

Anti-Doping Awareness in Sports

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Lecture -3

Doping in Olympics

Good morning, friends, and welcome to the NPTEL anti-doping program. This is the third lecture on anti-doping in week one, and the lecture for today is doping in the Olympics. I'm Professor Dobson Dominic. I'm a sports medicine specialist. In today's session, we'll be looking into doping, the history of doping, especially in the Olympic Games.

In the previous two lectures, we looked into doping overall throughout the world in all the competitions put together. We also looked into doping in perspective to India. In today's lecture, we'll be looking into the history of doping particular to the Olympic Games. We'll look into the role of the International Olympic Committee and the World Anti-Doping Agency in preventing doping, the major doping scandals in Olympics. We'll also look into the challenges and future outlook to prevent doping.

If you look into the early history of Olympic doping, it started right from ancient times to the 1950s when athletes consumed natural substances, especially herbs, wine, and animal parts as part of performance-enhancing substances. Right from Greek Olympians in 300 BC who used specific mushrooms and sheep testicles to enhance performance, all the way up to modern Olympians in 1904, St. Louis Olympics, Thomas Hicks, a marathon runner, used strychnine and brandy during the race, almost collapsing and dying.

The role of IOC and doping: the International Olympic Committee (IOC) was formed in 1967, and they formally defined doping as the administration or use by a competitive athlete of any substance foreign to the body or any physiological substance taken in abnormal quantity or taken by an abnormal route of entry into the body with the sole purpose of increasing in an artificial manner his performance in the competition.

So, IOC identified the menace of doping as early as 1967. The first instance of a professional athlete losing a medal in Olympics was in the year 1968 when the Swedish pentathlete Hans Gunnar Liljenwall tested positive for the banned substance and he lost

his bronze medal. The banned substance found in his blood sample was alcohol. Olympics has also seen systemic doping adopted by several countries, especially the East Germany Olympic teams of the 1970s and 1980s adopted a state-sponsored doping program. In the 1976 Montreal Summer Olympics, East Germany won almost 40 gold medals, especially the women swimmers alone won 11 of 13 swimming events, which was an unprecedented feat, and they were all found to have doped.

The modern Olympic doping scandal, the most shocking incident, is the incident by Ben Johnson in the 1988 Seoul Olympics. He won the gold medal, but subsequently was stripped of the gold medal after he tested positive for anabolic steroids, stanozolol. EPO (erythropoietin) and blood doping became prevalent in endurance sports in modern Olympics. The 2004 Athens Olympics saw the maximum number of athletes getting disqualified for doping violations. In the 2010 last decade, the Russian doping scandal was a major doping incident.

Russian athletes, almost 20 athletes, 8 from the London Olympics and 14 from the Beijing Olympics 2008, were tested retrospectively and they were banned subsequently. The Sochi Winter Olympics in 2014 saw state-sponsored doping adopted by Russia. So, anti-doping organizations, especially WADA, adopted the World Anti-Doping Agency Code 2015 where they allowed for retrospective testing where athlete samples can be stored for more than 10 years and they can be subsequently re-analyzed using improved detection methods, and subsequently, if there is any PEDs or performance-enhancing drugs found, then the athletes can be subsequently banned. So, WADA Code 2015 allowed for retrospective testing, which was a significant milestone in anti-doping strategy.

Some of the important years in the establishment of anti-doping regulations: in 1967, the International Olympic Committee established a Medical Commission, understanding the significance of the menace of doping.

In 1968, the first drug test was carried out in the Winter Olympics in Grenoble, France. In 1972, the Munich Olympics, broader drug testing to identify several performance-enhancing drugs was adopted. 1999 marked a significant milestone when the International Olympic Committee helped establish WADA or the World Anti-Doping Agency. In 2019, the International Olympic Committee also helped establish ITA or the International Testing Agency. So, IOC has played a very important part in anti-doping effort.

IOC or International Olympic Committee has a zero-tolerance policy to combat doping and they hold accountable anyone responsible for using or providing performance-enhancing drugs. IOC's efforts are focused on prevention through detection

and deterrence. The International Olympic Committee in 1999 helped establish WADA. IOC also in 2019 helped establish ITA or International Testing Agency, an independent organization specialized in managing anti-doping programs.

Modern Olympic anti-doping efforts: The contemporary Olympic anti-doping efforts are all overseen by WADA. WADA is an international independent organization established following the catastrophic 1998 Tour de France when several cyclists were found to have abused performance-enhancing drugs and the subsequent related criminal proceedings followed, and WADA was established with the help of IOC and other international organizations. WADA prohibits compounds as performance-enhancing drugs if they satisfy two of three criteria:

One, the PEDs or substances should enhance the performance. Two, they represent a health risk for the athlete. Three, they violate the spirit of the sport.

If any of the two things are satisfied, then WADA will ban the substance as PEDs or PES. WADA stands for World Anti-Doping Agency. It has its headquarters in Montreal, Quebec, Canada. It was established in 1999 in Lausanne, Switzerland. It was established to coordinate globally the anti-doping efforts, standardizing the regulations, and ensuring fair and clean competition. The International Olympic Committee played a very significant part in the creation of the World Anti-Doping Agency or WADA. IOC and WADA have a mutual collaboration where Olympic anti-doping efforts are overseen by WADA.

Overview of 2021 Code: protecting clean athletes, harmonizing regulations globally. Key updates of this collaboration are new sanctions for doping violations and protection of athletes' health and welfare. Also, this collaboration enables the introduction of the Athlete Biological Passport where there is a forensic doping technique employed where athletes can be tested both in competition and outside competition.

The World Anti-Doping Agency Prohibited List 2024 has several components:

S0 stands for non-approved substances which are banned at all times.

S1 stands for anabolic agents which are banned at all times.

S2 stands for peptide hormones, growth factors, and related substances — again they are banned at all times.

S3 stands for beta-2 agonists or beta blockers — again banned at all times.

S4 stands for hormone and metabolic modulators — they are banned at all times, both in and out of competition.

S5 stands for diuretics and masking agents — again banned at all times.

There are certain things like beta blockers which are particularly banned in particular sports and they are termed as P1. In addition to the substances:

S6 stands for stimulants,

S7 for narcotics,

S8 for cannabinoids,

S9 for glucocorticoids.

They are all banned in competition. They are not banned outside competition. They are banned during competitions. In addition to this 10 group of substances, WADA has also banned certain methodological methods of doping like manipulation of blood and blood components, chemical and physical manipulations, and the very significant gene or cell doping. All these methods are banned under WADA's Prohibited 2024 List. This prohibited list is updated annually to include substances and methods which are prohibited in a particular sport.

Now coming to performance-enhancing testing in Olympics: Olympic athletes undergo frequent unannounced testing during the Olympic competitions. Athletes must submit the whereabouts information for every day, including the location of regular activities and travel. Further, the athlete must report a 60-minute window daily between 5 a.m. and 11 p.m. during which they must be available at a specific location and available for random testing. There are no exceptions given for any Olympic athletes. Failure to submit this information or failure to be available during this 60-minute window counts as a whereabouts failure.

Now coming to doping testing in the recent Paris 2024 Olympic Games: The 2024 Olympic Games in Paris saw widespread anti-doping measures which were adopted. More than 1,000 volunteers and professionals were involved in delivering anti-doping controls throughout the Games. All the samples were sent to the only laboratory which was accredited in France by WADA. The name of the laboratory was Laboratoire Anti-Dopage Français located in Paris, Saclay University. They analyzed all the samples.

Challenges and future outlook:

Challenges: evolving doping methods, legal complexities and enforcement disparities, and athletes have moved on from performance-enhancing drugs to modern performance-enhancing genes, commonly known as gene doping. So, WADA has to monitor all these newer advancements, and the anti-doping measures have to be in tune with these newer doping methods. The Biological Passport program to track athlete

biological markers over time has to be enforced properly. In the 2020s, there is an increased use of artificial intelligence to detect doping patterns.

To conclude: Doping in the Olympics has been persistent from ancient times. Evolution in doping with newer substances and methods has prevailed over a period of time, and anti-doping agencies like WADA and ITA have to be ever vigilant to the newer doping strategies. There are several challenges in anti-doping and it has to be enforced strictly to have a clean sport. These are the references for this lecture. Thank you and Jai Hind.