



Revised and Updated

On Board!
BOOKS



“My single achievement is that, with my sincere and honest approach, I inculcated the spirit of oneness and togetherness among players.”
— BISHAN SINGH BEDI

Includes
COMPETENCY-BASED
QUESTIONS (CBQs)

Assertion-Reason
Type Questions

Data-Based/Picture-Based/
Case-Based Questions

MCQs



As per the
guidelines of
NEP 2020

— A TEXTBOOK OF —

Physical Education

Based on the latest CBSE syllabus

XI

SCAN QR CODE

For more information and
more study material
visit www.pearson.in



On
Board!

BOOKS

A Textbook of Physical Education Class 11

Chapter 10

TRAINING AND DOPING IN SPORTS



An imprint of Ratna Sagar P. Ltd.

MEANING AND CONCEPT OF SPORTS TRAINING

“A planned and controlled process in which, for achieving a goal, changes in complex sports motor performance, ability to act and behaviour are made through measures of content, methods and organisations.” – *Watso*

“A training based on scientific knowledge and a pedagogical process of sports perfection which, through systematic effect on psycho-physical performance ability and performance readiness, aims at leading a sportsman to top level of performance.” – *Harre*

Figure 10.1 To enhance their performance, sportspersons work hard during training sessions.



PRINCIPLES OF SPORTS TRAINING

The following are some different principles of sports training:

The Principle of Continuity:

The Principle of Transfer:

The Principle of Balance:

The Principle of Overload:

The Principle of Progression:

The Principle of Rest and Recovery:

The Principle of Individual Differences:

The Principle of General and Specific Preparation:

The Principle of Specificity:

The Principle of Active Involvement:

The Principle of Variation:

The Principle of Warm-up and Cool Down:

The Principle of Ensuring Results:

The Principle of Cyclicity:



Figure 10.2 Overload during training sessions expands the limitations of a player.

WARMING-UP AND LIMBERING DOWN

Meaning of Warming-up

Warming-up is a process of preparing the body before training or competition through performing light exercise.

“To engage in exercise or practice especially before entering a game or contest.”
– *Merriam Webster Dictionary*

“Preparatory exercises done to warm-up the muscles.”

– *Collins Dictionary*

Types of Warming-up

Passive Warming-up:

Active Warming-up:

There are two types of active warming-up:

1. General warming-up:

2. Specific warming-up:

Methods of Warming-up

There are various methods of warming-up:

- General Method : 1. Jogging: 2. Simple Exercises: 3. Striding:
4. Stretching: 5. Wind Sprints:
- Warming-up with Warm Water
- Warming-up through Massage
- Through Sunbath
- Through Steam bath

Importance of Warming-up

1. To Raise the Body Temperature:
2. To Decrease the Viscosity of Muscles:
3. To Increase the Speed of the Nerve Impulses:
4. To Reduce Muscle Capillaries Resistance:
5. To Increase the Speed of Transfer of Oxygen and Fuel to Tissues:
6. To Increase Metabolic Rate; and many other points.

Physiological Basis of Warming-up

1. Increase in Body Temperature:
2. Decrease in the Viscosity of Muscles:
3. Increase in the Speed of Nerve Impulses:
4. Decrease in the Resistance in Muscle Capillaries; and many other points.

Guiding Principles of Warming-up

Given below are the guiding principles of warming-up which can aid in the execution of the best performance:

1. Simple to Complex:
2. Exercise for all Parts of Body:
3. Stretching and Loosening Exercises should be Included:
4. Intensive Enough to Raise Body Temperature; and many other points.

Meaning of Limbering Down

Limbering down, also known as warming down, is the process of cooling down the body to restore it to its normal condition after a training or game. It is an integral part of every training and game.

The common stretches used in limber down are as follows:

1. Hamstrings:
2. Chest:
3. Glutes:
4. Quadriceps:
5. Triceps/Shoulders:

Importance of Limbering Down

1. Restoring the Body's Normal Temperature:
2. Eliminates Waste Products:
3. Reduces Tension:
4. Decreases the Chances of Dizziness or Fainting:
5. Supply of Oxygen; and many other points.

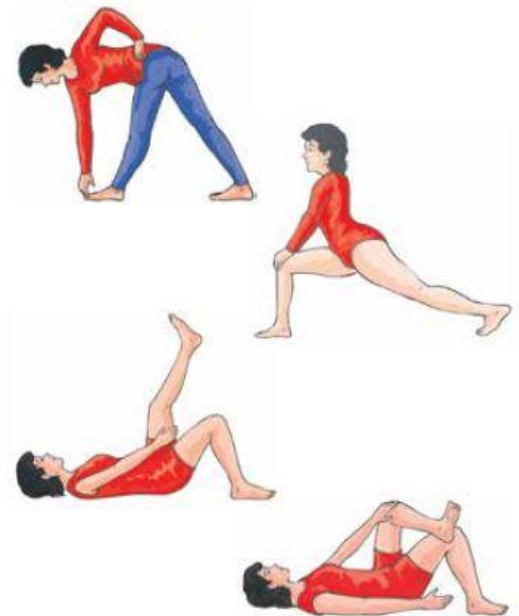


Figure 10.5 Limbering down exercises

SKILL, TECHNIQUE AND STYLE

Meaning of Skill

The meaning of skill in sports can be understood in the following ways:

- to implement the right techniques at the right moment effectively with minimum use of effort.
- to attain a desired result with certainty through the use of an acquired ability.
- a performance-based asset learned for a specific target.

Examples of skills in sports are: serving in tennis, handspring in gymnastics and spike in volleyball.

Classification of Skill

Listed below are some basic skills found in sports:

1. Open Skill:
2. Closed Skill:
3. Simple Skill:
4. Complex Skill:
5. Gross Skill:
6. Fine Skill, etc.

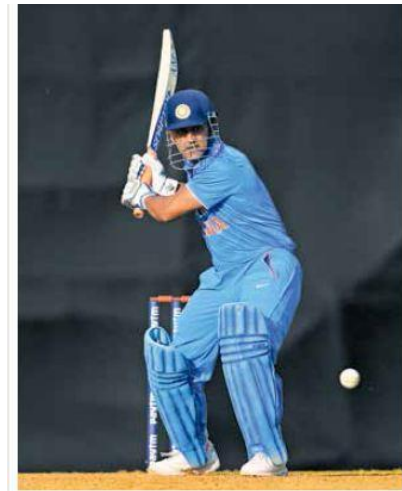


Figure 10.7 Discrete skill has a definite ending and beginning.

Meaning of Technique

Experts have defined technique as:

“The most rational and effective form to perform exercises.” – *Ozolín*

“The ideal model of a movement relative to a specific sport activity.”

– *Grosser*

Albert Bandura in his book *Social Learning Theory* (1977) suggested a structure with decreasing priority as follows:

1. Mastery of movements
2. A good modelling experience
3. Verbal motivation
4. Physical stimulation and readiness

Meaning of Style

Style is the expression of technique in motor action. It varies from player to player, and is the manifestation of the physical and psychological prowess of each. Famous examples are Brazilian footballer Kerlon's seal dribble (dribbling the ball on the head), Russia's tennis player Evgenia Kulikovskaya's two forehands, Sri Lankan bowler Lasith Malinga's way of slinging his arms while bowling, and American high jumper Dick Fosbury's Fosbury Flop.

CONCEPT AND CLASSIFICATION OF DOPING

“Doping is 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.”

– *International Olympic Committee*

Meaning of Doping

UNESCO defines doping as “an athlete’s use of prohibited drugs or methods to improve training and sporting results.”

As per Article 2 of WADA Code 2015, doping comprises the violation of the following:

1. Presence of a prohibited substance or method.
2. Athletes must ensure that no prohibited substance enters her/his body and no prohibited method is used.
3. Doping also constitutes evading, refusing or failing of sample collection after being notified.
4. Within a twelve-month period, if any combination of three missed tests and/or fail to file as per the International Standard for Testing and Investigations, then it is doping.
5. Possession of a prohibited substance or method.
7. Trafficking or attempted trafficking in any prohibited substance or prohibited method, etc.

Classification of Doping

Broadly there are two types of doping:

1. Performance enhancing drugs or substances
2. Physical methods

Performance enhancing drugs or substances

These are substances, chemical agents or procedures designed to increase the performance of athletes.

Anabolic-Androgenic Steroids (AAS):

Human Growth Hormone (HGH), Peptide

Hormones and Related Substances:

Beta-2 Agonists:

Diuretics and Masking Agents:

Stimulants:

Narcotics; etc.

Physical Methods

Blood Doping:

Gene Doping:

Figure 10.11 The World Anti-Doping Agency, Montreal, Canada



PROHIBITED SUBSTANCES AND THEIR SIDE EFFECTS

Prohibited Substances

The Prohibited List of substances and methods is the bedrock of the World Anti-Doping Code. It is updated annually after extensive consultation.

Substances prohibited at all times or in-and out-of-competitions are:

- Anabolic Androgenic Steroids (AAS):
- HGH, Peptide Hormones and Related Substances:
- Non-approved Substances:
- Beta-2 Agonists:
- Diuretics and Masking Agents:

Substances prohibited in competition are:

- Stimulants:
- Narcotics:
- Cannabinoids:
- Glucocorticoids:

Substances prohibited in particular sports are:

- Alcohol:
- Beta-blockers:

Side Effects of Prohibited Substances

Refer to Table 10.2 (pages 163-165) that illustrates the side effects of the prohibited substances.

DEALING WITH ALCOHOL AND SUBSTANCE ABUSE

What is Substance Abuse?

Substance abuse means the intake of any substance that affects the health of an individual. The substance can be alcohol or any prohibited drugs or anything beyond a prescribed level.

Harmful Effects of Substance Abuse

1. Slowly develops many health issues.
2. Person becomes fickle minded.
3. Willpower; decision-making skills and confidence will be low.
4. Person will be mentally imbalanced, etc.

Prevention

It is very important to prevent than going for a rehabilitation programme.

1. Firstly, prevention starts from the family bonding and culture. Values and customs can be imbibed in a child from and by the family.
2. Good education and effective understanding are very important to understand the ill-effects of substance abuse.
3. Self-belief is the best prevention.
4. Love and respect for the parents is another strong aspect of prevention, etc.

SUMMARY

1. Training is the process in which an individual is taught knowledge and skills required for a specific task. With training, an athlete's overall physiological efficiency is maximised in a specific sports discipline and its accompanying rules and limitations.
2. There are numerous principles of sports training: continuity, transfer, balance, overload, progression, recovery, individual differences, general and specific preparations, specificity, active involvement, variation, warming-up and cooling down, ensuring results and cyclicity.
3. Warming-up means preparing the body before training or competition by performing light exercises. Warming-up exercises can be active or passive.
4. There are five methods of warming-up: general method, warming-up with warm water, warming-up through massage, through sunbath, and through steam bath.
5. Warming-up increases body temperature and metabolism, reduces the viscosity of muscles, boosts cooling efficiency, etc. However, there are guiding principles that should be followed, such as the inclusion of stretching and loosening exercises, choosing activities based on age and sex, among others.

SUMMARY...

6. Limbering down, also known as warming down, is the process of cooling down the body to restore it to its normal condition after a training or game. Hamstrings, glutes, quadriceps, chest, and triceps are stretched during limbering down.
7. Limbering down restores the normal temperature of the body, eliminates waste products, reduces tension, etc. Hence, it is an integral part of the training process.
8. Skill is the ability to execute the right techniques at the right moment to achieve desired results. There are several types of skills in the field of sports.
9. Technique is the manner of applying a skill in a game setting. Style, meanwhile, is the expression of technique in motor action.
10. Doping is 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.

SUMMARY...

11. United Nations Educational, Scientific and Cultural Organisation (UNESCO) defines doping as “an athlete’s use of prohibited drugs or methods to improve training and sporting results”.
12. Cannabinoids are psychoactive chemicals used to induce a sense of relaxation. They include cannabis, *hashish*, marijuana, cannabimimetics, etc.
13. Blood doping is a way of boosting the number of red blood cells (RBCs) in the bloodstream in order to increase amount of oxygen in the blood and improve athletic performance.
14. Substance abuse means the intake of any substance that affects the health of an individual.