



Evaluate **testosterone deficiency** with laboratory insights

It is estimated that approximately 35% of men age 45 or older have hypogonadism¹



2 in 3 patients with hypogonadism present with one or more of the following symptoms²

- Decrease in ability to perform sexually
- Decrease in sexual desire or libido
- Physical exhaustion or lacking vitality
- Decline in general feeling of well-being



Fewer than 5% of affected patients receive treatment for hypogonadism.² The

Endocrine Society recommends testosterone therapy in hypogonadal men to induce and maintain secondary sex characteristics and correct symptoms of testosterone deficiency.³

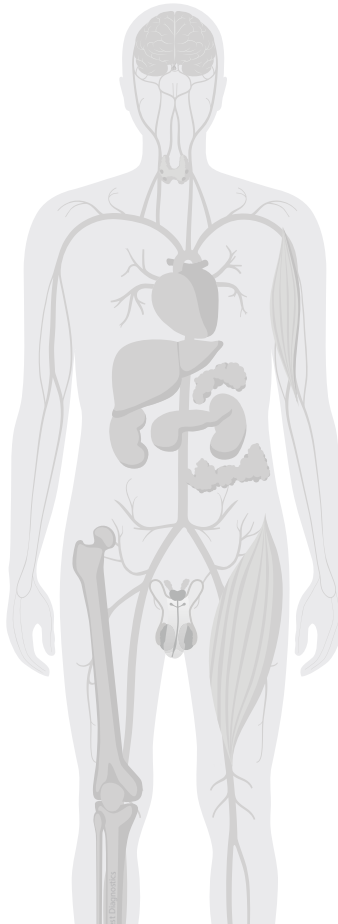


Hypogonadism is a crucial factor to consider in patients

with chronic disease such as diabetes, cardiovascular disease, and hypertension.



30%-50% of men with obesity or type 2 diabetes have hypogonadism.¹



Access the accurate, actionable insights you need to support complex clinical decision making

Quest Diagnostics is committed to making it easier for you to identify the tests you need, understand the diagnostic subtleties of hypogonadism in men, and make more informed decisions faster and with greater confidence.

Guideline-supported testing recommendations



LC-MS/MS provides a more precise and accurate measurement of TT at lower concentrations and is the recommended assay in Endocrine Society guidelines.³

Quest Diagnostics offers a Total Testosterone LC-MS/MS assay that is certified by the CDC Laboratory/Manufacturer Hormone Standardization (HoSt) Program, which is the assay recommended by the Endocrine Society for healthy men older than 18.^{3,4}

Guidelines recommend measuring FT by an equilibrium dialysis method.³

Diagnosis of hypogonadism (guideline-indicated, preferred)³

15983	Testosterone, Total, MS ^{a,b}	Diagnose hypogonadism
18994	Testosterone, Free ^{a,b}	Diagnose based on measurements of total testosterone, SHBG, and albumin
36170	Testosterone, Free (Dialysis) and Total, MS ^{a,b}	Diagnose androgen deficiency when TT is near lower limit of normal or alteration in SHBG is suspected

Table 3. Reference ranges for men

Analyte	Age	Reference range
TT	Adult	250-1100 ng/dL ^a
FT	18-69 years	46.0-224.0 pg/mL
	70-89 years	6.0-73.0 pg/mL

^a Quest Diagnostics assays for TT have a reportable lower limit of 250 ng/dL. The reference range is based on the 2.5th percentile of a distribution of study results in a healthy population using specimens from healthy men across the age spectrum, including individuals up to age 90. For comparison, the lower limit of normal TT harmonized to the CDC standard for TT in healthy nonobese young men is 264 ng/dL (9.2 nmol/L).³

^b Laboratory tests can provide 3 measurements of testosterone: free, bioavailable, and total. These measurements incorporate the 3 major forms of circulating testosterone: unbound (free), weakly bound to albumin, and tightly bound to SHBG. TT is the total concentration of bioavailable (free and weakly bound testosterone) and SHBG-bound testosterone.

Test interpretation

Quest Diagnostics Total Testosterone reference range (Table 3) is based on the 2.5th percentile of a distribution of study results in a healthy population using specimens from men across the age spectrum, including individuals up to age 90.

Access accurate, actionable testing for endocrine disorders

Contact your Quest sales representative today to learn more about how we can help make diagnosing and managing complex endocrinology disorders easier.

References: 1. Endocrine Society. Hypogonadism in men. <https://www.endocrine.org/patient-engagement/endocrine-library/hypogonadism>. Published January 24, 2022. Accessed March 14, 2023. 2. Mulligan T, Frick MF, Zuraw QC, Stemhagen A, McWhirter C. Prevalence of hypogonadism in males aged at least 45 years: the HIM study. *Int J Clin Pract*. 2006;60(7):762-769. doi:10.1111/j.1742-1241.2006.00992.x 3. Bhasin S, Brito JP, Cunningham GR, et al. Testosterone therapy in men with hypogonadism: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab*. 2018;103(5):1715-1744. doi:10.1210/je.2018-00229 4. Centers for Disease Control and Prevention. HoSt/VDSCP certified participants. Accessed April 4, 2024. https://www.cdc.gov/labstandards/csp/pdf/hs/CDC_Certified_Testosterone_Assays-508.pdf

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