

# Elevated testosterone levels may raise risk of uterine fibroids

December 15 2015

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Women who have high levels of both testosterone and estrogen in midlife may face a greater risk of developing benign tumors on the uterus called uterine fibroids than women with low levels of the hormones, according to a new study published in the *Endocrine Society's Journal of Clinical Endocrinology & Metabolism*.

Three out of four women develop [uterine fibroids](#) by age 50, said one of the study's authors, Jason Y.Y. Wong, Sc.D, of Stanford University School of Medicine. Women who are African American or are overweight face a greater risk of developing uterine fibroids. [Fibroids](#) can contribute to irregular bleeding, infertility, pelvic pain, recurrent pregnancy loss and other reproductive complications. The first-line treatment is undergoing a hysterectomy, and there are few other treatment options currently available.

Testosterone is one of a group of sex hormones called androgens. While testosterone is typically associated with men, women also naturally produce small amounts of the [hormone](#).

"Our research suggests women undergoing the menopausal transition who have higher testosterone levels have an increased risk of developing fibroids, particularly if they also have higher estrogen levels," Wong said. "This study is the first longitudinal investigation of the relationship between androgen and estrogen levels and the development of uterine fibroids."

The 13-year longitudinal study examined hormone levels and the incidence of uterine fibroids in women participating in the Study of Women's Health around the Nation (SWAN). Among the 3,240 women enrolled at the beginning of the study, 43.6 percent completed the follow-up visits. During nearly annual visits, participants had their blood tested for estrogen and androgen levels. In addition, the women were asked whether they had been diagnosed with or treated for uterine fibroids.

Among the participants, 512 women reported having a single incidence of fibroids, and an additional 478 women had recurrent cases. Participants who had high levels of testosterone in the blood were 1.33 times more likely to develop a single incidence of fibroids than women who had low levels of testosterone. Women who had high levels of testosterone and [estrogen](#) faced an even greater risk. Although women with high levels of both hormones were more likely to report a single incidence of fibroids, they also were less likely to have a recurrence than [women](#) with low levels of the hormones.

"Our findings are particularly interesting because [testosterone](#) was previously unrecognized as a factor in the development of uterine fibroids," said another study author, Jennifer S. Lee, MD, PhD, of Stanford University School of Medicine and Veterans Affairs Palo Alto Health Care System in Palo Alto, CA. "The research opens up new lines of inquiry regarding how fibroids develop and how they are treated. Given that managing uterine fibroids costs an estimated \$34.4 billion in annual medical expenditures nationwide, it is important to identify new ways to better treat this common condition."

**More information:** Circulating Sex Hormones and Risk of Uterine Fibroids: Study of Women's Health Across the Nation (SWAN), [dx.doi.org/10.1210/jc.2015-2935](http://dx.doi.org/10.1210/jc.2015-2935)

Provided by The Endocrine Society

Citation: Elevated testosterone levels may raise risk of uterine fibroids (2015, December 15)  
retrieved 4 May 2024 from

<https://medicalxpress.com/news/2015-12-elevated-testosterone-uterine-fibroids.html>

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