



## **Society for Endocrinology Position Statement on Male Hypogonadism and Ageing**

Testosterone is important for general as well as sexual health in men. Symptoms of testosterone deficiency commonly include decreased libido, loss of morning erections and erectile dysfunction, but may also involve tiredness (fatigue), reduced physical strength and endurance, loss of motivation and concentration, irritability, and low moods. As these symptoms may be caused by conditions other than testosterone deficiency, it is important that any diagnosis of hypogonadism is supported by biochemical evidence of low circulating testosterone levels.

Hypogonadism is defined as a clinical syndrome complex that comprises symptoms and signs as well as biochemical evidence of testosterone deficiency. It is now becoming increasingly recognised that older men with common medical conditions have a higher prevalence of borderline low serum testosterone levels; these conditions include obesity, metabolic syndrome, type 2 diabetes, osteoporosis, COPD, coronary heart disease, HIV, inflammatory conditions (e.g. arthritis), cardiac, renal and liver failure. These conditions have stronger associations with the finding of borderline low testosterone than ageing *per se*.

### **Biochemical diagnosis**

National and International guidelines, recommendations and position statements are available for the diagnosis of hypogonadism (1-4). To establish the diagnosis, serum total testosterone levels should be measured before 11am as there is a circadian rhythm. Readings below the reference range on at least two different occasions support a diagnosis of hypogonadism. Additional investigations include measurement of gonadotrophins and prolactin and the calculation of free testosterone when total testosterone is borderline. Methods for the calculation of free testosterone can be found on [www.issam.ch](http://www.issam.ch).

### **Late onset hypogonadism**

Late-onset hypogonadism (LOH) is a clinical and biochemical syndrome associated with ageing-related co-morbidities (especially obesity), characterised by symptoms suggestive of testosterone deficiency and consistently low testosterone levels, after exclusion of classical causes for hypogonadism (e.g. Klinefelter syndrome, Kallmann syndrome, pituitary tumours) (2). The number of men with LOH is small with the European Male Ageing Study (EMAS) reporting a general population prevalence of only 2.1% in men aged greater than 40 years (5).

### **Treatment of hypogonadism and its monitoring**

Testosterone treatment in patients with classical hypogonadism is effective and safe (1, 6). Whilst there are studies that suggest testosterone replacement in LOH may have some short term benefits, longer term studies of sufficient power to document clinical outcomes are lacking. Although testosterone replacement therapy has been used effectively for many years in younger patients with classical hypogonadism without major adverse effects, this experience and the risk-benefit balance cannot be extrapolated to LOH.

Occult prostate cancer is common in elderly men. In the absence of long-term, controlled studies, it is unclear whether testosterone therapy has adverse effects on the prostate. A history of prostatic symptoms should be taken and measurement of prostate-specific antigen (PSA) should be performed before commencing testosterone treatment in men over 40 yr. Currently, major International guidelines recommend continued surveillance with annual PSA measurement and, if abnormal, urological referral. Since testosterone replacement may



cause secondary polycythaemia, the haematocrit should be assessed before and annually after therapy. The long-term effects of testosterone treatment on cardiovascular disease susceptibility are currently unknown (6); testosterone replacement therefore should be used cautiously in men with symptomatic cardiovascular disease.

Modern testosterone preparations allow delivery of physiological doses to achieve better replacement therapy. The aim of testosterone treatment is to achieve serum testosterone levels within the mid-reference range.

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## References:

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