
WOMEN'S
RUNNING
CONFERENCE
Nutrition
Strategies For
The Female
Runner
Robyn Aitkenhead
RA NUTRITION
RA
EAT HEALTHY LIVE HEALTHY

Key topics covered

- Everyday nutrition – “performance meal wheel”
- Fuelling strategies for training and performance
- Gut tolerance
- Adapting fuelling & the menstrual cycle
- Supplements
- Key nutrition considerations

Brief Introduction

Optimum nutrition can support:

Injury management

Brain function

Immune function

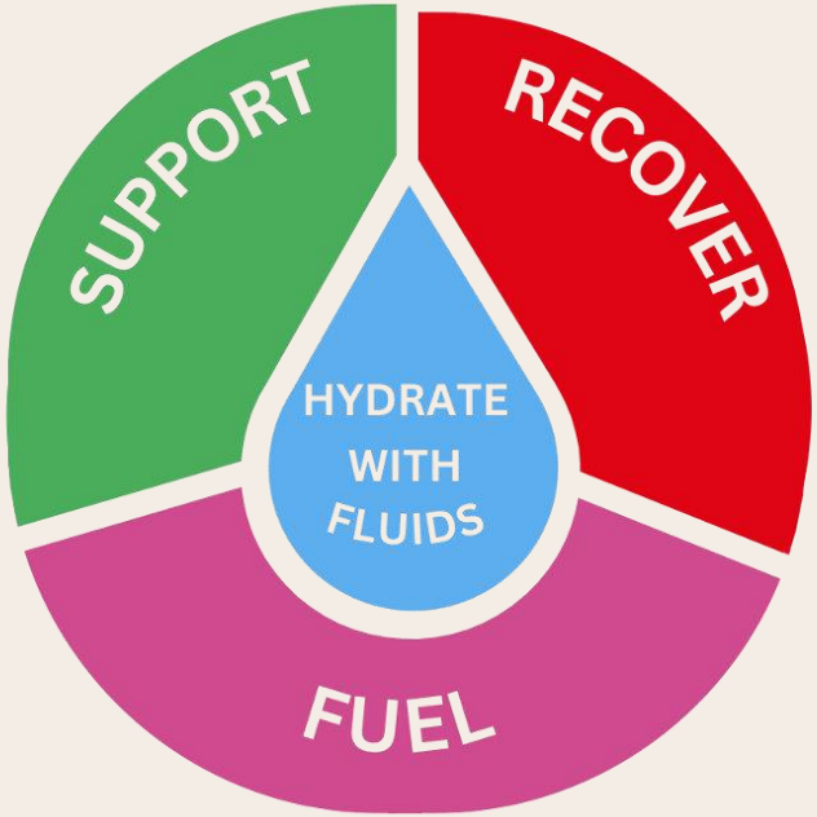
Physique

General health

Recovery

Energy

Performance meal wheel



Eating a varied diet helps to ensure consumption of the daily amounts of macronutrients (carbohydrates, proteins and fats) and micronutrients (vitamins and minerals) needed to achieve healthy bodily functions.

Each balanced meal ensures:

1/3 plate contains **FUEL** foods

1/3 plate contains **RECOVER** foods

1/3 plate contains **SUPPORT** foods

A fluid source to **HYDRATE**

Daily nutrition – Fuel foods

Carbohydrates

- Primary fuel source for runners
- 45-60% of daily calories
- Focus on complex carbs: whole grains, fruits, vegetables

Nutrient-rich carbohydrates

Nutrient-poor carbohydrates

High-fat carbohydrate

The vegan and vegetarian runner

Plant based protein sources

- Soy products (e.g tofu, tempeh)
- Beans
- Lentils
- Nuts and seeds
- Most grains (e.g. quinoa)

Dairy products

- Eggs
- Yogurt
- Cheese
- Milk

Pay attention to certain nutrients found less in plant-based foods, including;
Iron, zinc, calcium, vitamin d, iodine, vitamin B12 and riboflavin

❌ **There is currently limited evidence to say that consuming a vegan/vegetarian diet will improve performance over an omnivorous diet.**

Daily nutrition – recover foods

Protein

Recover foods play a key role in **growth, repair and recovery** of muscles, tissues and organs.

Aim to have **1.6-2g/kg** body weight of protein **per day** e.g. a 70kg athlete would aim for 112 – 140g daily

This might increase to 2.5g/kg body weight if looking to gain weight and support muscle growth, or to support muscle maintenance in times of injury or weight loss

- ✓ 50g cooked lentils: 8g protein
- ✓ Large egg: 6g protein
- ✓ 100g Cooked Chicken breast: 28g protein
- ✓ 25g cheese: 7g protein

Slow releasing protein before bed

Daily nutrition – recover foods

Fats

Fats are important nutrients in the diet. Not only do they provide energy, but they are required for cell growth, producing hormones and the absorption of fat soluble vitamins (A, D, E and K).

Should make up **at least** 20% of your overall diet.

Monounsaturated

Avocados, olives, olive oil, rapeseed oil, almonds, cashews, hazelnuts, peanuts, pistachios, spreads made from these nuts.

Polyunsaturated

Oily fish, corn oil, sesame oil, soya oil and spreads made from these oils; flaxseed, pine nuts, sesame seeds, chia seeds, sunflower seeds, walnuts.

Saturated

Processed meats like sausages, chorizo, salami, hot dogs; fatty meat; hard cheeses including cheddar; whole milk and cream; butter, lard, ghee, suet, palm oil, coconut oil.

Trans

Fried foods, takeaways, snacks like biscuits, cakes, pastries; hard margarines.

Low-fat diets don’t equal high performance—**fat fuels female physiology**

Daily nutrition – support foods

- This group also includes all fruits and vegetables and are important to supply most of the micronutrients (vitamins, minerals, antioxidants, phytonutrients) the body needs to function.
- These foods support a range of functions in the body: recovery from training and competition, immune health, and brain function, to name a few.

Eat a rainbow. The different colours will provide different micronutrients

Aim for 1 portion of green veg and 2 additional colours on every plate

Frozen fruit and veg has equal nutritional benefit as fresh

Steaming vegetables ensures they retain their nutritional content

7+ portions every day. Include a variety of different colours.

Increase fruit and veg intake in times of illness, hard training, and increased stress

Smoothies and soups are a great way to increase fruit and veg intake

Try adding beans to stews, extra veg to omelettes or having a bowl of soup with a main meal

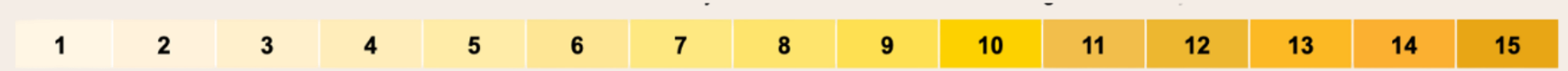
Tinned fruit and vegetables can be just as nutritious as fresh options

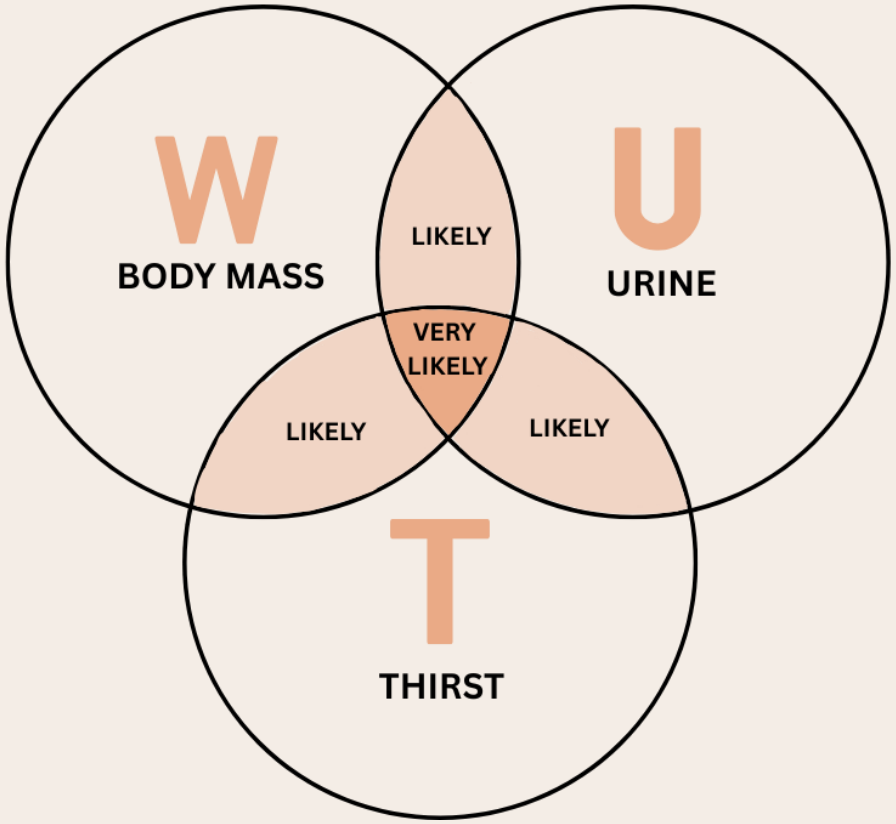
Hydration

Performance limiting factor in exercise >90 minutes

Ensure body becomes no more than 2% dehydrated

Minimum water intake is 2L





BODY MASS

Daily body mass loss >1% may indicate likelihood of dehydration

URINE

Reduced urine output and/or a darker urine colour can indicate dehydration

THIRST

Feelings of thirst may be an initial sign of dehydration

Presence of two indicators: Potential of dehyration

Presence of three indicators: Strong indication of dehyration

Hydration

Listen to your body – assess individual needs rather than ‘one size fits all’

- Always carry a large water bottle and refill regularly ✓
- Drink a large glass of water with each meal ✓
- Choose fluid options / flavours that you like as you are more likely to drink more ✓
- Set reminders on your phone to drink throughout the day ✓
- Monitor urine; colour chart, smell, frequency, quantity ✓
- Rehydrate after training to replace fluid lost through sweat ✓

Homemade isotonic sports drink:
OPTION 1: 200 mL ordinary fruit squash + 800 mL water + a pinch salt
OPTION 2: 500 mL fruit Juice e.g. pineapple juice + 500 mL water + a pinch salt

Top tip: dissolve the pinch of salt in a small amount of warm water first before adding to you drink

Daily nutrition - summary

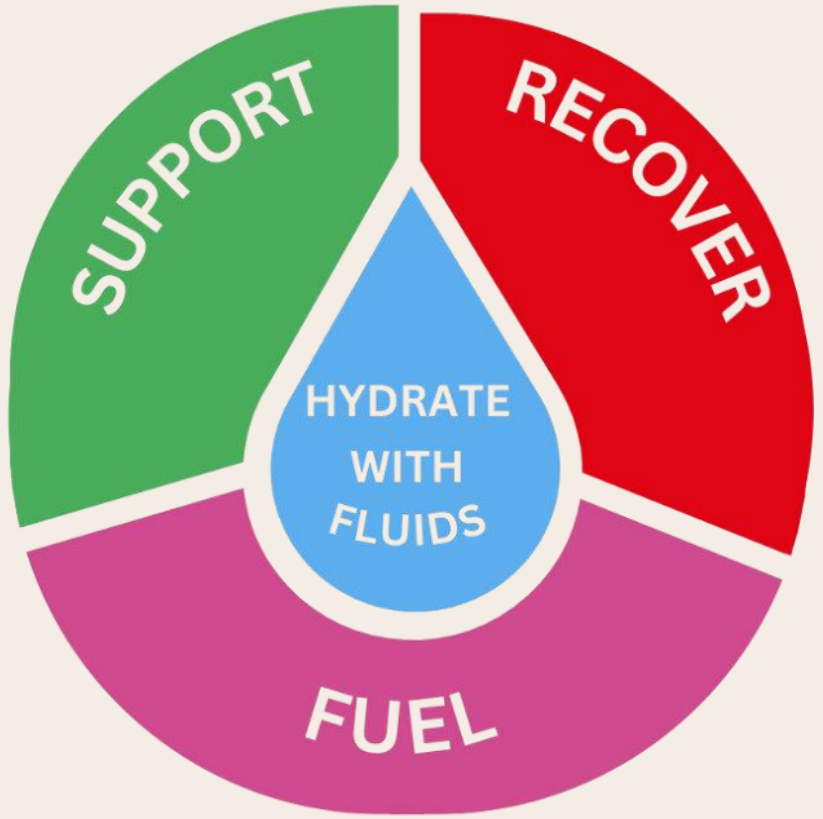
Carbohydrates are king – fuel your body!

Protein must be consumed consistently throughout the day, minimum requirements are 0.8g/kg body mass, but aiming for 1.2-2g/kg based on goals

Fats should make up AT LEAST 20% of your diet for optimal hormone production, aiming for mainly unsaturated fats

Hydration is a key focus of every day nutrition, ensure you are always conscious of hydration consumption**.**

BALANCE – 80/20 rule



Fuelling for training and racing

Carbohydrate loading

Carbohydrate availability is a **limiting** factor in performance of prolonged exercise

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Carbohydrate availability is a **limiting** factor in performance of prolonged exercise

For exercise 2 hours or less, carb loading for days prior to an even is unnecessary.

<1 Hour
Not necessary for events under 1 hour.

1–2 Hours
Slight increase in carb intake the day before the race.

2–3 Hours
Start carb loading 24-36 hours before the race.

3–4 Hours
Begin carb loading 48 hours before the race.

>4 Hours
Start carb loading at least 48 hours before the event.

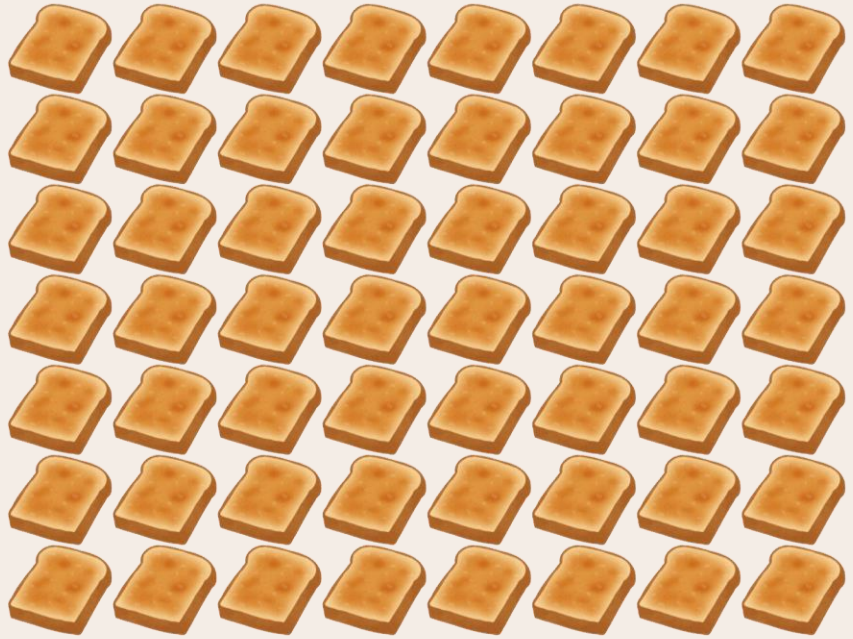
Women utilise more fat and less carbohydrate than men at the same relative intensities

Carbohydrate loading

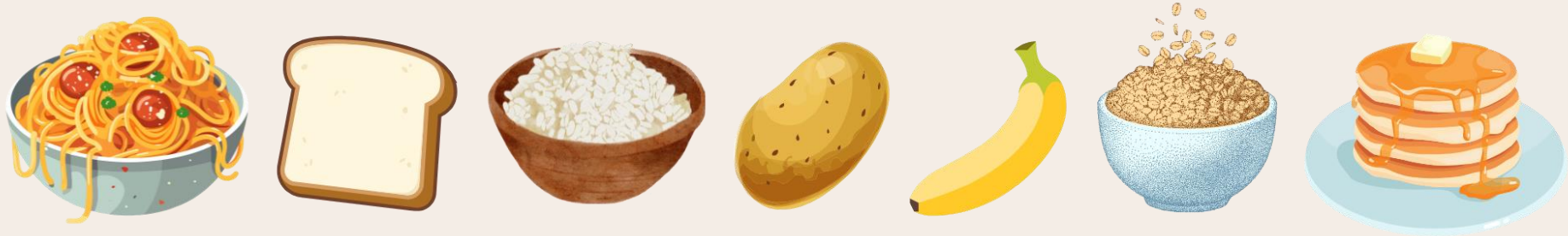
10–12 g/kg/body mass per day for 36–48 h

3-5	g/kg BM/day 180 – 300 g*	**Light activity**
5-7	g/kg BM/day 300 – 420 g*	**Moderate activity** (e.g., 1 hour per day)
6-10	g/kg BM/day 360 – 600 g*	**Endurance** (e.g., 1-3 hours per day)
8-12	g/kg BM/day 480 – 720 g*	**Extreme activity** (e.g., >4 hours)

For 70kg runner



Focus on low-fibre, easily digestible carbs like white rice, bread, pasta, potatoes, bananas, and sports drinks.



Runner weighing 60kg consuming 600g of carbohydrates

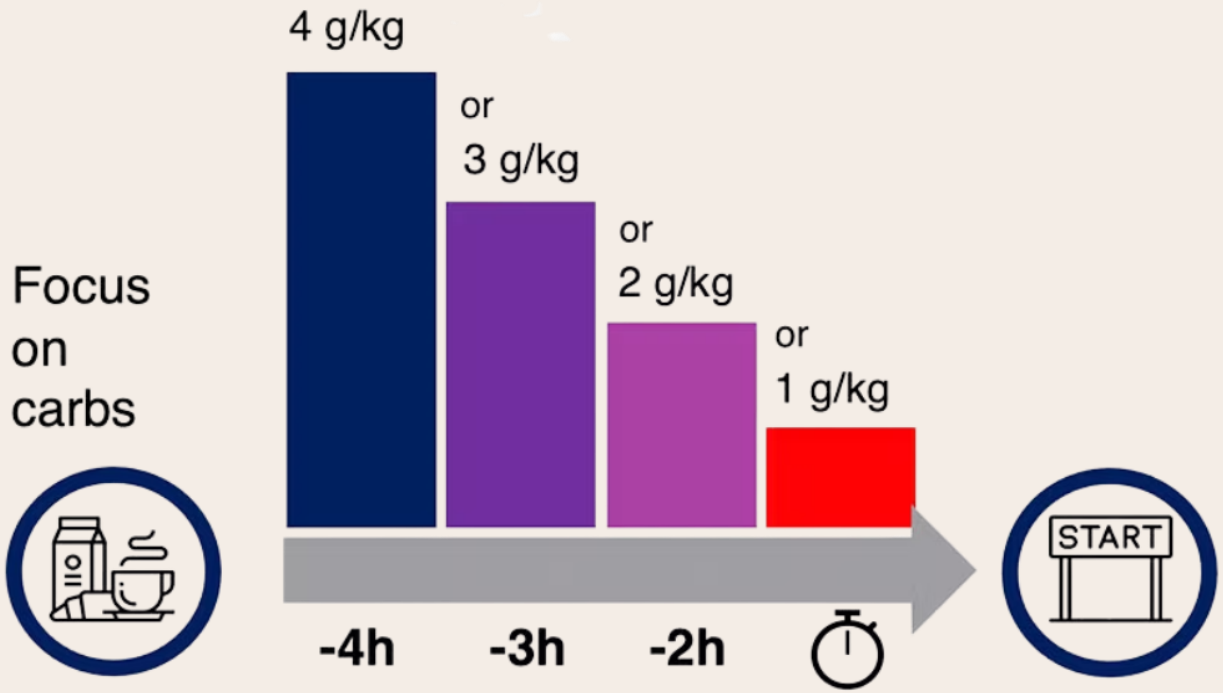
	2 days before	1 day before
Breakfast	• Porridge (made with 50g oats and 1% milk), honey, banana • White toast (2 slices) with marmalade • Juice (200ml)	• Special K (50g), 1% milk • Hot cross bun (2), jam • Smoothie (200ml)
Snack	Low fat yoghurt	Cheese oatcakes (6) and grapes (15)
Lunch	• Tuna mayo baguette • Flapjack (70g) • Juice (200ml)	• Pasta salad with roasted vegetables (120g dried pasta) • Welsh cakes (2) • Juice (200ml)
Snack	• Breadsticks (8) and low fat humous (60g snack pot) • Juice (200ml)	• Jaffa cakes (4) • Juice (200ml)
Main meal	• Spaghetti Bolognese • (with 120g raw spaghetti) • Apple crumble and custard • Juice (200ml)	• Stir fry chicken, vegetables and noodles (150g raw weight) • Low fat yoghurt and frozen berries (15) • Juice (200ml)
Snack	Rice krispies (45g) with 1% milk	• Cornflakes (45g) with 1% milk

Pre-race/training breakfast

Good carbohydrate sources for race day

- refined grains
- white rice
- corn/rice based cereals
- white bread, bagels (no seeded breads)
- pancakes
- cooked veggies (no seeds)
- cooked potatoes
- ripe bananas
- cooked fruits, apple sauce/fruit blends
- rice cakes
- honey
- syrup
- pulp-free juice

Good pre-race breakfast includes 100-200 g of carbohydrate in the 3-4 hours before the start of your race. If you find it difficult to eat before a race; you can get your carbohydrates from drinks



Mouth Rinsing

Improves performance in exercise <75 mins

💡 What is it?

- Swishing a **carbohydrate solution** in the mouth for 5–10 seconds, then spitting it out
- No ingestion — just stimulation of **oral receptors**

🧠 Why does it work?

- Activates brain regions linked to **reward and motor control**
- Signals the body that "fuel is coming"
- Can improve **perceived effort** and **performance**, even without digestion

🎯 When to use it:

- **Short-duration events** (<60 min) where fuelling isn't practical
- **Early morning sessions** with no time to eat
- Athletes with **GI discomfort** or nervous stomach pre-race

Carb intake during exercise

When: For runs >60 minutes

Goal: Delay glycogen depletion and maintain energy

High glycaemic index (GI) foods when practically possible

Gels/carb drinks when food is less practical

How much fuel?

Duration	Carbohydrate per hour (g)
Up to 1 hour	Nothing
1-2 hours	30g carbs
2+ hours	60g per hour
2.5+ hours	90g per hour

Intra workout fuelling

What does 60g per hour look like per hour?

12 Jelly babies 

Jelly beans - 70g 

4-5x Medjool Dates 

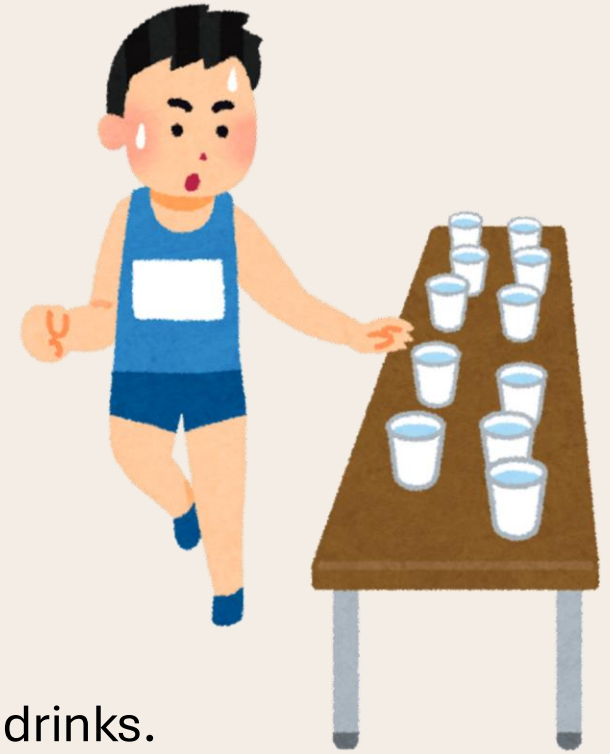
3 gels ~20g per gel 

2.5x mini pretzel bags
23g per 100g 

1.25x tube clif blocks 

Intra workout fuelling

What about hydration?



- **5K-10K:** Minimal hydration needed unless in extreme heat.
- **Half Marathon:** Drink **400-800ml per hour** with electrolytes.
- **Marathon:** Consume **500-1000ml per hour** of fluids, including water and sports drinks.
- **Ultramarathon:** Hydration should be carefully monitored, alternating between water, electrolyte drinks, and whole foods.
- **Electrolytes???**

Post exercise nutrition

THE 3 R'S… REFUEL, REPAIR, REHYDRATE

- **Glycogen Replenishment-** Typical stores: ~500g (90-120 mins of fuel)
- Post-workout: 1-1.2g carbs/kg/hour for 4 hours
- *Example calculation for 68kg runner - 68-82 g of carbs per hour*

First 30 minutes

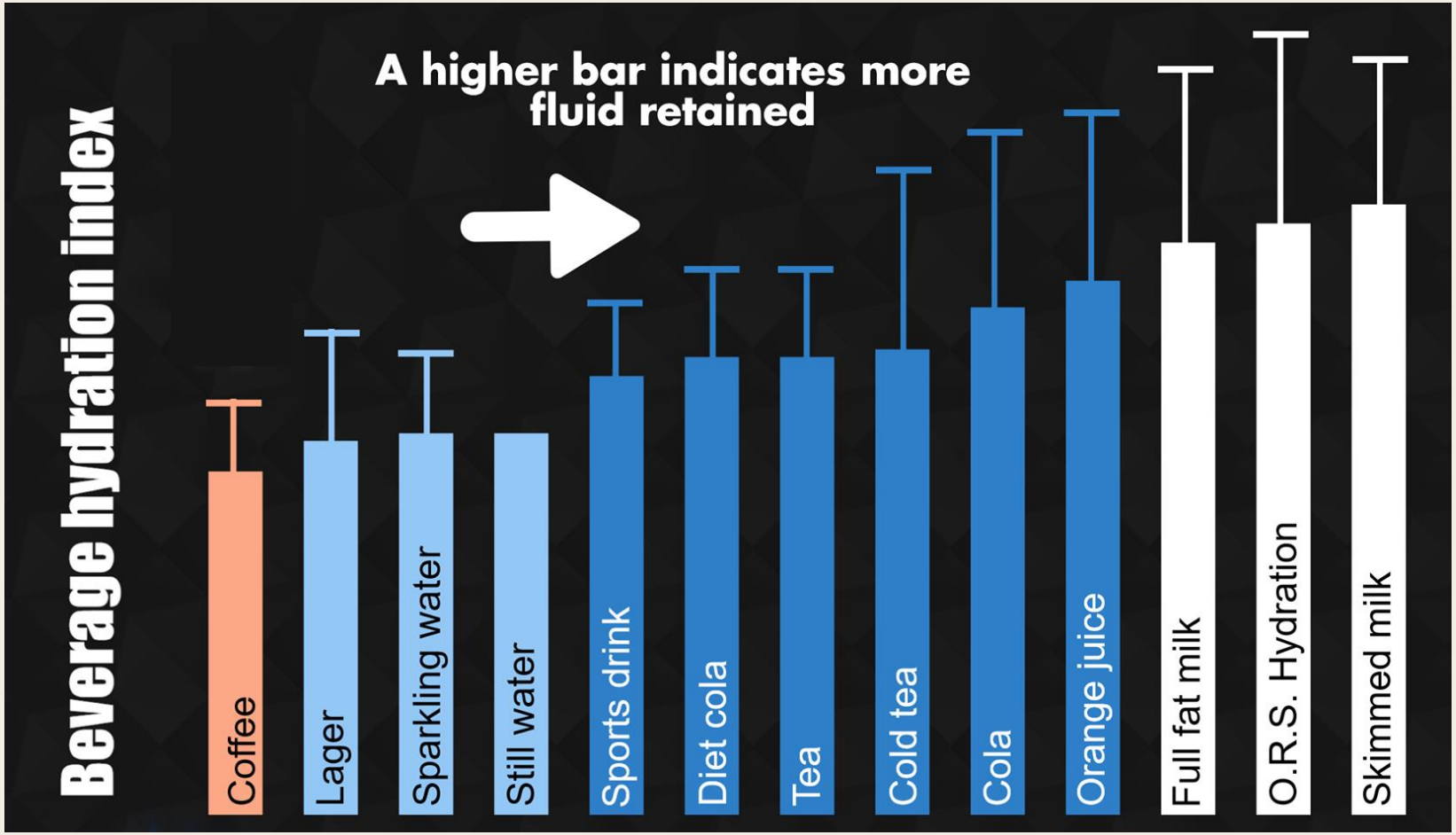
Within 2-3 hours

DID YOU KNOW?
Milk provides the perfect 3:1 ratio of carbohydrate to protein for recovery!

Rehydration

Drink 1.5L of fluids for every kg of body weight lost

Electrolytes can also be added to your drink to enhance water retention and accelerate the rehydration process



<u>To maximise rehydration:</u>

- **Sip fluids slowly** over time rather than chugging them all at once
- Combine rehydration with **carbohydrates** (to restore glycogen stores) and **protein** (to support muscle repair
- Include **sodium** to help retain the fluids you're taking in

Is sugar bad for athletes?

Claims:

Sugar

- An important fuel
- Can improve performance
- Can help recovery

Claims:

Sugar

- Causes obesity
- Causes diabetes
- Increases mortality

In summary, there is not convincing evidence that sugar intake has negative effects when in energy balance

Fuelling Strategies for Training and Racing

Summary

Carb loading - Include carb loading for anything over 2 hours. Current recommendations are 10-12 g/kg body mass (based on male studies)

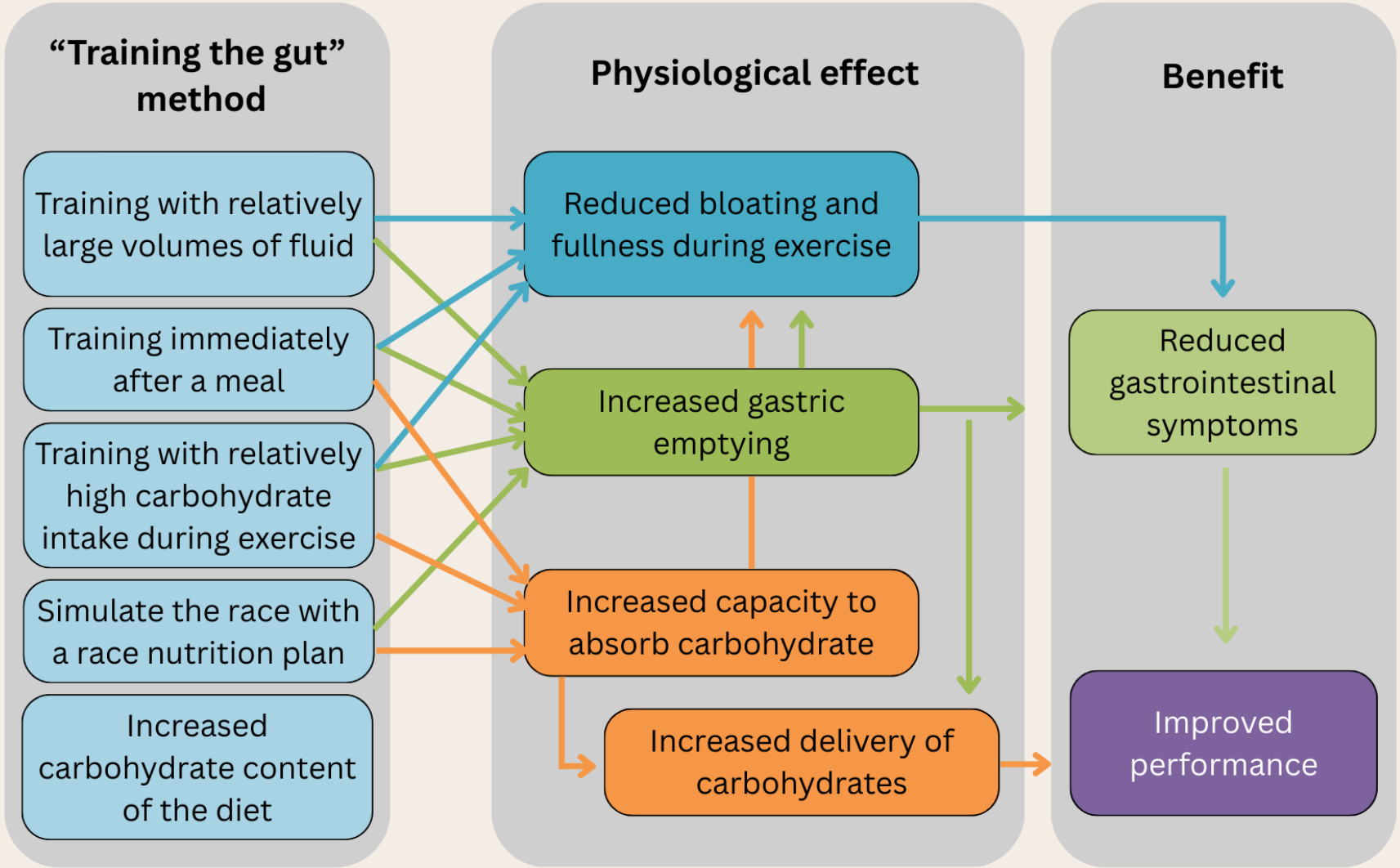
Pre-exercise – 1-4 g per kg body mass 1-4 hours before exercise

Mouth rinse – Rinse carb containing solution in mouth for 5-10 seconds. Favourable for 1 hour or less

During exercise– 30–60 g per hour for exercise 1–2.5 h. Up to 90 g per hour with products providing multiple transportable carbs for exercise >2.5 h

Post exercise - 1.0–1.2 g per kg body mass per hour for the first 4 h

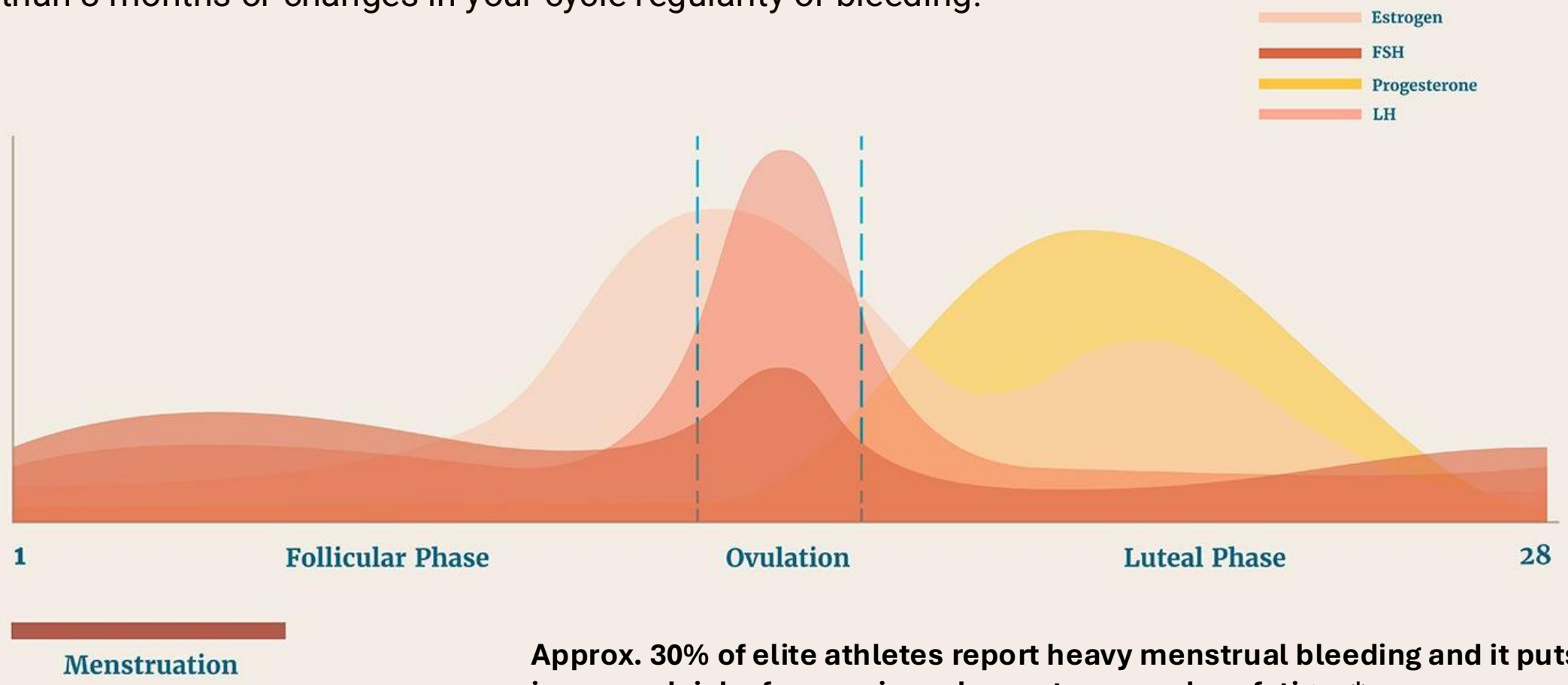
Gut tolerance



Adapting Fuelling & The Menstrual Cycle

Track your cycle to understand how you feel physically and emotionally at different times.

Know your normal recognise when you might need to flag a problem to your GP, like missing periods for more than 3 months or changes in your cycle regularity or bleeding.



Approx. 30% of elite athletes report heavy menstrual bleeding and it puts them at an increased risk of anaemia and symptoms such as fatigue*

Adapting Fuelling & The Menstrual Cycle

What do we know, based on the evidence??

In the mid-luteal phase (when oestrogen levels are high), female athletes use less muscle glycogen during exercise compared with the follicular phase & compared with males

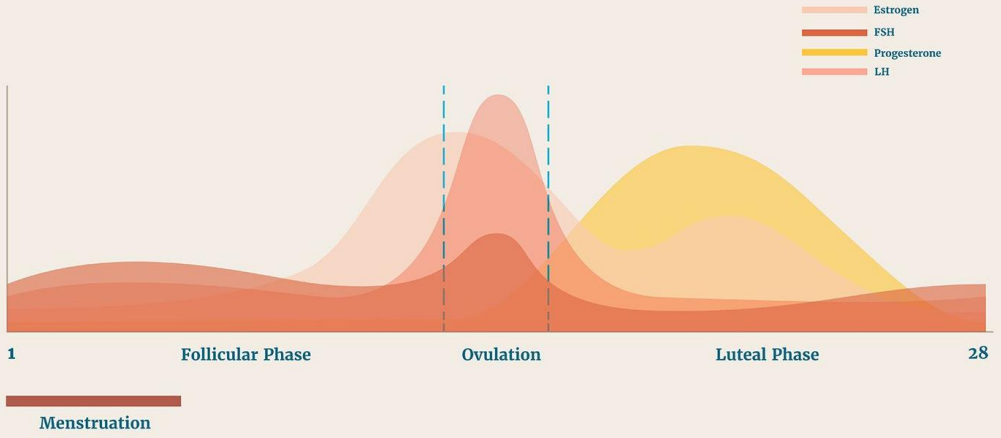
→ **Increasing** carbohydrate intake during the luteal phase may help to overcome this deficit

Female athletes, however, are more prone to non-regular, absent or defective menstrual cycles. Because little is known about how performance changes during the menstrual cycle, generating generalised nutritional advice is difficult.

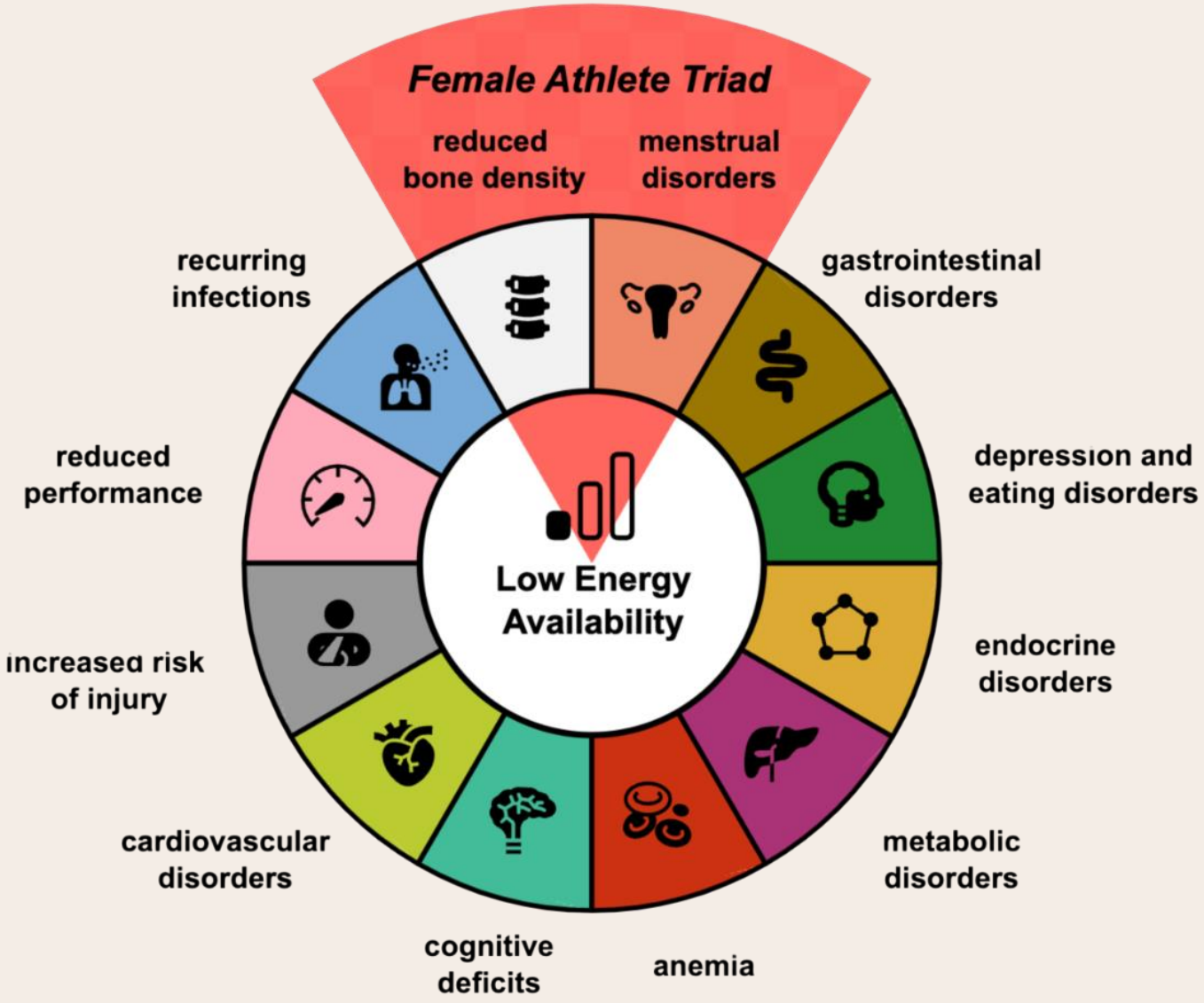
→ Firstly, **ensure adequate caloric intake** to have **regular cycles** and then use a personalised approach based on qualitative factors to fine-tune their nutritional plan to their cycles.

The effect for contraceptive use is unknown.

Remember - Every cycle is different!



Relative Energy Deficiency in sports (RED-S)

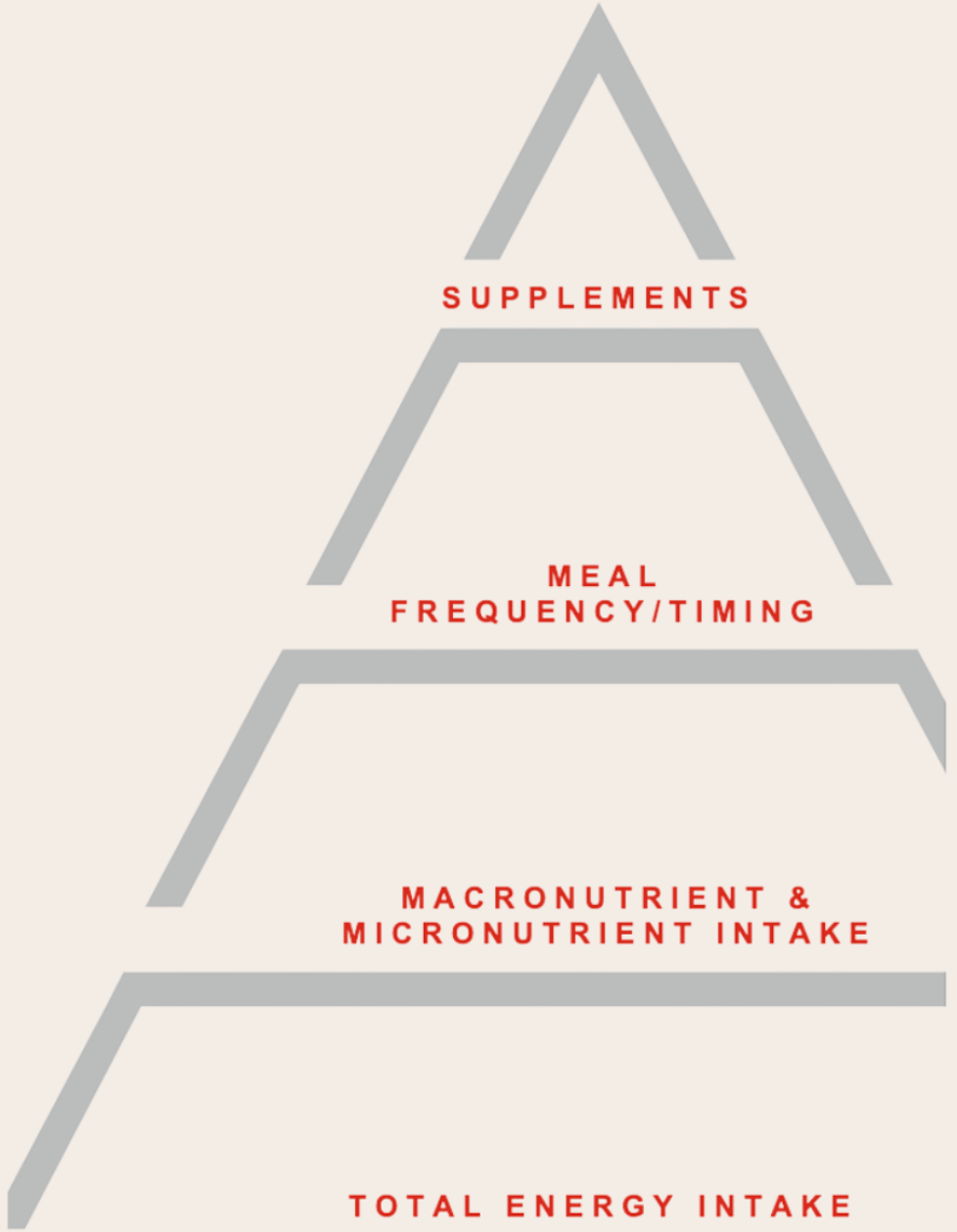


Supplements

A ‘food first’ approach is recommended where possible.

Use supplements as an addition if required but ask yourself:

- Dose it post any harm?
- Is it legal?
- Can I practically consume this through food?
- Does it promote health?
- Does it promote performance?



Key nutrition considerations

Calcium

Calcium is a mineral and important for healthy bones and teeth, as well as muscle and heart function, so is crucial for athletes. UK recommended calcium intakes are 800 mg/day.
Vitamin D helps the absorption of calcium from food so also ensure optimal vitamin D intake (supplement if necessary).

Milk, yoghurt, cheese	**Fortified soya drinks and yoghurts**	**Green leafy vegetables** e.g. spinach, kale, water cress	**Tofu set in calcium**
Nuts, seeds, dried fruit e.g. figs, tahini	**Beans** e.g. kidney beans, baked beans	**Tinned fish** e.g. sardines or salmon	

Key nutrition considerations

Vitamin D

Vitamin D is crucial for many aspects of health and performance, including bone health, muscle function and repair, and immune health (as well as aiding the absorption of calcium, another important micronutrient).
Vitamin D is synthesised in the skin upon exposure to ultraviolet B rays (UVB)

Dietary sources of vitamin D:
Very small quantities of vitamin D are obtained naturally through food (e.g. egg yolks, oily fish and mushrooms).
Some foods are fortified with vitamin D, including milk, yoghurt, cereals and juice.

Athletes at the greatest risk of vitamin D deficiency:

Have dark skin	**Live further away from the equator**	**Train indoors**
Wear clothing that covers most or all of their body	**Regularly use sunscreen or consciously avoid the sun** (which is often essential in order to maintain skin health)	

Key nutrition considerations

Iron

Iron is a mineral that plays many important roles in the body, including oxygen delivery to muscles through the blood, energy production, brain development and cognitive performance, and immune health.

Iron cannot be made by the body, so must be obtained from food.

Consume a minimum of **two** portions of red meat weekly and include daily sources of non-haem containing foods. To improve the absorption of non-haem iron consume alongside a rich source of vitamin C (e.g. have a glass of orange juice with breakfast cereal) and avoid consuming with iron inhibiting foods (e.g. tannins in tea and coffee or phytates, found in bran and beans).

There are two different form of iron which are obtained from food sources:

Haem iron is found only in animal sources and absorbed the most efficiently (absorption ranges from 10-30% of intake),
e.g. beef, lamb, venison, eggs, sardines, shellfish, poultry.

Non-haem iron is found in foods of plant origin, but is not absorbed as well as haem iron (absorption ranges from 4-10%),
e.g. kidney beans, chickpeas, quinoa, fortified cereals, nuts, seeds, green leafy vegetables

Summary

Carbs = Fuel

45–60% of daily intake; crucial for energy and performance.

Fats = Function

≥20% of diet; focus on unsaturated fats for hormones & recovery.

Protein = Repair

Spread evenly through the day

Hydration Matters

Even 2% loss affects performance

Balance is Key

Aim for variety, moderation, and a positive relationship with food.

Fruit & Veg

Aim for 7+ portions/day

Train Your Gut

Practice fuelling strategies early to avoid GI distress

Fuel Smart

Carb-load for long events, fuel during runs >90 min, recover with carbs + protein.

Cycle & RED-S

Track your cycle, fuel adequately to support health & performance.

Supplements

Food first. Use evidence-based supplements only when needed

80/20 rule

Eat well most of the time, but enjoy life too!


"Fuel well, finish strong, training begins on your plate."
Thank you for listening
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