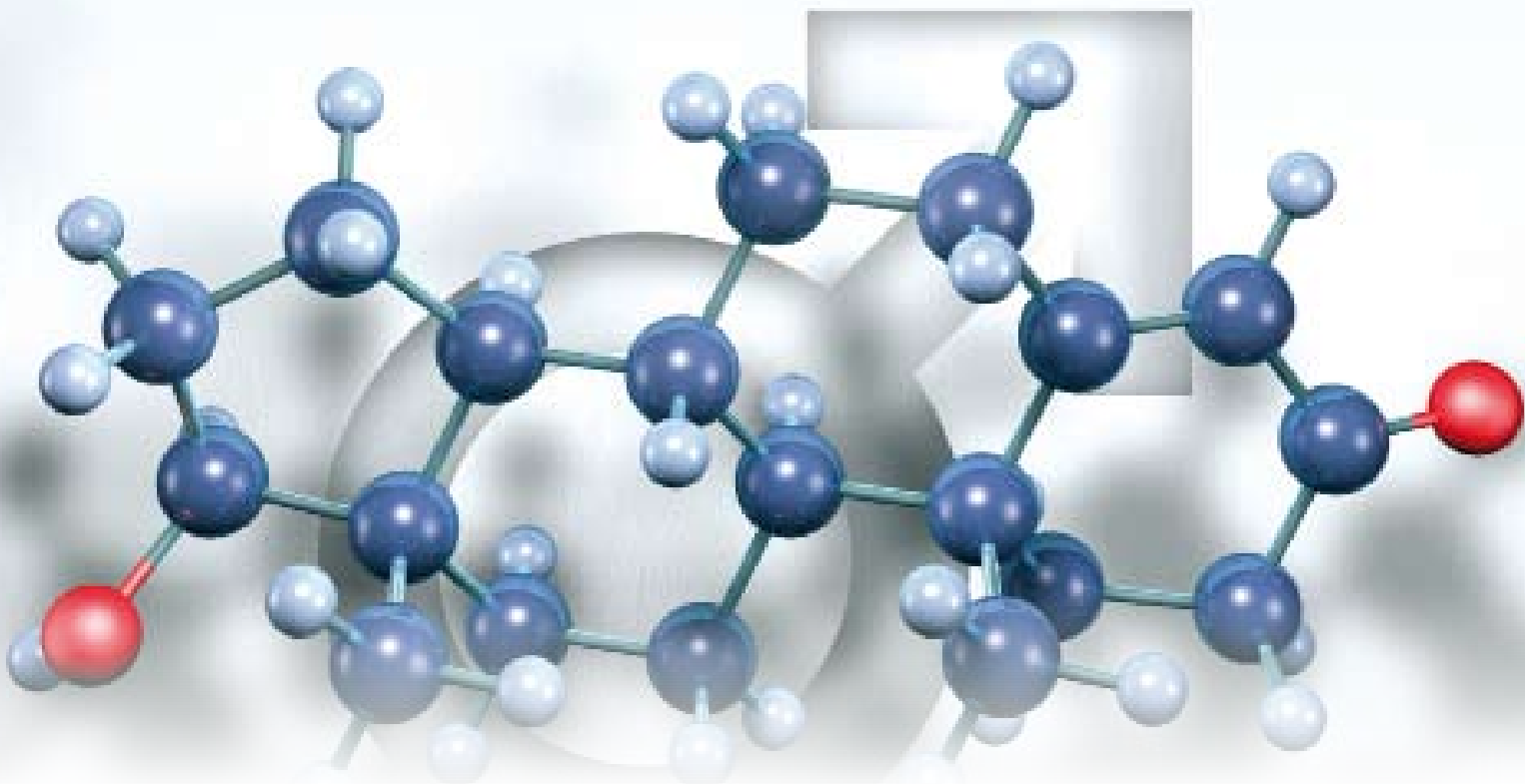


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## Testosterone use in older males

Although testosterone levels in males decline with age, the risks and benefits of testosterone supplementation in this age group are unclear.

Older males may present with signs and symptoms suggestive of hypogonadism; some of these are less specific, such as decreased energy or depressed mood, and others more specific, such as decreased or absent morning or spontaneous erections, reduced libido and erectile dysfunction.<sup>1</sup>

The first step is to consider medical conditions or other factors which could be managed to improve signs and symptoms.

**A number of medical conditions** can influence the function of the HPG axis and are associated with hypogonadism, including:<sup>2–4</sup>

- Type 2 diabetes
- End-stage renal disease
- Osteoporosis
- Moderate to severe COPD
- Severe obstructive sleep apnoea
- Pituitary tumour
- HIV

- Testicular cancer
- Haemochromatosis
- Chronic inflammatory disease, e.g. arthritis
- Eating disorders (malnutrition)

**Lifestyle factors** which decrease testosterone levels, include obesity, chronic excess alcohol intake, stress, sleep deprivation, vigorous exercise and illicit drug use.

**Medicines** that interfere with the HPG axis include opioids, high dose systemic corticosteroids, chemotherapy medicines and phenothiazines.

**Biochemical investigation of hypogonadism may be appropriate** for patients with symptoms which are adversely affecting their quality of life. The recommended investigation is as follows:<sup>3</sup>


- Request an early morning serum total testosterone level
- If the level is below the reference range, repeat the test as 30% of males with an initially low testosterone level have normal levels on re-testing
- A luteinizing hormone (LH) test can be ordered with the repeat testosterone level to help distinguish between primary and secondary hypogonadism, if the total testosterone level is confirmed as being consistently low
- Measures of sex hormone binding globulin (SHBG) and free testosterone are only necessary if there is reason to suspect that SHBG levels are abnormal, such as patients with marked obesity, thyroid disease or who are taking particular medicines such as anticonvulsants

**For males with consistent signs and symptoms and biochemical evidence of hypogonadism**, it is recommended that the decision of whether to initiate testosterone is discussed with an endocrinologist; only one formulation of testosterone can be prescribed without endorsement from an endocrinologist. Testosterone replacement is more likely to be worthwhile for those with specific symptoms for which improvements can be evaluated.

**Testosterone treatment is contraindicated** in males with prostate or breast cancer, primary liver tumours, hypercalcaemia and nephritic syndrome.<sup>1,5</sup> Further investigations which should be conducted before initiation include full blood count, PSA level and digital rectal examination. Testosterone treatment is not recommended in males with a palpable prostate nodule or induration, with PSA level > 4.0 ng/ml (or 3.0 ng/ml if there is a family history of prostate cancer), elevated haematocrit (PCV

> 50%), or in patients with severe untreated obstructive sleep apnoea or poorly controlled congestive heart failure.<sup>1</sup>

Prior to the initiation of testosterone, patients should be informed that the benefits and risks of treatment are to some extent both uncertain as detailed data on long-term health outcomes in large randomised controlled trials is currently lacking. In addition, patients should be made aware of the ongoing testing requirements during treatment to assess response and safety (e.g. haematocrit, PSA and testosterone levels).

 For further information, see: "Prescribing testosterone in ageing males: why you shouldn't read this article", *BPJ* 69 (Aug 2015).

"Research Update: Testosterone use and cardiovascular risk in older males", *BPJ* 70 (Sept 2015).

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