Male Menopause

by Dr Tan Yau Min Gerald

Answers to commonly asked questions about testosterone deficiency in ageing males

TESTOSTERONE IS AN important hormone produced by the testicles in men and the ovaries in women, although small amounts are also produced by the adrenal glands. In men, it is the chief sex hormone and is vital for normal development of male reproductive tissues such as the testis and the prostate glands, as well as promoting secondary sexual features such as increased muscle and bone mass and body hair. It also contributes to mood and general well-being and needed for prevention of osteoporosis in older men.[1]

What is testosterone deficiency syndrome, and why does it occur?

As men get older, the testosterone-producing Leydig cells of the testicles decline in function and size, resulting in decreased production. Testosterone deficiency syndrome (TDS), also known as late-onset hypogonadism (LOH), refers to the age-related decline in testosterone levels in ageing men, which may manifest as one or more of the following symptoms:[2]

- Diminished sexual desire
- Poorer quality of erections and absence of morning erections
- Hot flushes, unexplained sweating and reduced facial hair
- Increased tendency to experience fatigue, irritability, depression and mood swings
- Decreased intellectual ability and spatial orientation
- Decreased lean body mass, muscle strength and capacity for exercise
- Osteoporosis

TDS occurs in 6% of middle-aged men, and up to 50% of men in their 70s will have low free testosterone levels. In Asian countries, the prevalence of hypogonadism is 18.2% to 19.1%.[2-4]

Is testosterone deficiency more common in overweight men?

Yes, several clinical studies have demonstrated a strong link between TDS and metabolic syndrome, which is characterised by central obesity, hypertension, diabetes, abnormal lipid levels, and increased risk of heart disease. Low testosterone levels have been associated with obesity, an important risk factor for the development of diabetes. Interestingly, men who succeed in losing weight often demonstrate a rebound in their testosterone levels.[5]

How do I know if I am suffering from TDS?

The International Society of Andrology, the International Society for the Study of the Aging Male (ISSAM), and the European Association of Urology define late-onset hypogonadism as "a clinical and biochemical syndrome associated with advancing age and characterised by typical symptoms and a deficiency in serum testosterone levels." The first step would be to consult your doctor, who will usually check the testosterone, albumin and sex hormone binding globulin (SHBG) levels in your blood, and also ask you to complete a questionnaire such as the ADAM questionnaire or the Ageing Male Score, a 17-item questionnaire that assesses the patient's sexual, psychological and

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somatic symptoms. Testosterone levels fluctuate significantly in the bloodstream, being highest in the early morning, so it is best to have the blood tests taken between 7am to 11am for best accuracy.

How is testosterone replacement given?

There are several modes of administering testosterone replacement, the most popular in Singapore being intramuscular injections, gel applications or oral tablets. Many urologists recommend a long-acting depot intramuscular injection such as testosterone undecanoate, as the slow release of testosterone into the bloodstream over a 10- to 12-week period results in more stable testosterone levels. Other doctors advocate transdermal gel applications, which have the benefit of being short-acting and bypassing liver metabolism (which happens with oral testosterone undecanoate tablets). It is applied daily by men rubbing testosterone gel over their upper arms and abdomen until dry. However, these users have to refrain from swimming or skin contact with females and children for four hours after gel application.

What are the benefits of testosterone replacement?

Many studies have shown that men with TDS who are started on testosterone replacement experience improvement in libido and penile erections, particularly the return of morning erections.[7] Many patients who fail to improve with oral medications ineffective for erectile dysfunction report improvement when combined with testosterone replacement. Patients on testosterone replacement also report improved energy levels, alertness, mental concentration and mood, although these effects are more variable.

When do I need to start testosterone replacement therapy?

There is at present no clear consensus on how low serum testosterone levels must fall before commencing testosterone replacement. Most urologists accept that a total testosterone level above 12nmol/l does not require testosterone replacement, whilst men with levels less than that may be considered candidates for replacement therapy if they have significant associated symptoms on the questionnaires.

Are there any risks to being on testosterone replacement therapy?

Testosterone plays an important role in the development of prostate and breast cancer in men, and such patients are not suitable for testosterone replacement. However, several studies have demonstrated that in normal males, testosterone replacement does not increase the risk of developing prostate cancer. Before considering testosterone replacement, patients should see their doctor for a rectal examination and serum prostate specific antigen (PSA) level to exclude the possibility of prostate cancer, and should have their PSA levels monitored at three- to six-monthly intervals until the levels are stable.[2]

There is no evidence at present to show that testosterone replacement will worsen prostate enlargement and obstructive urinary symptoms. However, testosterone does stimulate bone marrow production of red blood cells. Polycythaemia (abundance of red blood cells), if present, should be treated and resolved before commencing testosterone replacement. In younger men with low serum testosterone levels, testosterone replacement may also impair sperm production and quality due to its effects on the brain's production of follicle stimulating hormone (FSH).

If you think you may be suffering from TDS, please consult your doctor for a proper evaluation before considering testosterone replacement. eh

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