

Gene variant identified as a heart disease risk factor for women

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When it comes to heart disease, Dr. Ross Feldman says women are often in the dark. Historically, it was thought that heart disease was a men's-only disease, however, data has shown that post-menopausal women are just as likely as men to get heart disease and are less likely to be adequately diagnosed and treated. New research from Western University published online this week in the *British Journal of Clinical Pharmacology* brings to light a genetic basis for heart disease in women and helps to identify which women are more prone to heart disease.

The study, led by Dr. Feldman, a clinical pharmacologist at London Health Sciences Centre and a [researcher](#) at the Schulich School of Medicine & Dentistry's Robarts Research Institute, identifies a common gene variant in women for the G-protein coupled estrogen receptor 30 (GPER) that makes them significantly more likely to have high blood pressure, the single biggest risk factor for heart attack and stroke.

GPER, when functioning normally, is activated in part by the hormone estrogen and has been previously shown to relax the blood vessels, and in turn, lower blood pressure. This new study demonstrates that many women have a less functional form of GPER, increasing their risk of developing high blood pressure.

The research looked at the effect of expression of the GPER gene variant versus the normal GPER gene in the vascular smooth muscle cells as well as its association with blood pressure in humans. It also looked at the frequency of the gene variant in a group of women

referred a tertiary care clinic at London Health Sciences Centre. The study found that women, but not men, carrying the GPER [gene variant](#) had higher blood pressure, and almost half of women who attended a hard-to-treat [blood pressure](#) clinic, where Dr. Feldman is a physician, expressed the variant. Twice as many women than men with hard to treat hypertension carried the gene.

"This is one step in understanding the effects of estrogen on heart disease, and understanding why some women are more prone to heart attack and stroke than others," Dr. Feldman said. "Our work is a step forward in developing approaches to treating [heart disease](#) in this under-appreciated group of patients."

Video of Dr. Feldman discussing the research:

Provided by University of Western Ontario

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