FOOD FOR RUGBY

FEMALE ATHLETES

"Women's rugby is one of sport's great success stories, experiencing unprecedented growth around the world and represents the single greatest opportunity for growth in the next decade. More than a quarter of the overall playing population is now female, and there has been a 28% increase in registered players since 2017."

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01. INTRODUCTION

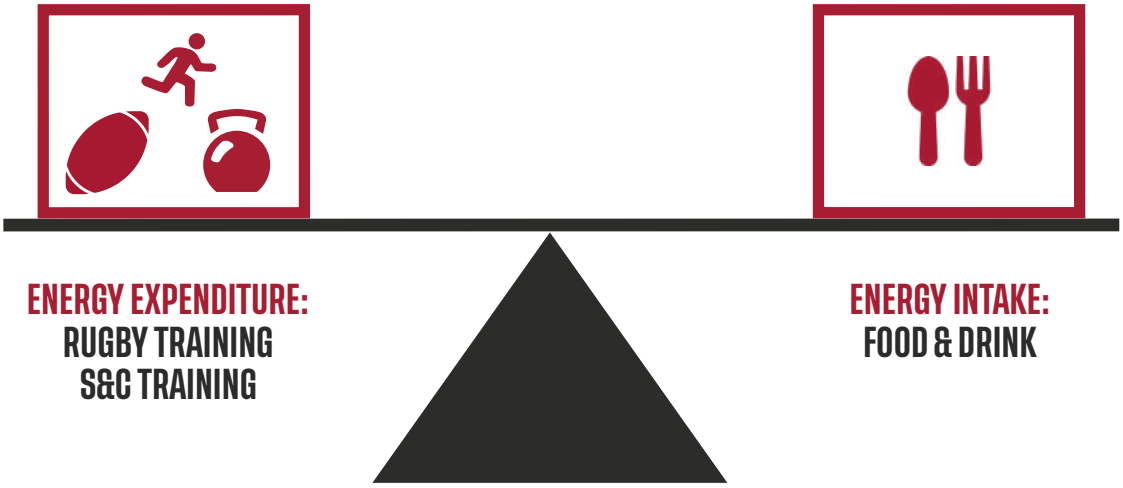
Optimal nutrition is an important aspect of your preparation to support health and performance. Currently there is a lack of high-quality evidence to suggest you need to eat in line with your menstrual cycle (i.e., eat specific foods at points of the menstrual cycle). Rather, the overarching recommendation is to adopt an individualised approach that considers your own training and competition goals and demands whilst also considering your own personal symptoms associated with the menstrual cycle.

> **REMEMBER:** *If you are feeling low in energy it is essential to have some additional fuel to support training.*

Whilst the balance of evidence does not suggest that diets need to change for every rugby player at various stages of the menstrual cycle, there are suggestions that on an individual level, the menstrual cycle can influence some dietary requirements (e.g. appetite). Therefore it is important that you monitor your own menstrual cycle to understand how this affects your energy levels and nutrition requirements.

02. ENERGY BALANCE AND THE ATHLETE TRIAD

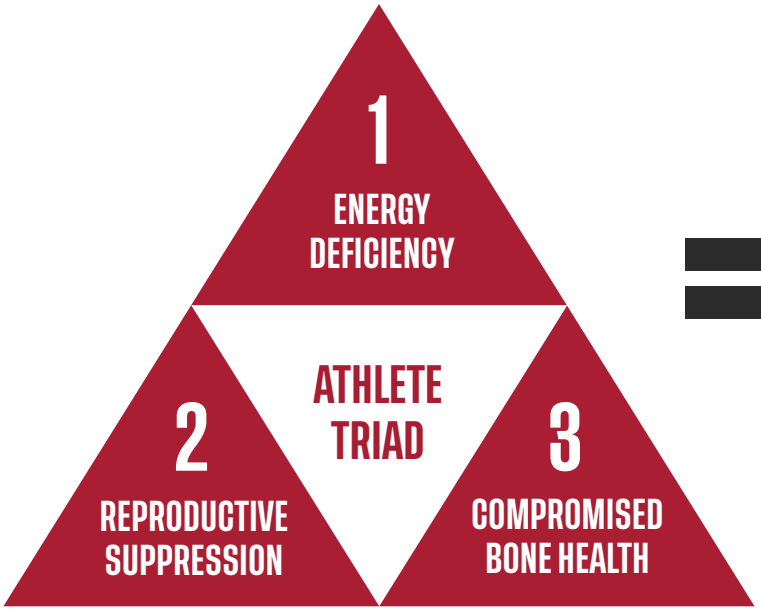
Intentional manipulation of energy balance may be used to build a rugby body, which in turn may influence strength and speed. While careful adjustment of energy intake has the potential to enhance performance, extended periods of diminished energy intake may pose risks to health and performance associated with low energy availability. Suboptimal energy intake may also compromise the ability to meet optimal carbohydrate and fuelling targets.



The biggest nutritional challenge for female athletes is avoiding low energy availability and preventing the occurrence of the **Female Athlete Triad** and/or **Relative Energy Deficiency in Sport (RED-S)**.

The Athlete Triad links three factors: menstrual function, energy availability and bone health.

When there is insufficient energy available, menstrual function is sacrificed (i.e., you lose your periods, known as amenorrhea) as energy is diverted away from reproductive activity to prioritise and fuel the sporting activity. With regards to energy availability (i.e., having enough energy to fuel the demands of your sport), healthy means having a period.



1. Cals used > Cals consumed with or without eating
2. Missed or irregular loss of periods
3. Frequent stress fractures & Risk of osteoporosis

IMPAIRED HEALTH CAN IMPAIR PERFORMANCE

YOU CANNOT REACH PEAK PERFORMANCE IF YOU ARE NOT HEALTHY ENOUGH TO TRAIN

Over time your body may start to alter important systems that impair normal functioning.

SIGNS & SYMPTOMS TO LOOK OUT FOR:

1. Although female menstrual cycles differ between individuals, you should contact your doctor or seek medical advice if you stop having regular periods or have frequent changes to the length of their menstrual cycles (e.g., 21-35 days).

2. Seek further advice for recurring injuries that do not get better (e.g., stress fractures).

3. If you are regularly tired, sluggish, and not recovering from training, check you are consuming enough energy around training, which includes fueling up and recovering well. Monitoring performance during training and competition is also important to ensure you are consuming enough of the right foods.

4. If you are on contraception, it is more difficult to assess menstrual cycles. In this instance, monitoring energy balance and other symptoms become more important.

03. NUTRITION AND MENSTRUAL CYCLE

A lot of females experience some menstrual pain, for up to 15%, it is severe enough to interfere with work and other activities for one or more days every month.

Dysmenorrhea (medical term for painful periods or cramps) may affect training and performance. Whilst there are currently no specific nutrition recommendations, increased consumption of the following have positive associations with less menstrual pain.

> **REMEMBER:** *Avoid skipping meals or having a severely low energy intake.*

TOP TIPS FOR ATHLETES:

1. Eat plenty of whole fresh foods and minimise ultra-processed foods i.e. formulations of ingredients that include food substances not used in culinary preparations.
2. Ensure adequate amounts of protein. Visit the **Nutrition Fundamentals** toolkit in the main Food For Rugby Library.
3. Preparation is key: Plan out your meals for the day and ensure you consume something every 3-4 hours and avoid skipping meals.
4. Ensure adequate amounts of fibrous foods in the diet, reaching the 30g daily target as this appears to have positive associations with dysmenorrhea in some. Sources include pears, oats, wholegrains, carrots, broccoli, green leafy veg, beans, lentils and pulses.
5. Be open and honest with support staff regarding symptoms. Don't suffer in silence!

A. MACRONUTRIENTS

The primary nutritional consideration for all athletic populations is the carbohydrate requirement that is necessary to promote competitive performance as well as maintain the desired daily training intensities and volume.

CONSIDERATIONS FOR FEMALE ATHLETES

- Consider the phase of menstrual cycle in relation to appetite regulation, food cravings and potential effects on habitual absolute carbohydrate intake.
- Periodise carbohydrate intake to the demands of training and competition and ensure sufficient carbohydrate intake during the post-training period.

Visit **Nutrition for Training** in the main Food for Rugby library.

There is no evidence that female rugby players have different PROTEIN and FAT requirements from male players. The same basics apply regarding the **Nutrition Fundamentals** and **Nutrition For Training** toolkits.

B. MICRONUTRIENTS

Whilst the evidence that macronutrients requirements are largely the same for males and females, there are some micronutrients that may be particularly important for female athletes.

Two micronutrients that may need specific consideration for female athletes are iron and calcium. Nutritional strategies should be used to prevent these deficiencies by increasing consumption of diverse foods.

FE IRON

Iron is incorporated into the red blood cells and is involved in many processes in the body:

- Oxygen Transport
- Energy Production
- Immune Function
- Brain Development and Function
- Collagen Synthesis
- Detoxification

Females lose blood in the menstrual cycle, and that will happen with most people monthly. So, for you, iron loss is much greater and as a result, you may need to account for this by incorporating more iron rich foods daily throughout the month.

Some females will have heavier bleeds than others and therefore have greater losses and greater risks of iron deficiency and anaemia, so it is important to focus on foods and get bloods checked to make sure there is not a deficiency.

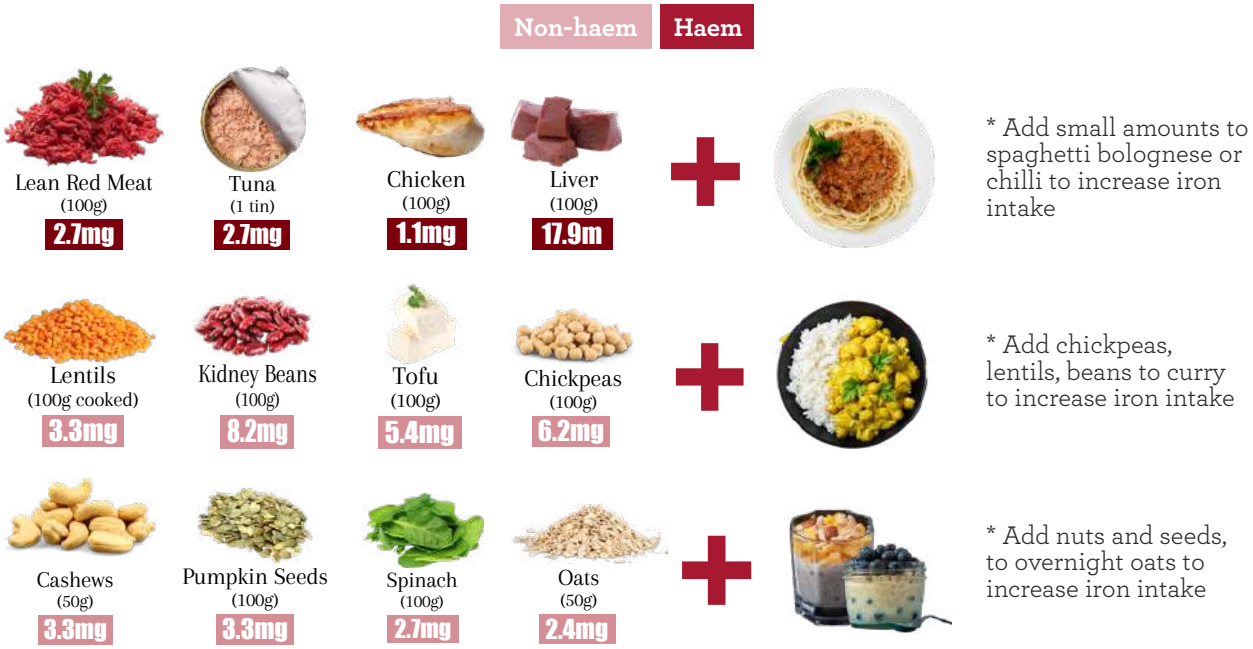
FEMALE ATHLETES ARE ENCOURAGED TO INCLUDE

- Meat, poultry, and fish
- Iron rich foods such as dried fruits, cooked beans, dark-green leafy vegetables, and whole grains and, if available, iron- fortified foods are also recommended. As well as foods containing Vitamin C that will increase iron absorption.

RNI for females ages 19-49 is 14.8mg a day.

! RECOMMENDED AMOUNTS:

Females between the ages of 19 to 49 are recommended to consume **14.8mg a day**.



Iron from **non-haem** sources are not as easily absorbed. To enhance iron absorption from plan-based foods, pair them with **vitamin C-rich foods**.

CA CALCIUM

Calcium has many important functions within the human body:

- Bone and Teeth
- Muscle Contraction
- Nerve Function
- Blood Clotting
- Enzyme Activation
- Hormone Regulation
- Cell Signalling

Female athletes often report sub-optimal calcium intakes and as such a wide variety of sources should be consumed daily, especially as milk and milk products are often omitted from the diet to reduce fat and/or energy intake, as well as for personal, religious, or philosophical reasons. In these cases, soya products with added calcium are suggested and increasing intake of green leafy vegetables.

! RECOMMENDED AMOUNTS:

The UK reference nutrient intake for calcium for adults aged over 19 years is **700mg a day**.

Cheese (30g) **160mg**

Milk (Pint) **610mg**

Greek yoghurt (100g) **110mg**

Kale (30g) **53mg**

Almonds (30g) **80mg**

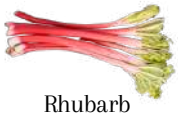
Whey Protein (scoop) **160mg**

Broccoli (50g) **23mg**

Poppy seeds (1 tbsp) **127mg**

Chia seeds (20g) **126mg**

Black Beans (100g) **123mg**



Rhubarb (100g) **87mg**

Chickpeas (100g) **104mg**

Vitamin D promotes calcium absorption in the gut and maintains adequate serum calcium levels. Ensure you have adequate Vitamin D levels!

04. REFERENCES & ADDITIONAL RESOURCES

ABOUT THE AUTHOR

Female Athletes is published by England Rugby.

Natasha Charlwood is a performance nutritionist who graduated from LJMU currently working in team sports. She is now the performance nutritionist at West Bromwich Albion Football Club and Warwickshire County Cricket Club. Previous credits also include Worcester Warriors RFC.