BHARATHIDASAN UNIVERSITY

Tiruchirappalli- 620024, Tamil Nadu, India

Department of Physical Education and Yoga

Course Title :SCIENTIFIC PRINICIPLES OF SPORTS TRAINING

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Unit- (IV)

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CAUSES OF OVER LOADING – SIGNS-

- The cause which leads to overloading can be discussed under the following four categories.
- Faulty training method
- Life-related factor
- Social related factor
- Health-related factor
- Some signs of overtraining
- Prolonged fatigue
- Increased tension, depression, anger, or confusion
- Inability to relax
- Poor-quality sleep
- Lack of energy, decreased motivation, moodiness
- Not feeling joy from things that were once enjoyable
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REDEDIAL MEASURES

- *Complete rest is not advisable.
- *Recognize the causes as early as possible.
- *The training load should be reduced carefully.
- *A good diet, good massage general excise be adopted to accelerate in the process of recovery.
- *Modify the training.
- *Start the training with a revised plan.
- *Avoid trails and competition.
- Management of overload
- Modifying volume and intensity
- Adding variety to avoid monotony
- Providing emotional support
- Allowing for rest and recovery
- Optimizing sleep, nutrition, and mental health

SUPER COMPENSATION

- In training the desired adaptive response is called super compensation. Training is simply the manipulation of the application of stress and the body's subsequent adaptation to that stress to maintain homeostasis. The adaptation that occurs is fairly predictable.

Supercompensation is a four-step process

- The first step is the application of training or loading stress and the body's subsequent reaction to this training stress, which is fatigue or tiring. There is a predictable drop-off in performance because of that stress.
- Step 2 is the recovery phase. This can be a lighter training session, a recovery session, or active rest. As a result of the recovery period, the energy stores and performance will return to the baseline (state of homeostasis) represented by the point of the application of the original training stress.
- Step 3 is the super compensation phase. This is the adaptive rebound above the baseline; it is described as a rebound response because the body is essentially rebounding from the low point of greatest fatigue. This super compensation effect is not only a physiological response but also a psychological and technical response.
- The last step in the process is the loss of the super compensation effect. This decline is a natural result of the application of a new training stress, which should occur at the peak of super compensation. If no training stress is applied, there will also be a decline. This is the so- called detraining phenomenon.
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ALTITUDE TRAINING

The history

- In fact, the impact of altitude on performance was not well known until the 1968 Mexico City Olympic Games, where two major impacts were observed:
- Short events got faster (due to lower resistive forces), and
- Long events got slower (due to lower oxygen availability).
- At an elevation of around 2,240 meters (7,350 feet), Mexico City's high altitude was expected to impact the performance of athletes not accustomed to such conditions. Many athletes and teams arrived weeks in advance to acclimate and train at altitude, hoping to gain an advantage. This event brought attention to the potential benefits of altitude training.

ALTITUDE TRAINING

- Altitude training is a training method that involves athletes living or training at high altitudes to improve their performance at sea level. The goal is to enhance athletic performance by:
- * Improving oxygen efficiency
- * Increasing red blood cell production
- * Boosting endurance and performance
- Depending on the protocols used, the body may acclimate to the relative lack of oxygen in one or more ways such as increasing the mass of red blood cells and hemoglobin, or altering muscle metabolism
- During altitude adaptation, our body undergoes several physiological changes in response to the reduced availability of oxygen. Ideally, these adaptations optimize oxygen delivery to tissues while maintaining cellular function. Because our body still requires the same amount of oxygen, it must become more efficient since there is less oxygen available.

The benefits of altitude training

- *1. Increased Red Blood Cell Production*
- 2. Enhanced Oxygen Extraction
- *3. Increased Capillarization*
- *4. Ventilatory Adjustments*
- *5. Increased Myoglobin Production*