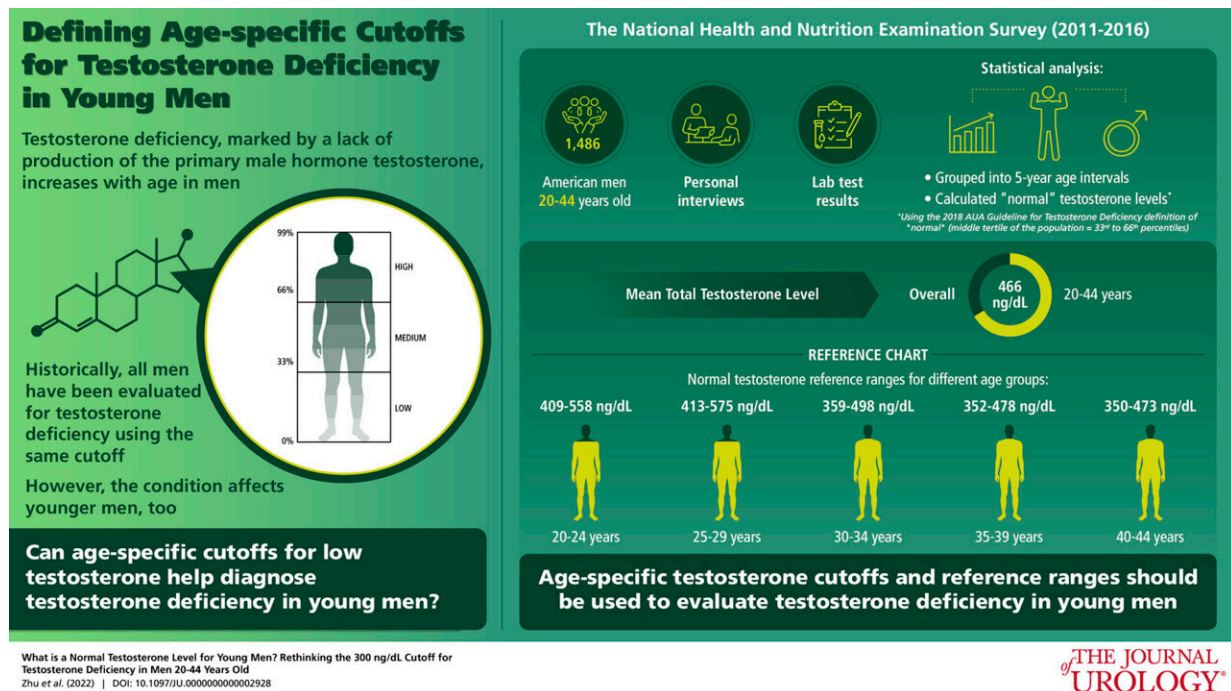


# Standard threshold for low testosterone doesn't apply to younger men, study finds

October 28 2022



Graphical abstract. Credit: *Journal of Urology* (2022). DOI: 10.1097/JU.0000000000002928

The standard cutoff point for low testosterone levels may not be accurate for men in their mid-forties and younger, reports a study in the *Journal of Urology*.

"Young men have different testosterone reference ranges than older

men," comments lead author Alex Zhu, DO, of University of Michigan, Ann Arbor. "Our findings suggest we should be using age-specific cutoffs when assessing testosterone levels in younger men."

## **Different thresholds for low testosterone in younger men**

Patients with testosterone deficiency have low levels of the male sex hormone testosterone, with related symptoms such as reduced sex drive and erectile dysfunction. Testosterone deficiency is typically regarded as a disease affecting elderly men. However, urologists are seeing a growing number of [younger men](#) with concerns related to testosterone deficiency—often with less-specific symptoms such as low energy and fatigue.

Diagnosing low testosterone in young men poses other challenges as well. The standard cutoff point for low testosterone is 300 nanograms per deciliter (300 ng/dL). However, that threshold is based on testosterone studies of [older men](#), and overlooks the normal age-related decline in testosterone levels.

To develop a set of age-specific cutoff points, Dr. Zhu and colleagues from the University of Michigan Department of Urology analyzed data on nearly 1,500 men, aged 20 to 44 years, from a nationwide health study (the National Health and Nutrition Examination Survey, or NHANES). The study excluded men on [hormone therapy](#) or those with a history of testicular cancer or testicular removal (orchiectomy). Because of normal daily fluctuations in testosterone levels, the analysis used only morning testosterone measurements.

The range of testosterone levels was evaluated in five-year age groups. The middle tertile (one-third) of the testosterone level distribution in each five-year age group was defined as the normal range. Values below this range were used to calculate age-specific thresholds for [low](#)

## [testosterone levels.](#)

As expected, the testosterone levels decreased at older ages. Age specific cutoff points for low testosterone ranged from 409 ng/dL at age 20 to 24 years to 350 ng/dL at age 40 to 44 years—substantially higher than the standard cutoff point. Each one-year increase in age was associated with a 4.3 ng/dL decrease in testosterone level.

### **Moving away from the 'one size fits all approach'**

The study provides "the first evaluation of normative, population-based testosterone levels for young men in the United States," according to the authors. They note that their study reflects the racial/ethnic diversity of the US population, and doesn't exclude men with health conditions other than testicular cancer or prior orchiectomy.

"In today's age of personalized medicine, clinicians can now use age-specific testosterone levels to evaluate young men instead of relying on a 'one size fits all' approach," Dr. Zhu and coauthors write. They highlight the need for further studies, including how to interpret age-specific cutoffs in the context of testosterone deficiency symptoms. The researchers also note that the age-specific cutoffs may affect [insurance policies](#)—which sometimes do not cover testosterone therapies unless the [testosterone](#) level is below the standard 300 ng/dL cutoff.

**More information:** Alex Zhu et al, What Is a Normal Testosterone Level for Young Men? Rethinking the 300 ng/dL Cutoff for Testosterone Deficiency in Men 20-44 Years Old, *Journal of Urology* (2022). [DOI: 10.1097/JU.0000000000002928](https://doi.org/10.1097/JU.0000000000002928)

Provided by Wolters Kluwer Health

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