What are the risks of testosterone replacement therapy?

Despite many years of widespread use, the long-term risks of testosterone supplementation have not been clearly established. Like any medical therapy, male hormone replacement should be approached with some caution and after an in-depth discussion with your physician.

Changes in risk factors for heart and blood vessel disease have been identified with the use of testosterone supplementation; some are thought to be beneficial and some unfavourable. The overall effect of these changes is unclear. Blood levels of hemoglobin (the oxygen-carrying component of blood) may rise, possibly increasing the risk of blood clots. In men with sleep apnea (pauses in breathing while asleep), the problem may worsen while on testosterone replacement therapy. Testosterone may promote prostate enlargement and an increase in PSA level (the blood test used to help detect prostate cancer). No clear link has been demonstrated between testosterone replacement and prostate cancer or the development of voiding difficulty from prostate enlargement.

It has been recommended that men on testosterone supplementation be monitored regularly, which may include blood tests, for these problems during the first year of treatment and then at least yearly afterwards.

How do I take testosterone?

Testosterone supplementation is available in a number of forms. Although no form of testosterone supplementation can mimic the normal hourly and day-to-day variations in hormone secretion by the testicles, testosterone levels can be reliably increased by injection (typically every few weeks) or the daily application of a skin patch, gel or cream. Tablets, although convenient, may be less reliable at restoring a normal testosterone level.

The significance of normal testosterone reduction with age and the role of testosterone supplementation therapy can be confusing. Replacement therapy can be beneficial but it requires regular monitoring for the detection of any adverse effects. These issues should be considered and discussed with your physician.

33E-MHSE0609

The Canadian Urological Association produced this publication. For more information on urological problems, please visit our website at **www.uroinfo.ca**.

Male Hormone Supplementation in the Aging Man

With advancing age, the production of male sex hormone decreases resulting in physical and emotional changes which may be bothersome to some men.

Many bodily functions are controlled by hormones, chemical messengers produced by various glands. **Testosterone** is the principal male sex hormone. Produced primarily in the testicles, it is essential in stimulating the development of male sexual characteristics in boys at puberty. In men, it helps maintain muscle and bone strength as well as sexual drive and performance.

After the age of 30, the normal testosterone level declines slowly but steadily in men. In some men, testosterone production declines more rapidly than others, although there is no sudden change comparable to menopause in women.

Today, men are living longer and many are seeking ways to improve their quality of life. Regular exercise, limiting alcohol consumption, avoiding obesity, not smoking, and eating a balanced diet have all been shown to be effective at maintaining good health.

Many men with low testosterone levels will benefit from supplementation: improving sexual function, muscle strength, bone health, fat distribution and even mood and mental function. However, other diseases may cause many of the symptoms associated with a low testosterone, and raising the testosterone to "youthful levels" may not reverse some of these changes. Your physician, after reviewing your particular symptoms and tests, will advise you on the possible benefits and risks of supplementing your testosterone.

How is testosterone deficiency diagnosed?

The diagnosis of testosterone deficiency is first suspected based on a man's symptoms and a blood test proving he has low testosterone levels. Testosterone levels vary over the course of the day reaching a peak early in the morning. Testosterone exists in several forms in the bloodstream and can be measured by different tests. Normal ranges vary widely between populations (for example – fit young men vs. fit middle-aged men vs. the general male population). All of these factors can make it difficult to clearly define the point at which testosterone is truly deficient. In practice, one or two separate morning measurements of testosterone are favoured.

What are the symptoms of testosterone deficiency?

In contrast to the well-defined symptoms of menopause in women, the symptoms of a slowly falling testosterone level may be more subtle. These may include decreased sex drive, decreased muscle mass and strength, increased body fat, moodiness, sleep disturbance, and decreased energy. However, these changes, frequently seen with deficient testosterone, may also be related to other factors like stress, depression, lifestyle, poor fitness or illness.

What are the benefits of testosterone supplementation therapy?

Benefits of testosterone supplementation are most notable in men with testosterone levels well below normal. These may include increased sex drive, increased muscle mass, improved bone strength, decreased abdominal fat and better control of blood sugar in diabetics. Mood and mental function may also improve. There is ongoing research examining the possible benefits of testosterone supplementation on the blood vessels in the body, especially its effects on heart health and the cholesterol levels.