Anabolic Agents

What are they?

Anabolic agents are one of the most widespread and well-known doping substances in existence. They are broken down into two sub-groups, Anabolic Androgenic Steroids (AAS) and other anabolic agents. Anabolic Androgenic Steroids (AAS) are synthetic versions of the hormone testosterone. Testosterone is a male sex hormone found in large quantities in most males and smaller amounts in females. The anabolic effects can result in an accelerated growth of muscle and bone. Anabolic androgenic steroids can be derived from both endogenous (naturally produced) or exogenous (synthetically manufactured) sources.

The anabolic steroids are synthetic derivatives of testosterone modified to enhance the anabolic rather than the androgenic effects.

Androgenic effects
- Development of primary sexual characteristics in males
- Secondary sexual characteristics during puberty (genital size, prostate growth, induction of sperm production, hair distribution, deep voice)
- Muscular-skeletal configuration
- Psychic changes

Anabolic effects
- Increasing calcium–uptake and stimulation of skeletal growth
- Erythropoietin
- Perceptual decrease of body fat, V-shaped muscle man
- Reuptake of electrolytes

Status on the Prohibited List

Anabolic Agents comes under S1 on the list of prohibited in-competition and out-of-competition.

Examples of Anabolic Agents

Anabolic steroids include nandrolone, oxandrolone, stanozolol, testosterone, metenolone, dehydroepiandrosterone (DHEA) and related substances.

Who would use them and why?

Athletes may be tempted to use anabolic steroids to increase muscle size and strength, reduce the amount of time required to recover after exercise, and to train harder and for a longer period of time allowing them to compete at the highest level in sports relating to strength power, bodybuilding and stamina activities.
Testing
Detecting exogenous anabolic agents in an athlete's body automatically results in a positive doping test. When endogenous anabolic agents are detected, further investigation needs to be done to determine whether misuse has occurred or whether the substance was produced by the athlete's body itself. The ratio of testosterone to epitestosterone is considered a good indicator.

Effects of Anabolic Steroid Abuse in Men

- Infertility
- Breast development
- Shrinking of the testicles
- Male-pattern baldness
- Severe acne and cysts

Effects of Anabolic Steroid Abuse in Women

- Deeper voice
- Enlargement of the clitoris
- Excessive growth of body hair
- Male-pattern baldness
- Severe acne and cysts

Other Effects of Anabolic Steroid Abuse

- Delayed growth in adolescents
- Tendon rupture
- Increased LDL cholesterol
- Decreased HDL cholesterol
- High blood pressure
- Heart attacks
- Enlargement of the heart's left ventricle
- Cancer
- Jaundice
- Fluid retention
- HIV/AIDS
- Hepatitis
- "Roid rage" - rage and aggression
- Mania
- Delusions