

**Title of Study**

The effects of low energy availability and Relative Energy Deficiency in Sport (RED-S) on the health of adults and athletes – Study A

**Introduction**

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you. One of our team will go through the information sheet with you and answer any questions you have. This should take about 10 minutes. Talk to others about the study if you wish and ask us if there is anything that is not clear. You will be given time to think about whether you wish to take part before making a decision and you may take this sheet away with you.

**What is the purpose of the study/project?**

The purpose of this project is to investigate the relationships between low energy availability, relative energy deficiency in sport, and mood disturbances with metabolic abnormalities in young adults and athletes. Low energy availability refers to an imbalance between an athlete’s energy intake (diet) and the energy expended in exercise. Consequently, there is an inadequate energy to support the functions required by the body to maintain optimal health and performance. This study will also aim to determine the differences between males and females. The project will provide new evidence to devise interventions for early RED-S screening, detection, and management to improve the health of high-risk populations.

**Why have I been invited to participate?**

You have been invited to take part in this study because you are a healthy adult between the age of 18 and 65, have no diagnosis of chronic disease, musculoskeletal problems, and are not currently receiving treatment for a clinical mental health problem. Your participation in this research enables you to contribute to a cutting area of nutrition and exercise physiology. Finally, you engage in a at least 4 endurance activity sessions per week (running, swimming, and cycling) for a total time of at least 5 hours. This can be as a combination of the three, or just in one discipline.

**Do I have to take part?**

Participation in this study is voluntary. You are free to withdraw at any time without giving a reason. If you are a fellow student or colleague, or if there are likely to be any other issues of power relations, do not feel obliged to remain in the study if you decide that you do not want to. Any decision not to take part will not have any negative consequences in terms of your studies or work.

**What is expected from participants?**

Participation in this study will require you to fill out an online questionnaire regarding your eating behaviours and mood state (which should take approximately 10 minutes). This is defined as Study A.

There is the also the possibility to be a participant in separate sub-studies. You do not need to complete these studies if you do not want to. Outlined here is a summary of these studies. More detailed information will be given should you leave your contact details at the end of the questionnaire. If you choose to participate in Study B, you will also be expected to participate in Studies C and D. For these assessments, you will also be required to complete a 7-day training and diet diary (examples will be provided).

Study B will involve in-person physiological assessments, which will function as a separate study. This would involve assessment of body composition (your proportion of fat and muscle), resting metabolic rate (the amount of calories your body burns at rest), blood testing for hormonal status (levels of testosterone, oestrogen, cortisol), and bone density with a scanning methodology called DXA (the strength of your bones).

Study C will comprise exercise testing. For this, you will undertake running assessments of your lactate threshold and VO2max, in addition to knee strength and endurance assessments. This testing will be aimed to be completed on the same day as Study B.

Study D will use interviews to explore in greater depth your eating and exercise behaviours. These interviews will take place online in collaboration with a researcher from the University of Pafos, Cyprus.

**Will I be paid for taking part?**

There is no monetary compensation or reward for taking part in this study. However, you will have contributed to expanding the knowledge of this area.

**What are the potential disadvantages or risks of taking part?**

The only risks involved with this study are the potential harm from the online questionnaires. If you are currently receiving treatment for a clinical mental health condition, or believe you are at risk of suffering from one, please do not participate in this study. There are links at the bottom of this document for where to seek support. If you suffer any discomfort during participation, please cease participation or contact one of the investigative team.

**What are the potential benefits of taking part?**

There is limited benefit to you personally for taking part. You will contribute to an emerging area of research. If you wish, there is the possibility for you to benefit from some physiological tests – understand your resting metabolic rate (how many calories your body burns at rest), your bone density (how strong your bones are), and your body composition (your proportion of fat and muscle).

**Will my taking part in the study/project be kept confidential?**

All data will be kept anonymous. All participants who fill out the questionnaire will be provided with a non-identifiable ID number. All data will be kept in password protected files on OneDrive. This data will only be accessed by researchers associated with this project. Data will be stored for 10 years before being destroyed in accordance with university policy. If there are any confidentiality breaches, the appropriate individuals will be informed. If data is to be shared or archived for possible re-use by other researchers, you will be informed, and your data can either be included or excluded.

**What will happen if I don’t want to carry on with the study?**

You may withdraw at any time without giving a reason. However, it may not be possible or desirable for data already provided to be removed or destroyed.

**What will happen to the results of the project?**

The results will be published as an academic paper and will contribute to my PhD thesis. If interested, you can be emailed a copy of the finished written project.

**Who is organising and funding the research?**

This research is being organised and funded by the University of Brighton.

**What if there is a problem?**

If you have any concerns or complaints, at any time, these will be addressed by one of the contacts listed below.

**Contact details**

Primary Research: Greg Wright. Email: g.wright8@uni.brighton.ac.uk

Supervisor: Dr Ifigeneia Giannopoulou. Email: i.giannopoulous@brighton.ac.uk

Independent Party: Dr Lucy Redhead. Email: l.redhead@brighton.ac.uk

**Who has reviewed the study?**

This study has been reviewed and received approval by the relevant Research Ethics Committee.

Support Links:

BEAT: <https://www.beateatingdisorders.org.uk/get-information-and-support/get-help-for-myself/>

Mind: <https://www.mind.org.uk/need-urgent-help/using-this-tool>

Body Dysmorphic Disorder Foundation: <https://bddfoundation.org/support/support-in-the-uk/nhs-services-for-bdd/>

Turning Point: <https://www.turning-point.co.uk/services.html>