

Overtraining in Child Athletes and Adults in Sports

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DESCRIPTION

Overtraining is a condition in which an athlete's adaptive mechanisms are stressed to the point of failure; symptoms can range from a decline in physical performance, loss of appetite to illness or depression, or may present themselves as just general tiredness or fatigue [1]. Excessive stress is the cause of overtraining and is usually caused by a sudden increase in training volume or duration with shorter times for recovery in between these training bouts.

In simple words, overtraining is due to a long-term imbalance between stress and recovery (i.e., too much stress combined with too little regeneration)

Types of overtraining

Short term overtraining

Short-term overtraining (also called overreaching or super compensation training) is a frequent part of athletic training, which leads to a state of overreaching in affected athletes. Short-term overtraining [2] lasts less than 3 weeks, and is a regular part of athletic training that leads to a state of overreaching in affected athletes which is characterized by a transient underperformance that is reversible within a short-term recovery period of 1 or 2 weeks.

Long-term overtraining

During long-term overtraining, athletes are on a chronic performance plateau that cannot be influenced positively by short amounts of rest and recovery periods, lasting 3 weeks or more. Long-term overtraining can be characterized by an inability to train.

Preventing overtraining

1. Include recovery training in weekly, monthly or yearly training plans. Ensure that after long periods of hard training athletes are given work, in the form of a reduction in training volume and intensity, which will allow them to recover.

2. Prescribe a high carbohydrate diet (55-65% of the total daily energy intake), specifically in the form of high-to-moderate glycemic foods.
3. Reduce other sources of stress or reduce training when additional stress is anticipated.
4. Try to prevent athletes from competing too frequently.
5. Ensure that adequate rest is provided following competition.
6. Do not let athletes become overextended by taking on too many responsibilities

Recovery

Recovery is an inter and intra individual multilevel (e.g., psychological, physiological, social) process in time for the reestablishment of performance abilities [3]. Recovery includes an action-oriented component, and those self-initiated activities (proactive recovery) can be systematically used to optimize situational conditions to build up. Recovery processes in competitive sports support the restoration of individual activity conditions and wellbeing following training and competition demands. Several studies have shown that recovery is faster when subjects exercise moderately instead of resting passively.

Recovery may be active or passive. Active recovery consists of cool-down activities, such as muscle relaxation and stretching, after practice and competition [4]. The purpose of these exercises is to eliminate the effects of fatigue through physical activity. Passive recovery, on the other hand, includes treatments such as massages, hot and cold baths, steam baths, and sauna baths, which initiate physiological reactions through physiological stimuli (heat, cold, and pressure), affecting blood flow, respiration rate, and muscle tone.

Treatment of overtraining

When athletes and coaches come across instability on performance, they have the tendency to increase their effort and the training load, which mostly leads to a vicious cycle. When a coach believes that an athlete is showing signs of overtraining, the athlete should consult a doctor to rule out injuries and damage due to overstrain [5]. If overtraining syndrome is

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diagnosed, treatment with electrolytes can be considered. The best treatment for overtraining is rest and recovery phases from 2 to 6 weeks long (sometimes longer), depending on the degree of overtraining. Athletes may require months without any training and without any physical activity in order to recover completely from overtraining syndrome, at times. Changes in training can also positively affect the practice routine. A reduction of training load, a change in intensity, or a change in training technique can positively affect athletes. Environment and climate changes help athletes to recover both physically and mentally. Physical exercises, such as gymnastics, games, regenerative runs, or swimming, as well as a balanced and healthy diet play an important role in the recovery process. Psycho regulative techniques, such as progressive muscle relaxation or autogenic training, can accelerate the recovery process [6].

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