PERFORMANCE-ENHANCING DRUGS

Performance-enhancing drugs are substances some athletes or bodybuilders take to help increase their strength, energy, and lean muscle mass. Although some people report improved performance and enhanced appearance while using these drugs, there is no evidence to prove that these drugs actually help, and there is significant evidence of harmful short- and long-term effects of these chemicals.

WHAT ARE EXAMPLES OF PERFORMANCE-ENHANCING DRUGS?

Performance-enhancing drugs may have some short-term benefits, but they also come with short and long-term side effects. Examples of performance-enhancing drugs include:

ANABOLIC STEROIDS

Anabolic steroids, including designer steroids and androstenedione, are synthetic (artificial) hormones resembling testosterone. People who use anabolic steroids often use them to help improve their appearance by increasing muscle mass. Anabolic steroids may also help reduce muscle injury and speed muscle repair after working out, which can help with recovery time, allowing people to work out more frequently.

The risks of taking anabolic steroids as performance-enhancing drugs clearly outweigh any perceived benefit. Some of these adverse effects include the following:

- Prominent breasts in men
- Decreased size of testicles and infertility
- Enlarged prostate gland

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- An irreversible, deeper voice in women
- Increased body hair
- Baldness
- Changes to menstrual cycles in women
- Severe acne
- Increased risk of tendon rupture or tendinitis
- Liver abnormalities and tumors
- Changes to cholesterol, both LDL and HDL
- High blood pressure
- Blood clots
- Stroke or heart attack
- Psychiatric effects such as aggressive behaviors or rage, depression, or delusions
- Dependence
- Risk of HIV or other blood-borne pathogens, especially if injecting and sharing needles

HUMAN GROWTH HORMONE

Human growth hormones are naturally produced by the pituitary gland and help regulate growth. Human growth hormones can be used in children to treat short stature or other growth abnormalities under the careful guidance of a medical provider. Some athletes misuse human growth hormones to increase lean body mass and decrease fat, but they have little proven effect on performance.

Negative effects can include the following:

- Diabetes
- Enlarged heart
- Hepatitis
- Kidney failure
- Carpal tunnel syndrome
- Joint pain
- Increased fatigue or feeling tired

ERYTHROPOIETIN

Erythropoietin (EPO) is a naturally occurring hormone found in the body that helps to increase the production of oxygen-carrying red blood cells Some cyclists or endurance athletes use these to help increase the amount of oxygenated blood delivered to their muscles to help increase their endurance. The use of EPO is risky as it can lead to some of the following negative effects:

- Dehydration
- Increased viscosity of the blood
- Stroke
- Heart attack
- Blood clot(s) in the lung(s)

DIURETICS

Diuretics are drugs that help your body increase urination and remove water from the body. People may use diuretics to help decrease their weight to fit into a specific weight category for competition in sports such as wrestling or boxing. Other athletes may use diuretics to help flush out remnants of

other performance-enhancing drugs, so they are less likely to be detected on drug screens.

Side effects of diuretics include:

- Dehydration
- Dizziness or lightheadedness
- Muscle cramps
- Potassium deficiency
- Low blood pressure
- Loss of coordination and balance

SUPPLEMENTS

The most common supplement used as a performance-enhancing drug is creatine. Creatine is a naturally occurring substance in the body that helps your muscles release energy. Most people use creatine for activities that require short bursts of energy with high intensity such as weightlifting or sprinting. Although creatine has been extensively studied and is generally safe at levels recommended by the manufacturer, there are no studies on the long-term effects of creatine. Some people may not see any changes with the use of creatine, while others may see short-term increased lean muscle mass and improved recovery after working out. Negative effects may include:

- Abdominal pain
- Nausea, vomiting, or diarrhea
- Weight gain
- Anxiety

STIMULANTS

Stimulants are substances that help stimulate the central nervous system, increase heart rate, and increase blood pressure. Common stimulants include caffeine, amphetamines, ephedrine, or illicit drugs such as cocaine or methamphetamine. Stimulants can help increase endurance, reduce feelings of tiredness or fatigue, decrease appetite. Although stimulants may help with bursts of energy in the short run, there are many potential negative effects including:

- Dehydration
- Heart palpitations or abnormal heart rhythm
- Changes in sleep, including insomnia
- Addiction
- High blood pressure
- Stroke
- Heart attack
- Irritability

Performance-enhancing drugs have their appeal in individuals who are looking to make quick improvements to their athletic ability, appearance, and lean muscle mass. Still, the use of these drugs is not without consequences. If you have any questions about if any supplements may be beneficial to you, it is always best to talk to your healthcare provider.

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