

## BLOOD TESTS FOR DETECTING OVERTRAINING

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Overtraining is a complex syndrome affecting athletes. The excess of psychophysical effort during training could induce overtraining, i.e. recovery from training is not completely assured, reducing the athletes performances.

The term overreaching is commonly used when the performance is recovered in period of days after the discontinuation of physical training, whereas overtraining defines a status of impaired performance recovered only after weeks of rest.

The overtraining syndrome is not definitely defined and accepted in sport science, representing a condition diagnosed when organic signs of illness are not identified. However, the prevention of overtraining is universally attempted in sport medicine, considering cardiological symptoms, mood modifications, and, finally, biochemical parameters modifications.

Overtraining biochemistry was initially studied in sport disciplines characterized by heavy training workload. Modern football was added to the traditionally considered disciplines susceptible to overtraining, owing to increase of workload, number of matches, and turnover of athletes.

Hormonal parameters are generally used for diagnosing overtraining, especially cortisol and testosterone.

Some biochemical parameters representing energy biochemical pathways are interesting, as creatinine and ammonia.

Finally, iron, ferritin, and other parameters included in the reticulocyte/erythrocyte production, release and recovery from destruction by haemolysis or by uptake from reticuloendothelial apparatus to evaluate overreaching/overtraining.