

Specialists In Reproductive Medicine & Surgery, P.A.

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Testosterone Therapy In Men *Patient Information*

Definition:

Testosterone is a hormone that is released from the testicle. It is responsible for the maintenance of secondary sexual characteristics (muscle, facial hair) as well as sexual drive (libido).

Anatomy/Physiology:

The testicle contains a number of cells. One group in particular, the Leydig cells, release high concentrations of testosterone. These cells are stimulated by the pituitary hormones Luteinizing Hormone (LH) and Follicle Stimulating Hormone (FSH). The LH and FSH levels are, in turn, stimulated by higher levels of the brain including the hypothalamus.

When the testes are abnormal and producing minimal amounts of testosterone, this is called primary (testicular) hypogonadism.

If the reduction in testosterone levels is caused by abnormalities of the pituitary or hypothalamus, this is called secondary and tertiary hypogonadism, respectively.

Indications:

1. Men with reduced levels of testosterone are candidates for replacement of the hormone.
2. Adolescents and adults who have a significant delay in the formation of secondary sexual characteristics (i.e., delayed puberty) including increased muscle mass, a change in voice, an increase in genital size, an increase of facial and body hair are potential candidates for testosterone replacement therapy. In this case, the testosterone is also administered to maintain the secondary sex characteristics.
3. Men with reduced testosterone levels with symptoms including decreased libido may benefit from testosterone treatment.
4. Men with reduced bone density secondary to prolonged low testosterone levels are candidates for testosterone replacement therapy.

Contraindications:

Men who have the following should take testosterone with caution:

Absolute Contraindications:

- Androgen-dependent tumors (prostate and breast cancers)

Relative Contraindications:

- Liver damage resulting in decreased hepatic breakdown of the medication
- Known sensitivity to the drug.

Administration:

Testosterone is generally administered by injection, patch or cream. Oral administration is rarely used because of potential damage to the liver. SRMS doesn't like the use of the cream because this can be transferred to female partners with adverse affects and absorption can be quite variable.

Complications:

The complication rates with testosterone treatment are rare and include the following:

- Administration site irritation (patch sometimes causing dermatitis with injection sometimes callusing localized swelling & redness)
- Reduction/loss of sperm in ejaculate
- Breast development (caused by the conversion of testosterone to the female hormone estradiol)
- Reduction in the HDL (good) cholesterol levels (perhaps a one in four chance with a 9% reduction identified)
- Growth of pre-existing prostate cancer
- Prostatic enlargement (rare)
- Elevations of the Prostate Specific Antigen (PSA) levels (very rare)
- Fluid retention (infrequent)
- Worsening of sleep apnea
- Elevation of red blood cell count
- Persistent/frequent penile erections
- Male pattern baldness
- Acne
- Liver tumors when given in inappropriate high dosages for extended periods of time
- Allergic reaction to the medication

General Results:

The vast majority of men will respond well to the administration of testosterone and experience the following:

Rapid Improvements (within 3-6 months)	Slow Improvements (within 1-2 years)
<ul style="list-style-type: none"> ➤ Increased libido ➤ Improved energy & feelings of well-being ➤ Increased muscle mass & strength ➤ Improved facial hair growth ➤ Decreased depression ➤ Improvement of red blood cell concentrations (decrease of anemia) 	<ul style="list-style-type: none"> ➤ Improved bone density

Monitoring:

Your physician may want to monitor therapy by any or all of the following:

1. Blood testosterone levels taken midway between injections
2. X-rays of the wrist to determine bone age in the adolescent patient
3. Bone density studies to monitor osteopenia/osteoporosis
4. Periodic Lipid, CBC, Liver function and electrolyte blood studies
5. Screening for prostate cancer with Prostate Specific Antigen (PSA) blood testing
6. Annual prostate examinations, when appropriate

Summary:

Testosterone is a natural hormone that is produced by the testes. Significant reductions often result in both physical and psychological changes. Replacement of the hormone results in a reduction in signs and symptoms of hypogonadism and eventually leads to the formation and maintenance of secondary sexual characteristics. Testosterone replacement therapy should be considered whenever appropriate.

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