

Anti-Doping Awareness in Sports

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Lecture -1

World History of Doping

Good morning friends and welcome to NPTEL anti-doping course. I'm Professor Dobson Dominic, Head of Sports Medicine and Sports Science, Saveetha Medical College. and I'm your course facilitator. In this week, we'll be looking into world history of doping, Indian scenario in doping, doping at Olympics. We'll be looking at World Anti-Doping Agency and NADA, which is National Anti-Doping Agency. And also we'll look into WADA code.

So these are the first week's sessions. Let's move to today's session. Today's session will cover on early history of doping, 19th and 20th century developments in doping, major doping scandals, history of anti-doping, formation of World Anti-Doping Agency, impact of World Anti-Doping Agency, and we'll conclude with the future remarks. What is doping?

WADA defines doping as use of banned substances or methods which are used by athletes to enhance athletic performance. These are commonly termed as performance enhancing drugs or performance enhancing methods. This can vary from anabolic steroids to stimulants to hormones to even certain techniques like blood doping techniques. Use of performance enhancing drugs undermines integrity of sports, threatens the players health and also distorts fair competition. Doping, if you look into the history, is prevalent from even ancient civilizations.

So, if you need to track the history of doping, the roots can be traced back to ancient civilizations like Greece and Roman warriors. Athletes and warriors of those ancient civilization tried to enhance the performance using herbal supplements. Ancient Greek Olympians consumed several concoctions like hallucinogenic mushrooms, plant extracts to boost stamina and performance. Roman warriors or gladiators were given a cocktail of herbal stimulants to endure physical pain and fight aggressively. So, the roots of doping lies in ancient civilizations.

Now, if we come to look at the birth of modern doping. So, modern doping, we look into anything after 1900s. Origin of modern doping can be tracked to this famous physiologist and neurologist, Charles Edward Brown Seaward. who in 1850 created a concoction, which was then termed as Elixir of Life, which was termed as the first earliest known performance enhancing drug. This was nothing but a cocktail of animal organs, especially gonads, which they believe was given to that athletes and which was believed to enhance the performance of the athlete.

So, as we said, the modern doping has its root is prevalent from 1900s. The earliest known case of doping was in 1904 Olympic games, when the then marathon winner Thomas Hicks won a gold medal. Thomas Hicks was from America. He won the gold medal, but he nearly collapsed and died at the end of the marathon, because during the course of the marathon, his trainers injected a mixture of Strychnine and Brandy during the race. This was supposed to be, Strychnine was basically a pesticide which they believed to be of a performance enhancing property.

So this was given to Thomas Hicks and he ran the race and he almost died during the course of the marathon. Mid-20th century saw the rise of doping. 1930s and 1940s, stimulants were prevalent rampantly, especially amphetamines were used in sports and military. This was a period of World War, especially at the end of World War, around 1950s, World War II got over. It was rampant anabolic steroid abuse.

Anabolic steroids were developed at the end of 1950s and this was widely adopted by athletes, particularly in power sports like weightlifting, track and field and even bodybuilding. So at the end of Cold War, there was intense rivalry between USA, United States of America and Soviet Union or USSR. So this during Cold War spurred widespread doping in sports as both sides sought to dominate international competitions. In doping in Cold War era, 1950s Soviet Olympic team in fact, experimented with testosterone supplements to increase the strength and power of the athletes. In 1960, Rome Olympics, Danish cyclist, Anima Jensen, collapsed and died during Tour de France, allegedly due to the use of stimulants, amphetamines.

This was a wake-up call for International Olympic Committee. So, stimulant use in cycling was very much prevalent during 19th century, and they played a key role in explosion of stimulant use after World War II, especially in cycling. Another episode is British cyclist, Tom Simpson, collapsed and died during Tour de France, 1967, after consuming a combination of amphetamines and alcohol. So, after this catastrophic episode, International Olympic Committee was formed in 1967. The key objective of International Olympic Committee Medical Commission was to identify banned substances and methods, implement drug testing procedure, ensure athletes health and

fairness of the competition.

In 1968 Olympics held in Mexico City was the first official doping test was conducted. Moving on in 1970s there was a systematic doping which was made into a strategy by certain countries. In 1970s, especially anabolic androgenic steroids widespread in professional sports particularly in anaerobic sports like weightlifting track and field and bodybuilding Republics of Soviet Union and East Germany adopted state-sponsored doping program in fact in 1970s East Germany implemented a state-sponsored doping program where they injected anabolic steroids to young athletes, especially female athletes, and they in fact dominated the 70s Olympics, especially held in Munich, Germany. In fact, they won more than 40 medals, 40 gold medals, 11 of them only in swimming, which was unprecedented at that time. 1980s saw the doping in professional sports.

1980s saw increased doping across many professional sports, particularly cycling, American football and baseball. This was a decade which saw the use of rampant human growth hormone . Human growth hormone emerged as a new doping agent, which was used and preferred by athletes to enhance muscle mass and recovery. it was preferred by the athletes because it was not easy to detect compared to anabolic steroids. Moving on, in 1988, the world was shocked by the scandal of Canadian sprinter, 100 meters champion, Ben Johnson.

100 meters in 1988 Seoul Olympics was at that time the most watched athletic sport in the world. So at the end of 100 meters championship Ben Johnson decimated the field and was a comprehensive winner with a at that point well record time of 9.78 seconds. He left behind legends like Carl Lewis who was a distant second. But after the race Ben Johnson was disqualified due to he was found to have doped and he was found to have this anabolic steroid Stanosolol and his gold medal was taken away from him and given to the silver medal placed Carl Lewis of USA.

Coming to, moving on to cycling, especially saw rampant doping which is prevalent especially in 2D France. There was widespread doping activities prevalent in endurance sport of cycling in 2D France. Especially in 1998 there was a shocking incident when a car full of PEDs belonging to the French Festina cycling team was found before race. All the nine Festina riders confessed to using EPO or erythropoietin. In 2006, American Floyd Lantis was caught using he was caught doping and the most shocking incident of Lance Armstrong who was a cycling legend is a seven times Tour de France winner.

He was never caught during his professional career but while writing his autobiography and especially when he was part of a televised interview with Oprah Winfrey in 2013,

Lance Armstrong admitted to doping and all his seven 2D France victories were relinquished and he was denied those victories. So this was again a very scandalous thing in cycling. Moving on, the recent scandals in doping was especially Balco scandal. In 2003, Bay Area Laboratory Cooperative, California marketed a then undetectable designer steroid known as Tetrahydrogesteronaut.

THG, known as the CLEAR. Shortly after a test for tetrahydrogesteron THG was developed, several existing urine samples from athletes were tested positive. The most important athlete who tested positive was US female sprinter Marion Johns. and several other profile sports stars who has used this steroid commonly known as The Clear. The most recent systemic scandal was the Russian doping scandal which was found in 2015 when there was a whistleblower who revealed that Russia has state-sponsored doping program. This led to Russia being banned temporarily by World Anti-Doping Agency.

They were banned from taking part in Olympics and also other international competitions. Formation of WADA, creation of WADA was established in 1999. WADA was created to promote, coordinate, monitor, fight against doping in sport so that both Professional and amateur sport remains clean. It sought to harmonize anti-doping policies worldwide. In 2004, WADA created a World Anti-Doping Code.

This came into effect from 2004. This WADA code was a comprehensive set of rules and guidelines Aim was to standardize anti-doping efforts. The code was adopted by all major sporting bodies, especially International Olympic Committee , International Sporting Federations and all national anti-doping organizations adopted World Anti-Doping Code. This was to standardize anti-doping efforts. Now looking into the technological advances which has happened in testing especially anti-doping.

Throughout the 2000s and 2010 advancements in drug testing technology significantly improved ability to detect performance enhancing drugs. World anti-doping agency WADA continues to evolve doping test following on new drugs micro dosing the newer doping techniques were followed erythropoietin and blood doping test was conceptualized newer technology helped create accurate detection of blood doping especially in endurance events like cycling and long distance running Very importantly, WADA also brought in a forensic approach to testing, adopting Athlete Biological Passport or ABP. This approach helped in an accurate detection of doping. If you look into the major milestones in the history of doping, there is A wide array, you can say, for a past 100 years, 100 to 120 years, starting from 1904 when the marathon runner used strychnine, 1920 use of shirine marathon was done, widespread use of stimulants and amphetamines during the 1930s, 40s and 1950s, Use of testosterone was first identified during 1954 Olympics. Doping was given a term by International Medical Committee,

IOC formed an International Medical Committee in 1967.

Major milestones of doping In the past 120 years, 100 to 120 years, there has been several milestones in doping, right from 1904 when the athletes used stretch line in marathon to all the way to 1999 when WADA was formed officially with the help of IOC, International Olympic Committee. There has been several milestones with the use of Shireen marathon in 1920, isolation of testosterone, there's been several milestones. So to conclude, doping has been a part of sports for centuries, but modern anti-doping efforts led by organizations like World Anti-Doping Agency has significantly advanced the fight against performance-enhancing drugs. From early usage of androgenic anabolic steroids used to sophisticated modern gene-doping techniques, athletes have continued to find new ways to cheat. Doping remains one of the biggest threats to the integrity of sport.

However, anti-doping technologies and global coordinations are catching up and the future looks promising for a clean sport. References, these are my references for the students to have a wide reading. Thank you, thank you for the listening.