

Relative Energy Deficiency in Sport:

An Athlete's Guide

Ever struggled with energy levels?

Keep getting ill or injured?

Starting to worry about your body weight or shape?

You might be suffering from RED-S

PROJECT
RED-S



www.red-s.com

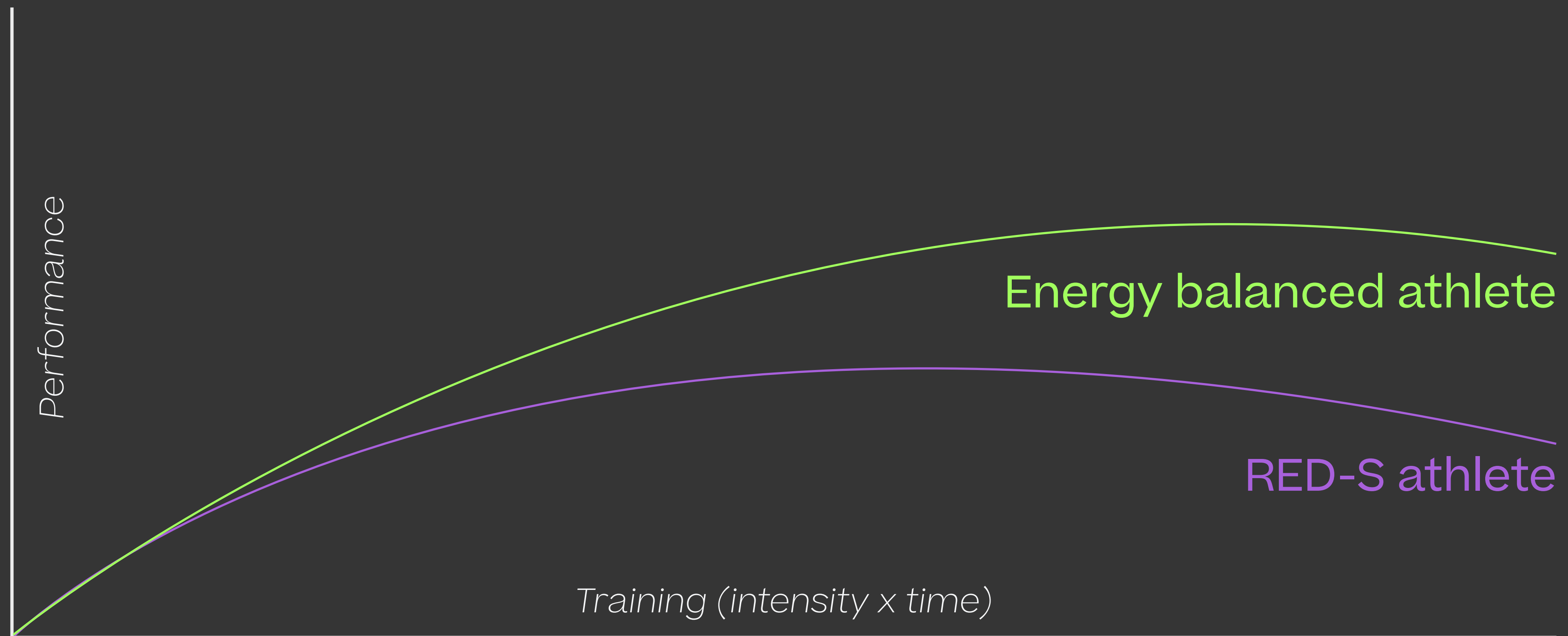
RED-S WHAT?



Relative Energy Deficiency in Sport (RED-S) is a serious health condition caused by a chronic mismatch between energy intake and expenditure.

Whether this occurs via intentional calorie restriction, or simply by underestimating the energy demands of activities, the consequences can be severe.

HEALTH & PERFORMANCE



(Keay, BR J Sports Med 2017)

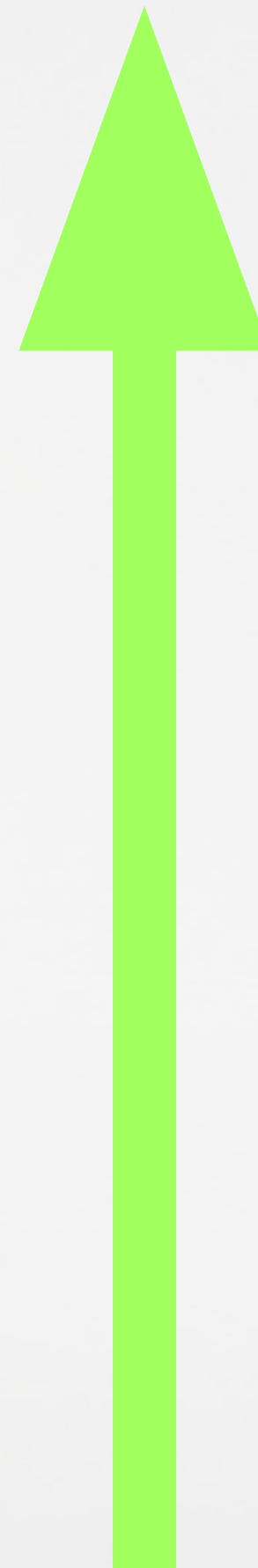
HEALTH & PERFORMANCE



DECREASED

- Stamina
- Strength
- Recovery
- Immunity
- Mood
- Sex drive
- Self-esteem
- Metabolism
- Coordination
- Concentration
- Training adaptation
- Overall performance

HEALTH & PERFORMANCE



INCREASED

- Illness
- Injury (soft tissue & bone)
- Fragility of bones
- Risk of osteoporosis
- Hormonal dysfunction
- Menstrual irregularity
- Erectile dysfunction

WARNING SIGNS

*"If you listen to your body when it whispers,
you don't have to hear it scream."*

Grayson Murphy - Pro Runner

1 Hormonal changes

Less than 3 morning erections a week
Missing or abnormal menstrual cycles*
Weight loss (not always present)
Disturbed sleep
Low sex drive

4 Performance decline or plateau

(or difficulty adapting to training)

2 Persistent or recurring illness & injury (coughs, colds, infections, anemia) (soft tissue or bone)

5 Mood changes

Irritability
Depression
Anxiety
Low motivation

3 Attitude changes

Preoccupation with food/body/weight
Reluctance to rest
Calorie restriction



REDUCING RISK

*"Anyone can train hard.
Do you have the discipline to recover?"*

Lauren Fleshman - Pro Runner

Up to
58%

of athletes suffer from
low energy availability*

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*LEA in Athletes 2020: An Updated Narrative Review



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1

Nutrient timing

Fueling as an athlete is a full-time job - often made harder by the appetite-suppressing effects of exercise. Eating something every 2-4 hours and immediately post-workout can minimise the risk of depletion.

2

Break the fast

'Breaking the fast' with some form of fuel before exercise can help avoid increased cortisol levels (the stress hormone). The same applies to eating something closer to bedtime. Learn more from [Dr Stacy Sims](#), author of [ROAR](#).

3

Life load

Energy can be sapped from many sources, besides your sport-specific training. Consider your overall 'life load' (studies, work, social commitments) and how you balance out all these sources of stress (e.g. sleep, nutrition, downtime).

4

Hidden extras

Training-aside, other forms of activity requiring energy can be easy to overlook. Make sure your nutritional intake accounts for extra exercise such as dog walking, travelling around by bike or standing for long periods of time.

5

"You do you"

With mounting pressures to look, eat and train a certain way, it's essential to collect nutrition and training advice from credible sources that are backed by science. Be mindful of social media accounts that may promote unrealistic comparisons. Instead of putting energy into changing your body, focus on working *with* the unique tools you were born with to achieve your goals.

6

Where to turn

Understanding more about RED-S can help you take measures to prevent it. Recovery time can be significantly increased with early identification, so if something starts to feel a little off, it's essential to know [where to turn](#).

**FORGET WHAT YOU
READ ABOUT FASTING.**

MYTHS & PITFALLS



~~RED-S is only for people with an eating disorder~~

RED-S is not limited to someone with any form of disordered eating. No matter how an energy deficit is created, the dangers of underfueling are the same.

~~It's ok for athletes to lose their period~~

A natural menstrual cycle between 21-35 days in length is a crucial measure of health. Experiencing significant changes, losing a cycle, or not getting a period by age 15 warrants immediate investigation, regardless of training level.

~~I'm not ill, injured or performing badly enough to have RED-S~~

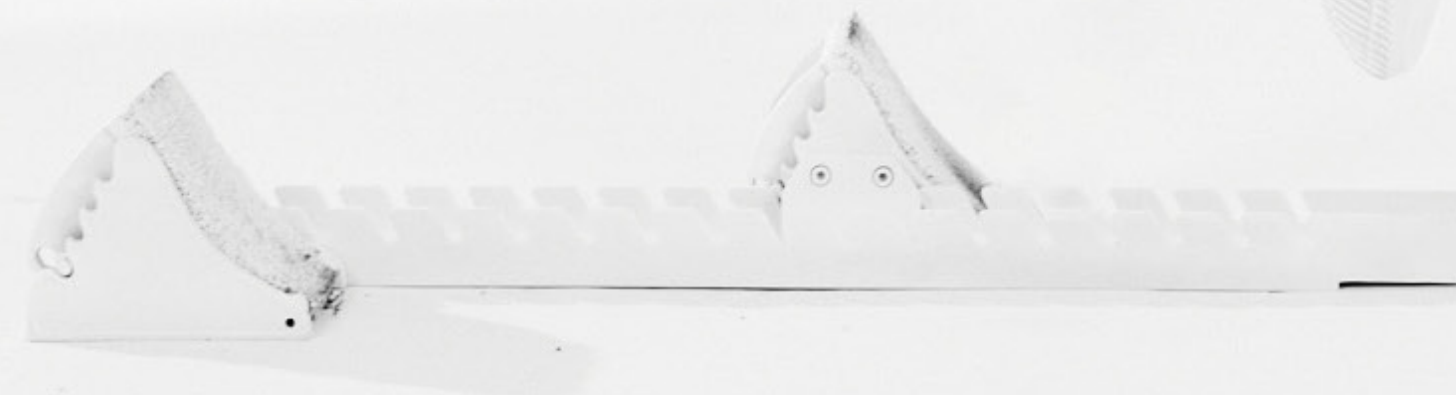
An athlete may experience some, or all of the symptoms, which may present on a different timeline for each individual.

~~I'm not female/elite/thin/ training enough to have RED-S~~

RED-S can impact any para or able-bodied exerciser of any age, gender, level or size. Despite common assumptions, weight loss is not always a symptom or pre-requisite for RED-S.

~~I have a period...I'm on the Pill~~

Contrary to early beliefs, hormonal contraceptives do not produce a natural period or protect bone health. Beware as a withdrawal bleed can lead to a false sense of security, and may delay a RED-S diagnosis.



SEEKING SUPPORT

"It might feel like it, but these issues aren't permanent, provided you get the support you need."

Will Jones - Recreational Cyclist

EARLY IDENTIFICATION IS KEY

Don't wait

If making a change feels scary, try taking one small step. This may mean asking someone trustworthy, “Can I talk to you about something later?”, or sending a text or email when the time feels right.

It can never hurt to learn more about RED-S, or to share your knowledge with others.

Find more athlete and supporter resources at:
www.red-s.com

Prepare to talk

To minimise fear of judgement or avoid misinterpretation, it can help to prepare what you want to say. You could include:

- How you're feeling, mentally and physically
- How long you've been feeling this way
- Anything you might fear (e.g. judgement, de-selection, being forced to take time off)
- How they (or others) could support you, or what might be unhelpful for them (or others) to do

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