Could higher levels of testosterone hold the key to slower aging?

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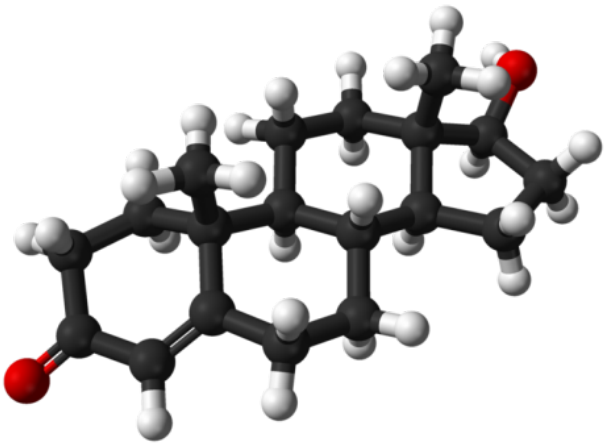

Ball-and-stick model of the testosterone molecule, $C_{19}H_{28}O_2$, as found in the crystal structure of testosterone monohydrate. Credit: Ben Mills/Wikipedia

A new study of older men carried out by The University of Western Australia has found there is a link between men who have higher levels of the sex hormone estradiol, produced from testosterone, and slower ageing.

The study is the largest of its kind to look at the relationship between sex hormones and ageing in older men.

Testosterone plays a critical role in male sexual functioning, including modulation of libido, erectile function and production of sperm. It is also converted to estradiol, with higher levels of estradiol associated with longer telomeres, which are proteins that protect chromosomes from damage.

The researchers collected data from 2913 men in Perth aged between 70 and 89 and measured both testosterone and estradiol levels in their blood. The length of telomeres in their DNA from white cells was also measured.

The lead scientist of the study, Professor Bu Yeap from the UWA Medical School, said the researchers found a correlation between higher estradiol levels and longer telomeres. He said the protection of chromosomes from telomeres that were longer slowed the ageing process.

"The research suggests higher testosterone levels in older men, which is then converted to estradiol, might sustain youthfulness," Professor Yeap said.

"We know from the study that testosterone, estradiol and telomeres are linked, however further research is needed to explore how this relationship works.

"Testosterone is converted to estradiol but it's still unclear what determines the level of production."

Professor Yeap said other factors should also be considered in estradiol levels such as physical activity and body composition.

The research has been supported by National Health and Medical Research Council of Australia and is published in *Clinical Endocrinology*.

More information: Bu B. Yeap et al. Cross-sectional associations of sex hormones with leucocyte telomere length, a marker of biological age, in a community-based cohort of older men, *Clinical Endocrinology* (2018). DOI: 10.1111/cen.13918

Provided by University of Western Australia