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Abstract:

Today doping refers a universal problem in the field of sports. All federations and International Olympic Committee tries from last fifty years to have permanent solution over this problem with the help of educational institutes and by organizing camps. Due to advanced development of technology new and more powerful and undetectable doping methods and techniques are introduced as well as to run this drug business sophisticated network of distribution have developed. In ancient period i.e in 776 BC Greek Olympians and Roman gladiators uses mushrooms, plants, mixture of wine and herbs to enhance the performance and get recovery from pain and injuries. But observing the side effects on human body these substances and drugs are banned by International Olympic Committee.

Key Words: Drugs, W.A.D.A., N.A.D.A., I.O.C., C.N.S, Ergogenic aids,

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Introduction:

In recent years, players those who are participating at various sports and games at different levels are using many substances to increase their performance. (banned by N.A.D.A & W.A.D.A i.e. National Anti-Doping Agency & World Anti-Doping Agency). These substances have been referred to as ergogenic aids. Drugs may improve sports performance but their effects are temporary. These drugs are very harmful in the long run of life. These substances are powerful stimulant of the brain, as well as they are given in the form of intravenous injections, they can produce more sensation of both physical and mental with decreased sensibility to pain, fatigue and hunger.

The Ginseng root comes from the plant *Panax Ginseng*, which cultivated chiefly in China and Korea. The root grows slowly and can be harvested after near about 5 to 6 years. It is approximately 2-3 cm thick and 10 -20 cm long. The lower part of the root sometimes gives the

appearance of a living being. In China the root is called tu- China which means 'earth spirit'. Depending on the drying method used for the fresh drug, the final product will be either white or red.

Russian root:

Ginseng root, having its high cost and difficulty in cultivating it, Russians thought about an indigenous plant that might prove to be a suitable alternative for ginseng. A wide range of plants were investigated like ginseng, belonged to the ivy family and in the late 1950s, the root of *Eleutherococcus Sentiosusas*, was found in animal studies to have effect similar to Ginseng.

Eleutherococcus Sentiosusas is a thorny bush about 2-3 m tall which grows widely large areas of eastern Siberia, China & Korea. In 1964 the root extract was launched on the market as a remedy for practically all illness and as a dietary supplement.

Drugs: chemical substance that excite a person

mentally or physically are called drugs.

Ergogenic Aids: is defined as something that improves (*Ergo means More & Genic means to produce more*) physical work performance.

Doping: use of substance to augment artificially the performance of an athlete during, either participation or preparation.

Drugs used by Individuals:

1. Unemployment- there is hardly any scope of employment for youth; they see nothing but blankness and despair before them.
2. Failure & Frustration- drive them into dark wells of despair
3. Lack of Vocational Courses- vacuum so far as their failure is concerned
4. Peer Group pressure- youth succumb to peer group pressure in schools, colleges & Universities. They feel secure and reassured in the company of their peer group and have temporary solace from the ills of life.
5. Illegal sale of drugs- there is mushroom growth of chemist shops which have become easy outlets of illegal sales of the drugs.
6. Loss of physical labour- most of the people lost their work traditional love for physical labour. Manual work has been taken by the advanced machines in almost all the spheres of life.
7. Mismatch of routine expenditure- many families have become rich by the sale of their ancestral immovable assets and enjoy all the luxuries of life. Members of the other party become asset less and participate in antisocial activities and take the support of drugs.

Drugs used by sports persons:

1. To attain honor- for excellence and improved performance they use drugs.
2. Psychologically to get them 'up' for the competition or event.
3. Physiologically they want to reduce fatigue.

Following classes and methods are described by the IOC are..

- I) Doping classes-**
 1. Stimulants
 2. Narcotic Analgesic
 3. Anabolic Steroids
 4. Beta- blockers
 5. Diuretics
 6. Peptide Hormones & Analogues
- II) Doping Methods-**
 1. Blood Doping
 2. Pharmacological, Chemical and physical manipulation
- III) Classes of drugs subject to certain restriction**
 1. Alcohol
 2. Marijuana
 3. Local Anesthetics
 4. Corticosteroids
- I) 1.Stimulants-** CNS (Central Nervous System)stimulants were originally introduced for medicinal purpose because of their stimulant, appetite and weight reducing properties.(American Foot Ball, Cyclists, Long Distance Runners)

Risks-

 1. Increases aggressiveness
 2. It is habit forming.
 3. Increases body temperature
 4. It could contribute to heart illness
 5. It gives temporary disappearance to fatigue and hunger
 6. Muscle tone increase, lead to loss of skills in more complex tasks.
- 2. Narcotic Analgesics-** Morphine like analgesics are the most effective of all analgesics, which is powerful anxiolytics and sedative.

Risks- 1. It is habit forming

 2. Risk of respiratory arrest and death
- 3. Anabolic Steroids-** Anabolic Steroids act upon the CNS. It is generally believedthat 70% or more athletes are using these drugs. Majority of the

championship level athletes taking part in weight and strength oriented events. Anabolic Steroids increases muscle mass and body weight. These drugs mostly used by sprinters, throwers, weight & power lifters, Tennis players, Marathon runners and other Long distance runners to gain strength and power.

Risks-

1. It affects the growth hormones of sportsman.
 2. Risk of Liver disorder and causes cancer.
 3. It develops secondary male characteristics in female.(increase in body musculature , voice change, menstrual irregularities)
 4. Impotency
 5. Decreases height and leads to stoppage long bones growth in young boys.
 6. Risk of high blood pressure and kidney damage or kidney failure.
- 4. Beta Blockers-**It is used to reduce tremor and palpitation. This drug is mainly used by shooters, Archers and jumpers and also used for patients suffer from hypertension, spasm of the coronary arteries, arrhythmias, prevention of recurrent heart attacks, toxic goiter and migraine.

Risks-Most common side effect encountered with the use of beta blockers are.

1. Mild gastrointestinal upsets in the form of nausea, diarrhea and stomachache.
 2. Mild depressive symptoms.
 3. Decreases heart rate
 4. Asthmatic condition certain irregularities of cardiac rhythm(severe heart attack)
- 5. Diuretics-** diuretics (water tablets) increases the excretion of sodium and potassium in the urine, which promotes an increase in passive loss of water. The term ‘Sal uretic’ is occasionally used to indicate a drug that increases the excretion of salt in the urine. In sports medicine, they have three principal areas of application.

a) To reduce localized swelling this may arise as a result of inflammation or trauma.

b) In compartmental syndrome

c) To counteract premenstrual symptoms

Diuretics mainly used in sports to reduce weight. (Judo, Boxing, Weight & Power Lifting, Wrestling, etc.)

Risks- 1. Reduce aerobic capacity

2. Risk of cramps

3. Decreases cardiac output

4. Risk of heart attack

5. Concentration of uric acid in the blood may increases

6. Gout disease affecting small joints

6. Peptide hormones and analogues- since 1989, the IOC (International Olympic Committee) has classed Human Chorionic Gonadotropin (HCG), adrenocorticotropin (ACTH), and human growth hormone (HGH), as doing agents, HCG can increase the production of testosterone in male subject, ACTH has been misused either intravenously or intramuscularly. HGH brings similar effects like anabolic steroids. Unethical and unsafe having several dangerous side effects so it banned by IOC.

II. 1. Blood Doping-blood doping (Blood boosting or Blood transfusion) is the injection of either whole or packed red blood cells (RBCs) into the participant the day prior to competition in the hope increasing the blood volume and its oxygen carrying capacity, & thus improving endurance performance, Blood doping may be the injection of an individual’s own blood which was drawn several weeks prior to reinjection. Training continuous and this apparently allows time for the body to regenerate new RBCs in which to restore the normal hemoglobin.

Risks- 1. Hypertension

2. More Viscosity

3. Intravascular blood clotting

4. Infection

5. Untrained physician – leads to mismatch blood transfusion.

II. 2. Pharmacological, Chemical and physical manipulation-in these class the most important in the kidney, where many drugs and drug metabolites are excreted. The effect of probenecid is twofold. It increases the blood level of many drugs, which give more probenecid effect with the usual dosages (or the usual effect with a lower dosage).

Secondly, probenecid reduces the amount of trace substance (for eg. Anabolic steroids) is released in the urine, thus making such substance much more difficult to detect in a urine sample.

III. 1. Alcohol-stimulate CNS, Small moderate doses of alcohol increases strength, muscular endurance. Alcohol brings extra load on heart, affects the liver and digestive system. It also increases urine production. It is mainly used by shooters and modern pentathlon players. IOC banned it. About performance some found decrease in performance and some found increase in performance.

2. Marijuana- studies have suggested that there is no difference between smoking marijuana and placebo in measurements of vital capacity expiratory flow rate and handgrip strength.

3. Local anesthetics- used to block the sensation of pain from any injured part of the body. (Widely used in surgical practice) also used to hide the severity injury or disease, so to avoid more seriousness. IOC has imposed certain restriction.

4. Corticosteroids- mainly used as anti-inflammatory drug. High doses can produce euphoria. In sports carry the risk of impaired healing of wounds and fracture. IOC banned it. During the Olympic Games, the IOC required written notification from the doctor, whenever Corticosteroids are injected locally intra particularly.

Conclusion: In sports rising players are in search of short cut to get success, accidentally getting involved doping, which is harmful to their health as well as their carrier too. Now as a third eye NADA &WADA <http://familyfitness.about.com>
<http://sciencecongress.nic.in>.

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