Participant Information and Consent Form

Online Survey Participant Information

Project title: The Fe-Male Athlete Health Questionnaire: Screening and assessing the impact of anaemia and iron status on performance in elite and non-elite female athletes

Name of Researchers:

- Mr Cory Dugan, School of Human Sciences, UWA, cory.dugan@research.uwa.edu.au
- Professor Toby Richards, Division of Surgery, UWA Medical School, toby.richards@uwa.edu.au
- Miss Giulianna D'Aulerio, UWA Medical School, giuliana.daulerio@uwa.edu.au
- A/Prof Peter Peeling, UWA School of Human Sciences, peter.peeling@uwa.edu.au

Invitation:
You are invited to participate in a research study being conducted by the research team listed above at the University of Western Australia. We are recruiting exercising (> 4 hours of exercise per week) pre-menopausal females aged between 18 and 55 (inclusion criteria). Anyone outside this age range or individuals who do not meet the required exercise requirements will unfortunately be not allowed to participate (exclusion criteria).

Aim of the Study (What is the project about?)
Women who exercise are at an even higher risk of experiencing iron deficiency than that of the general population. Further to this, female athletes may experience lower iron absorption rates. The iron deficiency and anaemia risk is therefore exacerbated in individuals who both exercise and experience heavy menstrual bleeding. The resultant detriment to performance has been well demonstrated in the literature. Previous research has demonstrated that heavy menstrual bleeding is common in athletic populations, and is further associated to anaemia, iron supplementation and slower performance times. However, this research was subjective (self-reported), with no objective data collected. Consequently, due to recall bias, the data may be inaccurate, which could potentially invalidate conclusions. The association between HMB, iron deficiency and exercise performance with the measurement of haematological markers is yet to be investigated. The relationship with exercise recovery also remains latent to the present date.

For these reasons, the primary aim of this observational study is to assess the sensitivity of a newly developed screening tool regarding the identification of iron deficiency and/or iron deficiency anaemia.

What does participation involve?
Participation will involve the completion of the corresponding survey. The survey should take approximately 4-5 minutes to complete. Upon completion of the survey, if you are deemed at risk of iron deficiency or anaemia, you will be asked to attend a screening session at the University of Western Australia. The purpose of this screening session is to measure your haemoglobin concentration, via a small drop of blood from a fingerprick assessment. Should your

assessment conclude that you indeed have anaemia, we will provide you with a referral to receive a full blood assessment for follow up measures of iron status. All assessment results will then be passed onto your GP for further discussion.

Voluntary Participation and Withdrawal from the Study
Participation in this research is voluntary and you are free to withdraw at any time without giving a reason. If you are a student in any classes of the investigation team, it should be considered that you are not required to participate in this study, and if you choose to not participate or leave the study once commenced, your student rights will not be compromised, nor will they be enhanced. If you do withdraw, we may wish to retain the data that we have recorded from you, but only if you agree, otherwise your records will be destroyed.

Your privacy
Personal details and results from this study will be treated confidentially at all times. Subsequently, your anonymity will be maintained through removal of any identifiers, which will be replaced by a code, as per the National Statement on Ethical Conduct in Human Research (page 27; Hyperlink here). We will keep a code key on the chief investigator's password computer, which can be used to re-identify the data should you request anything of us at a later date. Participant re-identification will only be performed by the chief investigator. Once the project is considered closed, the code key will be destroyed, rendering all data anonymous. No data will be stored on public computers. All data will be stored on the chief investigator's password protected computer in a secure location for a period of 7 years. Secondary to this, the data will be uploaded to the UWA IRDS (Institutional Research Data Store), as per University protocol (https://www.it.uwa.edu.au/service-catalogue/data-storage/irds). Data from this investigation may be published; however, no personal details relating to you as an individual will be revealed in this process.

Possible Benefits
Individual: You will receive information about your iron status that could be compromising overall health. You may access your individual survey responses upon completion, should you request it. Blood test results will also be sent to you, should you require screening and follow up blood counts. These results will also be passed onto your GP.

Community: The outcomes of this study will inform numerous female athletic populations on the impact of iron status and anemia on exercise performance. Furthermore, the outcomes of the study will raise overall awareness of the current issues through the measurement of prevalence rates.

Possible Risks and Risk Management Plan
There are no significant risks associated with this study; however, it should be noted that there is a minor risk of bruising, discomfort and/or infection associated with any forms of blood collection. To minimize this risk, blood collection will be conducted by trained laboratory personnel, and all aseptic techniques will be implemented to maintain the sterility and reduce any risk.

Contacts
If you would like to participate or discuss any aspect of this study, please feel free to contact either
- Mr Cory Dugan, School of Human Sciences, UWA, cory.dugan@research.uwa.edu.au (0401910790)
- Professor Toby Richards, UWA Medical School, toby.richards@uwa.edu.au
- Miss Giulianna D'Aulerio, UWA Medical School, giuliana.daulerio@uwa.edu.au
- A/Prof Peter Peeling, UWA School of Human Sciences, peter.peeling@uwa.edu.au

Approval to conduct this research has been provided by the University of Western Australia, in accordance with its ethics review and approval procedures (Ethics Number 2019/RA/4/20/6465). Any person considering participation in this research project, or agreeing to participate, may raise any questions or issues with the researchers at any time. In addition, any person not satisfied with the response of researchers may raise ethics issues or concerns, and may make any complaints about this research project by contacting the Human Ethics office at UWA on (08) 6488 4703 or by emailing to humanethics@uwa.edu.au. All research participants are entitled to retain a copy of any Participant Information Form and/or Participant Consent Form relating to this research project.

Consent Statement

I have read the information provided and any questions I have asked have been answered to my satisfaction. I agree to participate in this research project, realizing that I may withdraw at any time without reason and without prejudice.

I understand that all identifiable information that I provide is treated as confidential and will not be released by the investigator in any form that may identify me unless I have consented to this. The only exception to this principle of confidentiality is if this information is required by law to be released.

Do you consent and agree to participate?

Yes

No

Please sign here

× SIGN HERE

clear

Full name (for the purpose of communicating the results)

Email address (for the purpose of communicating the results)

Do you live in Western Australia?

Yes

No

Personal Details

Please provide some personal details.

What is your age?

What is your current weight in kilograms (estimate as close as possible)?

30 40 50 60 70 80 90 100 110 120 130 140 150 160

Weight (kg)

What is your current height in centimetres (estimate as close as possible)?

60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Height (cm)

Are you (or are you not) any of the following?

	Yes	No
A blood donor (i.e. do you donate blood?)	○	○
A mother	○	○

Diet and Exercise Habits

Are you vegetarian?

Yes

No

Are you vegan?

Yes

No

Do you follow any other diet regime (e.g. pollotarian, flexitarian)? If yes, please outline in the comments section

Yes

No

On average, how many of hours of exercise do you complete a week?

0 3 6 9 12 15 18 21 24 27 30

Hours of exercise per week (hours)

Have you completed a timed 5km run before (for example, a parkrun or personal time trial)? If yes, please provide our best time for the run in the comments section

Yes

No

Mensuration

In the last year, how many periods have you had?

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Number of periods?

With regards to your period, have you ever experienced any of the following? (Please select all that apply)

Flooding through clothes or bedding

Need of frequent changes of sanitary towels or tampons (meaning changes every 2 hours or less, or 12 sanitary items per period).

Need of double sanitary protection (tampons and towels)

Pass large blood clots

None of the above

Medical History

To the best of your knowledge have you had (or have you ever) had any of the following?

	Yes	No
Iron deficiency	○	○
Anaemia	○	○
An iron infusion	○	○
Iron tablets	○	○
A blood test (specifically, in the last 12 months)	○	○

What was your last measured ferritin and haemoglobin level? (Blood test results will include this. If unknown just leave blank).

	0	25	50	75	100	125	150	175	200	225	250
Ferritin (ug/L)											
Haemoglobin (g/dL)											

Iron Deficiency Symptoms and Impact

Below are a list of symptoms- What are your symptoms of iron deficiency? (Please pick all that apply to you)

Fatigue
Dizziness
Brain Fog (inability to think clearly, forgetful, foggy)
Anxiety
Muscle weakness or soreness
Shortness of breath (air hunger, out of breath, puffed easily)
Heart palpitations (thumping heart, rapid pulse, high pulse)
Exhaustion but difficulty falling asleep
Headaches
Hair loss
Pica (desire to eat things such as ice or paper)
Light-headedness
Vision problems

Restless legs while at rest or while sleeping

Aching legs

Other (please specify)

When you first became iron deficient, which symptoms made you seek medical advice?

» Fatigue
» Dizziness
» Brain Fog (inability to think clearly, forgetful, foggy)
» Anxiety
» Muscle weakness or soreness
» Shortness of breath (air hunger, out of breath, puffed easily)
» Heart palpitations (thumping heart, rapid pulse, high pulse)
» Exhaustion but difficulty falling asleep
» Headaches
» Hair loss
» Pica (desire to eat things such as ice or paper)
» Light-headedness
» Vision problems
» Restless legs while at rest or while sleeping
» Aching legs
» Other (please specify)

Have any of these symptoms negatively impacted your ability to exercise/play sport?

Yes

No

In your own words, describe the impact these symptoms have had on performance/recovery (both training and competition)?

Performance

Recovery

When having iron tablets what was the subsequent impact to training/performance/recovery?

Training

Performance

Recovery

When having an iron infusion, what was the subsequent impact to training/performance/recovery?

Training

Performance

Recovery