UNIT-10

TRAINING AND DOPING IN SPORTS

Content

- Meaning and Concept of Sports Training
- Principles of Sports Training
- Warming up & Limbering Down
- Skill, Technique &Style
- Concept and Classification of Doping
- Prohibited Substances and their Side Effects
- Dealing with alcohol and Substance Abuse

Learning Outcomes

At the end of this unit you will be able to:

- Identify the need of training in sports
- Recount principles of sportstraining
- Explain the significance of warming up and coolingdown
- Differentiate between skill, technique and style
- Identify doping and types of doping
- Recognize side effects of prohibited substances
- Recognize the effect of alcohol abuse and substance on sports performance

Discussion

Do you follow a fitness routine? Complete the given routine and share your information within your group. After discussion, is there anything you would like to change? If so, why/why not?

Personal Details					
Name		Age		Gender	
Physical Fitness Goals					
What are your short term physical fitness goals? (3 months)		What are your medium term physical fitness goals? (6 months)		What are your long term physical fitness goals? (a year)	
Your current lifestyle/stat					
How would you describe your current level of fitness?	Unfit	Below average	Average	Good	Very good

How important is exercise to you?	Not all important	Slightly important	Moderately important	Very important	Extremely important
How often do you exercise?	1-2 times a week	2-3 times a week	3-4 times a week	4-5 times a week	Everyday
What barriers, if any, prevent you from exercising more regularly?	I don't have enough time	I can't stay motivated	I have an injury	I don't really enjoy exercising	I exercise regularly with no barriers
Would you say you eat a healthy balanced diet?	Not really	Sometimes	Fairly often	Often	Always

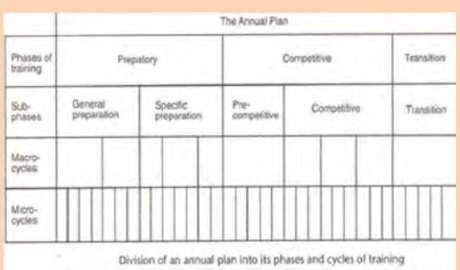
10.1.1 MEANING AND CONCEPT OF SPORTS TRAINING

Training is the process of preparing human resources for performing a particular task or activity. Sports performance training simply is a type of training that is designed to improve the sportsperson's fitness level and ability to perform in a given sport. It includes corrective and restorative exercises, strength training, conditioning and cardiovascular training, sports specific technique sand drills, periodization, nutritional advice, mental and psychological training by a qualified trainer.

Do you know?

MODERN SPORTS TRAINING is a method of developing an athlete's performance. And for improvement of performance it is important to know about the **Periodization**.

Periodization means dividing the training plan of an athlete in order to enable him/her to achieve his/her optimum performance during the main championship. It includes a preparatory period, competition period and transitional period in one periodization cycle.



Division of an annual plan into its phases and cycles of training

Preparatory period is the longest phase where players work on their fitness components, sports technique and tactics. During th ***Competition peri***, players play minor competitions before playing the main competition.

Minor competitions help an athlete to identify his/her own error and to rectify it before the main competition ***Transitional perio*** is at the most a month which starts just after the end of the main competition. It is an active rest period of an athlete where recreational activities are advised. Players need to enjoy and help their body and mind to recover.

Sports Training is not a new concept; it has been implemented and assessed from ancient times. During the times of Ancient Olympics, players trained themselves for achieving high levels of performance. They were required to report at the venue one month prior to the commencement of the Games for training together.

Do you know?

The preparations of an ancient Olympic athlete started many months, even years, before the opening of the festival, in the gymnasion. The Ancient Greek gymnasion was a public location used for training, education, exercise and socialising – something like the modern community centre. In Ancient Greek society, achieving a harmonious balance between body and mind was an important aspect of an individual's personal development. The gymnasion therefore hosted wrestling matches and provided weight lifting training as also music rehearsals and philosophy lectures.

Now a days, as you know competition has increased in all the fields. Similar is the case with sports. Modern sports training has become very scientific and systematic with well-designed equipment and means for developing the performance of an athlete as per his/her abilities. This is the reason why proper training schedules are now designed on an annual or Olympic period basis. In these periods, training is divided into different phases for better acquisition or adaptation of skills, and to attain optimum results during the main competition.

Extension Activity

Sport training is a process of preparation for a sport performance, put simply. It consists of four parts:

- Conditioning training (strength training, endurance training, flexibility training)
- Training of technique (Technical preparation)
- Training of tactics (Tactical preparation)
- Psychological training (Mental preparation)

Working in groups, interview ten sports persons from your school, or another near by school, who have participated in CBSE's Zonal Competitions (or, any equivalent Competition). Find out details of their training under the heads given above.

Today sports training is not only related to the training of physical exercises, but is a complex process which includesa sequential way of training where an athlete develops his physiological and psychological adaptation through working on different areas such as individual care, specific fitness and conditioning, technical help, utilising appropriate machine equipment, considering climate conditions, special athletic diet plan, safety means, emotional stability in competition, feedback, increased participation in competition, rehabilitation treatment, motivating forces, overload etc. All these factors are inter-related and produce high levels of performance in the competitions. In the present competitive world, these factors are as important as physical training/exercises for improving the performance of an athlete which is the ultimate aim of sports training.

As you are aware, though exercises and training are different in nature, they are related to each other. In fact, exercise is a part of training. Exercise is a short-term physical activity which results in increasing the breathing rate, heart rate, blood pressure, blood flow and fatigue etc. On the other hand, training is a long-term process which involves a number of scheduled days and results in decreased breathing rate and resting heart rate, lowering of blood pressure,quick recovery and reduced risk of disease.

According to Harre, "Sports training, based on scientific knowledge, is a pedagogical process of sports perfection which through systematic effect on psycho-physical performance ability and performance readiness aims at leading the sportsman to high and the highest performance."

Matweyew, "Sports training is the basic form of an athlete's training. It is the preparation systematically organized with the help of exercises, which in fact is a pedagogically organized process of controlling an athlete's development."

Martin,"Sports training is planned and controlled processing which, for achieving a goal, changes in complex sports motor performance, ability to act and behaviour are made through measures of content, methods and organisation."

Hardial Singh, "Sports training is a pedagogical process, based on scientific principles, aiming at preparing sportsmen for higher performances in sports competitions."

According to G. Thiess and G. Schnabel,"Sports training is a scientific based and pedagogically organised process through which planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition."

According to Todd Townes, "Sports training is a targeted approach to training focused on your sport of choice."

According to P. Garrison, "Sports training is training designed specifically to increase performance and minimize injury of general sports performance as well as specialised sports performance.

"Sports training is the preparation of an athlete on scientific based principles in sequential manner to attain optimum performance in their desired competition."

So, in broad terms it can be said that, training is a well-planned, systematic, pedagogical (educational) process through which optimum performance can be achieved by an athlete in sports and games by working on implementing scientific principles. In simple word "Sports training is an organised procedure by which people learn skills for a definite purpose."

I. Tick the correct options

1. In order to develop the best performance of an athlete in competition, sports training has become
   - i. scientific and systematic
   - ii. disorganised and irrational
   - iii. complex and painstaking
   - iv. easy and approximate
2. Exercise is a short-term activity which resultsin
   - i. normalising the heart rate
   - ii. decreasing blood pressure
   - iii. increase in bloodf low
   - iv. decrease in heart rate
3. Due to systematic training the resting heart rate of a Marathon player will
   - i. remain normal
   - ii. decrease
   - iii. increase
   - iv. become critical
4. The main benefit of systematic and scientific sports training is an increase in
   - i. performance
   - ii. injuries
   - iii. physical labour
   - iv. supervision

II. Answer the following questions briefly.

1. What do you understand by the term sportstraining?
2. What is the need for sportstraining?
3. Differentiate between Training and Exercise.

III. Answer the following questions in 150-200 words.

1. In what ways does sports training become an essential part of a trainee's life in sports?
2. Why is systematic sports training required for anathlete?
3. Apart from training, list the factors, that contribute to a successfulplan?
4. "Scenario of sports training is changing day by day." Justify thestatement.

10.2.1 PRINCIPLES OF SPORTS TRAINING

In order to prepare a sportsperson for his/her highest performance in the *desired* tournament acertain process has to be followed; that is called training. Sports training nowadays demands certain technicalities and to make the process simpler, yeteffective, few principles should be kept in mind. These principles facilitate a trainer in successfully employing an efficient training Programme.

Do you know?

endurance – the ability to work for a longer duration of time under the condition of fatigue.

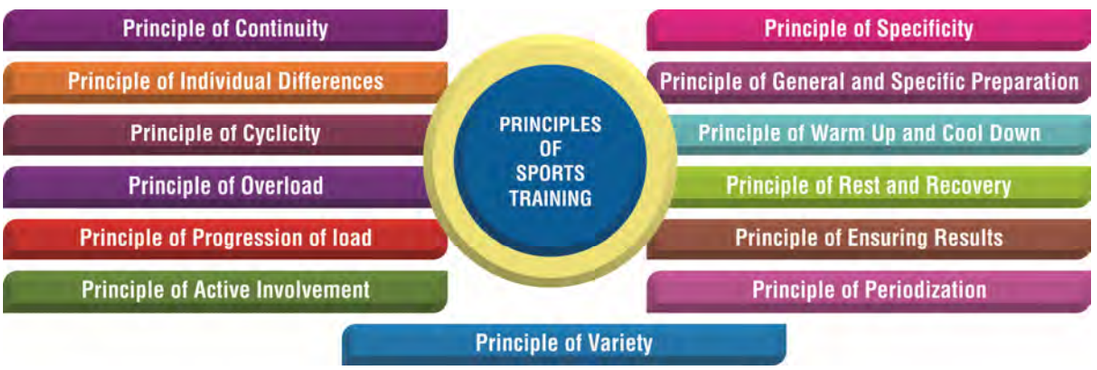
strength - the ability to overcome from resistance.

flexibility – the ability to cover maximum range of motion of joints.

speed - the ability to perform any task in minimum possible tim

coordination – the ability to maintain stabilised and generalised pattern of motor contro

performance - the manner in which sport participation is measured.



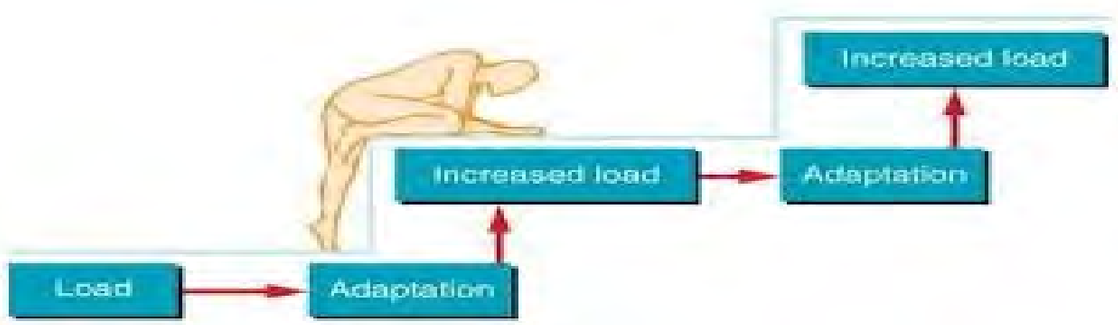
1. **Principle of Continuity:** Sports training is a regular phenomenon that should be done consistently, without irregular breaks. Though, it is a continuous process that includes planned intervals, the breaks should not be long as that can reduce the capability of the sportsperson. The important point to be kept in mind is that only an uninterrupted training can lead to an optimum/desired performance.

2. **Principle of Individual Differences:** Every individual is different. Each one possesses different qualities and capabilities, and responds differently to exercise and training. Some people handle higher volume of training while others may respond better to higher intensities. Therefore, a training plan must be constructed by keeping in mind the principle of individual differences. While building a plan a trainer must keep in mind the trainee's age (both chronological and athletic), gender, predominance of muscle fibre types and other related factors.

3. **Principle of Cyclicity:** A training plan is constructed by incorporating various training cycles. These cycles are: micro, meso and macro; where micro is the shortest cycle which may last for 3-10 days. Meso cycle is the medium duration cycle and may be done for 3-6 weeks. Lastly, macro cycle, this is the longest duration cycle that lasts up to 12 months ora year. A macro cycle consists of different micro and mesocycles.

4. **Principle of Overload:** Load, in sports training, is known as the demand, that can be physical, physiological or psychological, put on the body to enhance the performance of the individual. The key point to note, while planning a training session, is the load should be greater than the normal load to aid adaptation process and thus facilitate the performance enhancement

5. **Principle of Progression of load:** As we discussed above, training load must be greater than the normal load. This principle testifies that training load must be increased gradually in order to avoid any unwanted tension on the muscles of the individual by increasing the load slowly and in accordance with the capabilities of the sports person.



Also, this principle highlights the significance of rest and recovery in between the training sessions. Without optimum rest, there is higher risk for the athlete of getting injured. **Therefore, while increasing the load, rest and recovery should be given required importance too.**

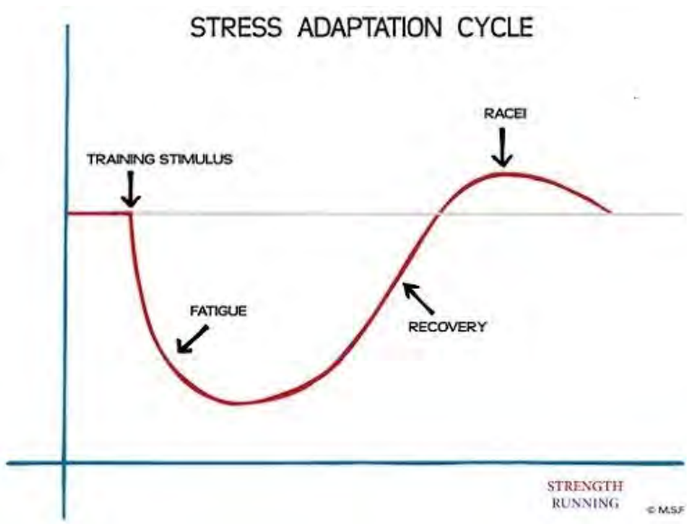
6. **Principle of Active Involvement:** The performance of an athlete is not merely because of the coach's skills. A training plan results best and is effective only when the coach's knowledge blends with athlete's efforts. This principle lays stress on the athlete's ready participation in the training design. Also, this principle incorporates the "Law of Readiness" since this type of involvement prepares the athlete to perform upcoming tasks willingly.

7. **Principle of Variety:** Training is along-standing process that can turn in to aboringerr and. Therefore, to avoid monotony and to make a training design successful, a coach must incorporate variety in to it. The change can be made by introducing different exercises and drills, changing the time of the day of the session or training group etc. But, it is important to keep in mind that the change must be done according to the load and adaptation process and also facilitate performance enhancement.

8. **Principle of Specificity:** This principle lays emphasis on the notion "practice makes a man perfect". It further states that working on a particular muscle or fitness component will predominantly develop that part. Therefore, to enhance a specific skill or component one must practise it to achieve desired outcomes. E.g., a boxer must focus on punching and dodging skills whereas a basket baller must practise dribbling and shooting.

9. **Principle of General and Specific Preparation:** In order to enhance sports performance both general and specific preparation of an athlete is required. General preparation provides the base for the specific preparation. General preparation focuses on the development of overall fitness components whereas the specific preparation will enhance the functional capacity of the body systems which further improves the performance.

10. **Principle of Warm Up and Cool Down:** Warm up and cool down play vital role in delivering optimum performance. These two are an unavoidable part of training design. Warming up before a training session prevents muscle tenderness by increasing blood flow to the working muscles and therefore, prevents injury. On the other hand, cooling down helps an athlete to return to normal level by transferring blood from the working musclesto vital organs. It also helps in removing waste products from the body.



11. **Principle of Rest and Recovery:** It is evident that during rest, the body restores itself and become better and stronger than before. Both short periods, like hours between multiple sessions, and longer periods, like days or weeks to recover from a long season, are required to ensure that the athlete does not suffer from

exhaustion or an overuse injury. Therefore, a training plan must be designed in such a manner that proper rest recovery can take place in between the training sessions.

12. **Principle of Ensuring Results:** The pinnacle of sports training is to achieve desired result of delivering optimum performance. Therefore, a training Programme must be made by keeping in mind the goal of performance enhancement. This principle ensures achievement and maintenance of optimum performance only when all the above-mentioned principles are implemented while designing a training plan.

13. **Principle of Periodization:** Periodization is the blue print of a training plan. Its aim is to reach best possible performance in the most important competition. It comprises of following three phases:

i) **Preparatory Phase:** In this phase, a sportsperson works on his/her motor fitness and specific preparation. This phase provides the base for the competition phase.

ii) **Competitive Phase:** In this phase the sportsperson participates in variousp re-competitions and main competitions.

iii) **Transition Phase:** This phase is used to facilitate psychological rest, relaxation and biological regeneration as well as to maintain general level of fitness.

I. Tick the correct options.

1. Meso cycle is a training of

i. one week
ii. 4 to 10 days
iii. 3 to 6 weeks
iv. 3 months

2. Transitional Phase is a

i. rest and recovery period
ii. training period
iii. competition period
iv. fitness period

3. General preparation focuses on

i. personality
ii. functional capacity
iii. cardio vascular efficiency
iv. over all fitness component

II. Answer the following questions briefly.

1. What do you understand by Principle of Meso Cyclicity?
2. List the phases of Principle of periodization.
3. What do you mean by progression of load?

4. Differentiate between general and specific preparation.

III. Answer the following questions in 150-200 words.

1. All players diligently follow the principles of training. What are the important principles of training which followed by coaches and players during training to attain good results in a championship?

2. Specify the factors that should be kept in mind while preparing a training plan.

Extension Activity

For a week, every day in the morning you/all will do 30 minutes physical activity, in which you will follow the schedule designed by your sports teacher. At the end of the week compare the pre-andpost - training effect on your body.

	Strength	Flexibility	Speed	Coordination	Performance
Pre-training					
Post-training					

List the Principles of Training that you applied to improve your performance.

1. _____
2. _____
3. _____
4. _____

10.3.1 WHAT IS WARMINING UP

Warming up includes a set of physical activities or exercises performed prior to any sports competition, game or training through which an athlete prepares his/her muscles to move efficiently. These exercises also enable the nerve impulses of the person respond quickly and effectively. In short, warming up is the process of heating up the body temperature of a sportsperson before the competition or training for optimum performance. Warming up is short term in nature and activities performed while warming up are of low intensity with little repetition of specific exercises. It prepares the athlete physically, physiologically and psychologically before indulging in sports activity reducing the possibility of error and injury during the main sport or competition.

Do you know?

Warming up is a preliminary exercise of physical and mental preparation for a strenuous exertion.

Limbering Down/Cooling Dow is an easy exercise, done after a more intense activity, to allow the body to gradually transition to a resting or near-resting state.

Art Integration – STAGING A PLAY ABOUT FAIR PLAY IN SPORTS

Games and contests become opportunities to strive – with opponents – for excellence. Those who cheat or take performance enhancing drugs do not play the game. Fair Play means more than just following the rules.

- A sportsperson who plays fair:
- respects the Rules
- respects the officials and accept their decisions
- respects opponents
- gives everyone an equal chance to participate
- maintains self-control at all times

Choose a situation where an athlete

- broke rules
- cheated/took drugs
- Or, helped an opponent.

Write a play about her/him.

Perform the play during Special Assembly of your school.

10.3.2 TYPES OF WARMING UP

Warming Up includes the following types.

1. **Passive Warming Up:** Passive Warming Up helps increase body temperature before the competition or training without performing any physical activity. This involves drinking warm water, hot beverages (tea, coffee, etc), taking as team bath, wearing heavy (extra) warm clothes, massage and sun bath etc. It enables the player to save his/her energy.This technique is usually preferred before events like pole vault, long jump etc.

2. **Active Warming Up:** Active Warming Up involves increasing the body temperature by performing different low intensity, repetitive exercises. These exercises or activities increase muscle efficiency and reduce risk of injuries. Although the intensity, repetition of exercises, and duration of warm up depends on individual difference, it is advisable to perform the activities for 10 to 30 minutes. The sequence of exercises must move from simple to complex at slow pace.

   Active warming up is further divided into two types.

(i) **General Warming Up** is performed before all types of activities and includes walking, jogging, running, jumping, striding, wind sprints, callisthenics, upper and lower limb movements such as rotation, stretching etc. It increases the coordination among different body muscles, mobility of joints, muscle tone andflexibility.

(ii) **SpecificWarming Up** is performed specially according to the sport and event and is aimed at toning all thosespecific muscles which play a major role in a particular sport. e.g., in basketball players attempt lay-up shot, jump shot, rebounding, dribbling, overhead etc. This reduces the chance of ankle twisting, shoulder dislocation, knee injuries which are common in basketball.

Do you know?

Some specific warming activities include

Hockey: Stick rotation, dribbling, stopping the ball with stick, scoops

Badminton: Tossing, high clear, low clear, smashing, drop shot Tennis: Knocking, wall practise, slice, lob return.

Kho-Kho: Dodging, Zig-Zag running pole to pole running. Volley ball: Blocking, passing, smashing etc.

10.3.3 METHODS OF WARMING UP

There are various methods through which an athlete can warm up his/her body.

1. **Physical Activities** are activities which involve some set of exercises for the body parts through which the body gets prepared to perform any task at optimum level. These exercises must be done at slow pace and low intensity to prevent fatigue or overload before the competition or sports event. This is the best

method which allows the athlete to increase his body temperature at required level.

Find out and name the warming up activities in the picture

Physical warming up activities include

(i) **Jogging** is generally done at slow pace for 5 to 10 minutes to increase the body temperature.

(ii) **Bending and Stretching Exercises** include limb and trunk exercises like stretching of shoulder muscles, arm muscles, clavicle muscles, back muscles, hip muscles and leg muscles and include movements like flexion, extension, abduction and adduction circumduction, and rotation.

(iii) **Striding** is best before events requiring explosive effort. The athlete may run around 30 to 40 meters at sub maximum intensity at least 3-4 times with proper rest in between.

(iv) **Wind Sprints** are sprinting exercises performed for short distance with spikes onas the athlete moves from a walk or slow run to a faster run and repeatedly reverses.

2. **Massage** increases and regulates blood flow in the body, thereby increasing the athlete's body temperature for producing efficient movement. Different techniques of massage include effleurage, petrissage, kneading, friction, vibration andpercussion.

3. **Beverages** Drinking of beverages including warm water, tea, coffee etc stimulates the body functions. However, care must be taken to consume these in limited quantity to avoid any discomfort.

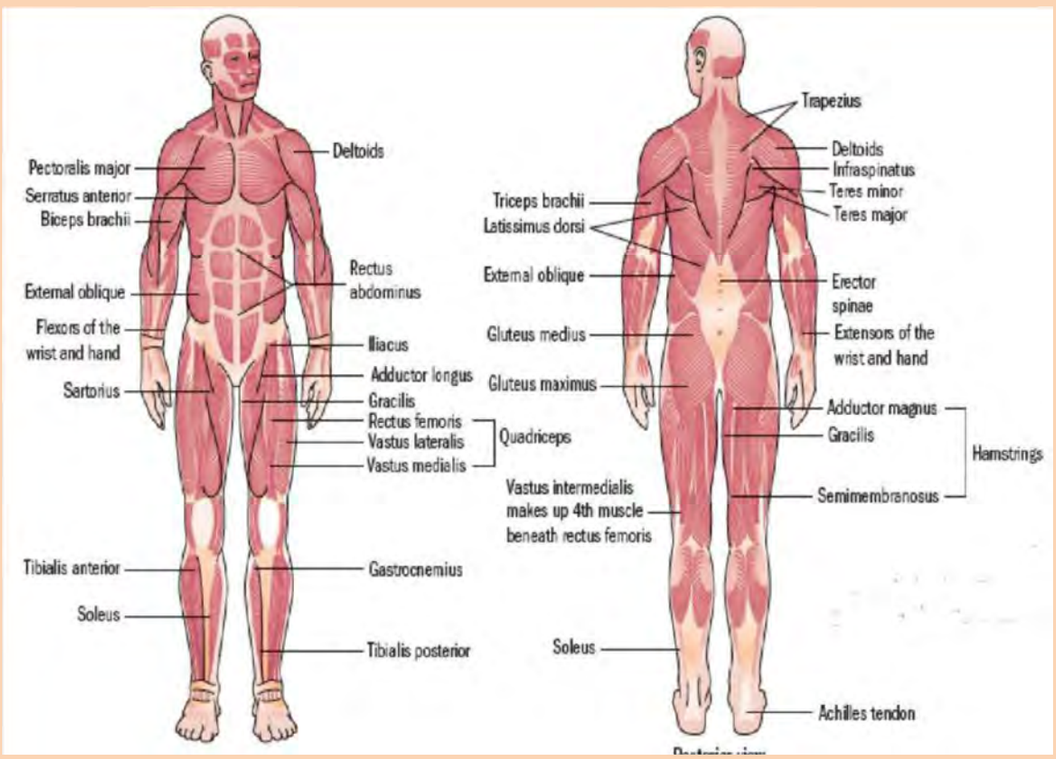
4. **Bath** Hot bath therapy is usually very common in sports in cold countries. It can be performed before and after the task. A hot bath before the event may improve

the blood flow, increase body temperature and muscle activation of the athlete. After the task, it may help an athlete to cure muscle tension and reveal relaxation to the body.

Do you know?

The Muscular System

Do you know the names of some important muscles in the body? Find out from the illustration given below.



10.3.4 IMPORTANCE OF WARMING UP

Warming up plays a vital role in sports training or competitions.

1. **Psychologicalpreparedness:** Performing a set of routine or specific activities/ exercises before the training and competition helps an athlete plan and build himself /herself to competing readiness, thereby eliciting optimum output.

Extension Activity

During your games period, take part in 100m race without doing any jogging and stretching activities.

In the next game period, do warm up before participating in the 100m race.

Record the difference in body efficiency.

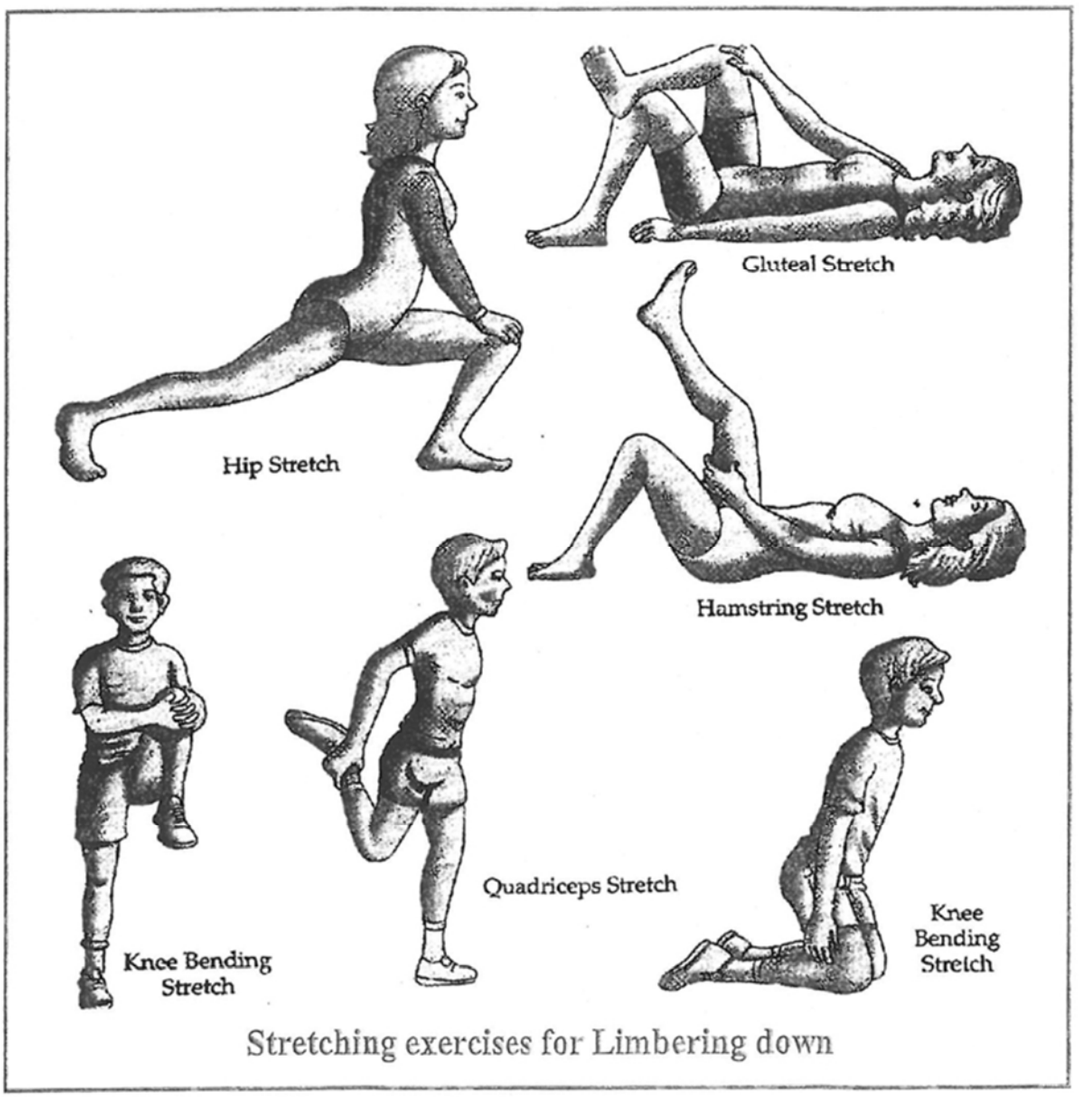
2. **Reduces anxiety and tension**: Warming up reduces anxiety and tension and increases motivational levels of a sports person.
3. **Facilitate optimum performance** by increasing the speed of nerves impulses and metabolic rate improving the reaction time of a sports person.
4. **Prevents sports injuries** Adequate warming up before training period or competition prevents loosening and tearing of muscles and reduces muscle cramping.
5. **Assists flexibility** and increases the range of motion helping a sportsman to exert force up to maximum reach.
6. **Enhances mechanical efficiency** by increasing the suppleness ofmuscles.
7. **Facilitates motor fitness components** like strength, endurance, flexibility, coordinative abilities andspeed.
8. **Increases muscle temperature** as a result of which muscles both contract more forcefully and relax more quickly, reducing the risk of over stretching a muscle and causing injury. It also improves muscle elasticity; this can enhance speed and strength.
9. **Increases blood temperature and lactic acid** leading to weakening of the binding of oxygen to haemoglobin. So oxygen is more readily available to working muscles, which may improve endurance.
10. **Blood vessels dilate** increasing blood flow and reducing stress on the heart.
11. **Increases range of motion** allowing large joints such as shoulders and knees to reach their maximum movement potential.

10.3.5 LIMBERING DOWN

Limbering Down or Cooling Down refers to activities or exercises performed by an athlete or sportsperson after training or competition to gradually transition from an exertion state to a resting or near resting state. Due to training, some physiological changes occur in an athlete's body. To get the body to normal or resting condition, cooling down is a necessary activity. Depending on the intensity of the exercise under taken, cooling down can involve as low jogor walk, or after a sports activity of lower intensity, stretching, especially static stretching allows muscles to be elongated and lengthened. Rehydration is an essential part of the procedure and should be done either during stretching and light intensity or after these steps. Players take a cooling bath, ice bath or cryotherapy for relaxing their muscles.

There are some exercises designed for cooling down or muscle relaxation after a competition. In cooling down stretching exercises plays vital role as well.

1. **Ham Strings:** Lying on your back, raise and straighten one leg directly above hips. Holding the calfort high, press the heel towards ceiling as you pull the leg back towards the chest. Do the same for otherleg.
2. **Chest:** Standing straight, interlace fingers behind your back. As you straighten out your arms, lift your chin towards ceiling.
3. **Glutes:** Lying on your back, cross right leg over bent left knee. Then bring the left knee to chest, holding onto the back of your thigh, gently pressing right knee wide. Do the same for otherleg.
4. **Quadriceps:** Lying on your right side, pull left into left glute, feeling the stretch in front of the thigh. Repeat with the right leg.
5. **Triceps/Shoulders:** Take one arm overhead, bend at elbow, and extend palm down centre of your back, gently pulling elbow with opposite hand. Take same arm across the chest, gently pulling at the elbow joint, to extend through the shoulder. Switch arms.



Stretching exercises for Limbering down

Do you know?

Dynamic stretche – controlled leg and arm movements that involve active tightening of muscles to move joints through their full range of motion; used to engage muscles and mobilise joints; improves speed, agility, and acceleration. e.g., torso twists, walking lunges. **Static stretche** – involve gradually easing into the stretch position and maintaining it without pain for 15-20 seconds; a very effective way to increase flexibility. It must be noted that using static stretching post- event will help prevent injury. e.g., hamstrings stretch, quadricepsstretch.

10.3.6 BENEFITS OF LIMBERING DOWN

1. **Reduces body temperature**: Appropriate cooling down or limbering down helps in reducing the body temperature.

2. **Reduces chances of unconsciousness**: Proper cooling down reduces the heart rate slowly and blood does not pool in the legs and feet. It continues to flow back to the heart through veins and consequently such process reduces the chances of dizziness or fainting.
3. **Restores supply of oxygen:** Proper cooling down restores blood supply and oxygen to the muscles, restoring them to the position they were in before performing training.
4. **Removal of waste products:** Proper cooling down reduces the accumulation of waste products like lactic acid, uricacid, phosphates, sulphates, chlorides and carbon-dioxide etc. from the muscles.
5. **Reduces tension:** Proper cooling/limbering down reduces the muscular tension and mental tension.

Extension Activity

On the picture of the musculo-skeletal system given below, add arrows and labels to show the parts involved in warming up and limbering down exercises as shown.

I. Tick the correct option

1. Warming up is performed to
   - i. generate heat in body
   - ii. decrease metabolic rate
   - iii. lower the body temperature
   - iv. increase oxygen supply to the muscles
2. Cooling down activity is performed at
   - i. maximum intensity
   - ii. sub-maximum intensity
   - iii. low intensity
   - iv. unplanned intensity

II. Answer the following questions briefly.

1. What is the difference between active and passive warmup?
2. What do you understand by the term specific warmup?
3. List the names of any four muscles that relax during cooling down.

III. Answer the following questions in 150-200 words.

1. "Warm up gives a strong acceleration to the body, to perform at its best." Justify the statement?
2. Define Cooling Down. Enlist the benefits of cooling down.
3. How is general warming up is different from specific warming up?

10.4.1 SKILL, TECHNIQUE AND STYLE

Skill, Technique and Style are essential attributes for an athlete to perform at optimum level in sports. Some people are born with a natural ability for a particular game or sport such as speed, agility, coordination, flexibility, balance, reaction time. But they still need to develop and perfect their skills with frequent practice to bring about the result they wish to achieve. In simple words, skill is a learned and practised ability that helps an athlete or sportsperson achieve the desired result with maximum certainty and efficiency. Technique is the way of performing that fundamental skill/activity in sport involving a well-timed and coordinated sequence of muscle actions so that the movements involved produce the best performance and are least likely to cause injury. Style, on the other hand, is the individual's way of adapting skill and technique to develop his/her performance in a smartway.

Skill

Skill is the fundamental ability that enables an individual to perform a large movement with correct technique. It comprises a whole movement of motor action, the ease of which is the result of long hours of practice. Skill is, thus, the result of repetitive practice to get automatisation of movement, by which a performer spends the least energy on are quired task. If an athlete requires a great effort, or struggles to perform any activity, then, it clearly indicates that there is a lack of skill efficiency in the task. In simple words, a motor action which is performed smoothly, with the least error is called skill.

Champions possess this quality of movement that enables them to them produce graceful movement with minimum effort. Skills which are complex in nature can be learned or performed more easily, if the different elements of the movement can be separated and adapted through "learning-by-parts" method. Once mastered, the "parts" may be combined to perform the whole skill. With practice, the movement or motor action of an athlete become accurate and sometimes even automatic.

Do you know?

Anders Ericsson, a psychologist, writes that it takes 10,000 hours of practice to become an expert. In other words, an athlete training for 5 hours a day, for 7 days a week over 365 days anyear would take about 5.5 years to acquire expertise in her/his chosen sport or game.

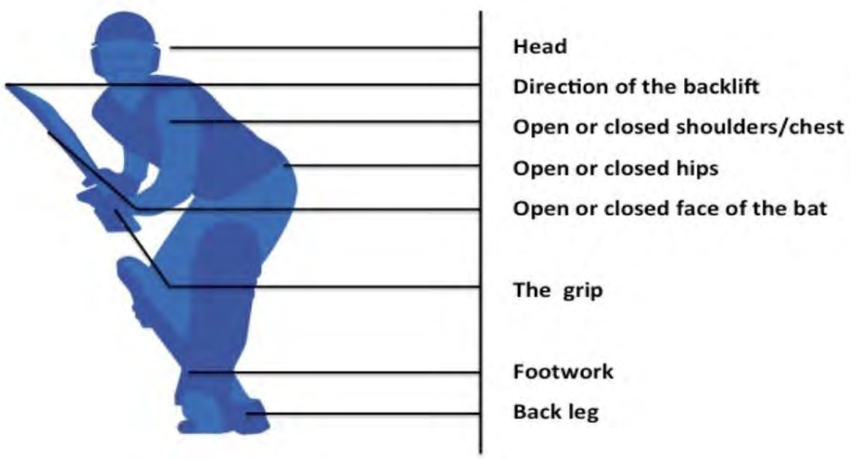
Technique

Technique is the mechanical model of doing any task through which an athlete minimises his energy expenditure and produces remarkable output. It involves a well-timed and coordinated sequence of muscle actions which have been developed through the experience of players, coaches and the analysis provided by sports science. These techniques have evolved and been refined so that the movements involved

produce the best performance and are least likely to cause injury. Using good technique in sport is beneficial because it promotes high performance and reduces the risk of injury.

"Technique is an imaginary model of performing any task in cyclic manner which is ideally based on scientific principles to attain effective movement in sports with least energy expenditure." e.g.,in cricket, a batsman should play the ball with a straight bat, aiming to connect the ball with the middle of the bat for a sound drive. Or, in ice or roller skating, athletes need to bend their body to keeping the central of gravity (COG) lower for efficient and effective balance andspeed.

Study the picture below, where the player demonstrates correct batting stance and technique.



Style

Style is the unique ability of an athlete to perfor many activity in his/her own distinctive manner according to his/her individual technique and ability. It may or may not have a scientific basis. It is just the way the player adapts the movement according to his/her anatomical structure or other factors, and performs it in a unique manner. This unique technique becomes "style". Thus, style is a particular movement started by some one as an innovation, and if the movement becomes popular, it comes to be known after the athlete. e.g., in cricket, M S Dhoni's "helicopter shot" has become his style. The popular Parry O'Brien style of shotput is named after the American athlete, Parry O'Brien. Similarly, in high jump, American athlete, Dick Fosbury, has given his name to the Fosbury flop.

MS Dhoni

ParryO'Brien

DickFosbury

	Skill	Technique	Style
Meaning	• Skill refers to the whole movement of motoraction.	• A mechanical model of doing any task in sequential way based upon scientific principle. • It requires practice of particular task scientifically.	• A personalised way of performing any task (signature step). • A player's/ athlete's own expression of presenting the technique
Example – Cricket	• Batting is askill.	• Foot movement, back foot defence, covers shot, straight drive etc are different techniques of playing shots.	• Each individual has an imaginary model in his/her mind about batting technique, but they all act differently because of individual differences. e.g., MS Dhoni and Sachin Tendulkar have their own style of foot movement while playing drives
Example – Basketball	• Shooting is askill	• Lay-up shot is holding the ball in hand and taking one or two step towards the basket with jump to attempt basket.	• different players have unique style of performing it. Like dunk shot is a style in it.

Skill, technique and style all are inter-related as technique and style are a part of skill. In fact,

Skill = Technique + Style

Acquiring style is a long and continuous process in which a player sets an imaginary mechanical model in his/her mind for performing any skill. Then, through repeated practise he/she adapts the skill in his/her unique style. In the initial phase of learning the technique, an athlete may make many mistakes. However, through practise and proper supervision bycoach or teacher, these errors are minimised. Thereafter, a player is able to learn and execute that particular technique in his own style with least energy and error. An athlete can perform at his best if he follows the complete process of skill acquisition by interlinking skill, technique and style.

I. Tick the correct answer.

1. Style is
   i. a mechanical model of doing anything
   ii. a unique, personalised expression
   iii. an automatisation of movement
   iv. a natural ability for a particular game
2. In basketball, shooting is required to score goals. Shooting is a
   i. technique
   ii. style
   iii. skill
   iv. tactic

II. Answer the following questions briefly.

1. Define Technique.
2. How they are Skill and Techniques inter-related to each other?
3. Elucidate style in brief.

III. Answer the following questions in 150-200 words.

10.5.1 DOPING

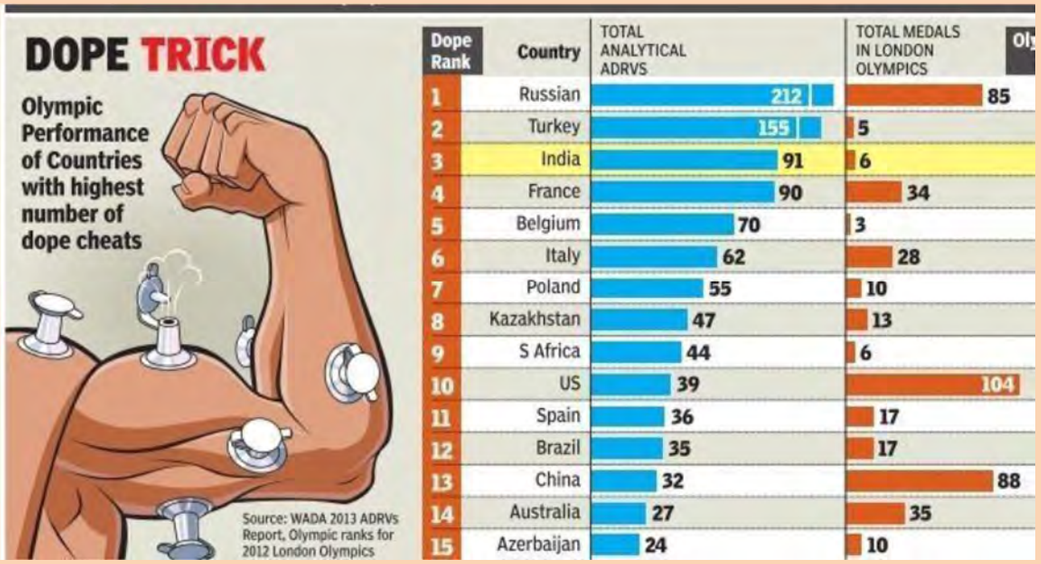
Doping in sports is not a new phenomenon; it goes as far back as the first Olympic Games in ancient Olympia. Since the inception of the competition in 776 BC, historians have written about use of performance-enhancing substances. There were experts who offered nutritional components to athletes in order to provide them an advantage over their competitors. Athletes in those times took herbal infusions to increase their muscle mass etc. Increasing performance by taking mushrooms and opium was also a very common method in those days. In 100AD Roman gladiators used stimulants and hallucinogens to delay fatigue and to prevent injuries.

Do you know?

Doping was punished even in ancient times. If athletes were caught cheating, they were banned from the games and their names were often engraved into stone and placed in a pathway that led to the stadium. To this day, stone pedestals line the entranceway to the Olympic stadium in Olympia, Greece, site of the ancient Olympics (776 BC-394 AD). Inscribed on each pedestal is the offending athlete's name, his wrong doing, and the names of family member.

Similarly, in modern times athletes use various techniques to get a winning edge over their competitors. In the late 19thcentury, French cyclists and lacrosse players took wine and coca leaves – source of cocaine andrelatedalkaloids–tocounter fatigue. Vin Mariani was even called "the wine for athletes" as it is a fusion of wine and coca leaves.

Do you know?



Dope Rank	Country	TOTAL ANALYTICAL ADRVS	TOTAL MEDALS IN LONDON OLYMPICS
1	Russian	212	85
2	Turkey	155	5
3	India	91	6
4	France	90	34
5	Belgium	70	3
6	Italy	62	28
7	Poland	55	10
8	Kazakhstan	47	13
9	S Africa	44	6
10	US	39	104
11	Spain	36	17
12	Brazil	35	17
13	China	32	88
14	Australia	27	35
15	Azerbaijan	24	10

In Modern Olympics, the first case of doping came to light in 1904 when runner Thomas Hicks collapsed after winning the marathon and nearlydied.Itwas later found that he was using a blend of brandy and strychnine (a stimulant). The use of a mixture of strychnine, heroin, cocaine and caffeine in various proportions was a common practice until 1920 when heroin and cocaine became available only by prescription. In 1960 Summer Olympic Games, heldin Rome, Knut Jensen, the Danishcyclist, diedand traces of an amphetamine known as Ronicol was found in the autopsy. In 1967, British cyclist, Tommy Simpson, consumed excess of amphetamines and brandy to fight the effects of an illness. Simpson collapsed and died during the race at the age of 29.

In 1928, IAAF (International Association of Athletics Federation) became the first governing body to prohibit doping. Later in 1967, after the much-hyped death of Tommy Simpson, the IOC (International Olympic Committee) established a commission for anti-doping. As a result, the first doping test was done in 19 68 Winter Olympics. In 1988, the Canadian sprinter, Ben Johns on was stripped off his gold medal at the Olympic Games in Seouland suspended for two years initially after he was found positive for an anabolic steroid called stanozolol. Later, he was banned for life after testing positive for the second time in 1993. In the year 1999, World Anti-Doping Agency was established as an independent international anti-doping agency to be fully operational for Sydney Olympics 2000.The list of athletes who indulged in doping isavast one after that. Famous athletes who were found guilty include Lance Armstrong, Marion Jones, Maria Sharapova, Martina Hingis, Tyson Gay, Diego Maradona, Carl Lewis, Shane Warne, Michael Phelps among others.

Doping in sports is a critical issue putting an athlete's health at risk, maligning the integrity of clean athletes and damaging the spirit of sports. Doping can be defined as the use of a substance or technique to enhance the sports performance illegally.

It is a deliberate attempt by an athlete towin at any cost, even if it is by using life threatening substances or methods.

International Olympic Committee defined doping as **"the use of any method or substance that might harm the athlete, in a quest to gain an unfair advantage, over his/her fellow competitors."** In other words, it can be said that doping is the use of such substances or methods that are custom-made to increase the abilities of an athlete, bothphysical and mental, and/or to cover the use of such substances while intraining.

According to World Anti-Doping Agency (WADA) REFERNCE YEAR, "Doping is defined as the occurrence of one or more of the anti-doping rule violations set forth in Article 2.1 through Article 2.8 of the anti-doping code. These are as follows:

I. Presence of a prohibited substance or method.

II. Use or attempt to use a prohibited substance ormethod.

III. Refusing to submit sample collection after beingnotified.

IV. Failure to file athlete's whereabouts after beingnotified.

V. Tampering with any part of the doping control process.

VI. Possession of a prohibited substance or method.

VII. Trafficking a prohibited substance or method.

VIII. Administering or attempting to administer a prohibited substance or method to an athlete.

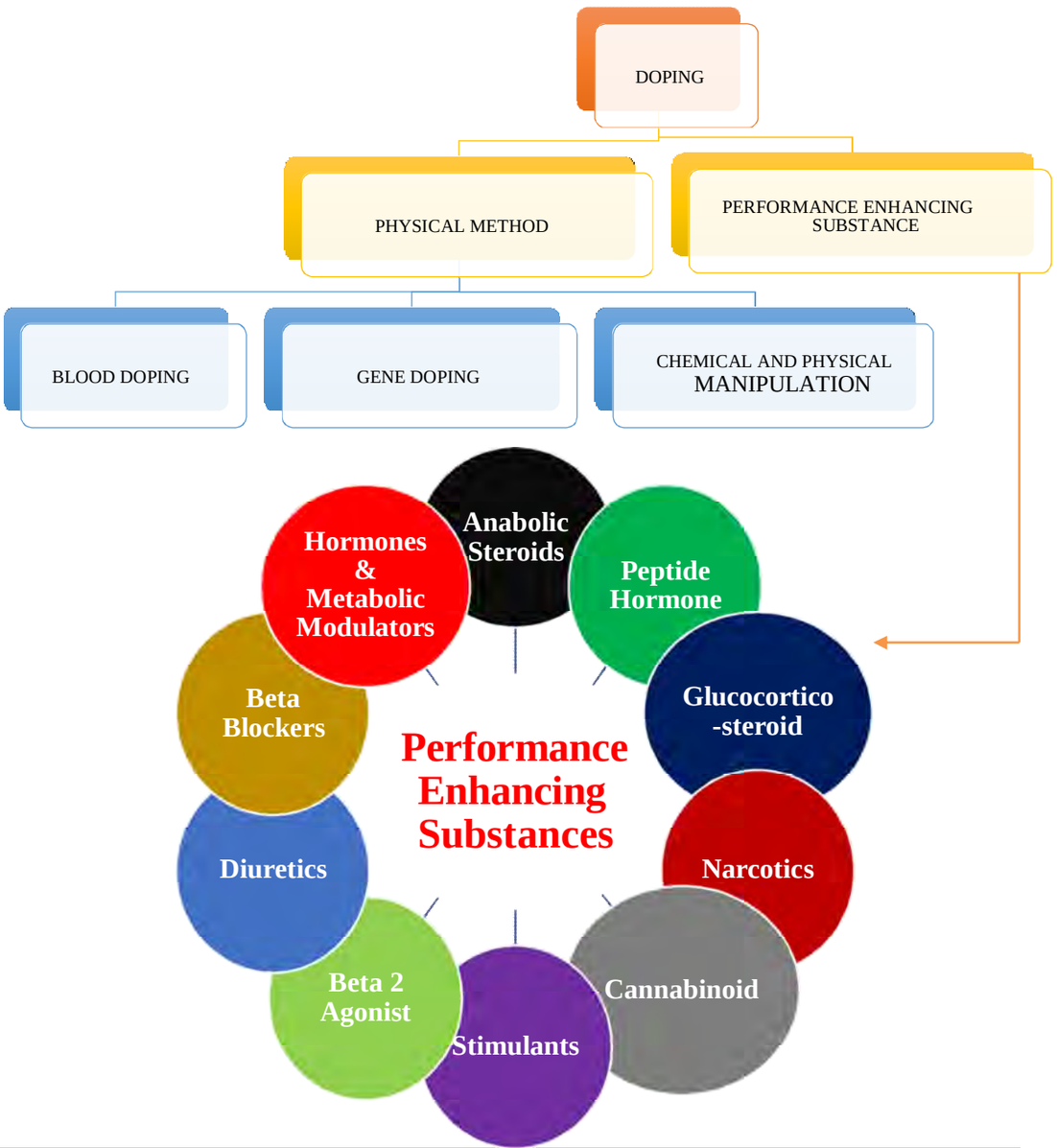
Thus, according to the anti-doping code, it is clear that doping is not only about using a prohibited substance or method to improve performance, but also about breaking any of the rule(s) listed by WADA.

10.5.2 CLASSFIFICATION OF DOPING

Doping can be classified into two major categories.

1. **Performance Enhancing Substances**: These are the drugs or medicines that can be used to enhance athletic performance. Some of the examples of performance enhancing substances are anabolic steroids, stimulants, narcotics etc.

2. **Physical Methods**: These are the techniques used by athletes to increase the performance by unfairmeans. The seme thods include blood doping, genedoping and chemical and physical manipulation.



I. Tick the correct answers.

1. The first case of doping in Modern Olympics came to light in
   - i. 1904
   - ii. 1908
   - iii. 1912
   - iv. 1916

2. A famous athlete who was recently found guilty in the dope test is
   - i. Sachin Tendulkar
   - ii. Martina Hingis

iii. Usain Bolt

iv. MC Mary Kom

3. The Canadian sprinter named Ben Johnson who won a gold medal at the 1988 Seoul Olympics, which was later rescinded, tested positive for

i. anabolic steroid

ii. diuretic

iii. cannabiniods

iv. blood doping

4. In which Olympic Games, was the doping test first done by IOC under the Anti Doping Agency Campaign?

i. 1960 Summer Olympic Game

ii. 1960 Winter Olympic Games

iii. 1968 Summer Olympic Game

iv. 1968 Winter Olympic Game

II. Answer the following questions briefly.

1. Of the eight athletes in the 1988 Olympic 100 metres final, only two were not disqualified. Why?
2. Is doping only about using a prohibited substance or is it a method to improve performance? Comment.
3. Enlist any three (WADA) Anti-Doping Codes which are mentioned in Articles 2.1 to 2.8.
4. Classify the methods of doping in brief.

III. Answer the following questions in 150-200 words.

1. Doping at the Olympics is not a new phenomenon.Discuss.
2. Compare the substances used for doping in ancient times with those used in the modernera.
3. Has doping become a critical issue in sports? Explain the role of WADA in controlling doping.
4. List the rules laid down by WADA in the anti-dopingcode.

Extension Activity

Survey of Doping in Sports.

Talk to at least 15 sportspersons or athletes from your school, or a nearby school. You could also talk to persons who regularly go to a Gym for a workout. Fill up the following questionnaire.

	No	Don't know	Maybe	Probably	Yes
Do you think doping is necessary to achieve the best results?					
Does anyone you know use performance enhancing drugs?					
Are you aware of the substances you cannot use in competitions?					
Do you think your performance would improve by banned substances?					
Have you ever tried any banned substances to improve performance?					
Are you aware of the side effects of doping?					
Is the NADA doping test available for the tournaments/competitions you participate in?					
According to you who recommends performance enhancing drugs toplayers?					
Have you felt a pressure to use banned substances?					

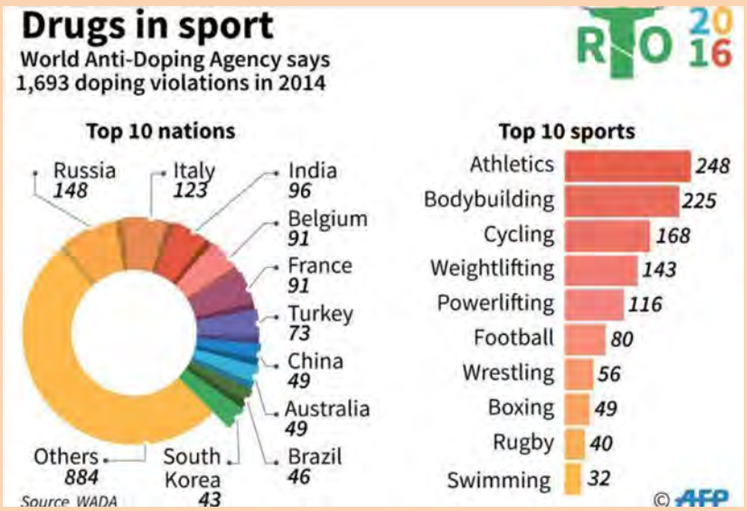
Based on the survey above, and your own ideas, make a PPT on Sports.

10.6.1 WHAT ARE PROHIBITED SUBSATNCES

Prohibited substances are the drugs, supplements andother techniques which are banned from use in sports as these might enhance the performance of the players through use of unfair means. World Anti-Doping Association (WADA) is responsible for regulating the consumption or use of these substances or methods worldwide. Every year WADA updates and publishes a prohibited items list, which is the paradigm that outlines the substances that are prohibited in sports. A substance or method is added in the list if

- it enhances sports performance;
- it damages the athlete's health;
- violates spirit of sports.

Do you know?



There are certain substances and methods that are prohibited only during the competition period whereas others depend on the technique or method of imbibing the substance like inhalation, taking tablets or injection. If an athlete is taking any such substance for medicinal purpose, he must apply to the International Federation of the concerned sport for exemption. Also, it must be verified by the physician on the following basis:

- The athlete would face critical health problems if he does not take such drug or substance.
- There is no appropriate alternative for that drug.
- There is no significant enhancement of the sports performance due to taking that drug.

Extension Activity

Look at the pictures of some athletes who have been disqualified for taking Performance Enhancing Drugs (PED). Find out

- the sport they participated in.
- what drugs they took and why.
- for how long were they banned.

Lance Armstrong

Maria Sharapova

Tyson Gay


Diego Maradona


Anderson Silva


Ben Johnson


Shoaib Akhtar

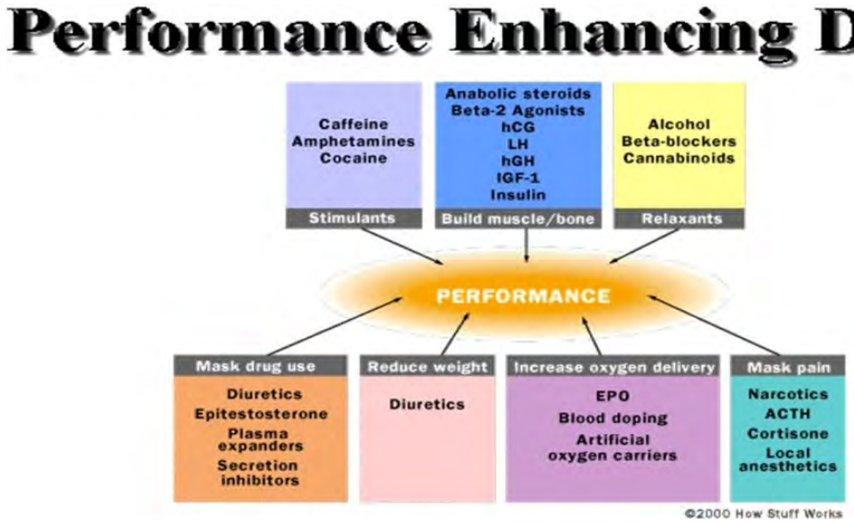

Shane Warne


Kunjarani Devi

10.6.2 PROHIBITED SUBSTANCES AND SIDE EFFECTS

Substances Prohibited In and Out of the Competition	Methods Prohibited In and Out of the Competition	Substances Prohibited During Competition	Substances Prohibited in Particular Sports
• Anabolic Steroids • Peptide Hormones • Beta-2 Agonists • Diuretic • Hormones & Metabolic Modulator	• Blood Doping • Gene Doping • Chemical and Physical Manipulation	• Stimulants • Narcotics • Cannabinoids • Glucocorticosteroids	• Beta Blockers

1. **Anabolic Steroids** are synthetic human made variations of the male sex hormone that include natural androgens like testosterone as well as synthetic androgens that are structurallydesigned to provide similar effects. Anabolic steroids are used to increase muscle mass, performance and endurance and to reduce recovery time in between the training sessions.



2. **Peptide hormones** such as erythropoietin, human growth hormone (HGH), insulin, human chorionic gonadotropin and adrenocorticotropic hormone (ACTH) are the substances produced by the various glands and when circulated by blood can affect organs and tissues to alter bodily functions. These are banned because they can stimulate various bodily functions such as growth rate and sensitivity to pain. They stimulate the production of naturally occurring hormones, increase strength and production of red blood cells, therefore, increasing oxygen carrying capacity that results in improving endurance level of an athlete.

3. **Beta 2 Agonists** are majorly used for medicinal purposes for treating asthma because they open up the bronchial tubes of the lungs and hence clear the air passage. In sports, they are used for improving the breathing by relaxing the muscles around air passages and thus widening them. Athletes take these to boost their respiratory functions. They also accelerate the will to win insports.

4. **Diuretics** help athletes by increasing excretion of water from the body. They are also known as “water pills” as they increase production of urine. Athletes use diuretics to flushout the remains from steroids and to facilitate temporary weight loss by shedding water from the body. They are majorly used in sports such as boxing, wrestling, weightlifting etc.

5. **Hormones and Metabolic Modulators** are used to alter the effects of hormones or to quicken or slow down certain enzyme function such as supressing the conversion of male sex hormone (testosterone) into female sex hormone (estrogen), there by helping in building muscle mass.

6. **Stimulants** are also known as “uppers” as they enhance sports performance by stimulating the mind and body artificially. They basically increase the activities of Central NervousSystem(CNS)resulting in improved alertness, reaction time and energy. Some of the most commonly used stimulants are cocaine, amphetamines etc. These are taken by either swallowing in tablet form or injecting in liquid formor, they may even be,crushed and snorted.

7. **Narcotics** was at ermoriginally used to refer to any psychoactive compound with sleep inducing properties and used for medical purposes. In sports, when used in small amounts, narcotics may result in relieving severe pain. However, overdose can result in respiratory problems and even death.

8. **Cannabinoids** are a class of diverse chemical compounds that alter neurotransmitter release in the brain. They help in reducing anxiety, leading to a feeling of relaxation and decreasing pain sensation. The most common example of a cannabinoid is Marijuana.

9. **Glucocortic osteroids** are majorly used for treating allergies, asthma, skin disorders and inflammatory conditions and other such ailments. In sports, these are primarily used as pain relievers and to improve the pain threshold of an athlete.

10.6.3 SIDE EFFECTS OF PROHIBITED SUBSTANCES

Substance	Side effects
Anabolic Steroids	Continuous use of anabolic steroids may result in serious health issues. Anabolic steroids • elevate blood pressure • reduce high density lipoprotein(HDL) • lead to several cardio vascular diseases like atherosclerosis and may even result in a cardiacattack • increase aggressiveness, sexual desire and may lead to criminal behaviour • cause jaundice, liver tumour andcancer. • lead to mood swings, depression, withdrawal symptoms and dependence onothers
Peptide Hormones	Use of peptide hormones may lead to • blood clots due to increased blood viscosity • increased risk of heart attack • overgrowth of limbs and face • musculo-skeletal enlargement • low blood sugar levels • shortness of breath • brain damage and death • headache and joint pain • ulcer, cataract and osteoporosis
Beta 2 Agonists	Prolonged use of Beta 2 Agonists may result in

	• increased risk of cardiac arrest • trembling (specially in hands) • headache • palpitations • muscle cramps
Diuretics	Side effects of diuretics may vary from mild to severe. Some of these effects include • headache • dizziness • too little or too much potassium inblood • diarrhoea • unusual thirst and dehydration • muscle cramps • kidney failure • increased cholesterol and bloodsugar • irregular heart beat • skin rashes
Hormones and Metabolic Modulators	Use of hormones and metabolic modulators may cause • cardiac problems • osteoporosis • abnormal vaginal bleeding • shortness of breath • hotflashes • swelling/numbness • anxiety • rapidheartbeat • moodswings • blurryvision • loss of consciousness, if severe can lead tocoma.
Stimulants	The side effects of using stimulants include • exhaustion • addiction • increased heart rate and palpitation • irregular heartbeat • hypertension • heartfailure

	• headache • upsetstomach • anxiety and insomnia • depression
Narcotics	Use of narcotics may result in • nausea and vomiting • drowsiness • constipation • failing to recognize injury due to increased pain threshold • increased heartrate • physical and psychological dependence leading toaddiction • hallucination
Cannabinoids	Cannabinoids lead to • increased risk of heart diseases • lung cancer • impaired memory • decreased concentration • respiratory issues • increased heart rate • poor coordination and reaction of reflexes • moods wings • distorted sense of space and time
Glucocorticosteroid	Prolonged use may lead to • loss of muscle mass • weakening of injured area • decreased rate of growth in young people.
Beta blockers	Prolonged use of Beta Blockers may result in • increased stress on heart • blood clotting • stroke

10.6.4 METHODS OF IMBIBING PROHIBITED SUBSTANCES

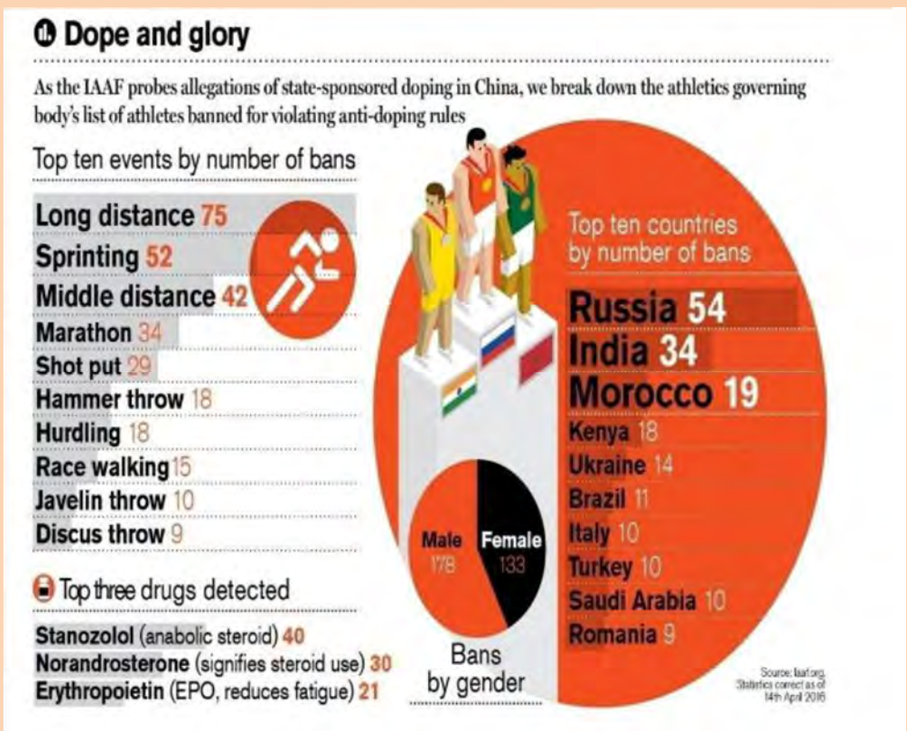
1. **Blood Doping** is an attempt to enhance sports performance by infusing oxygenated blood into an athlete before an event. This leads to increased red blood cell count resulting in higher oxygen carrying capacity and thus, improving endurance.

   The two basic types of blood transfusion are

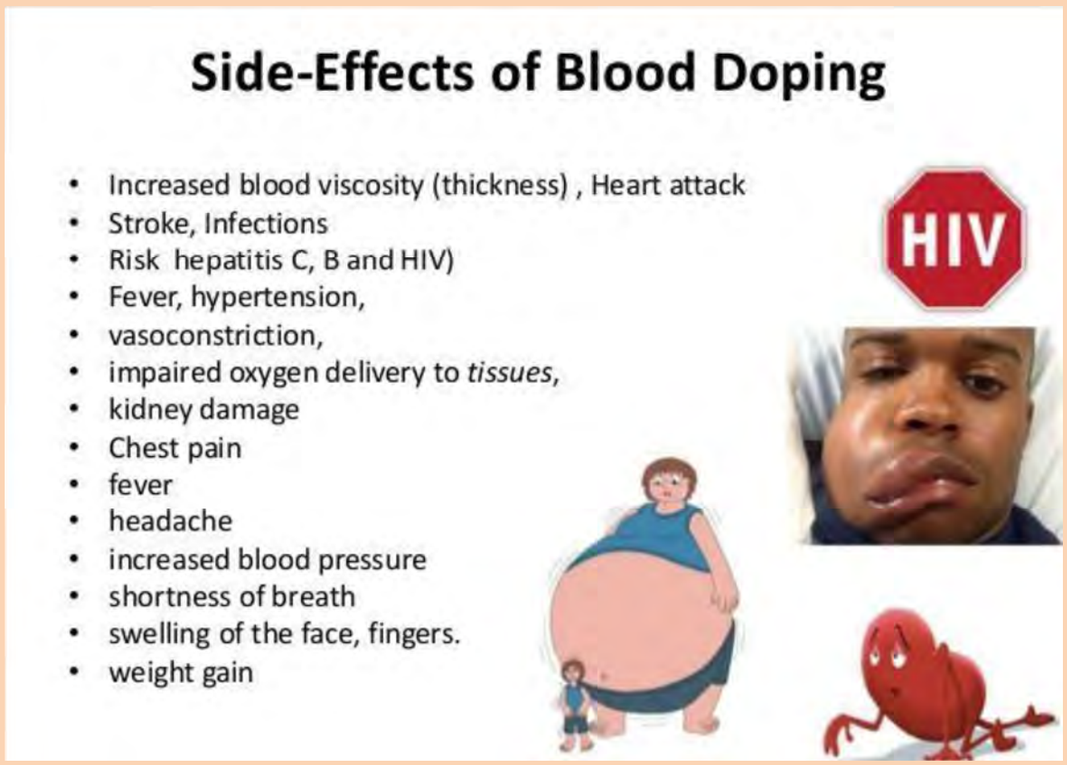
   - **Autologous**: The athlete's own blood, which was drawn and stored for future use is transfused.
   - **Homologous**: An athlete is transfused with someone else's blood of the same blood group.
   - **Injections:** Other examples of blood doping include Erythropoietin injections and injections of Synthetic Oxygen Carriers.

   Side effects of Blood doping:
   - Increased risk of bloodclots
   - Stroke
   - HIV/AIDS
   - HepatitisB
   - Various Allergies
   - Hypertension

Do you know?



Do you know?



2. **Gene Doping** is the practise of transferring genes, or genetically altered cells, into an athlete as a possible method of enhancing sporting performance. It plays a vital role in the growth and development of musculo-skeletal structure. **Side effects of Gene Doping:**

   - Heart failure
   - Cancer
   - Leukemia
   - Immune Dysfunction

3. **Chemical and Physical Manipulation** include stampe ring or attempt to tamper the integrity or validity of the samples collected during doping control procedure. Also, intravenous injections of more than 100 ml per 12 hours are prohibited. The only exceptionis, if the athlete is dependent on the drug for medical treatment.

   Side effects of chemical and physical manipulation:

   - Infection in urethra, bladder or kidney
   - Cardiac Issues
   - Chronic Systemic Inflammation
   - Hepatitis
   - HIV/AIDS

I. Tick the correct option.

1. The performance enhancement drug generally used by boxers and judo players to reduce their weightis
   i. diuretic
   ii. peptidehormone
   iii. anabolicsteroid
   iv. Beta-2 agonist
2. Stimulants benefit performance by
   i. increasing heart and respiratory rates and suppressing the symptoms offatigue
   ii. having a painkilling and sedating effect
   iii. releasing hormones promoting growth, healing and body repair
   iv. preventing the release of adrenaline
3. Some of the side effects of using narcotics include
   i. suppressed appetite, increased blood pressure and body temperature
   ii. addiction, suppressed appetite, toxicity
   iii. impotency, infertility, arteriosclerosis, heart disease, liver and kidney cancer
   iv. a damaging affect on endurance, heart disease
4. Sports which are well known for the use of anabolicsteroids
   i. Sprinting
   ii. Soccer
   iii. Archery
   iv. Shooting

II. Answer the following questions briefly.

1. Players using peptide hormones to enhance performance suffer from serious side effects. What are these side effects?
2. List the names of prohibited substances according to WADA(latest).
3. While it is easy to reduce weight through diuretic substance, it may have serious consequences. Explain the side effects associated with diureticsabuse?
4. What is prohibited substance? How does it affect the sports person's performance?

III. Answer the following questions in 150-200 words.

1. Adopting illegal ways to enhance performance by taking Performance Enhancing Drugs may lead to severe side effects. List the major side effects of Doping.
2. Comment on how harmful doping is for health.
3. Explain any two doping Steroids. Mention five side effects of each.

10.7.1 ALCOHOL AND SUBSTANCES ABUSE

Substance abuse refers to the injurious use of psychoactive substances including alcohol and illegal drugs, or other such substances as are harmful to the individual himself/ herself or others. Abuse results when a person uses a substance in a way that is not recommended, or uses more than the prescribed amount. In other words, it can be said that a person canuse a substance and still not be addicted.

Substance abuse interferes with every facet of life. Drug and alcohol abuse affect an individual's health,work and social relationships. The person who uses drugs hurts people around him emotionally, or even physically. Thus,substance abuse can wreck relations and financial health. Substance abuse often leads to addiction and causes serious health issues, even death.

Do you know?

psychoactive substan is a substance that changes brain function and results in alterations in perception, mood, consciousness, cognition, or behaviour. These substances include caffeine, alcohol, cocaine, LSD, nicotine andcannabis.

Classes of drugs frequently used recreationally include: Stimulants, which activate the central nervous system. These are used recreationally for their euphoric effects. Some categories of psychoactive drugs are prescribed by physicians and other healthcare practitioners. e.g., anesthetics, analgesics, anticonvulsant, anti depressants, and stimulant medications. Some psychoactive substances may be used in the detoxification and rehabilitation Programmes for persons dependent on or addicted to other psychoactive drugs.

Addiction is a maladaptive pattern of using any substance in a harmful way. Therefore, substance use is considered to be substance abuse when the repeated use results in

- Healthissues
- failure to meet responsibilities
- riskyuse
- disabilities
- impaired control
- socialissues

Most commonly abused substances are: alcohol, cocaine, marijuana, tobacco, heroin etc.

10.7.2 SIGNS AND SYMPTOMS OF SUBSTANCE ABUSE

Signs and symptoms of substance abuse include

- increased confusion
- moods wings
- weakness orfatigue
- anaemia
- severe nervedamage
- depression
- memory impairment
- sleeping disorders
- abnormal blood results
- dizziness
- dementia

10.7.3 DEALING WITH ALCOHOL AND SUBSTANCE ABUSE

Some psychoactive drugs may have actual performance-enhancing side effects in the short- term. However, many actually decrease performance, primarily because of

adverse cardiovascular effects and impaired judgment. Athletes and nonathletes alike may be knowingly or unknowingly exposed to psychoactive substances if they use over-the-counter, recreational, or prescription drugs. Psychoactive substances often bring about subjective changes in consciousness and mood that the user may find rewarding and pleasant, e.g., euphoria or a sense of relaxation, or advantageous, e.g., increased alertness and are thusreinforcing. Substances which are both rewarding and positively reinforcing have the potential to induce a state of addiction – compulsive drug use despite negative consequences.

Substance abuse can be life threatening if not controlled in time. Therefore, it is important to monitor a person's behaviour for the signs mentioned above. In order to deal with alcohol and substance abuse, National Institute of Drug Abuse (NIDA) maintains a list of principles of effective treatment and management. It states the basic information for overcoming addiction. Moreover, it is a process that should be followed to avoid the fatal consequences of alcohol and substance abuse. The process consists of following steps:

1. **Detoxification**: This is the first step in overcoming substance abuse or addiction. It is basically designed to end body's physical dependence on an intoxicating substance like alcohol.

2. **Rehabilitation**: The purpose of rehabilitation is to change the behaviour of an individual who is recovering from addiction especially when he/she feels stressed, runs into triggers and experiences cravings. Most of this behaviour retraining involves therapy both group and individual. Types of therapy that can be giveninclude

   - Cognitive Behavioural Therapy
   - Motivational Enhancement Therapy
   - Family Counselling etc.

   NIDA recommended staying in a rehabilitation Programme for a period of at least 90 days.

3. **Supportive environment**: A supportive environment can be prove to be agreat support when dealing with alcohol and substance abuse. Such support can be provided by the people who are close to the abuser such as family members, friends, relatives, teachers etc. All they need to do it to provide a happy and healthy environment and motivate the person to keep up with the process.

4. **Medication**: Some times a person reverts to the addictions often that reducing craving will help him stay sober for a longer period of time. Naltrexone and acamprosate are the main drugs prescribed to maintain so briety.

5. **Aftercare**: Once the detoxification and rehabilitation are successfully completed, one should find emotional support to stay sober. In addition to support from the family and friends, attending mutual support groups, going to an individual therapist, and finding complementary practices like yoga and meditation can help the person to stay on the track.

I. Tick the correct options.

1. The full form of NIDAis
   i. National Institute of Drug Abuse
   ii. National Institute of Dramatic Art
   iii. National Institute of Developmental Administration
   iv. National Institute of Drug Anabolic
2. The term psychoactive refers to
   i. a drug that alters mood, cognition and/or behaviour.
   ii. a drug that lowers the threshold of pain.
   iii. a particularly active psychopath.
   iv. a drug-induced hallucination.
3. When you are dealing with the people of Substance abuse, what will be your initial step?
   i. Detoxification
   ii. Supportive Environment
   iii. Rehabilitation
   iv. Medication

II. Answer the following questions briefly.

1. Define substance abuse.
2. How can you identify the sports person who is suffering from substance abuse?
3. What do you understand by the term Rehabilitation?
4. List the signs and symptoms of substance abuse.

III. Answer the following questions in 150-200 words.

1. What do you understand by substance abuse. List the health issues arising out of use of psychoactive drugs.
2. If a 21-year-old boy is suffering from substance abuse, what role can you play to help him overcome his addiction?
3. Discus your views on Doping.
4. With training in sports, how we can achieve the target to produce better results in 2024 Olympic Games. Share your views.

Suggested Reading

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