

## **Anti-Doping Awareness in Sports**

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**Lecture -21**

### **The Sample Transport Process**

Good morning ladies and gentlemen, and welcome to week 5 of this course on anti-doping awareness in sports. Today we will discuss a topic called the sample transport process. To bring you in perspective, we are right now at the stage when the sample has been collected, and we are supposed to transport the sample to the WADA accredited laboratory. I will be covering this lecture under the following outline: Introduction, objectives of sample collection, roles and responsibilities, preparation for urine collection, the urine sample collection process, transportation of urine samples, the blood collection procedure, post-collection procedures for blood, blood sample transport, the chain of custody, modifications in case of special cases, consequences for improper procedures and a take-home message or conclusion.

So, we all know that the World Anti-Doping Agency is dedicated to promoting fairness in sports. Proper sample collection for doping control is really critical to maintain the integrity of sport. These procedures ensure accurate results and protect athletes' rights. WADA has set strict standards for sample collection which is the same worldwide and must be followed by everyone who conducts sample collection as per the WADA code. Adherence to these guidelines helps prevent manipulation or contamination of the samples.

So let's define what sample transport is. The process of transport starts when the samples and the related documentation leave the doping control station and ends with the confirmed receipt of the samples and sample collection session documentation at their intended destinations. The intended destination is usually a WADA accredited laboratory. The main activities are arranging for the secure transport of the samples and related documentation to the laboratory that will be conducting the analysis and arranging for the secure transport of the sample collection session documentation to the testing authority. These are two different things.

The sample with one set of forms goes to the WADA accredited laboratory, and the rest of the balance forms go to the testing authority which has ordered the dope sample testing. So what are the objectives of sample collection? To ensure the authenticity and the integrity of urine and blood samples. To help detect the use of performance-enhancing drugs by athletes. These procedures cover everything from preparation and collection to transportation. It is essential to maintain strict control throughout the process.

The protocols outlined in the WADA guidelines ensure that fairness and consistency are maintained. Maintaining the chain of custody is critical to preserve the sample's integrity. There are several roles and responsibilities which have been defined as per the WADA code. The doping control officer is responsible for preparation, coordination, briefing of the sample collection personnel, athlete notification, overseeing the sample collection, maintaining the chain of custody and all the post-collection duties.

There is a blood collection officer who is supposed to be qualified and competent. He is supposed to collect and handle the blood samples, and also manage the aftercare for the athletes. He is also responsible for documentation and biohazard management. The chaperone is responsible for athlete notification, escorting the athlete to the doping control station, observation of the athlete in between, maintaining confidentiality during the process and any additional roles as he may be directed to by the doping control officer.

The athlete is supposed to cooperate. He is supposed to give his identification when asked for. He is supposed to give the sample when he or she is directed to. Athletes are supposed to check their documentation and they should know their rights and responsibilities. So let's talk about the urine sample collection process. Now we all know that urine samples are collected both in competition and out of competition. There is a proper preparation which involves securing the necessary equipment and briefing all the personnel who are involved in the sample collection process.

Athletes are usually notified with no advance warning, and the rule is called the no advance notice rule. Athletes are notified with no advance warning as per the no advance notice rule. The athlete provides the sample under direct observation by the chaperone or the DCO to avoid any form of tampering with the sample. Samples are processed and sealed in tamper-proof containers for transportation.

Preparation for urine collection: The DCO is supposed to ensure that all required equipment is sterile and available in sufficient quantities. The collection station should guarantee the athlete's privacy and should be completely secure. No unauthorized person is allowed to enter the doping control station and even authorized personnel are allowed to enter only if they have the doping control pass. All personnel involved in this process

are briefed upon their responsibilities and the athlete should have a choice of at least two sample kits to ensure transparency.

During the urine sample collection process, the athlete selects a sealed collection vessel to ensure equipment integrity and to prevent any allegations of malpractice later. The DCO or the chaperone directly observes the sample provision to prevent any form of tampering. A minimum of 90 ml of urine is required and there are certain specific gravity requirements which are to be met for the analysis. If the volume is insufficient, it is deemed to be a partial sample and the partial sample process is initiated. Once there is enough urine collected, it is divided into A sample and B sample for analysis.

Both the samples are sealed, labeled, and documented before you leave the doping control station. The post-collection handling of samples involves dividing the samples into two bottles, A and B, under the supervision of the athlete. You are supposed to check that the seals on the containers are tamper-proof to ensure no unauthorized access. The athlete verifies the correct labeling of the samples and signs off on the paperwork. The DCO documents the entire process on the doping control form ensuring that it is accurate and there are no mistakes made on the form.

Both the athlete and the representative can comment on the process on the doping control form if they find anything out of place. The samples are stored securely before being dispatched to the testing laboratory. The transportation of the urine samples must be done in tamper-evident containers to maintain integrity. The samples are placed in secure courier transport bags that ensure protection and climate control during transit. That means the samples should be stored under cold chain to prevent degradation or to prevent any tampering.

The DCO ensures that a chain of custody is maintained throughout the transportation process. Courier services must follow proper protocols for handling and delivery to the laboratory. The documentation accompanies the samples to ensure a clear record of all handlers in the chain. This was about urine collection.

Now let's talk a bit about the blood sample collection. Blood samples are collected to assess biological markers such as in the athlete biological passport. Blood collection involves additional precautions compared to urine collection because it is an invasive procedure. Venipuncture is performed by a qualified phlebotomist or a trained blood collection officer. The process covers collection, sealing, storage and transportation of the sample to a WADA accredited laboratory. Equipment for blood collection includes sterile needles, syringes, blood tubes and biohazard disposal containers.

A clean and private environment must be maintained to ensure the safety and privacy of the athlete. A secure temperature-controlled storage area is essential to preserve the blood

samples. The DCO ensures that all equipment is properly sealed, tamper-proof and ready for use. And it is also the duty of the athlete and the athlete support personnel who accompany the athlete to ensure that all the equipment which is being used is properly sealed and tamper-proof. The athlete should sit calmly for at least 10 minutes before blood collection.

During the blood collection procedure, blood is drawn from a vein by venipuncture by the blood collection officer or a trained phlebotomist. Blood is collected into sealed vacutainer tubes to prevent contamination. The athlete's identity is kept confidential throughout the process by using coded labels on the blood samples. The collection process must be done carefully to avoid any physical harm or contamination.

After collection, the athlete is advised on aftercare procedures such as rest for some period and applying pressure to the puncture site, and applying a bandage to the puncture site. The sample is then sealed and handed over for further processing. Post-collection procedures for blood sampling. The blood collection officer disposes of the used equipment in biohazard containers according to the health regulations in place. The DCO ensures that the sample is properly sealed and documented.

The athlete must review and sign the doping control form, confirming the accuracy of the information. The DCO verifies the integrity of the sample and ensures that the chain of custody is maintained. If there are any irregularities which are noted during the process, the DCO, the chaperone, the athlete or the athlete support personnel is at liberty to note the irregularities on the doping control form for future reference. Blood samples are kept in secure storage before transportation to the testing laboratory. When you are transporting blood samples, they must be stored and transported in a temperature-controlled environment.

They are placed in insulated transport containers or refrigerators to maintain sample stability. The DCO ensures that the transport conditions, including the temperature, are appropriate and recorded at each stage using data loggers. The chain of custody is maintained with each person handling the sample duly documented. There is a proper chain of custody form which has to be filled in and signed by each person handing over and taking over the sample transport equipment.

Samples are delivered to a WADA accredited laboratory for analysis with all documentation in place. Secure courier services must be used to ensure the samples arrive in good condition and on time. We talked about the chain of custody, so let's discuss a bit more about the chain of custody. Chain of custody refers to the documentation and process tracking of every individual handling the sample. This ensures that the integrity of the sample is not compromised at any stage.

Each person involved in sample collection, transportation and analysis is recorded. Maintaining the chain of custody is critical for the sample's admissibility in anti-doping cases. Any breach in the chain of custody could invalidate the test results. WADA requires strict compliance to protect the rights of both athletes and the testing authorities. There are certain modifications which are allowed for special cases in this process.

These special cases or modifications are allowed for minors, disabled athletes or athletes who are using catheters. For minors, an athlete representative or guardian may be present throughout the process and should definitely be present during the urine sampling process in the bathroom along with the chaperone. Athletes with disabilities may request reasonable accommodations during the sample collection process. If the athlete is disabled, does not have upper limbs, they may request assistance during the sample collection process and it can be allowed. WADA provides specific guidelines for handling athletes who self-catheterize or use urine drainage systems.

In all cases, the procedures should maintain the sample's integrity and the athlete's dignity. The DCO must document any modifications and ensure compliance with all WADA standards. As has been reiterated several times earlier, anti-doping procedures under the WADA code is a legal issue and there are certain guidelines which have been laid down and WADA emphasizes that strict adherence to guidelines is necessary to avoid any procedural errors. Guidelines are laid down, training is given and it is up to the people involved in the anti-doping process to ensure that they follow the guidelines and their training strictly because failure to follow proper procedures can result in invalid samples which will definitely harm the anti-doping efforts. Improperly sealed or handled samples can lead to false negatives or false positives.

If there is anything proven in the sample collection process or if there are any proven breaches in the transport process, the athlete gets the opportunity to challenge the results which may have detrimental effects to the anti-doping process as a whole. Violations of doping control protocols will result in anti-doping rule violations for the athlete and the athlete's support personnel. Proper training and accountability help to reduce the likelihood of procedural errors. I am reiterating it. WADA has given strict guidelines for anti-doping procedures, anti-doping sampling, anti-doping support, anti-doping collection, anti-doping transport, and all aspects related to the anti-doping process.

It is in the interest of everybody to ensure that all these processes are strictly followed in true letter and spirit. So, what is the take-home message from this? Strict adherence to WADA guidelines ensures fairness in the anti-doping process. Proper sample collection and transportation are crucial to maintaining the integrity of sports. There are laid down guidelines for sample collection, for athlete notification, and for every part of the doping

control process, including sample collection and transport. So please ensure that you follow these guidelines.

Athletes' rights are protected through transparent and accountable procedures. Both urine and blood samples must be handled with care from collection to laboratory testing. Maintaining a chain of custody is essential to validate sample integrity. Not just maintaining, but documentation of the chain of custody is also very, very essential. Compliance with WADA standards ensures reliable results and supports the fight against doping in sport.

These are my references, ladies and gentlemen. I strongly urge you to go through them if you wish to delve deeper into this subject. So we have come to the end of lecture 1 of week 5. I wish to thank you for your patience and for your support for this course. There will be an assignment which you will have to submit online within the designated time frames. Thank you for listening ladies and gentlemen and Jai Hind.