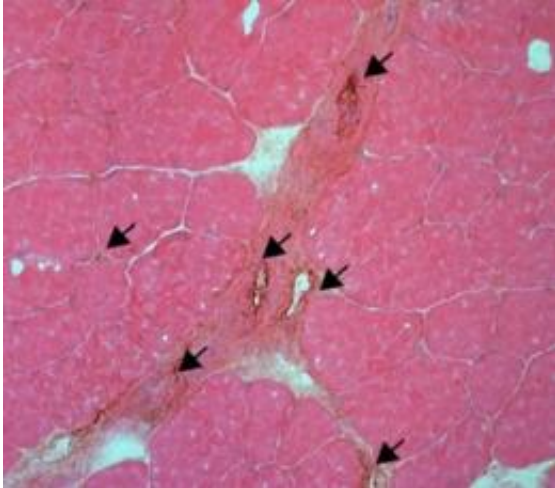


Gender-biased heart damage

January 13 2010



Androgen treatment repaired (arrows) damaged vessels in castrated mice. Credit: Sieveking, D.P., et al. 2010. *J. Exp. Med.* doi:10.1084/jem.20091924

A man's male hormones may ward off heart damage by helping vessels around the heart regenerate, suggest Australian researchers in a report posted January 13 in the *Journal of Experimental Medicine*.

While studies have shown that estrogen helps [blood vessels](#) regenerate, both in the uterus after menstruation and around the heart after wear and tear, little is known about whether or not men make up for a lack of the female hormone. Some researchers have theorized that this disparity accounts for why men tend to suffer worse heart attacks more often and earlier in life than women. However, Sieveking and colleagues find that this trend may be due to a drop in androgens, a collective term for male

hormones, as men age.

Cells derived from the umbilical cord of a human male fetus responded to androgens by moving and multiplying—activities associated with new vessel growth. Furthermore, castrated mice, which produced fewer androgens, fared poorly after the researchers inflicted vessel damage intended to resemble injuries that occur during a [heart attack](#) or a stroke. And treating the castrated mice with androgens hastened their recovery.

Therefore, the authors suggest that androgen replacement therapy might one day be used to treat men at risk for [heart disease](#). The therapy currently receives attention for possibly inducing other rejuvenating benefits, such as increased energy and muscle mass. However, it's been approached with caution as androgens have been shown to assist in [tumor growth](#) in prostate cancer—perhaps by stimulating tumor-promoting vessel growth.

More information: Sieveking, D.P., et al. 2010. J. Exp. Med. [doi:10.1084/jem.20091924](https://doi.org/10.1084/jem.20091924)

Provided by Rockefeller University

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