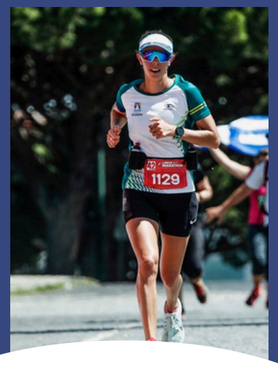
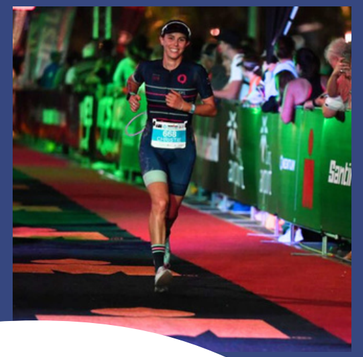
MULTISPORT NUTRITION

Fuelling Women in Triathlon & through Life

Christie Robson
Sports Dietitian (ADP)

A little bit about me...





MULTISPORT NUTRITION










Some of my athletes









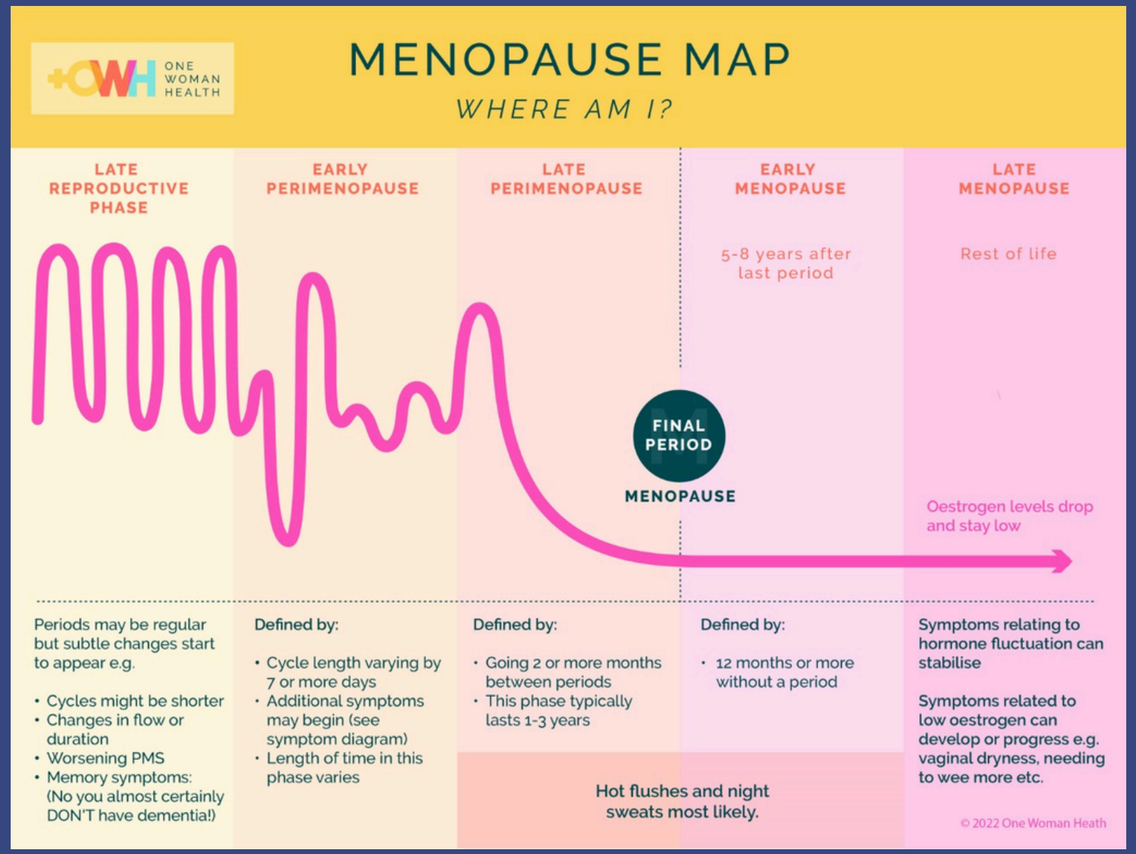


GOALS for today

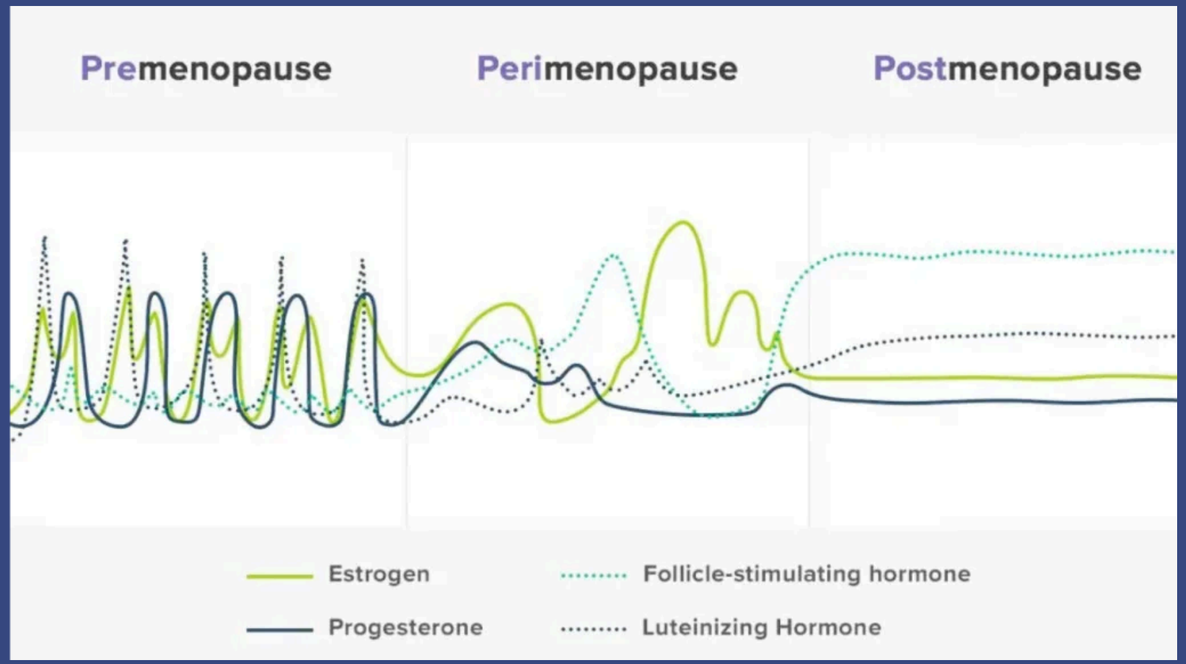
1. Feel empowered & be confident in food and fuelling
2. Always take the individualised approach & experience

Menopause

is a journey with a variable course



https://onewomanhealth.com/menopause-in-pictures/



https://www.langleyhousesurgery.co.uk/menopause-perimenopause

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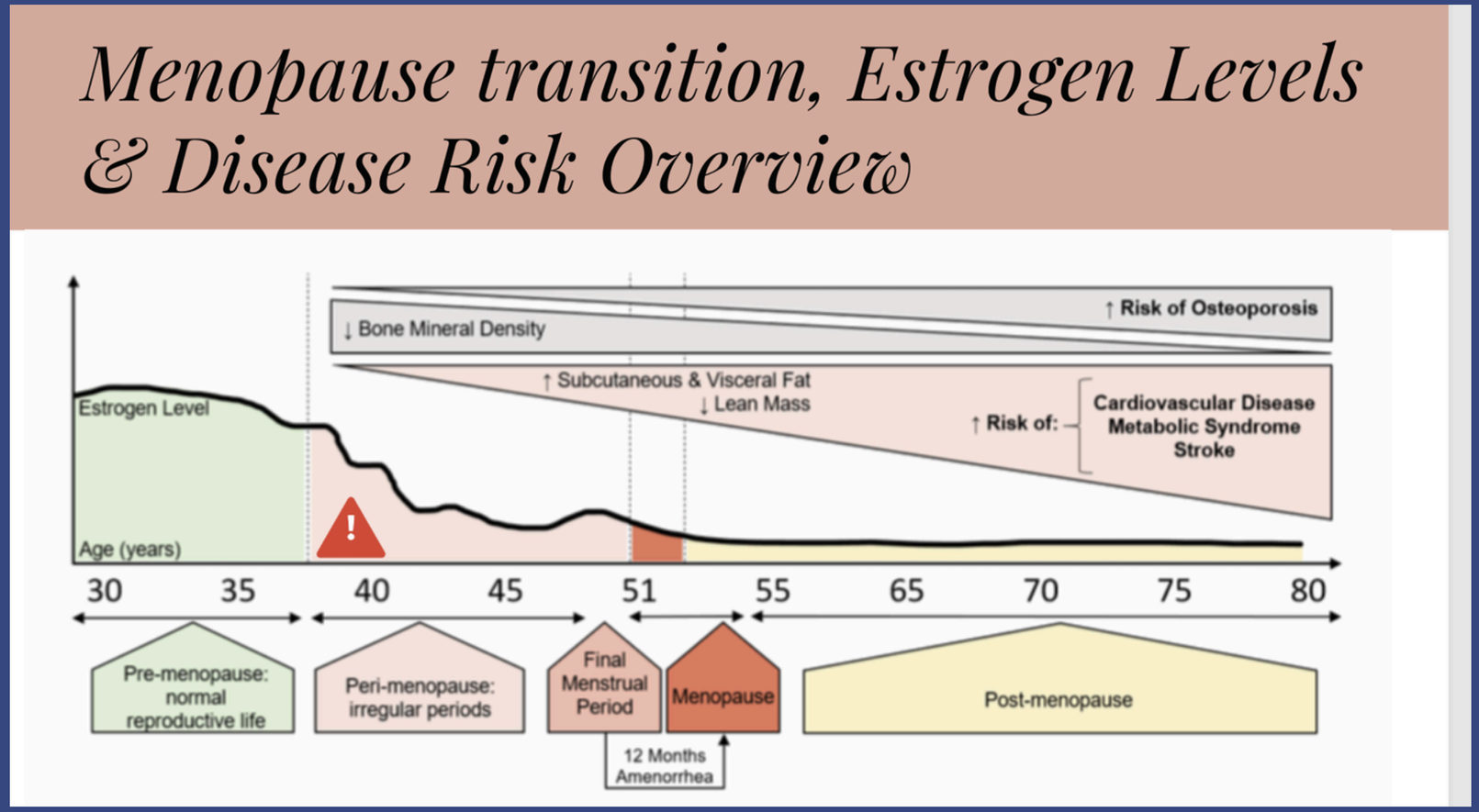
Menopause



Angelique Clarke Nutrition

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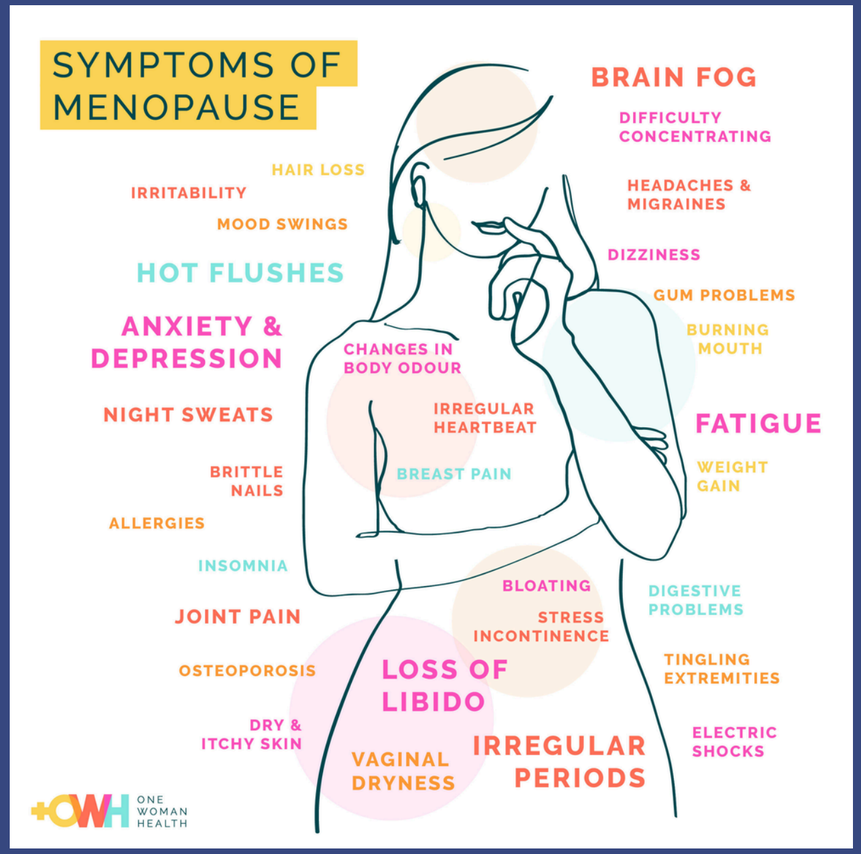
Prioritise protein

Creatine

Magnesium

Omega 3 fatty acids



Cooling aids

Plenty of colourful veg

Quality & fibre rich carbohydrates

Calcium rich foods

Individualised supplementation plan

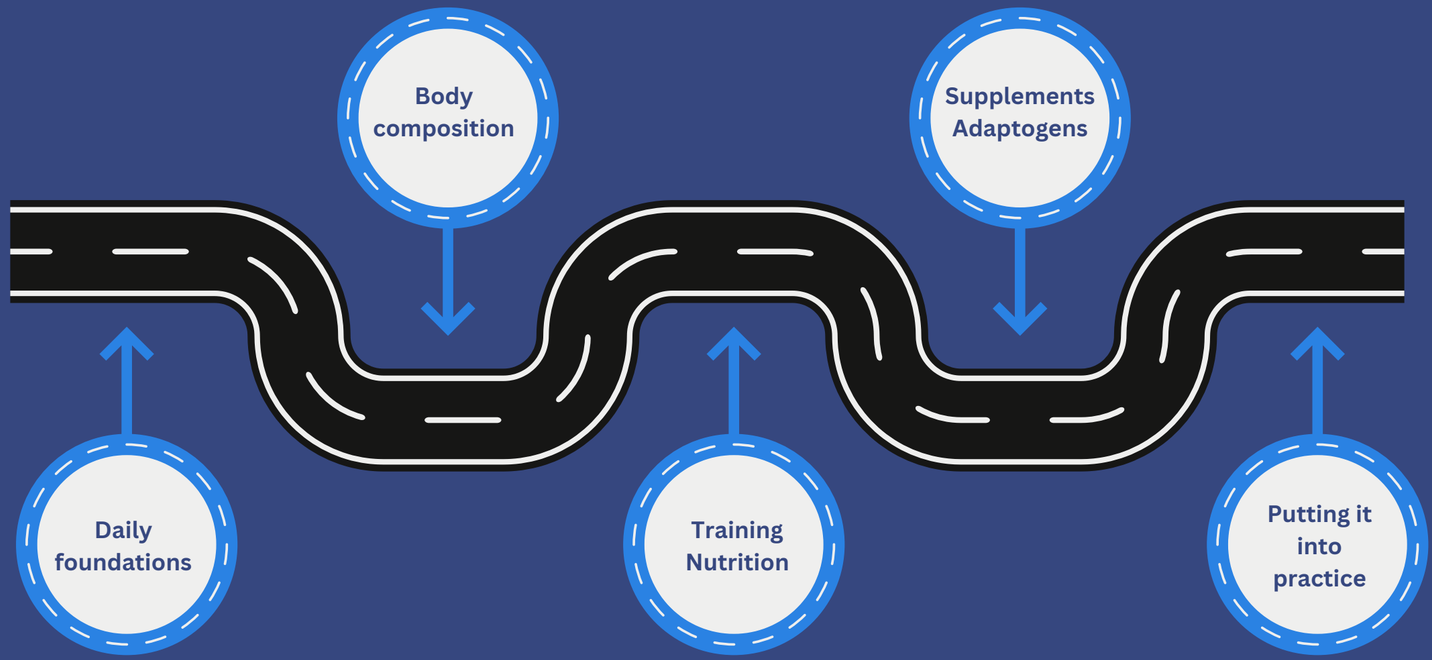
Adaptogens

MULTISPORT NUTRITION

Comparison is the theif of joy

MULTISPORT
NUTRITION

Today’s roadmap



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DAILY FOUNDATIONS:

Intentional, not restrictive

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WHAT CHANGES

- ↓ insulin sensitivity
- ↓ muscle protein synthesis
- ↑ fat storage (especially around middle)
- ↓ bone density
- ↑ inflammation
- Sleep disruption
- Chronic underfuelling (intentional or not)

Harder to:

- recover
- back up from sessions
- maintain lean muscle
- hit key high intensity sessions
- focus, make decisions

Increased injury risk
(bone and tendon)

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KEY MACRONUTRIENTS FOR TRIATHLETES & WOMEN

CARBOHYDRATES

2-3.5g/kg → 5-8g+/kg

- High fibre - 30+g/day
- Less processed
- Periodise around training + earlier in the day to reduce insulin resistance
- Increase daily intake relevant to training load!

PROTEIN

1.8-2.4g/kg

- High quality
- HBV plant protein (includ. soy and legumes)
- Regular across the day (4-6 times)
- 0.5g/kg/meal

FAT

1-1.3g/kg

- Unsaturated fatty acids help reduce inflammation
- omega-3 fatty acids (2-6g/day) ~help with hot flushes, brain cognition and mood function

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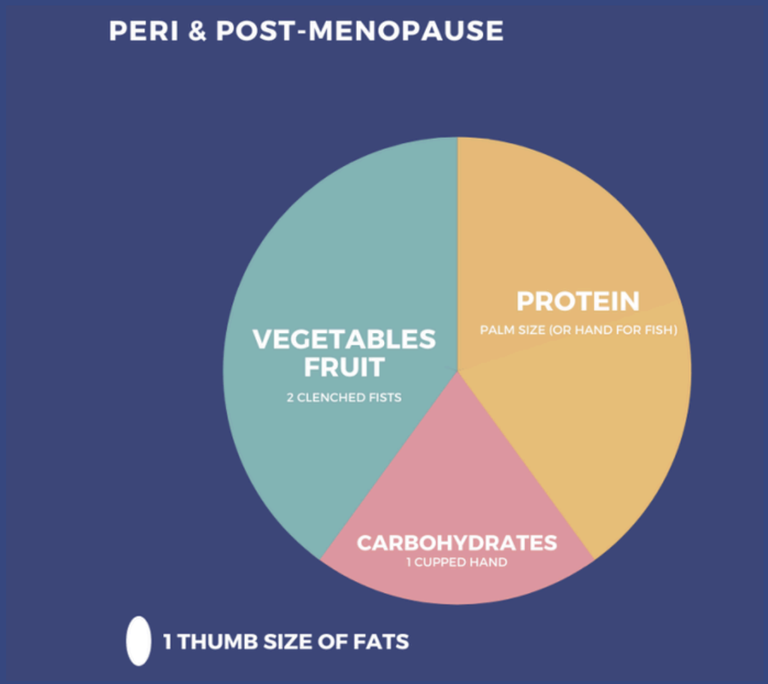
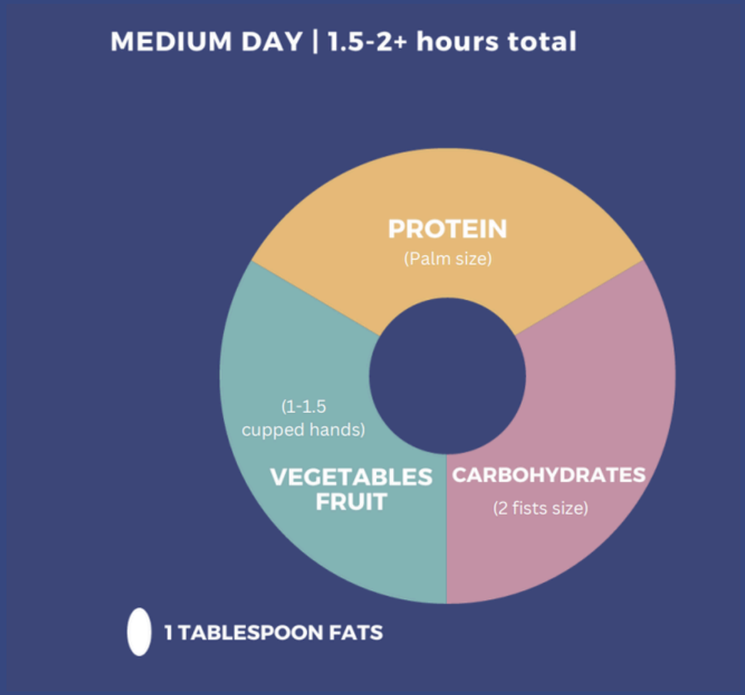
THE PLATE MODEL*





MULTISPORT NUTRITION

BUILDING A HEALTHY ATHLETE: Foundations

+ **FIBRE** for phytoestrogens

FUEL
WITH CARBOHYDRATES

- Maintain energy for muscles and brain
- Support growth & development
- Help recovery & reduce injury risk
- Fast thinking & alertness
- Eat regularly throughout the day

FUEL
WITH CARBOHYDRATES

- Bread
- Rolled oats
- Pasta and noodles
- Rice
- Potato, sweet potato, pumpkin
- Legumes
- Wraps
- Rice paper rolls

BUILD
WITH PROTEIN

- Build muscle and strength
- Recover & repair from sport
- Helps manage energy levels and appetite
- Eat regularly throughout the day

BUILD
WITH PROTEIN

- Eggs
- Nuts, nut butters, seeds
- Tofu, tempeh, edamame beans
- Legumes
- Chicken, pork, beef, turkey, etc
- Fish
- Milk, yoghurt, cheese

COLOUR
FRUITS & VEGETABLES

- Supports your immunity & reduces illness
- Full of vitamins, minerals & antioxidants
- Helps recover faster & trainer harder
- Helps a happy gut

COLOUR
FRUITS & VEGETABLES

- Banana, apples, oranges, berries, grapes, kiwi fruits, stone fuits
- Broccoli, zucchini, green beans, spinach, cabbage, lettuce, rocket
- Carrot, squash, tomatoes, capsicum, cucumber, mushrooms, bok choy, eggplant, beetroot
- Go for fresh, frozen or tinned

PROTECT
WITH HEALTHY FATS

- Supports recovery & repair
- Keeps you fuller
- Anti-inflammatory properties
- Helps absorb key nutrients
- Improves brain function & focus

PROTECT
WITH HEALTHY FATS

- Avocado
- Nuts, nut butter, seeds
- Extra virgin olive oil
- Macadamia oil
- Oily fish (salmon and mackerel)
- Olives

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FIBRE TYPES

AIMING FOR 30G+ OF FIBRE EACH DAY
PLUS A RANGE OF TYPES BEST SUPPORTS DIGESTION, BOWELS, ENERGY, APPETITE AND A HAPPY GUT!

Soluble Fibre

- Helps us feel fuller for longer
- Helps lower LDL cholesterol & stabilise blood sugar

Fruit	Oats	Vegetables	Lentils	Beans	Linseeds
1 Medium Piece = 3g fibre	½ Cup (cooked) = 2.5g fibre	1 cup mixed = 10g fibre	½ Cup = 7g fibre	½ cup = 14g fibre	1 tsp = 2g fibre

Insoluble Fibre

- Helps us feel fuller for longer

Helps reduce constipation and speed up transit time

Wholegrain Seed Bread	Brown Rice	Wholemeal Pasta	Bran Cereals	Nuts	Fruit (skin on)	Vegetables
1 slice = 4g fibre	½ Cup (cooked) = 1.5g fibre	½ Cup (cooked) = 4g fibre	½ cup = 12.5g fibre	¼ cup = 3g fibre	1 medium piece = 3g fibre	1 cup mixed = 10g fibre

Resistant Starch

- Good gut bugs eat this kind of fibre which keeps our gut healthy

Green Banana Flour	Cooked & Cooled Potato	Cooked & Cooled Pasta	Cooked & Cooled Rice	Sweet Potato

Chia Seeds	Lentils	Beans	Cashews	Chickpeas

ADAPTED FROM SOPHUS HEALTH


FOODBODS
DOUBLE CHOCOLATE
PLANT BASED
GLUTEN FREE
16G PROTEIN


SINCE 1956
SIRENA
TUNA
WITH BEANS
MEDITERRANEAN
ALL NATURAL INGREDIENTS
TUNA & BEANS

KEY MICRONUTRIENTS FOR TRIATHLETES & WOMEN

IRON

Transport oxygen in blood
Support energy production, immunity, hormones.

FOODS:
- Meats
- Eggs
- Legumes, nuts, seeds
- Cashews, dried apricots, green leafy

CALCIUM

Bone health
Smooth muscle contraction
Hormone regulation

FOODS:
- Dairy foods
- Calcium set tofu
- Salmon with bones
- Okra, broccoli, dried figs

ZINC

Immune health
DNA
Building proteins
Healing tissues

FOODS:
- Seafood & meat
- Nuts
- Dairy, whole grains

VITAMIN B12

Blood and nerve health
DNA
Works with iron to prevent anemia

FOODS:
- Cow's milk, fortified plant milks
- Cheese
- Meats, eggs, fish
- Supplement if vegan

MAGNESIUM

Muscle and nerve function
Regular blood sugar and blood pressure
Bone strength
Reduced anxiety, improve sleep quality, relief from headaches etc

FOODS:
- Almonds, peanuts, cashews
- Pumpkin seeds
- Soybeans, soymilk, tofu, blackbeans,

VITAMIN D

Bone health
Calcium & phosphorus absorption
Reduce inflammation

FOODS:
- Milk
- Eggs
- Mushrooms in the sun
- Oily fish

ANTIOXIDANTS (VIT A, C, E, K)

Reduce cellular damage
Immunity
Bone and connective tissue

FOODS:
- Fruits
- Vegetables
- Extra virgin olive oil

OMEGA-3s

Anti-inflammatory
Support brain & heart health
Joint health

FOODS:
- Oily fish, blue green algae
- Walnuts, chia seeds, flaxseeds
- Supplementation

MELTISPORT NUTRITION

KEY REDUCTORS

ALCOHOL

- Strips gut microbiome,
- Increases core temperature
- Disturbs sleep quality
- Can dehydrate

CAFFEINE

- Can trigger or exacerbate symptoms
- Delay appetite
- Elevates cortisol
- Imapcts sleep and energy

ULTRA PROCESSED

- Limit ultra processed foods outside of key training sessions
- Can increase inflammation
- Low in fibre
- Diet / sugar free options can impact the gut and not actually fill you up

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USEFUL **SUPPLEMENTS**

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NUTRITION

SUPPLEMENTS

FOOD FIRST...

Micronutrients

- **Iron** (heavier periods, foot striking etc)
- **Vitamin D** (bone health)
- **Calcium** (bone health)
- **Magnesium** (bone integrity, sleep, muscle)
- **Omega 3 fatty acids** (helps with hot flushes, brain fog and mood function)

Supporters

- **Creatine** 0.3g/kg/bw
- **Tart cherry** concentration (30ml prior to bed)
- **Beta alanine**: 4-6g/day prior to exercise helps vasodilation and reduce hot flushes during exercsie + lactic acid buffer
- **Myo-inositol - 2-4g/day:** Improves insulin sensitivity. Works as a second messenger achieving insulin-like effects on metabolic enzymes.

Adaptogens

- **Ashwagandha** - 250mg b.i.d.
  - calming, Reduce cortisol, anti-anxiety, anti-depressant, increase LH, T3, T4.
- **Holy basil**: Calming: 500mg b.i.d.
  - Anti-microbial, reduces oxidative tissue damage, modulates cortisol, improves glucose control
- **2Before**: Stimulating: 10g 30-60 minutes prior to peak performance. Anthocyanins enhance performance and speed up recovery.
- **Maca**: Stimulating: 2g/day. Sex hormone support

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SUPPLEMENT FRAMEWORK

AIS Supplement Framework website

- Sports drinks
- Sports gels
- Sports bars
- Electrolyte supplement
- Mixed macronutrient supplement
  (bar, powder, liquid meal)

Medical supplements

Supplements used to prevent or treat clinical issues including diagnosed nutrient deficiencies. Should be used within a larger plan under the expert guidance of a Medical Practitioner/Accredited Sports Dietitian.

- Iron
- Calcium
- Probiotics
- Vitamin D

Performance supplements

Supplements/ingredients that can support or enhance sports performance. Best used with an individualised and event-specific protocol, with the expert guidance of an Accredited Sports Dietitian.

- Caffeine
- ß-Alanine
- Sodium Bicarbonate
- Creatine

BROWSE BY ROLE
Athletes
Individuals and Families
Schools and Teachers

AUSTRALIAN SPORTS COMMISSION TOPICS
Grants and Funding
Sport Governance
Club Development

AIS TOPICS
Health and Wellbeing
Community Engagement
Nutrition

CLOSE

Caffeine

Following ingestion, caffeine is rapidly absorbed and transported to all body tissues and organs where it exerts a large variety of effects.

Athlete infographics have been developed for the information of athletes under the direct guidance of a sports dietitian. Sports dietitians have expert knowledge of sports supplements and their potential application in an athletes broader health and performance nutrition strategies. Always engage with a sports dietitian when considering the use of any supplement. https://www.sportsdietitians.com.au/#find-sports-dietitian

Practitioner Fact Sheet

Athlete Infographic

- What is it?
- What does it look like and where is c
- How and when do I use it?
- Are there any concerns or considera
- Where can I find more information?
- References

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CREATINE

FOOD FIRST?

> 'Food first' principles should apply to all supplements, however diet alone is not enough to increase muscle creatine to supplement levels required for performance benefit.

> Muscle creatine uptake is maximised by ingestion with carbohydrate due to the effects of insulin. Early recommendations using large amounts of simple sugars has been updated with a protein (50 g) and carb (50 g) rich meal achieving the same result.

> Consider if this is appropriate for your individual needs and more practically ingest creatine with your recovery/ main meals (that should focus on protein and carbs).

Co-ingestion with post-exercise recovery ideas providing protein + carbs:

1 egg on toast + Rokeby farms breakfast smoothie

Salad & chicken (250g) wrap + 1 apple (medium)

Tofu & vegetable stirfry with rice

Breakfast cereal & milk + yoghurt

Tuna & lettuce sandwich + banana smoothie

Steak & salad with roast potato

CONCERNS & CONSIDERATIONS

Consider impact of potential 1-2kg increase in body mass caused by fluid retention vs. a performance benefit in your sport.

No evidence of adverse effects with long term (4 yrs) creatine supplementation at appropriate dosage in healthy individuals.

Following cessation of creatine supplementation, muscle creatine levels and body mass return to baseline over 4-6 weeks.

Timing of creatine ingestion with post-exercise recovery meal may be more effective and practical than pre-exercise.

Mild, temporary gut upset can be

Individuals with the lowest muscle creatine

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EASY SIMPLE DELICISOUS

FOOD PREP & IDEAS

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NUTRITION FOR
TRAINING & RACING

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NUTRITION

TRAINING NUTRITION

BEFORE
Fuel Up

GOAL
CARBOHYDRATE FOODS
?PROTEIN

WHEN
30 minutes to 2 hours before

WHAT
0.5-4g carbs/kg/ BW

Yoghurt & muesli
Banana + milky coffee
Nut bar/ muesli bar
Cottage cheese on toast
Toast with PB + jam/honey

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TRAINING NUTRITION

DURING

Top Up

GOAL

HYDRATION +
CARBOHYDRATES
SODIUM

WHEN

Every 30-45 minutes
? 10-15 minutes
Sip often & small

WHAT

<1 hour = 0-30g/hr
1-2 hours = 30-60g/hr
>2.5 hours = 60-90g/hr
Match fluid to ~70-90% of losses

? May need to reduce fructose if sensitive

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TRAINING NUTRITION

AFTER

Refuel + Recover +
Repair + Rehydrate

GOAL

PROTEIN +
CARBOHYDRATE
FOODS + FLUIDS

WHEN

Within 45 minutes
Then every 2-3 hours

WHAT

0.8-1g carbs/kg/ BW
30-40g protein
150% fluid losses over 2-3 hours

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TOP STRATEGY:
TRAINING THE GUT

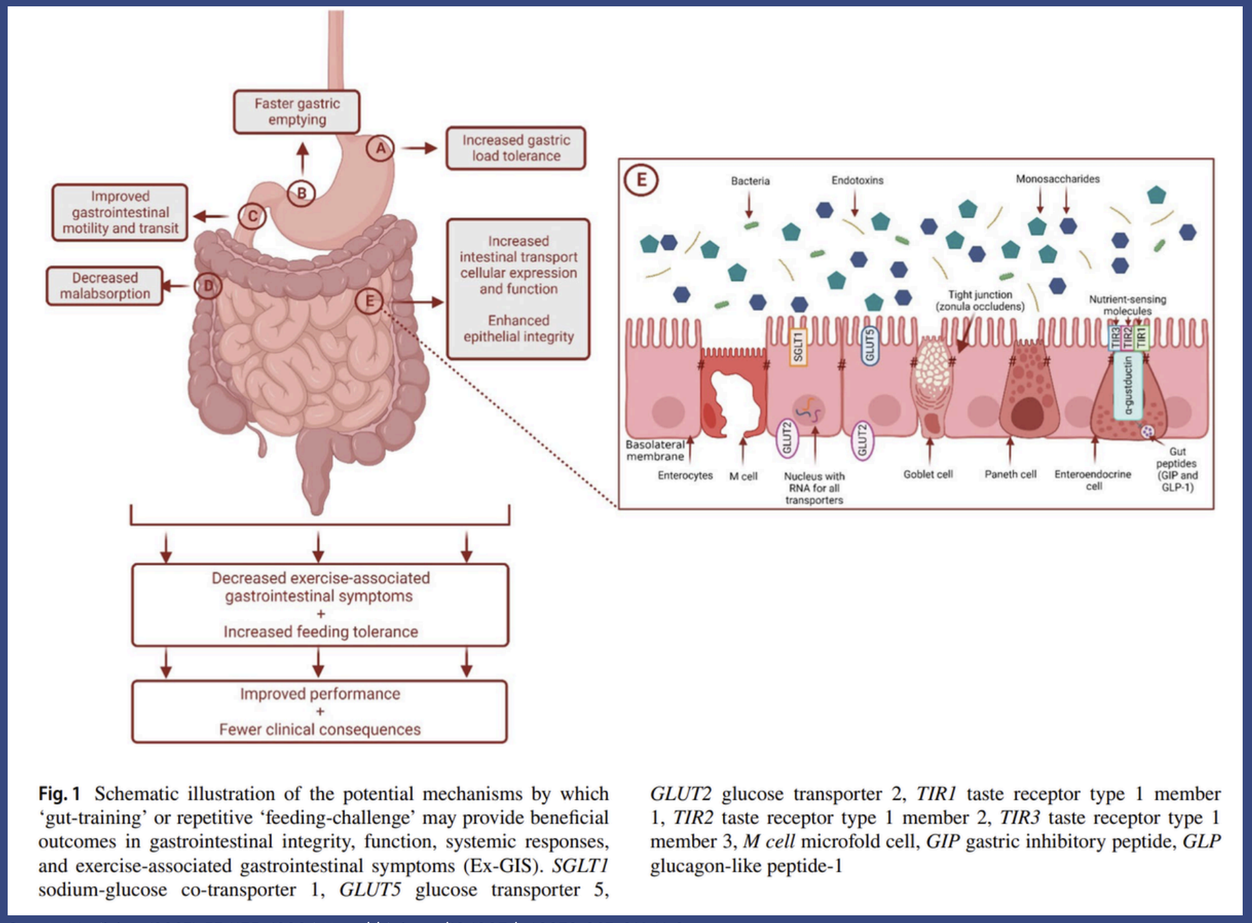

Fig. 1 Schematic illustration of the potential mechanisms by which 'gut-training' or repetitive 'feeding-challenge' may provide beneficial outcomes in gastrointestinal integrity, function, systemic responses, and exercise-associated gastrointestinal symptoms (Ex-GIS). *SGLT1* sodium-glucose co-transporter 1, *GLUT5* glucose transporter 5, *GLUT2* glucose transporter 2, *TIR1* taste receptor type 1 member 1, *TIR2* taste receptor type 1 member 2, *TIR3* taste receptor type 1 member 3, *M cell* microfold cell, *GIP* gastric inhibitory peptide, *GLP* glucagon-like peptide-1

Sports Medicine (2023) 53:1175–1200 https://doi.org/10.1007/s40279-023-01841-0

HYDRATION

GOAL = prevent dehydration

- Don’t want to overhydrate
- Fluid testing & sweat testing
- Thirst mechanism reduces, but we still need to hydrate
- Sodium important
    - season to taste vs calculated losses
- Duration and intensity dictates % to replace during exercsie
- Urine doesn’t need to be clear!
- Ad lib vs plan

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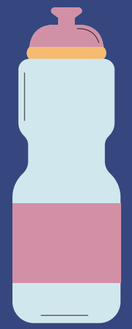
COOLING STRATEGIES



Freeze bottles the night before (or use insulated bottle)

Incorporate slushie/ slury drinks (or loads of ice cubes)

Snow cone or electrolyte ice blocks before/ after

Pour water over skin to evaporate & draw heat away

Use ice packs before/ after & cooling collars during (if possible)

Add ice cubes to bottles or put under clothing, in your hat, or suck on them

Sit in front of a fan (or air con) before you start OR have a cold shower just before

Find shade when possible

Wear cool clothing & replace when possible

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RACE
PREPARATION

MULTISPORT
NUTRITION

CARBOHYDRATE LOADING

1

GOAL: To overload muscle glycogen stores so they're dripping with carbohydrates (energy)

2

Easy to eat, easy to digest foods. AIM FOR 7-9g/kg/body weight of carbohydrates

3

Load for 2-4 days + drop volume 12-14 hours before to rest your gut

4

Stay hydrated.
Sip fluids regularly

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FOODS FOR CARBOHYDRATE LOADING

Smoothies & juices

Toast with jam, honey, banana, marmalade

Sports drink & sodas

Cereal and quick oats

Muffins, fruit buns/ loaf banana fruit

Fruit and fruit juice

Lollies/ candy

Pasta, rice and noodles with simple sauces

Potato chips/ crisps

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RACE
NUTRITION

MULTISPORT
NUTRITION

BUILDING
YOUR RACE NUTRITION

MULTISPORT NUTRITION

1. CARBOHYDRATES

- Aiming for 60-90g/ hour (or more less if required)
- Multiple Transportable Carbs (ie. fructose and glucose/ maltodextrin)

2. FLUID & HYDRATION

- Do a fluid test to learn how much you lose in your sweat
- You don't need to replace 100%
- Aim for 85-95%

3. SODIUM

- Match sodium to fluid losses
- Males = 800-1000mg/L
- Females = 600-800mg/L
- Review products and foods you're using

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4. CAFFEINE

- Consider caffeine supplementation before and during for a boost & alertness
- 3-6mg/kg body weight initially
- During - dependent on individual

5. PAIN RELIEF

- Start pain relief early to keep pain levels down
- Take regularly throughout according to instructions

6. TROUBLESHOOTING

- Have back up plans and options ready in your 'toolkit'
- Be prepared for: muscle cramps, nausea, vomiting, reflux, flavour fatigue

7. RECOVERY

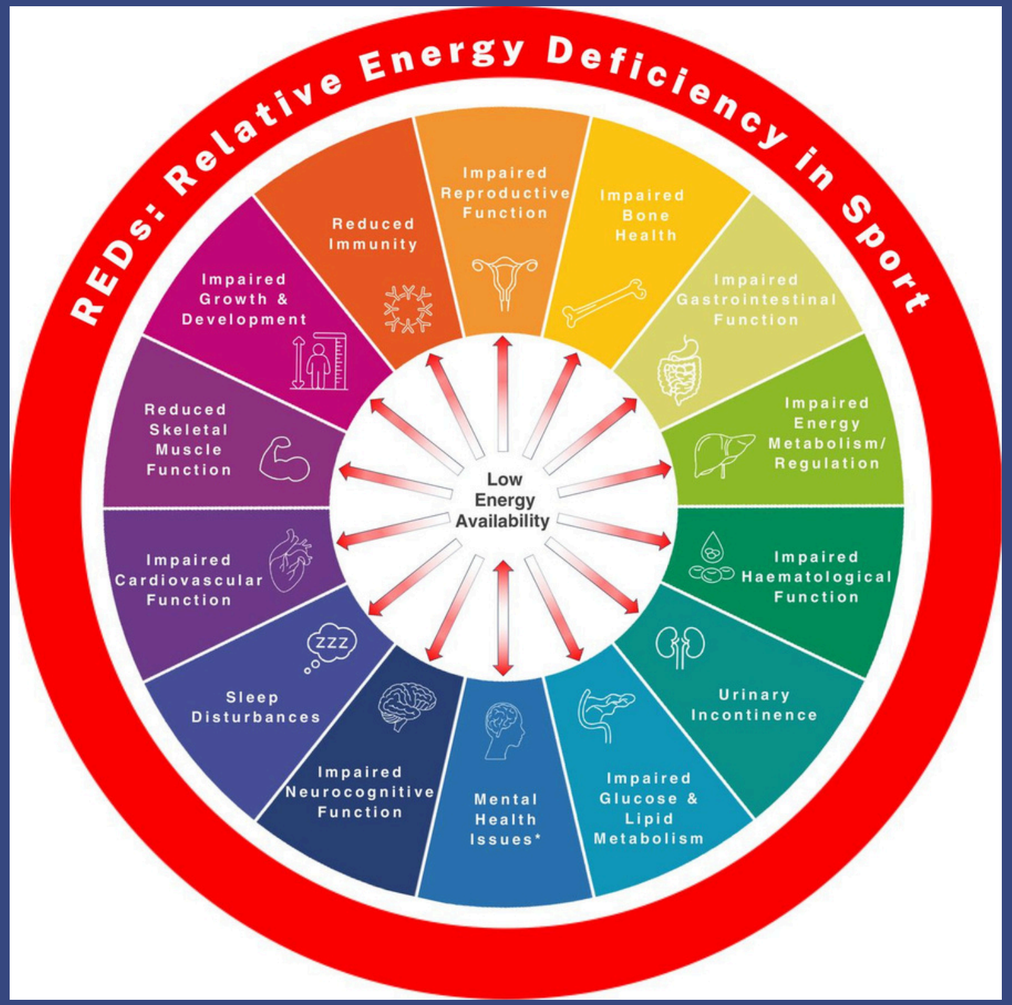
- Have a recovery plan for immediately after AND for the next 3-7 days minimum
- Take food / drink with you to the event so you can refuel quickly

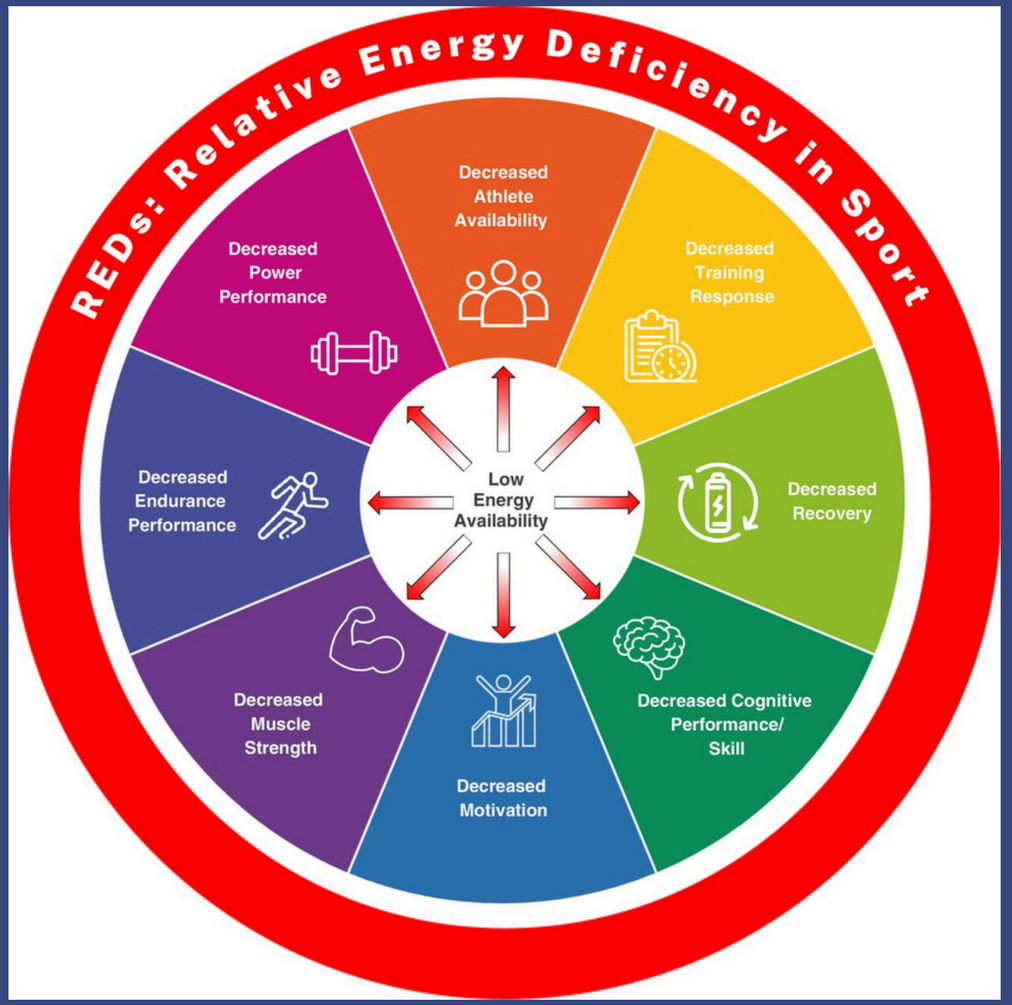
@multisport_nutrition | www.multisport-nutrition.com

PREVENTING & MANAGING
LEA & POOR NUTRITION

MULTISPORT NUTRITION

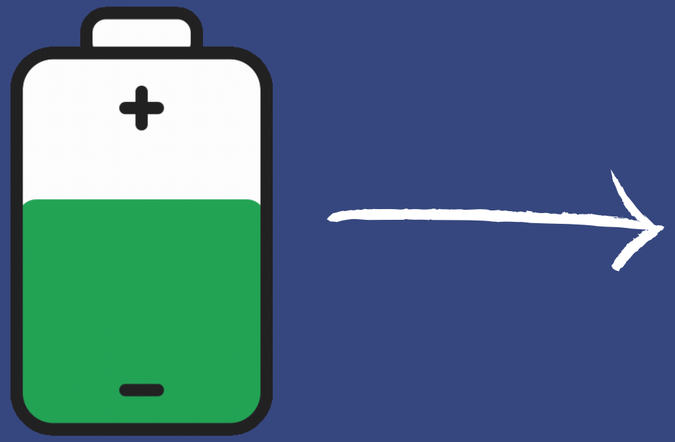
PREVENTING LOW ENERGY AVAILABILITY





IOC Conceptual model for PERFORMANCE and HEALTH

PREVENTING LOW ENERGY AVAILABILITY



- Eat BEFORE and AFTER training
- Hydrate during = carbs in your bottle
- Fuel during if over 75 minutes
- Manage training loads & adjust when needed
- Eat regularly throughout the day (including school, uni, work, life!)
- Listen to hunger cues
  - + also strategies for when to ignore/ don't have
- Look out for signs and symptoms
- Use liquid foods if hard to eat
- TRAIN YOUR GUT

MULTISPORT NUTRITION

ARE YOU EATING ENOUGH TO FUEL YOUR PERFORMANCE?

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FACTORS THAT CAN MAKE FUELLING CHALLENGING...

- altered training load
- altitude or heat training
- interstate or overseas travel
- difficulties shopping for food
- new training squad or location
- changed eating habits for any reason
- unpredictable or change to work / study routines

- limited kitchen access or cooking skills
- moving out of home or changed living arrangements
- unsure how to execute your sports nutrition plan
- financial hardship

WARNING

UNDER-FUELLING CAN NEGATIVELY IMPACT YOUR PERFORMANCE & HEALTH

NEXT STEPS...

FUEL CHECK

Speak to your sports dietitian who has expert knowledge in helping you to match your fuelling needs to training and competition

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ARE YOU EATING ENOUGH TO FUEL YOUR PERFORMANCE?

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UNDER-FUELLING CAN AFFECT MALES & FEMALES	75% OF FEMALE ATHLETES MAY BE UNDER-FUELLING	1 IN 3 FEMALE ATHLETES HAS 2 OR MORE SYMPTOMS OF UNDER-FUELLING

HAVE YOU NOTICED...

- ☐ low mood / feeling irritable
- ☐ difficulty with motivation for training
- ☐ persistent fatigue
- ☐ unintentional weight loss
- ☐ inabilty to alter body compostition
- ☐ pressure to lose weight (from self / others)
- ☐ new or persistent gut discomfort
- ☐ loss of appetite or always feeling hungry
- ☐ menstrual cycle changes (if not on pill)
- ☐ lowered sex drive
- ☐ more frequent injury & / or illness
- ☐ prolonged rehab
- ☐ poor performance or failing to adapt to training

IF YOU TICKED ONE OR MORE ...

FUEL CHECK

Speak to your sports dietitian who has expert knowledge in helping you to match your fuelling needs to training and competition

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RECAP FOR TODAY

1. Feel empowered & be confident in food and fuelling
2. Always take the individualised approach & experience

- DAILY FOUNDATIONS
- KEY NUTRIENTS & SUPPLEMENTS
- TRAINING AND RACE NUTRITION

MULTISPORT NUTRITION

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