

## Format:

Abstract ▾

## Send to ▾

## Full text links



*Maturitas*. 2010 May;66(1):16-22. doi: 10.1016/j.maturitas.2010.01.009. Epub 2010 Feb 13.

## Testosterone and the aging male: to treat or not to treat?

Bain J<sup>1</sup>.

### Author information

### Abstract

It is well-established that total testosterone (TT) in men decreases with age and that bioavailable testosterone (bio-T) falls to an even greater extent. The clinical relevance of declining androgens in the aging male and use of testosterone replacement therapy (TRT) in this situation is controversial. Most studies have been short term and there are no large randomized placebo-controlled trials. Testosterone has many physiological actions in: muscles, bones, hematopoietic system, brain, reproductive and sexual organs, adipose tissue. Within these areas it stimulates: muscle growth and maintenance, bone development while inhibiting bone resorption, the production of red blood cells to increase hemoglobin, libido, enhanced mood and cognition, erectile function and lipolysis. Anabolic deficits in aging men can induce: frailty, sarcopenia, poor muscle quality, muscle weakness, hypertrophy of adipose tissue and impaired neurotransmission. The aging male with reduced testosterone availability may present with a wide variety of symptoms which in addition to frailty and weakness include: fatigue, decreased energy, decreased motivation, cognitive impairment, decreased self-confidence, depression, irritability, osteoporotic pain and the lethargy of anemia. In addition, testosterone deficiency is also associated with type-2 diabetes, the metabolic syndrome, coronary artery disease, stroke and transient ischemic attacks, and cardiovascular disease in general. Furthermore, there are early studies to suggest that TRT in men with low testosterone levels may improve metabolic status by: lowering blood sugar and HbA1C in men with type-2 diabetes, reducing abdominal girth, ameliorating features of the metabolic syndrome, all of which may be protective of the cardiovascular system. The major safety issue is prostate cancer but there is no evidence that supports the idea that testosterone causes the development of a de novo cancer. So on balance in a man with symptoms of hygonadism and low or lowish levels of testosterone with no evidence of prostate cancer such as a normal PSA a therapeutic (4-6 months) trial of TRT is justified. Treatment and monitoring of this duration will determine whether the patient is responsive.

Copyright 2010 Elsevier Ireland Ltd. All rights reserved.

PMID: 20153946 DOI: [10.1016/j.maturitas.2010.01.009](https://doi.org/10.1016/j.maturitas.2010.01.009)

[Indexed for MEDLINE]



## Save items

★ Add to Favorites ▾

## Similar articles

**Review** Testosterone suppler [J Am Geriatr Soc. 2003]

**Review** Hypogonadism in the man with e [Curr Urol Rep. 2005]

**Review** Testosterone treatment in the ag [Swiss Med Wkly. 2012]

**Review** Testosterone replacemer [Curr Urol Rep. 2007]

**Review** [Testosterone substitution [Arch Esp Urol. 2002]

See reviews...

See all...

### Cited by 12 PubMed Central articles

Testosterone and C [Open Cardiovasc Med J. 2016]

**Review** Sex and Gender Impact Im [Physiology (Bethesda). 2015]

Testosterone treatment is a potent tum [Endocrinology. 2014]

See all...

### Related information

Articles frequently viewed together

Cited in systematic reviews

Publication type, MeSH terms, Substance



LinkOut - more resources



MedGen

PubChem Compound

PubChem Compound (MeSH Keyword)

PubChem Substance

Cited in PMC

## PubMed Commons

[PubMed Commons home](#)

0 comments

[How to join PubMed Commons](#)

## Recent Activity

[Turn Off](#) [Clear](#)

Testosterone and the aging male: to treat or not to PubMed

[No increase in the incidence of breast PubMed

Point of care blood gases with electrolytes and

Red blood cell profile of elite olympic distance triatl PubMed

A prospective randomized study to optimize the PubMed

[See more...](#)

You are here: [NCBI](#) > [Literature](#) > [PubMed](#)

[Support Center](#)

### GETTING STARTED

- [NCBI Education](#)
- [NCBI Help Manual](#)
- [NCBI Handbook](#)
- [Training & Tutorials](#)
- [Submit Data](#)

### RESOURCES

- [Chemicals & Bioassays](#)
- [Data & Software](#)
- [DNA & RNA](#)
- [Domains & Structures](#)
- [Genes & Expression](#)
- [Genetics & Medicine](#)
- [Genomes & Maps](#)
- [Homology](#)
- [Literature](#)
- [Proteins](#)
- [Sequence Analysis](#)
- [Taxonomy](#)
- [Variation](#)

### POPULAR

- [PubMed](#)
- [Bookshelf](#)
- [PubMed Central](#)
- [PubMed Health](#)
- [BLAST](#)
- [Nucleotide](#)
- [Genome](#)
- [SNP](#)
- [Gene](#)
- [Protein](#)
- [PubChem](#)

### FEATURED

- [Genetic Testing Registry](#)
- [PubMed Health](#)
- [GenBank](#)
- [Reference Sequences](#)
- [Gene Expression Omnibus](#)
- [Map Viewer](#)
- [Human Genome](#)
- [Mouse Genome](#)
- [Influenza Virus](#)
- [Primer-BLAST](#)
- [Sequence Read Archive](#)

### NCBI INFORMATION

- [About NCBI](#)
- [Research at NCBI](#)
- [NCBI News](#)
- [NCBI FTP Site](#)
- [NCBI on Facebook](#)
- [NCBI on Twitter](#)
- [NCBI on YouTube](#)

National Center for Biotechnology Information, U.S. National Library of Medicine  
8600 Rockville Pike, Bethesda MD, 20894 USA

[Policies and Guidelines](#) | [Contact](#)

