovascular disease is lower in premenopausal women compared to men, but we wanted to see how men and women reacted to reduced physical activity and increased sugar in their diet over a short period of time," said Camila Manrique-Acevedo, MD, associate professor of medicine.

The results showed that only in men did the [sedentary lifestyle](#) and high sugar intake cause decreased insulin-stimulated leg blood flow and a drop in a protein called adropin, which regulates [insulin sensitivity](#) and is an important biomarker for [cardiovascular disease](#).

"These findings underscore a sex-related difference in the development of vascular insulin resistance induced by adopting a lifestyle high in sugar and low on exercise," said Manrique-Acevedo.

"To our knowledge, this is the first evidence in humans that vascular insulin resistance can be provoked by short-term adverse lifestyle changes, and it's the first documentation of sex-related differences in the development of vascular insulin resistance in association with changes in adropin levels."

Manrique-Acevedo said she would next like to examine how long it takes to reverse these vascular and metabolic changes and more fully assess the impact of the role of sex in the development of vascular insulin resistance.

The study was recently published in the journal *Endocrinology*.

More information: James A Smith et al, Young Women Are Protected Against Vascular Insulin Resistance Induced by Adoption of an Obesogenic Lifestyle, *Endocrinology* (2022). [DOI: 10.1210/endocr/bqac137](https://doi.org/10.1210/endocr/bqac137)

Provided by University of Missouri

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