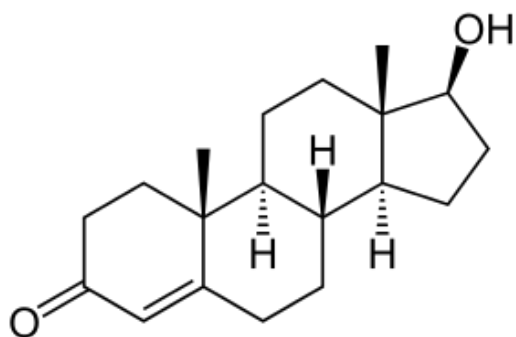




THE TESTOSTERONE REPORT



BY

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Hormones are powerful chemical messengers that help organs, tissues and cells communicate within the body. They are secreted in one area, but can have effects on multiple areas in our body. Testosterone is a steroid hormone found in human beings and vertebrate animals. It is secreted by the testicles in a male and to a small extent by the ovary in the female. Typically, the amount of testosterone in adult male population is about 8 times higher than the corresponding amount in adult females. In males, testosterone is responsible for the development of reproductive organs. In addition, it is also responsible for the development of other sexual characteristics such as increase in muscle and bone mass, growth of body hair. Research has also shown that it prevents osteoporosis in males.

As we age, testosterone levels decrease naturally about 1% per year after the age of 30 as shown in Figure 1. Decrease in testosterone causes decrease in muscle mass and libido. However, if the testosterone level goes below 300 ng/dL (nanogram per deciliter), then the condition is classified as hypogonadism. About 30% of males suffer from this condition. But other factors such as obesity, diabetes and exposure to pollutants can also result in low testosterone.

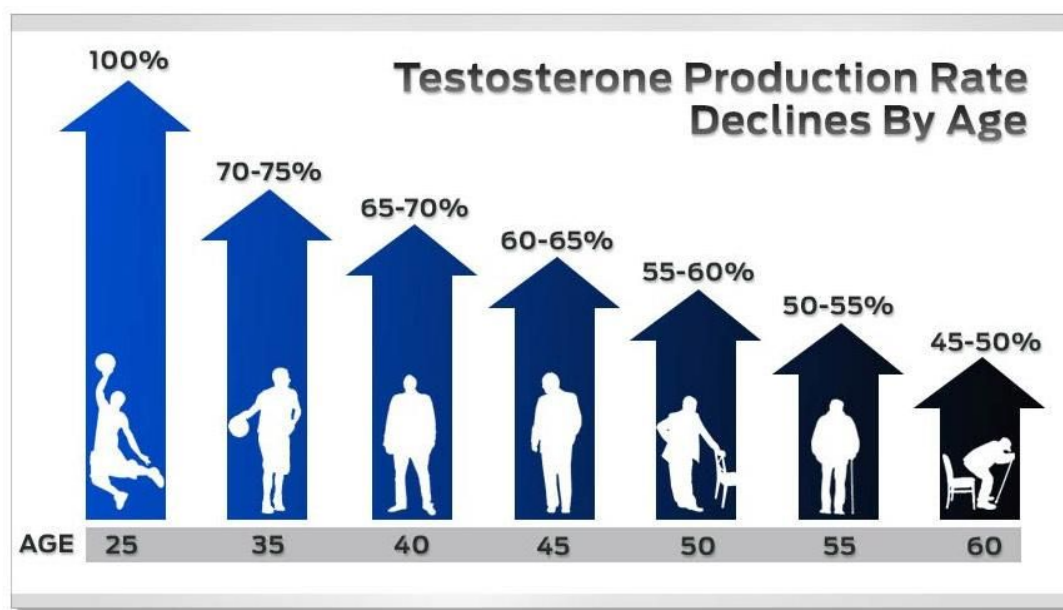


Figure 1: Decrease in testosterone as we age

Testosterone is secreted by the testicles but it is regulated by the hypothalamus and pituitary gland in the brain. Testosterone has an effect on the circulatory system, reproductive system, nervous system as well as other systems in our body.

As we age, there is a natural tendency to lose testosterone. But other factors such as obesity, high blood sugar and exposure to environmental pollutants, sickness, stress and smoking can also

cause low testosterone. But it is important to recognize the difference between low testosterone due to aging or lifestyle causes and a medical condition called hypogonadism.

Only a medical doctor can diagnose hypogonadism based on a blood test. There are three types of testosterone measurements: free or available testosterone, bound or unavailable testosterone and total testosterone, which is the sum of free and bound testosterone. Typically only total testosterone is measured, however, to get an accurate diagnosis, free testosterone should be measured. If the total testosterone is less than 300 nanogram per deciliter (ng/dL) or if free testosterone is less than 150 picogram per deciliter (pg/dL), then the condition is diagnosed as hypogonadism. Hypogonadism should be treated otherwise there are severe problems that can arise.

Testosterone taken orally gets destroyed in our stomach and can also cause toxicity. So it has to be injected or applied to the skin in the form of a patch, cream or gel. Pharmaceutical treatments do have side effects and they should be considered prior to starting replacement therapy.

Non-pharmaceutical treatments such as diet, exercise, yoga/meditation and taking natural herbal supplements can be helpful. It should be noted that supplements are not regulated by US Food and Drug Administration. Therefore, their quality, safety and effectiveness is not confirmed. However there are certain organizations like the US Pharmacopoeia that verifies the supplements.