

Sex hormone levels in older men are linked to lower biological age

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Older men tend to have lower biological age if they have higher levels of sex hormones, particularly the estradiol form of estrogen, a large new study from Australia finds. The study results will be presented on Sunday at ENDO 2019, the Endocrine Society's annual meeting in New Orleans, La., and appear online in the journal *Clinical Endocrinology*.

"As populations grow older and sicker, identifying pathways to healthier aging is important," said the study's lead investigator, Bu Yeap, M.B.B.S., Ph.D., a professor at the University of Western Australia's medical school in Perth. "Sex hormones such as testosterone and its active metabolite, estradiol, may reflect or possibly determine biological youth."

Some people have a lower or higher [biological age](#) than their actual chronological age, and slower biological aging is a measure of a person's ability to remain healthier and live longer. One way to measure biological age is the length of telomeres, which are DNA-protein complexes located at the ends of chromosomes that shorten with age, leading to cellular dysfunction. Past research shows that stress, smoking, obesity, lack of exercise and poor diet can also shorten telomeres, but the effect of sex hormones on telomeres was uncertain, Yeap said.

The researchers studied data from 2,913 men aged 70 to 89 years who lived in the community and not long-term-care facilities. The investigators measured telomeres in DNA from [white blood cells](#) using a molecular biology method called quantitative polymerase chain reaction. They measured [sex hormones](#) taken from blood samples using an accurate technique called [mass spectrometry](#).

The research team found that the higher the estradiol level, the longer the telomeres were likely to be, indicating lower biological age. This remained true even after the researchers adjusted for actual age, lifestyle factors and existing medical conditions. Yeap cautioned, however, that their study results show only an association and not necessarily a cause.

"Our finding will facilitate future studies aimed at preserving health in the growing demographic of aging men," Yeap said. "If future research finds that sex hormone exposure modulates biological aging in men, we would need to test the effect on biological age of giving men

testosterone, which is then converted to estradiol. The optimal blood level of [estradiol](#) in [older men](#) also would need to be determined."

Provided by The Endocrine Society

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