Understanding RED-S vs. Overtraining

A quick-reference guide for athletes, coaches, and teams on distinguishing underfuelling from overtraining — and knowing when to seek professional support.

Performance dropping. Constant fatigue. Recovery is taking longer than it used to. It is easy to interpret these as signs of training too hard. Often, the underlying driver is that your body is not receiving enough fuel to meet the demands placed upon it.

Two Different Problems

Overtraining and *Relative Energy Deficiency in Sport* (RED-S) can look identical from the outside — fatigue, flat performance, slow recovery. The underlying issue is not the same, and the fix is not the same.

Overtraining	RED-S
Training demands exceed the body's ability to recover	Energy intake does not support both training and normal physiological function
Often linked to excessive physical workload or training volume	Can occur at any training load, particularly when fuelling fails to match demand
Improves primarily with structured rest and training adjustments	Requires restoring adequate energy availability, rather than rest alone
Primarily impacts athletic performance and physical recovery	Impacts performance, long-term health, and multiple body systems
Significant hormonal disruption is uncommon	Hormonal changes and metabolic shifts are hallmark features

How RED-S Develops

Low Energy Availability does not require a diagnosable clinical eating disorder to take hold. Common pathways include:

Training-Driven

Increasing training volume or intensity without adjusting nutritional intake, or managing a demanding schedule that inadvertently squeezes out regular meals.

Body-Composition Driven

Deliberately restricting food, restrictive diets, or "clean eating" rules; pressure to maintain a certain physique.

Signs to Watch For

RED-S affects the whole body, not just performance output. While no single symptom confirms RED-S, a combination of these signs over time warrants clinical attention:

- Changes to menstrual cycle, or loss of periods
- Reduced libido
- Frequent bone stress injuries or fractures
- Recurring injuries, slow to heal
- Feeling unusually cold
- Difficulty concentrating, "brain fog"
- Preoccupation with food or body composition
- Anxiety, guilt, or stress around food

Recovery

Recovery is not about becoming less committed or lowering your standards. It is about creating the necessary physiological and psychological conditions that allow your body to adapt, rebuild, and perform consistently. Recognising the signs early is the first step towards sustainable wellbeing.

When to Seek Support

Seek support if you're experiencing ongoing fatigue that doesn't improve with rest, declining performance despite consistent training, recurrent or slow-healing injuries, menstrual changes, constant thoughts about food or body composition, or a marked change in mood or motivation.

Sustainable recovery is rarely one change. It usually means a multidisciplinary team working together:

Sports Physician

Assesses health, investigates symptoms, monitors physiological change, guides a safe return to training.

Sports Dietitian

Restores energy availability, builds practical fuelling strategies tied to performance and recovery.

Psychologist

Addresses perfectionism, body image, performance pressure, fear around food, and confidence.