What is Energy Availability?

Energy availability is the amount of dietary energy remaining after exercise, available for other physiological functions such as growth, muscle recovery and homeostasis.

Low energy availability (LEA) occurs when the calorie intake of an athlete is insufficient to meet the energy required for daily living plus the demands of training. Energy intake should never drop below resting metabolic rate.

Low Energy Availability in Sport

LEA is associated with the majority of consequences of relative energy deficiency in sport (RED-S) and the Female Athlete Triad. Consequences include but are not limited to: suppressed metabolic rate; menstrual dysfunction; and impairments of bone health, immunity, protein synthesis and cardiovascular health. The consequences can occur in as little as five days and be acute, intermittent or chronic.

Performance Consequences

- Decreased endurance performance
- Increased injury risk
- Decreased training response
- Impaired judgement
- Decreased coordination
- Decreased glycogen stores
- Decreased muscle strength
- Increased metabolic rate
- Decreased concentration
- Irritability

Signs and Symptoms of LEA

- Reduced training capacity.
- Repeated injury or illness.
- Delayed or prolonged recovery times.
- Change in mood state.
- Failure to lose weight.
- Reduced or low bone density.
- Reduced libido.
- Cessation or disruption in menstrual cycle.
- Excessive fatigue.
If you suspect an athlete may have LEA, disordered eating or body image issues, refer them to a sport dietitian, sport psychologist or sports medicine practitioner for assessment and management.