

Education and debate

Redefining the overtraining syndrome as the unexplained underperformance syndrome

R Budgett, E Newsholme, M Lehmann, C Sharp, D Jones, T Peto, D Collins, R Nerurkar, P White

Unexplained underperformance in athletes is a common problem, occurring in around 10–20% of elite endurance squads.¹ The terms “overtraining syndrome”, “staleness”, “chronic fatigue in athletes”, and “sports fatigue syndrome” have been used.² “Burn out” with depressed mood state may occur in power athletes. There has been some confusion in the literature on the definition and diagnostic criteria. On 19 April 1999 the authors held a round table discussion at St Catherine’s College, Oxford in order to clarify the diagnostic criteria to be used in the future. The format of the meeting was modelled on the consensus meeting held at Green College, Oxford on 23 March 1990 on the criteria for diagnosis of patients with chronic fatigue.³

Unfortunately the term overtraining syndrome implies causation, which limits investigations of this problem in athletes. There is confusion as to whether athletes suffering from frequent respiratory infections, depressed mood state, fatigue, or underperformance are all actually overtrained. In order to allow researchers and clinicians to investigate the problem, we have created a broader definition. It is likely that there are several distinct subgroups and that some of these subgroups overlap. It is essential that those conducting research and producing case reports define exactly which group(s) they are investigating or whether they have included all athletes with persistent unexplained underperformance.

The definition of unexplained underperformance syndrome (UPS)

UPS is a persistent unexplained performance deficit (recognised and agreed by coach and athlete) despite two weeks of relative rest.

The following have been reported in UPS⁴⁻⁷:
Fatigue and unexpected sense of effort during training

Also
History of heavy training and competition
Frequent minor infections
Unexplained or unusually heavy, stiff and/or sore muscles
Mood disturbance
Change in expected sleep quality
Loss of energy
Loss of competitive drive
Loss of libido

Loss of appetite
Excessive sweating

Conclusions

The list of symptoms has been included to give a background to the basic definition. If the underperformance can be explained in terms of a major disease, then the diagnosis cannot be made. For this reason all athletes with a diagnosis of UPS should have a history and physical examination performed by a competent doctor. The performance deficit may be agreed by the sports scientist or sports physician if appropriate ergometer or field tests have been carried out. However, in most cases it would be the coach and athlete who are best able to measure performance, which may be compared with previous weeks, months, or years. It may be most appropriate to compare performance with the same stages of previous seasons or even Olympic cycles (in the case of an Olympic athlete). Relative rest cannot be defined exactly but should involve a significant reduction in training and increase in recovery time, for example as would occur normally before a competition.

There is evidence for different presentations in endurance and sprint athletes. Endurance athletes present with fatigue and underperformance with secondary changes in mood and this is specific to the sport and the individual.² Sprinters and power athletes present primarily with changes in mood (burn out and staleness) with subsequent changes in performance.⁸ Also athletes who suffer from frequent minor infections, particularly upper respiratory tract infections, may form a separate overlapping subgroup.⁹ As a result of these overlapping groups and the confusion of definitions, our definition of unexplained underperformance is broad and all inclusive. It does not, however, include over-reaching or so called short term overtraining, from which athletes recover with two weeks of relative rest. Blood variables are not yet specific enough to make the diagnosis, but changes in glutamine,^{10 11} catecholamines,¹² the hypothalamic pituitary axes, and eccentric/concentric muscle force¹³ may help with the diagnosis in the future.

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R Budgett
E Newsholme
M Lehmann
C Sharp
D Jones
T Peto
D Collins
R Nerurkar
P White

Correspondence to:
Dr R Budgett, Director of
Medical Services, British
Olympic Association, 1
Wandsworth Plain, London
SW18 1 EH, United
Kingdom.

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