

Relative Energy Deficiency in Sport (REDs)

Athlete Information

Relative Energy Deficiency in Sport (or REDs as it's often shortened to) is a collection of symptoms that can affect athletes of any age, any gender, any activity and any ability. It is not sport specific.

As the name suggests REDs occurs when your body is expending more energy than is being consumed over a period of time. Therefore, your body is in a deficient energy state.

This may be due to a number of reasons, but the main ones are:

- Unintentional under-fueling: Not understanding the energy needs of your training and underestimating the demand it is placing on your body
- Intentional under-fueling: Restricting energy intake for perceived performance benefits; aesthetic preferences; weight making practices or difficulties with increasing food intake in line with energy demands.

REDs can show itself in several ways.

REDs symptoms occur across genders and symptoms may include:

- Recurrent coughs, colds and mild illnesses you cannot 'shake off'
- Ongoing fatigue, feeling of low energy despite rest
- Recurrent or persistent injuries that don't seem to improve
- Decline in performance (not always immediate as there may be an initial improvement)
- Not making any 'gains' despite training

REDs can result in stress fractures and osteoporosis if left untreated along with significant hormonal disruption.

In females, menstrual regularity can be a useful gauge on your body's energy state.

If you are on the oral contraceptive pill, hormonal intrauterine device or hormonal implant then menstrual assessment is not possible, however if you are not on hormonal contraception your periods are a good indicator of your overall general health.

Loss or irregularity of periods, or not starting your periods by the age of 16 years, is an indicator of being in a low energy state. When your body doesn't have enough energy, it suppresses your hormones, and your periods can stop. This needs to be taken seriously. Not starting periods by the age of 16 or periods having stopped for 3-6 months needs investigation with a doctor.

Outside of sports medicine, there isn't much, if any, training for GP's or NHS doctors on REDs so your doctor may not have heard of it.

Often, you may visit the GP and be told you aren't having periods because you are training. This is a long-held viewpoint which is not true.

It is not normal to not have periods because you do sport.

It is also never advised to start on the contraceptive pill because your periods have stopped or become irregular.

The aim of the hormonal contraception is to switch off your periods altogether. A breakthrough or withdrawal bleed whilst taking hormonal contraception is not a true period. It also does not protect your bone health.

If you are visiting your doctor and you have concerns over your period regularity, or any of the other symptoms highlighted above it can be useful to take the following information:

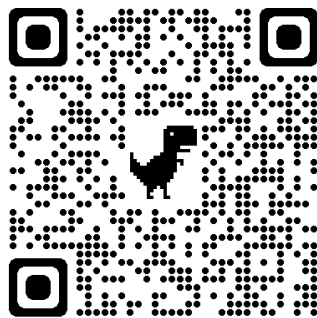
- Your current daily training diary with energy/fatigue levels
- A period diary (there are plenty of apps that are good period trackers)
- A food/snack diary looking at energy/calorie intake. (If writing down your intake feels uncomfortable or may make you more likely to restrict then you can talk to them about the difficulties you have around fuelling)

There is a REDs Clinical Assessment tool which can help guide your doctor on what to look for and how to manage REDs. You will require some blood tests and you may require some training modifications, a nutritional referral and/or a psychology referral particularly with disordered eating.

[PROJECT- REDs](#) is a comprehensive web resource for anyone who wants further information on REDs. It provides you with medically approved information and resources surrounding the condition.

On the next page is a letter that you can take to your doctor's appointment detailing information about REDs should they require it. The page following that is a way for you to detail your symptoms and concerns to take with you as written information. This part has been created by the Project REDs medical advisors and Team and modified by the Female Health and Performance Team at Sport Wales.

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Information for your GP

Please pass this onto your GP at your appointment.

Dear Doctor,

There are concerns about relative energy deficiency in sport (REDs) with your patient. This has either been identified by the patient themselves or coach, support staff or family members and they are seeking an appointment to discuss this further.

In the sports world, REDs is often discussed and spoken about, but in reality this is an extremely small subset of patients you are likely to see in your general clinical practice and therefore it may not be a condition that you have previously encountered and managed before.

REDs occurs when energy intake does not match energy demand from the body. It can occur at any age, in any gender and at any level of sport participation.

REDs may occur intentionally if there is deliberate calorie restriction or unintentionally in those who don't understand the demands, they are putting on their body with their sport/activity level and how to fuel appropriately for that.

Often patients of any gender may present with:

- Recurrent mild illnesses
- Unexplained fatigue,
- Recurrent or persistent injuries
- Decline in performance
- Not making any 'gains' despite training
- Bone issues e.g. stress reactions, stress fractures, osteopenia, osteoporosis
- Psychological issues such as anxiety or depression associated with their sport/performance

In female athletes there may be amenorrhoea (if not on OCP). This is not accepted as a normal situation for those training in sport and is used as a red flag to investigate for REDs. Prescribing the OCP is not helpful in these patients as it masks their amenorrhoea and can lead to further issues with bone health.

The QR code below takes you to the [British Association in Sports and Exercise Medicine \(BASEM\) website for HealthCare Professionals](#) and provides more in-depth information on REDs.



There is a [clinical assessment toolkit available to help guide investigation and management of REDs](#) which is the QR code below, alternatively the URL is:



Your patient has been provided with a sheet to list their symptoms that they should have brought to the appointment. This has been created by the medical advisors at Project REDs

Initial investigations suggested include:

- All patients: FBC, thyroid function, ferritin, vitamin B12, vitamin D, 9am cortisol, prolactin
- Female: FSH, LH, oestradiol, testosterone, pregnancy test
- Male: testosterone, LH
- Consider investigating coeliac disease and inflammatory bowel disease if relevant symptoms present
- Consider DEXA scan if athlete has had two or more stress fractures

There are [a variety of sports medicine specialists with an interest in REDs](#) should a private referral be requested or required.

My symptoms (to be completed by athlete prior to doctors' appointment)

My symptoms are: **[specify any physical or psychological symptoms, alongside the severity and length of time the symptom has been present for. You can [use the symptoms boxes within this page as a guide](#)].**

Despite my best efforts to maintain a healthy diet and lifestyle, these symptoms have persisted, and I am concerned that they may be indicative of a larger underlying issue.

I am a **[recreational/competitive/elite]** athlete who completes roughly **[specify number]** hours of exercise training per week.

Option to insert line about any recent life training or general life changes, including a timeframe

- I started training for **[specify event and date training began or changed]**
- Over the recent **[specify number of weeks/months/years]**, my training **[specify duration and intensity]** has increased
- I recently left home to start University
- I have experienced significant stress over the past year, due to...

Option to insert line about your nutrition*

- I am **[specify e.g. vegetarian/vegan/pescatarian/dairy-free/gluten-free/paleo]**
- I have reduced my **[specify food group e.g. fat/carbohydrate/protein]** intake in an attempt to **[specify goal e.g. lose weight/feel better/improve my performance]**
- I believe I have some level of disordered eating as I am **[specify symptom e.g. frightened of gaining weight/spending a large proportion of my time thinking about food/feeling of loss of control around food/entering into binge-restrict cycles]**
- I have not consciously restricted my food intake, though I feel I may be underestimating the energy demands of my training

**It is very important to state any previous experience with an eating disorder, disordered eating (of any form) or energy restriction here.*

Option to insert concise line about menstrual health* here:

- I have had a **[specify: regular/irregular/absent]** monthly menstrual cycle (see below if using any form of hormonal birth control) since **[specify rough date]**
- I have been using **[specify relevant method of hormonal birth control]** since **[specify rough date]**, but my last natural menstrual cycle was roughly **[specify rough date]**
- I use a non-hormonal method of birth control **[specify non-hormonal method e.g. copper intrauterine device (IUD)]**

**Consider whether you have shown any subtle signs of menstrual disturbance, such as a longer length of time between periods. Tracking your cycle and symptoms via an app like Garmin Connect, Clue or Flo can be helpful. Be aware that a withdrawal bleed from hormonal contraceptives, such as the Oral Contraceptive Pill is not the same as a natural period.*