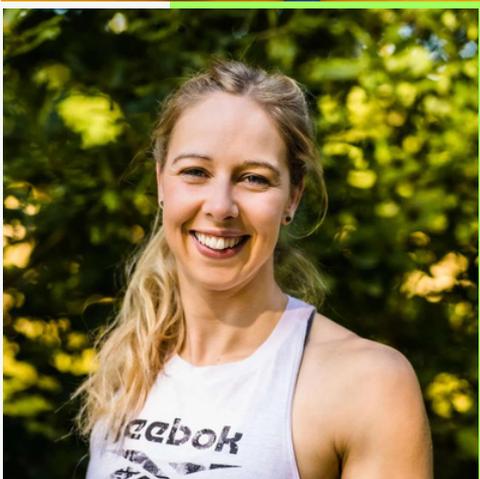


MAY 2023

UK ELITE FEMALE ATHLETE

# MENSTRUAL HEALTH REPORT



**PROJECT  
RED—S**

**PRESENTED BY**

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# CONTENTS

**1** Data-Informed  
Recommendations

**2** Introduction  
and Aims

**3** Background

**4** Participant  
Demographics

**5** Menstrual Health  
& Understanding

**7** Organisational  
Support

**8** Relative Energy  
Deficiency in Sport

**9** Athlete  
Experiences

**10** What Athletes  
Want

**11** Conclusion &  
Contact



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# RECOMMENDATIONS

## **1** SYSTEM-WIDE SUPPORT

System-wide change in how female athletes are supported, from grassroots to elite level

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## **2** STAFF TRAINING

National Governing Bodies (NGBs) and institutions to provide coach, practitioner and support staff training to increase understanding of female athlete health

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## **3** OPEN UP CONVERSATIONS

Sports organisations to promote conversation and consideration of female-specific factors

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## **4** ACCESSIBLE RESOURCES

Accessible resources for all female athletes covering the menstrual cycle, contraception and nutrition

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## **5** INCREASE GP KNOWLEDGE

Female athlete health resource to be developed by Royal College for General Practitioners

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# INTRODUCTION

Pippa Woolven (former GB athlete and founder of Project RED-S) and Laura Weightman (current GB athlete, Olympian, and coach) devised and distributed the Female Athlete Health Survey in collaboration with Dr Natalie Brown (female athlete menstrual health researcher) and the Women's Sport Trust Unlocked Programme - an initiative dedicated to increasing the visibility and impact of women's sport.

**Why?** The effect of the menstrual cycle (MC) on physical performance is an increasingly recognised consideration for female participation in sport. Previous research has consistently reported that sports performance can be influenced by both perceived and physical factors. There are calls for further understanding of how MCs may impact and inform training, nutrition, injury prevention, and recovery advice.

**159 elite junior and senior athletes from over 100 sports organisations took part in the anonymous survey, designed for biological females from the UK, aged 18+**

## AIMS

The aim of the survey was to identify gaps in knowledge and support relating to elite athlete menstrual health. Four sections were devised to determine: athletes' current menstrual health status and symptoms; use of contraceptives; current or previous level of education/support received from sporting institutions; and level/content of desired female athlete support.

By uncovering gaps in knowledge and support, this report aims to provide evidence-based recommendations to National Governing Bodies (NGBs) and other UK sports organisations.





# BACKGROUND

Previous research has consistently found how MC phases are perceived to affect training and performance - highlighting the importance of modifying training sessions and schedules around utilising the predominant performance variable, based on MC phase. However, the way in which the MC affects females and their performance is highly individual, so it is important for athletes and practitioners to maintain open dialogue and ideally participate in MC monitoring.

From an injury and overall wellbeing perspective, athletes who experience menstrual irregularities are almost three times more likely to sustain a musculoskeletal injury than those reporting normal menses. Further consequences can include decreased bone mineral density, leading to increased risk of stress fractures and osteoporosis. This is particularly concerning among young female athletes who form 60-80% of lifetime bone mass by age 18 and peak bone mass by 26-30.<sup>1</sup>

## Relative Energy Deficiency in Sport (RED-S)

RED-S - a serious health condition characterised by sustained low energy availability - is just one potential cause of menstrual irregularities. Current research suggests up to 58% athletes are at risk of RED-S,<sup>2</sup> which presents a whole host of systemic consequences alongside menstrual dysfunction and decreased bone density. These include: impaired reproductive function, immune system suppression, poor cognition, depression and anxiety. In the context of performance, athletes face increased risk of injury, impaired recovery and declines in strength, endurance and performance.

The impact of menstrual irregularities and RED-S needs to be better understood through research. Simultaneously, female athletes should receive tailored education that includes nutritional, psychological, and physiological support, alongside menstrual monitoring and proactive management strategies, giving them the tools they need to be proactive about their cycle and overall health.

[WWW.RED-S.COM](http://WWW.RED-S.COM)

# DEMOGRAPHICS



JUNIOR  
(18-20)



U23  
(21-22)

79%

CURRENTLY COMPETING



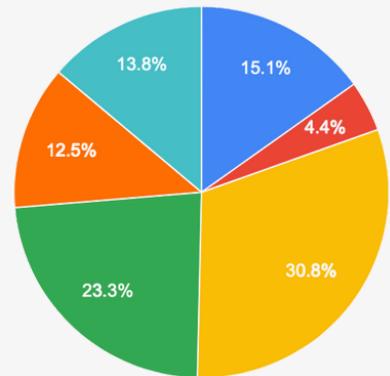
SENIOR (23+)

91%

ABLE-BODIED VS PARA

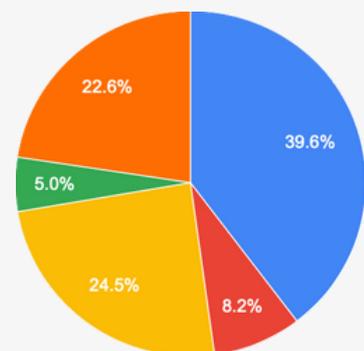
## LEVEL

- JUNIOR NATIONAL
- JUNIOR INTERNATIONAL
- SENIOR NATIONAL
- SENIOR INTERNATIONAL (EURO, CWG)
- SENIOR WORLD CHAMPS
- SENIOR OLY/PARA



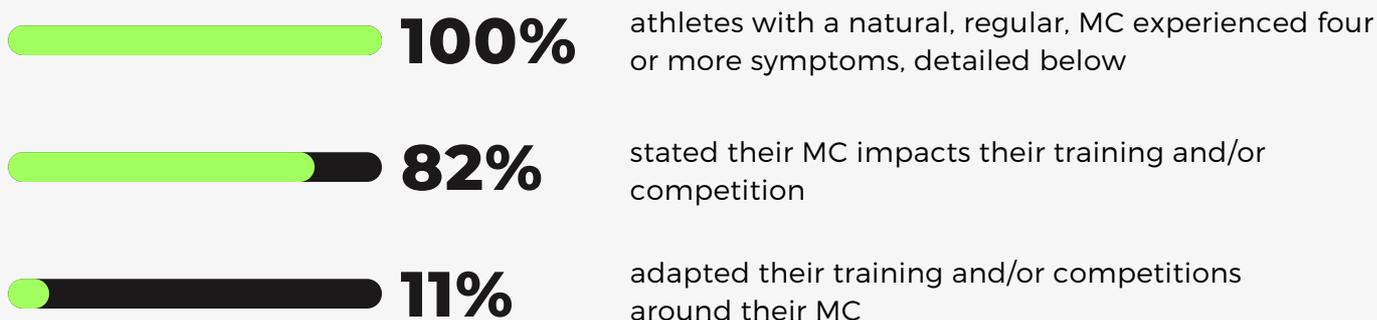
## SPORTS

- ENDURANCE
- TEAM SPORTS
- WATER BASED
- ARTISTIC
- OTHER INDIVIDUAL

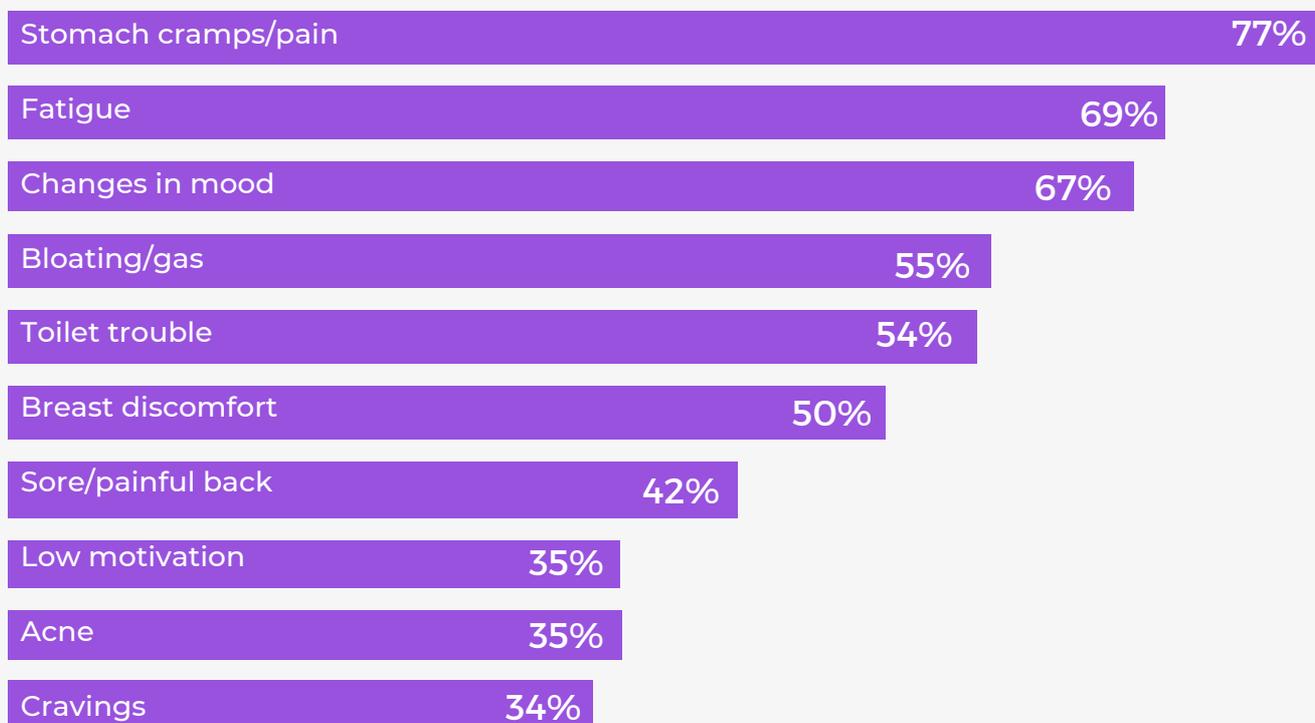


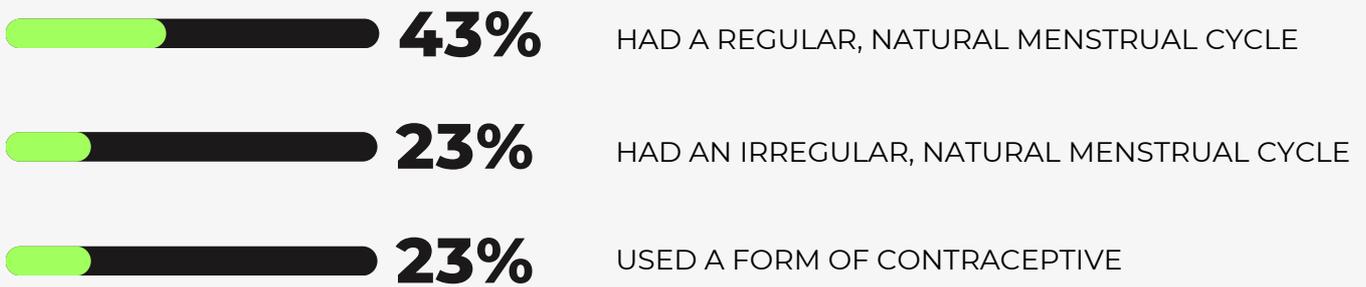
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# MENSTRUAL HEALTH AND UNDERSTANDING

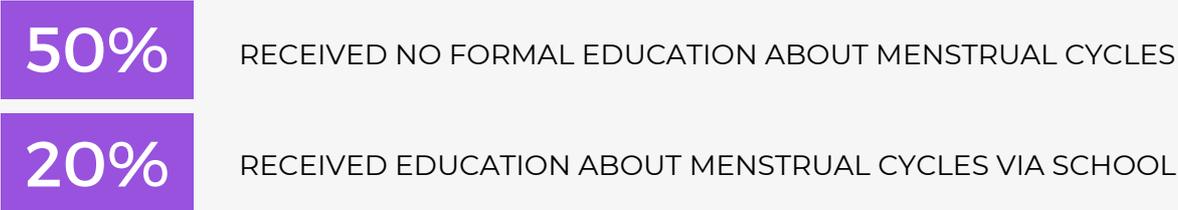


Reasons for not making adjustments in line with MCs included lack of personal understanding and coach guidance surrounding MCs, alongside timing of group training and competitions.

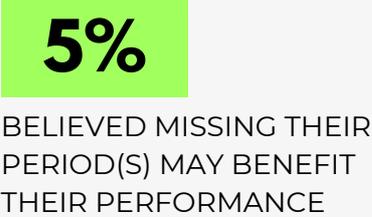




Qualitative responses revealed how hormonal contraceptives were commonly used to manage MC symptoms and timing of periods, highlighting a gap in understanding and management of natural MCs and likely misuse of forms of hormonal birth control.



Athletes received considerably more menstrual health education and support from the internet (55% via non-social media sources and 57% via social media) and peers/teammates (47.8%), than from coaches (6.9%), sports medicine professionals (13.8%), or NGBs (6.3%). Concerningly, 45.9% athletes had been told by a medical professional that it was normal to miss their period, have irregular MCs, or start their period later in life, because of their activity level. This highlights an urgent need for increased understanding of female athletes' MCs among healthcare professionals. Within qualitative findings, athletes added that they wished GPs in particular had greater understanding of menstrual health and RED-S issues.



# ORGANISATIONAL SUPPORT

With the rise in female participation and professionalism in sport, institutions such as clubs, NGBs and universities have an increased responsibility to provide athletes with the multidisciplinary support required to achieve and maintain their performance potential, alongside safeguarding their health and wellbeing.

While such organisations have made great strides in some areas, our data reflected the lack of provisions for numerous female-specific health matters, listed above. Within qualitative findings, some athletes stressed the need for greater education and support from an early age, while others highlighted the importance of simply opening up the conversation with coaches, healthcare professionals and support staff.

**50%** had received no menstrual health support from the organisations and NGBs they are involved with

**20%** rarely talked to members of their support team about their menstrual cycle

**75%** did not feel supported by their organisation in relation to any realm, including: menstrual health, breast health, pregnancy, perimenopause, menopause, bladder control, and choosing appropriate methods of contraception

“MUCH MORE CAN AND SHOULD BE DONE, FROM CLUB LEVEL UPWARDS, TO EDUCATE YOUNG GIRLS GETTING INTO SPORT.”

“I WOULD LIKE TO HAVE RECEIVED SOME NUTRITIONAL, MEDICAL, AND PSYCHOLOGICAL ADVICE FROM COACHES AND NGB STAFF SO THAT THEY KNOW HOW TO HELP FEMALE ATHLETES WHERE NECESSARY AT TRAINING OR AT COMPETITIONS.”

# RELATIVE ENERGY DEFICIENCY IN SPORT

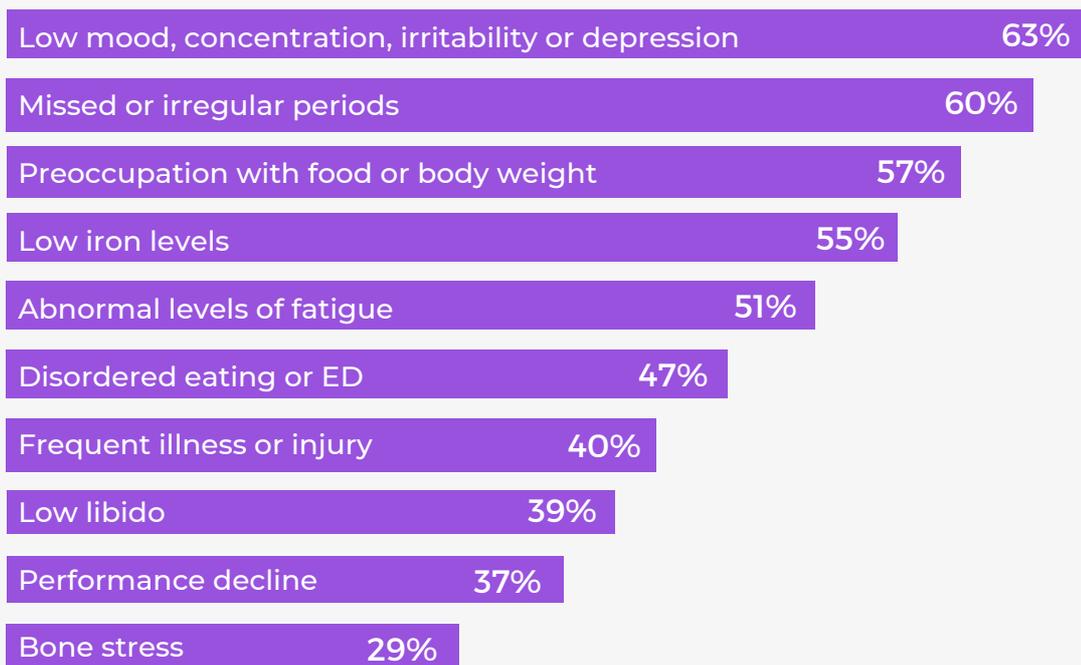
Whilst it was not possible to quantify the number of athletes from this survey who have suffered, or are suffering, from RED-S, an alarming:

**89%** athletes have/had two or more symptoms

**71%** have/had four or more symptoms

This discovery raises significant concern over the lack (or efficacy) of RED-S prevention measures, alongside tailored nutritional, psychological and physiological support received by female athletes.

## RED-S SYMPTOMS



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# ATHLETE EXPERIENCES



"I have endometriosis and I find my coach doesn't really understand the impact it has on me physically, or mentally. I know my lack of a menstrual cycle is a problem but healthcare professionals just say 'stop running' and that is not an option."

— SENIOR NATIONAL ATHLETE

"My coach wouldn't even acknowledge my period!!"

— RETIRED NATIONAL ATHLETE

"The conversation has started up for sure, but that's only because I had to really push to get it started. I think it shouldn't be something you have to push for."

— SENIOR WORLD CHAMPIONSHIP ATHLETE

"I believed (in my younger years) that not having a period was an indicator that I had the 'correct' body fat for my sport. I couldn't have been more wrong and I had to learn the hard way - educating myself alone through the process."

— SENIOR NATIONAL ATHLETE

"I'm still surprised by the lack of alarm bells ringing for GPs when people come to them with the combination of irregular or no periods and lots of sporting activity."

— SENIOR INTERNATIONAL ATHLETE

"I'm part of a mixed gender programme with no adaptations made around menstrual cycles or female health"

— JUNIOR NATIONAL ATHLETE

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# WHAT ATHLETES WANT

“Literally anything!!”  
— SENIOR WORLD CHAMPIONSHIP ATHLETE

“To have more open discussions around female health issues; more proactive support and guidance from youth/junior level up.”  
— RETIRED OLYMPIC ATHLETE

“I'd like more information on how my menstrual health affects my performance and training. Are there certain sessions I should do at certain times of the month to make them more effective? Should I eat or recover differently when on my period?”  
— SENIOR PARALYMPIC ATHLETE

“More education for all staff so they are comfortable to talk about periods and how they may affect performance. I also want to know about my my own period and how I can best train with my own body.”  
— SENIOR OLYMPIC ATHLETE

“More athlete support and monitoring but also using the data to actually put strategies in place to support the athletes. We need increased education in all areas of female health and to normalise regular conversation around periods.”  
— SENIOR OLYMPIC ATHLETE

“NGBs having a female athlete health lead as an applied practitioner.”  
— SENIOR NATIONAL ATHLETE

“To learn how to work with my cycle in training/competition and how different phases affect it.”  
— SENIOR OLYMPIC ATHLETE



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# CONCLUSION

The present survey findings highlight the urgent need to address numerous aspects of female athlete health - namely menstrual cycle education and female specific nutrition and training advice - in order to minimise the risk of conditions such as RED-S and maximise the health and performance potential of female athletes, UK-wide. Crucially, this requires education and support for coaches, healthcare practitioners and other members of an athlete's overall support system to increase their confidence and knowledge in delivering such education, even at a basic level.

**We believe these recommendations are not only achievable but also essential in order to foster improvements in female athlete wellbeing and performance from grassroots, to elite levels in sport.**

Through provision of educational resources and access to further support materials, we propose that staff within NGBs and other sports organisations will be able to deliver a sufficient level of female athlete health support, greatly improving on the current level of care experienced by female athletes.

Such education should focus on increasing understanding of the MC and its potential impact on overall health, wellbeing and performance, alongside answering calls for tailored nutrition and training advice for females. In addition, simply opening up conversations and encouraging discussion of such topics are paramount to achieving a cultural shift. Normalising these topics reduces stigmatisation surrounding female athlete health concerns, and increases the support felt by future athletes.



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