

# Why men are more at risk of diseases caused by blood clots than women

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Being male increases your risk of diseases caused by the inappropriate formation of a blood clot (a process known as thrombosis), such as heart attack and stroke, but the reasons for this are not completely understood. However, Ethan Weiss and colleagues at the University of California, San Francisco, have used a mouse model of thrombosis to shed new light on this matter.

Thrombosis-related proteins are made in the liver, where expression of the genes containing the information needed for their generation is regulated by growth hormone (GH), which is secreted in a sex-specific manner — males secrete GH in a pulsatile fashion, whereas females secrete GH continuously. In this study, GH-deficient mice were protected from thrombosis in the model of disease.

When female GH-deficient mice were given pulsatile GH (to mimic the manner in which GH is secreted in males) their ability to form blood clots resembled male mice. Conversely, when male GH-deficient mice were given continuous GH (to mimic the manner in which GH is secreted in females) their ability to form blood clots resembled female mice.

The authors therefore conclude that sex-specific patterns of GH release mediate the gender-associated differences observed in susceptibility to diseases caused by inappropriate thrombosis, information that they hope will be of help in the development of sex-specific treatments for thrombosis.

Source: Journal of Clinical Investigation

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