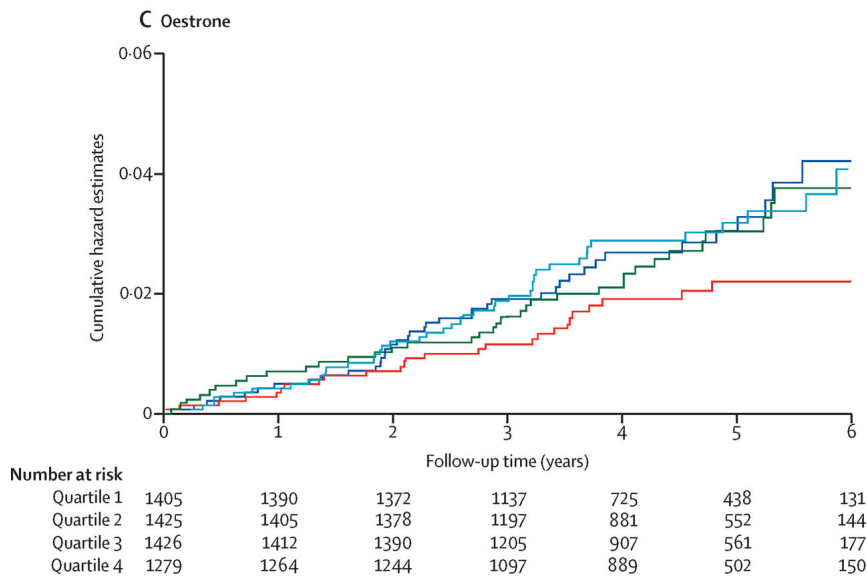
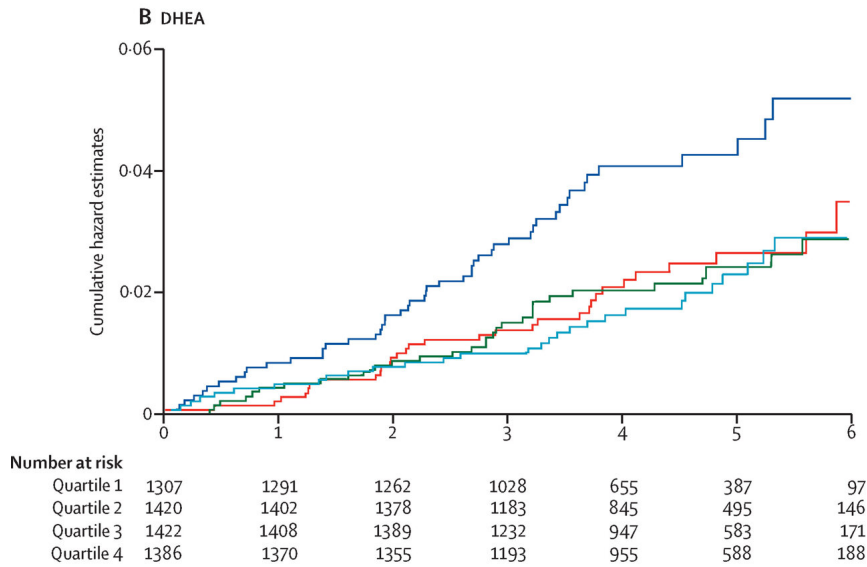
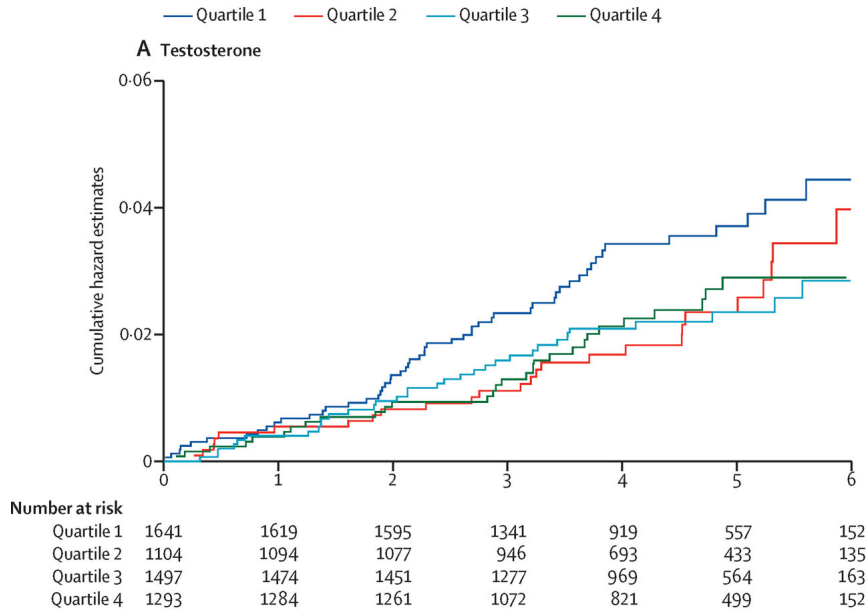


# **Low testosterone levels in women associated with doubled risk of cardiac events**

February 8 2022

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Cumulative hazard estimates for major adverse cardiovascular events by quartiles of sex steroid concentrations in the blood Cumulative hazard estimates provided for testosterone (A), DHEA (B), and oestrone (C).

DHEA=dehydroepiandrosterone. Credit: DOI: 10.1016/S2666-7568(22)00001-0

A Monash University study has challenged the view that testosterone is bad for women's hearts, showing that for women aged over 70, having low testosterone levels actually doubles the risk of a cardiac event.

Researchers say the findings warrant further research into the potential benefits of testosterone therapies for older [women](#).

Before menopause, women's ovaries are the primary source of testosterone circulating in the blood. After menopause, because the ovaries stop functioning, blood testosterone is made from the hormone DHEA which comes from adrenal glands.

Using data captured in the longitudinal ASPREE (ASPirin in Reducing Events in the Elderly) randomized trial, this study, led by Susan Davis, Professor of women's health in the Monash School of Public Health and Preventive Medicine, measured blood testosterone, DHEA and estrogen concentrations in women over 70 with no prior CVD events. Women who had low blood testosterone and DHEA concentrations but not low estrogen, had twice the risk of a cardiovascular event than women with higher testosterone blood levels.

The findings are now published in *The Lancet Healthy Longevity* journal.

Blood testosterone levels decrease with age in women from their early

20s but do not change significantly as a result of natural menopause. However, after the age of 70 years, women have blood testosterone levels similar to those seen in young premenopausal women.

Professor Davis says the findings suggest there might be some advantage to older women having high testosterone levels.

"We have shown in past studies that testosterone therapy lowers blood pressure and increases blood flow in arteries. So our hypothesis was that having higher testosterone may protect [older women](#) from cardiovascular disease, which is contrary to the conventional belief that testosterone is bad for the cardiovascular system," Professor Davis said.

"We need to stop thinking about testosterone as a 'male' hormone that is bad for women. It is an important human hormone for both women and men.

"Further research is needed to better understand testosterone action in [blood](#) vessels and the heart, including whether treating postmenopausal women with low [testosterone](#) protects against [cardiovascular disease](#)."

The Sex Hormones in Older Women (SHOW) study incorporated results from 9180 Australian women, aged at least 70 years, with no prior CVD events of which 5535 were included in this analysis with a median age of 74 years.

**More information:** Rakibul M Islam et al, Associations between blood sex steroid concentrations and risk of major adverse cardiovascular events in healthy older women in Australia: a prospective cohort substudy of the ASPREE trial, *The Lancet Healthy Longevity* (2022).

[DOI: 10.1016/S2666-7568\(22\)00001-0](https://doi.org/10.1016/S2666-7568(22)00001-0)

Provided by Monash University

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