

# Running on empty?



## What you need to know about relative energy deficiency in sport (RED-S)

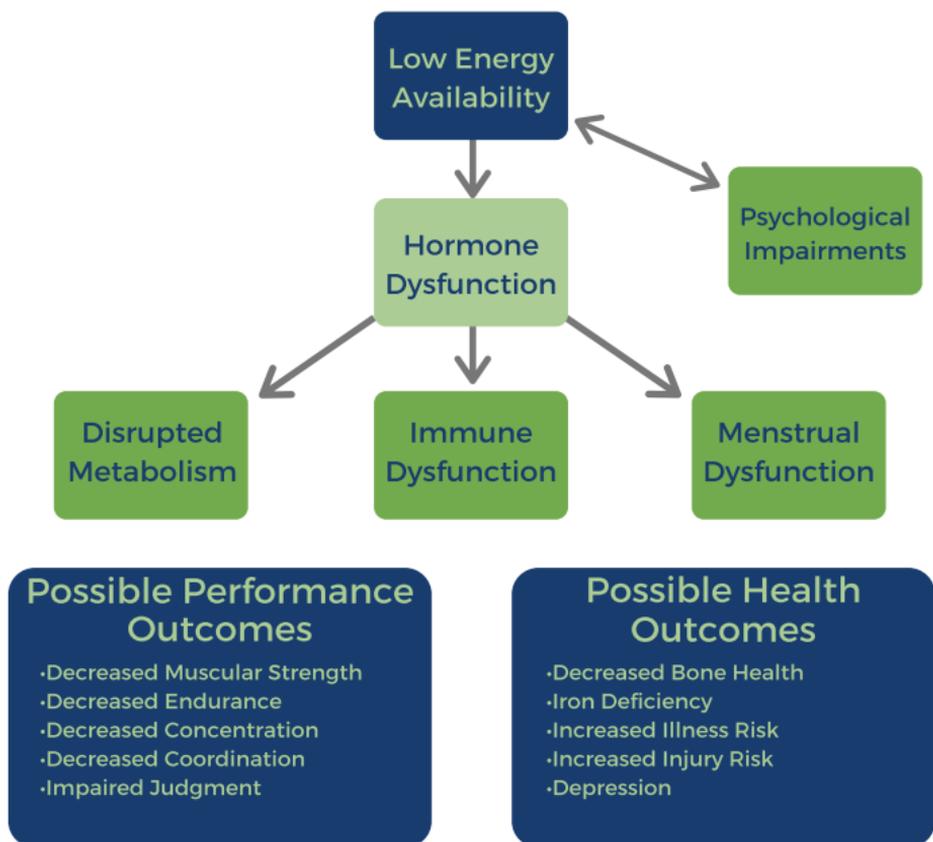
**What is RED-S?** It is a syndrome that can affect all athletes, of any age and any gender, especially those in “lean” sports such as track and field.

**Why is RED-S harmful?** It impairs health and is associated with higher injury and illness risks. It reduces quality training time and performance.

**What causes RED-S?** RED-S is caused by **low energy availability**, which results from an imbalance in the energy the athlete gains from food relative to the energy the athlete expends.

**When can it occur?** Low energy availability can happen in or out of season.

# Consequences of RED-S



## What you can do

**EDUCATE:** Help prevent incidences of RED-S in athletes by informing them of the risks to performance and health posed by low energy availability.

Familiarize yourself with resources in your community.

**OBSERVE:** Monitor the athlete for the signs listed below. Note any changes in athletes' habits, attitudes or performances in practices or competition.

**COMMUNICATE:** If you observe signs of RED-S in an athlete, encourage them to seek medical attention from their family physician or a sports-medicine physician. Note that it is not your role to diagnose RED-S in athletes.

**SUPPORT:** Recovery from RED-S will likely involve long-term behavioural changes on the part of the athlete. It is important that athletes adhere to the recovery program prescribed by their healthcare team. Support the athlete by ensuring they are following the return to sport plan.

## Signs of RED-S

### Physical Signs

- Recurrent injuries (i.e., stress fractures, muscle strains)
- Unusually prolonged recovery from minor injuries
- Recurrent acute injuries
- Persistent fatigue or complaints of being overly tired
- Irregular menstruation in females, late first period or stalled puberty

### Behavioural Signs

- Dieting that is unnecessary for health or sport performance
- Exercising while injured despite recommendations to modify activity
- Self criticism concerning body weight, size/shape, and performance
- Excessive, compulsive or rigid exercise routine beyond that recommended for training or performance

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This brochure was produced in collaboration with researchers at Simon Fraser University