

Relative Energy Deficiency in Sport (RED-S) – how can you recognize symptoms and make positive changes.

What is RED-S?

RED-S is a condition that can affect women and men of any age or level of sporting ability. and occurs when there is an imbalance in energy intake (nutrition) and energy output (sport/training). A low energy status can occur when our dietary intake is insufficient to provide energy for all the bodies physiological functions and physical activity requirements. This energy deficiency can result from excessive exercise, poorly planned nutritional intake, not enough nutritional intake, or not enough recovery. It is a misconception that the cause is intentional, in many people, they just misjudge the energy requirements for their physical activities.

The exact energy value required to maintain optimal health varies between individuals depending on their body composition and age. If energy availability falls below a minimum level, our bodies go into a negative energy balance. This essentially puts some of our bodies systems into a “energy saving mode” and dampens our hormonal and metabolic responses.

How does RED-S affect our health and sporting performance?

RED-S can negatively impact women’s training and sports performance by affecting muscle strength, co-ordination, concentration, decreasing their training response and ultimately putting a woman at increased risk of injury. If left unrecognized or untreated, energy deficiency will have detrimental effects on menstrual function and fertility, bone health, metabolic rate, immune function, cardiovascular health, and psychological wellbeing.

Who is at risk of developing RED-S?

RED-S can affect any physically active person at any age or level of sporting ability. It is more commonly seen amongst some sports such as in long distance runners, cycling, weight category sports such as rowing and aesthetic sports including gymnastics, dance, and ballet.

Younger girls in their teenage years are at particular risk, as puberty is already a high-energy demand state with growth and development and the energy demands of their every day lives can be underestimated.

What are the symptoms of RED-S?

We know that women with RED-S can present in different ways depending upon the severity of the low energy status and often, women do not recognise or report their symptoms. Many can experience feeling fatigued with their sporting activities and notice a reduced performance. Sleep or mood may be affected and there can be a history of frequent injuries or viral illnesses. One of the first recognisable signs in many women is that their periods can become irregular or stop altogether. Many sports women attribute this to their high volume of training and “normalise” it within their sport. It is not normal for any woman undertaking regular physical activities to stop menstruating and should never be considered an acceptable consequence of any level of sport or training. Furthermore, absence of periods can impact our bone health and can have long term consequences with reduced bone mineral density.

How is RED-S treated?

It is very important that this condition is managed by a multi-disciplinary team to help support and provide education to improve and maintain energy balance. In most cases, expertise is required from a Sports and Exercise Medicine doctor, physiotherapist, gynaecologist, nutritionist, and sports psychologist. The management consists of addressing the low energy balance and investigating and managing any underlying associated conditions, such as low bone mineral density, stress fractures, vitamin deficiencies and menstrual abnormalities.

Ultimately, a healthy physically active woman is one that will adapt to training and will be able to perform at their best. Health and maintaining this should be the priority.

Resources –

<http://bjsm.bmj.com/content/bjsports/52/11/687.full.pdf>

<http://health4performance.co.uk/updates/>