Do you know your testosterone level?

Testosterone, in correct quantities, is just great. This hormone is the primary driver for masculinity, virility and athletic performance. It is of no surprise that testosterone and its chemical derivatives are banned substances by elite sports governing bodies.

The normal range for men is between 8.4 – 28.7 nmol/L of blood. This is a measurement of Total Testosterone and from its peak will decline by between 0.4 and 0.8% per year. A decline then, appears to be normal. However, can its reduction be slowed or, indeed, arrested? Could it even be increased?

It may seem paradoxical to note, but testosterone levels are actually dictated by the hormone Oestradiol (oestrogen, the predominantly female hormone). Women produce testosterone too, albeit in lesser amounts by the adrenal cortex.

The brain – specifically the hypothalamus – monitors for high circulating Oestradiol levels to control the testosterone production cascade. When elevated levels are detected, reduced signalling hormones are secreted by the hypothalamus. Their job is to pass messages to the pituitary gland instructing the testes (via luteinising hormone, primarily) to simply get on with it. Make testosterone. And, of course, sperm.

The major players which oversee this testosterone production cascade are known as the Hypothalamus – Pituitary – Testicular Axis (or HPTA).Their role is to maintain *homeostasis* (Greek for “same state”- a balance or equilibrium) and it does this via a negative feedback loop.

A frequent analogy is drawn between this negative feedback loop and the temperature thermostat in your home. Basically, too much Oestradiol equals a reduction in the output of natural testosterone. Your living room gets too warm, the radiators turn off. This is homeostasis in action.

What’s important to note is that testosterone is converted to Oestradiol by a specific enzyme called aromatase. That explains where the Oestradiol comes from! And what happening to your precious testosterone. You will still have some, but a worrying proportion is effectively being wasted by conversion. Oestradiol promotes female fat distribution patterns. Man boobs and love handles, anyone?

As fat deposits increase, so too does aromatase. Interestingly, because Anabolic/Androgenic Steroid (AAS) use upregulates aromatase expression, a direct link may be drawn between the dramatically reduced natural testosterone production caused by AAS use and age and obesity. The degree of obesity being directly proportional to the decrease in androgens.

This hypogonadal state (low testosterone level) is a progressive cycle of increased abdominal fat deposits with an attendant increase of aromatase activity - thus more Oestradiol conversion - resulting in decreased testosterone production. Wash and repeat. Aging, health and disease are contributing factors that down regulate the HPTA and therefore testosterone.

The resultant symptoms of a hypogonadal state are decreased libido, fatigue, depression, insomnia and erectile dysfunction. Again mirroring what occurs after an AAS cycle. Moreover, there is a direct link between decreased sex hormones and cardiovascular disease.

Clearly it is of great value to have optimal testosterone levels. Not just for your health but to attain athletic and performance goals. AAS drugs do not adequately address this. Their use results in vastly elevated levels of testosterone (supraphysiological amounts) for the duration of an AAS cycle. This is followed by an extended period of natural testosterone production suppression.

Your testes can produce up to 10mg testosterone daily, or 70mg per week. In AAS using circles a weekly injected dose of 200mg testosterone enanthate is considered very conservative. This is three times what could be expected from the testes on a busy day! It’s of small wonder that testicular atrophy (ball shrinkage) is an expected side effect of AAS use, then. Excess testosterone (aromatised – or converted by the aromatase enzyme - to Oestradiol) from an external source effectively renders the testicles redundant. So they shut down. The closed signs are up and they’re in hibernation, losing size all the while.

“How do I know my steroids are the real thing?” ask many AAS users, and rightly so given the unregulated underground lab market that dominates the AAS scene. The best answer I’ve heard was “Your muscles will grow and your balls will shrink”. Give that man a gold star.

My professional field of expertise is clinical work with men who use AAS. Without exception they all end up with a marked reduction in natural testosterone levels. This is referred to medically as hypogonadotrophic hypogonadism. This condition often requires a prescription for medication to reinstate natural testosterone production.

If you’ve never used AAS drugs you may think “what’s this got to do with me”? Read on. The science that governs the production of testosterone applies whether you use AAS or not. There are other ways - natural ways - to boost testosterone. And because they work in men in a hypogonadal state they’ll work very effectively in the healthy too. We know this because, as was previously mentioned, health and disease imparts a massive influence on the HPTA.

We all have a glorious variety of hormones in our bodies, all operating in a wonderfully orchestrated symphony. Using the Vitruvian Principles they can be dramatically manipulated for optimal and efficient results without recourse to drugs.

In this series we’ll explore what works and, perhaps more importantly, why. With the application of science, real world experience and common sense you’ll discover the best ways to the best you. No nonsense. No fads. Just the truth to maximise your outcomes. You may be rather surprised...