



HORMONE TESTING

Testosterone Information Sheet

What is Testosterone?

Testosterone is the primary sex hormone in males, but it is also important in females. Testosterone is secreted from the testicles in males, and from the ovaries in females (1).

What are the roles of testosterone?

Testosterone has an important role during the life cycle of both males and females. Testosterone levels before birth are associated with sex formation (2), potentially brain masculinization during early infancy (3), and pubertal effects, including penis or clitoris enlargement, increased libido, remodelling of facial bones, acne, pubic hair, and deepening of voice (4).

In adult males, testosterone is necessary for normal sperm development, enhances muscle growth, and regulates platelet aggregation (5,6). In females, testosterone also enhances muscle and bone growth, may modulate the physiology of vaginal tissue, and contributes to female genital sexual arousal (7).

Free Androgen Index (FAI)

Adult males typically have total testosterone levels of 300 - 1200 ng/dL, while levels in females are a lot lower, with normal total testosterone levels of 8 – 60 ng/dL (8). Most of this testosterone is bound to proteins and is unavailable for biological activity. Free testosterone can be calculated from the total testosterone, SHBG, and albumin concentrations, or alternatively, the Free Androgen Index (FAI) can be calculated by:

$$\text{FAI} = \text{Total Testosterone (nmol/L)} \times 100 / \text{SHBG (nmol/L)}$$

This ratio correlates well with measured values of free testosterone and is a useful measurement for identifying individuals with abnormal testosterone levels (9).

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What are the signs of low testosterone in males?

Symptoms of low testosterone can include:

- Low sex drive
- Fatigue
- Reduced muscle mass
- Irritability
- Erectile dysfunction
- Infertility
- Weight gain
- Osteoporosis
- Depression

Low testosterone can occur due to conditions that males are born with, such as Klinefelter syndrome, or testosterone may also decline for other reasons, including testicle injury, chemotherapy, infection, autoimmune disease, malnutrition, and hormonal imbalances.

Testosterone therapy is available for men with low testosterone levels, although often other changes, such as more physical exercise for overweight men, can increase testosterone levels (10).

What are the signs of high testosterone in males?

Elevated testosterone in males is not a common problem, and is most often observed in athletes who use anabolic steroids, testosterone, or related hormones to increase muscle mass and athletic performance. Elevated testosterone can cause many health complications (11), including:

- Low sperm counts
- Impotence
- Liver disease
- Acne
- Blood clots
- Aggressive behaviour
- Damage to heart tissue
- Weight gain
- Mood swings
- Excessive body hair
- Sleep apnea

Where can I find more info?

Visit www.genetrackdiagnostics.com for full test information, including specimen collection requirements

CONTACT US:

Email: support@genetrackdiagnostics.com
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What are the signs of abnormal testosterone in females?

The signs of reduced testosterone in females include low muscle mass, poor sleep, lack of energy, depression, low libido, and vaginal dryness. Excess testosterone can lead to acne, polycystic ovary syndrome, irregular menstruation, increased body hair, and low HDL (good) cholesterol.

References:

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- (11) Testosterone – What It Does And Doesn't Do. (2019). Harvard Health Publishing, Harvard Medical School.

NOTE:

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