

### Introduction

Drugs are life saving as well as life threatening chemicals. They are used by sports persons for different purposes. Performance enhancing drugs are banned in sports. The reasons for the ban are mainly, the health risks of performance enhancing drugs.

Anti-doping authorities state that using performance enhancing drugs goes against the spirit of sports.

According to world anti-doping Agency (WADA) "Doping is defined as the occurrence of one or more of the anti-doping rule violations.

### Meaning and Types of Doping (Concept)

Doping is the use of prohibited substance or methods to improve sports performance. It can also be defined as use of drugs or sports performance. Doping methods or substances might harm the health of athletes and might be fatal.

### Types of Doping (Classification)

(i) Performance enhancing substances.

(ii) Physical methods.

(iii) Performance enhancing substance:

(a) Stimulants

(b) Anabolic Steroids

(c) Peptide hormones

(d) Beta-2 Agonists

(e) Narcotics

(f) Diuretics

(g) Cannabinoids

(ii) Blood doping and Gene doping comes under physical method.

**Blood doping:** It is the process of increasing the Red blood cells by blood transfusion. Blood doping increases hemoglobin allows higher amount of  $O_2$  to fuel an athlete's muscles. This can improve stamina and performance, particularly in long distance events.

**Gene doping:** It is the non-therapeutic use of cells, genes, genetic elements or of the modulation of gene expression, having the capacity to improve athletic performance.

Increasing muscle growth, blood production, endurance and pain resistance. In such cases nothing unusual would enter the blood stream. So officials would detect nothing in blood or urine test. Some viruses target certain organ, such as kidney, liver. Therefore only samples are taken from these areas that could lead to detection.

### Prohibited Substances and Methods

Substances prohibited at all times.

(a) Stimulants

(b) Narcotics

(c) Steroids

(d) Growth hormones

(e) Beta Blockers

(f) Diuretics

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(g) Blood doping

### **Methods prohibited at all times or in or out of competition**

The following methods are prohibited at all times.

- (a) Blood doping
- (b) Gene doping

### **Responsibilities of Athletes**

- (i) Remain in direct observation of the Doping Control Officer.
- (ii) Produce proper photo identification
- (iii) Comply with sample collection procedures.
- (iv) Report immediately for test.

### **Ergogenic Aids and Doping in Sports**

Ergogenic aids are any external influences that can be determined to enhance performance in sports. These includes:

- (i) Mechanical aids
- (ii) Pharmacological aids
- (iii) Physiological aids
- (iv) Nutritional aids
- (v) Psychological aids

### **Doping Control Procedure**

Dope test is done on athletes by World Anti Doping Agency (WADA). This agency checks and controls doping in sports. It provides technical and financial help for testing. In India, the controlling body under the WADA is named as National Anti Doping Agency (NADA).

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