

A Textbook of Physical Education Class 11

Chapter 10

TRAINING AND DOPING IN SPORTS



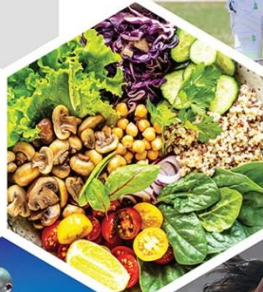
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BOOKS



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

- BISHAN SINGH BEDI



Revised and Updated

Includes
COMPETENCY-BASED QUESTIONS (CBQs)
Assertion-Reason Type Questions
Data-Based/Picture-Based/Case-Based Questions
MCQs

A Textbook of

Physical Education

Based on the latest CBSE syllabus

XI

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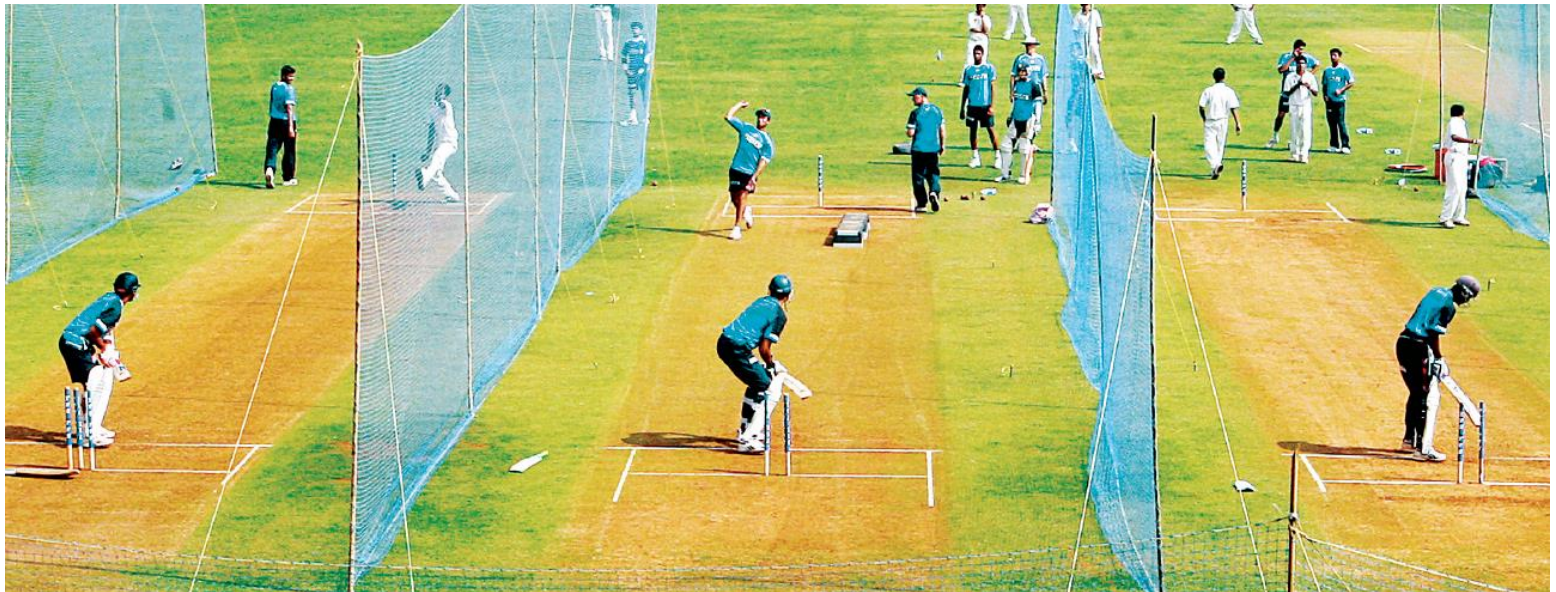


CONCEPT AND PRINCIPLES OF SPORTS TRAINING

“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 Periodisation:

The Principle of Overload:

The Principle of Progression of Load:

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 Variety:

The Principle of Warm-up and Cool Down:

The Principle of Ensuring Results:

The Principle of Cyclicity:

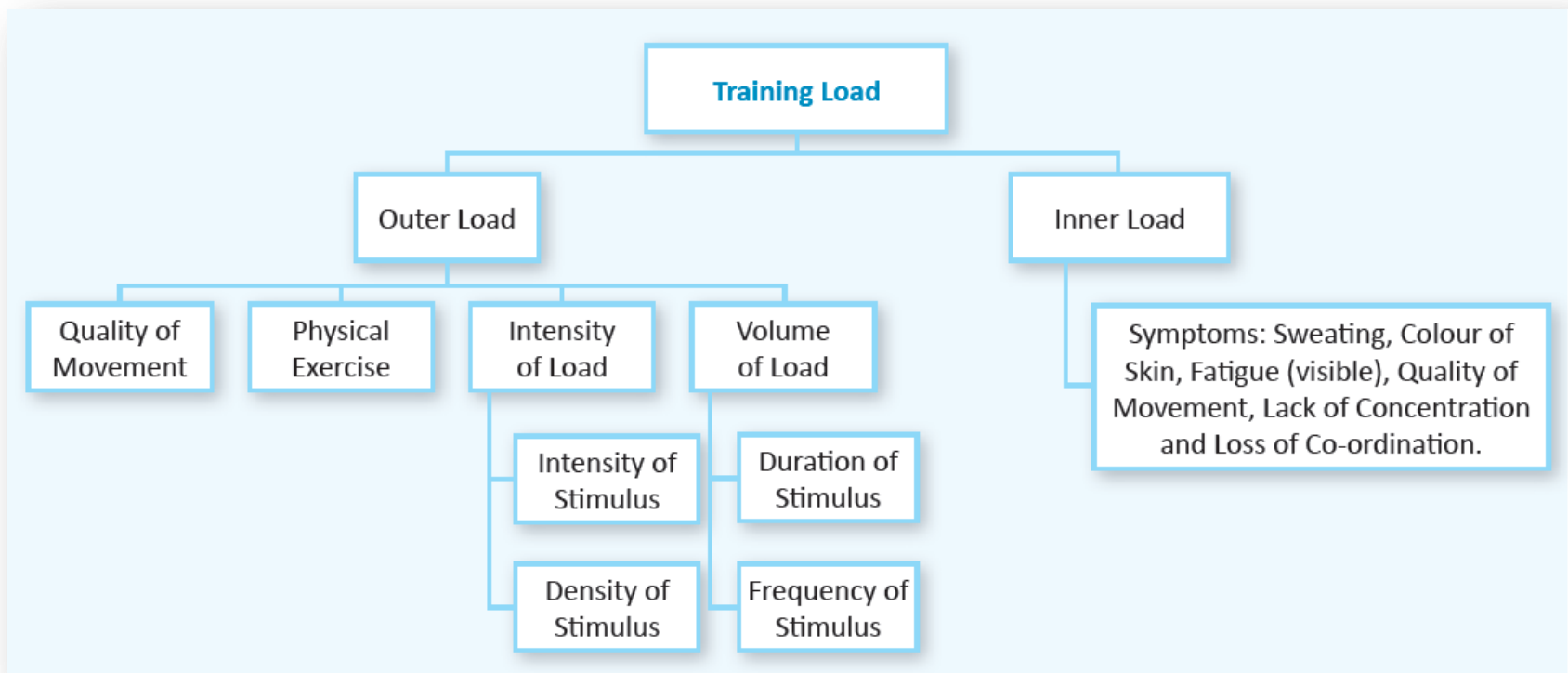


Figure 10.2 Overload during training sessions expands the limitations of a player.

TRAINING LOAD – OVERLOAD, ADAPTATION AND RECOVERY

Training Load

Load is a key consideration in sports training. Efforts should be made to complete job with the least amount of effort feasible. The term ‘load’ is defined as the amount of work that a person’s body does. It is also known as training load. It is the physiological and psychological pressure placed on individuals by subjecting them to exercise in order to enhance and elevate their capabilities during performance.



Overload

Load is distributed to athletes according to their capabilities during training. When this burden exceeds an individual's capabilities, physiological and psychological systems are disrupted. Though the additional load has no immediate effect on the athlete, if the overload is applied for an extended length of time, the athlete's performance will suffer.

There are two types of overloading:

- 1. Dominance of excitation process:** In this type, the training load suddenly increases without adequate preparation.
- 2. Dominance of relaxation process:** This state occurs when an overdose of training load is administered continuously over an extended period.

Causes of Overloading

The main causes that lead to overloading are categorised in the following manner:

1. Faulty Training Method:
2. Life Factors:
3. Social Factors
4. Health Factors:

Psychological Symptoms:

1. Increased irritability and a tendency to lash out at others.
2. Tendency to withdraw into oneself and avoid the company of coaches and fellow trainees.
3. Oversensitivity to criticism.
4. Laziness towards learning and working.
5. Hallucination, anxiety, depression, melancholia, insecurity.
6. Decreased self-esteem and motivation.
7. Inability to focus.

Performance Symptoms: Lack of rhythm and flow in movement, slowness in correction and differentiation, inability to focus, tense movements, re-occurrence of previously corrected error and tendency to make technical errors, decrease in strength, speed, and endurance abilities, slow recovery, etc.

Somatic-functional Symptoms: Decreased appetite, insomnia, poor digestion, loss of weight, dizziness, night sweats, increased rate of respiration, weakening of muscular strength and joint aches, Susceptibility to injuries, etc.

Adaptation

Adapting to a load leads to an increase in performance capacity. As a result of the adaptation process, a sportsperson might improve her/his performance. The adaptation process necessitates that a sportsperson trains consistently.

Recovery

It is the time to recover body damage induced by training or competition.

This entails restoring the following:

- Enzymes that produce energy within muscle fibres.
- Muscle cell carbohydrate storage.
- Immunological and endocrine systems.

Process of Stimulus – Recovery and Adaptation

Our body goes through various changes. To catch up with these changes, the body adapts itself. This happens frequently during our lifetime. Living cells are capable of accomplishing these adaptations. We all know that every living organism is made up of tiny living cells and each type of cell or a group of cells functions differently. Adaptation also occurs in sports training.

Training load plays an important role in sports training because it boosts performance. It should be raised after every adaptation if we wish to improve our performance. Otherwise, the performance will remain the same.

CONCEPT OF DOPING AND ITS DISADVANTAGES

“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.”

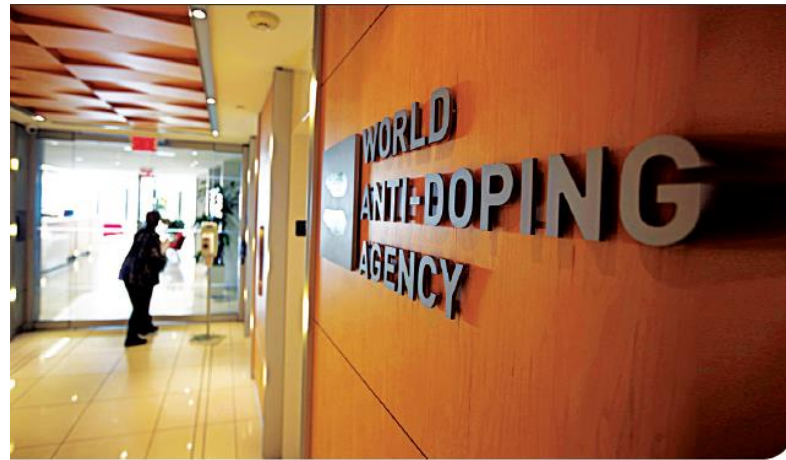
– *International Olympic Committee*

Concept 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.
6. Trafficking or attempted trafficking in any prohibited substance or prohibited method, etc.

Figure 10.5 The World Anti-Doping Agency, Montreal, Canada



Disadvantages of Doping

The fact that prohibited substances like steroids, stimulants, narcotics, alcohol, beta blockers, cannabinoids, diuretics, chemical and physical manipulation, etc. can have dangerous and long-lasting negative effects is the most crucial reason why doping is such a major deal:

- **Cardiovascular:** arrhythmia, high blood pressure, heart attack, and sudden death, etc.
- Insomnia, anxiety, sadness, aggressive behaviour, headache, addiction with withdrawal, psychosis, tremor, dizziness, and stroke are all symptoms of the central nervous system.
- Sinusitis, nosebleeds, and other respiratory issues
- Infertility, gynecomastia (enlarged breasts), decreased testicular size, acromegaly (coarse bones in the face, hands and feet), and cancer are all hormonal issues.

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, periodisation of load, overload, progression, recovery, individual differences, general and specific preparations, specificity, active involvement, variation, warming-up and cooling down, ensuring results and cyclicity
3. Load is a key consideration in sports training. The term 'load' is defined as the amount of work that a person's body does.
4. Load is distributed to athletes according to their capabilities during training. When this burden exceeds the individual's capabilities, physiological and psychological systems are disrupted.
5. The adjustment of physical and psychological functioning system to the training load is referred to as adaptation.
6. Recovery is the time to recover body damage induced by training or competition.

SUMMARY

7. 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.
8. 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”.
9. The fact that many prohibited substances/drugs can have dangerous and long-lasting negative effects is the most crucial reason why doping is such a major deal.