

# Testosterone tied to incidence, progression of metabolic syndrome

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Testosterone is associated with a greater risk for development and progression of metabolic syndrome, particularly in transmasculine individuals, according to a study [published](#) online July 2 in *JAMA*

*Network Open.*

Leila Hashemi, M.D., from the David Geffen School of Medicine in Los Angeles, and colleagues assessed whether gender-affirming hormone treatment (GAHT) by proxy steroid is associated with development and progression of metabolic syndrome. The analysis included 645 transgender participants and 645 matched cisgender participants.

The researchers found that metabolic syndrome z-scores changed significantly over time and differed significantly across groups. Transmasculine participants had the greatest percentage increase in mean z-scores after versus before the index GAHT date (298.0%), followed by cisgender females (108.3%), cisgender males (49.3%), and transfeminine persons (3.0%).

"In both cisgender and transgender individuals, [estradiol](#) was associated with reduced metabolic syndrome risk, whereas [testosterone](#) was associated with increased risk. These findings are relevant for the management of metabolic [syndrome](#) risk factors in [cisgender](#) and transgender individuals," the authors write.

"It is also important to note that exogenous sex hormones are not equivalent to endogenous sex hormones, nor is the body in which they operate the same as one never exposed to the opposing sex hormones."

**More information:** Leila Hashemi et al, Gender-Affirming Hormone Treatment and Metabolic Syndrome Among Transgender Veterans, *JAMA Network Open* (2024). [DOI: 10.1001/jamanetworkopen.2024.19696](#)

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