HIGH PERFORMANCE
SPORT NEW ZEALAND

NUTRITION FOR HEALTHY FEMALE ATHLETES

Hannah Hoeksema, RD

Sports and Diabetes Dietitian.
0212504505

hannahesmeh@gmail.com

Zespri KIWIFRUIT AIMS GAMES

NZSSAA New Zealand Secondary Schools Athletics Association

From Secondary School Competition to Regional & National Championships to World Juniors to World Youth Games to CWG & the Olympics Games (summer and winter) and the Paralympic Games

NETBALL WORLD YOUTH CUP GIBRALTAR 2025

You are not the same person you were yesterday?

Grew
Repaired tissue
Development
Seek more responsibility in food decision

Athletes come in different ages, shapes and sizes

Just like everyday people

Fuelling – a key step to being a healthy athlete

Parents also face a lot of pressure to do 'the right thing' for their young athletes, without a solid understanding of what's actually healthy for their developing kids.

Tom Farrey is the founder and executive director of the Aspen Institute's Sports & Society Program, which works to foster healthy children and communities through sports

WHAT IS RIGHT FOR PARENTS MAY NOT BE RIGHT FOR TEENS: DIFFERENT NEEDS FOR YOUTH ATHLETES

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Parents want their teens to be healthy and teen athletes want to be healthy

Adults – have finished growth cycle (if growing it's likely in the wrong places)

Parents may have health conditions (high cholesterol, heart disease, high blood pressure, pre Diabetes) requiring modified diet that influences family food choices

Young athletes need fuel (carbohydrate, fat and protein) to support energy for growth, sport, and brain

Eliminating a food or food group from the family diet could lead to poor performance and growth challenges

What is different for athletes

- Why the food and nutrition guidelines need to be modified for athletes?

Adjusting the NZ Nutrition Guidelines for the youth athlete

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- Needs are different due to the level of training performed
- Activity can be several times a day during the week and weekend
- Protein – red meat intake (Paris 2024)
- Fibre
- Sugar
- Salt
- Total energy and more food
- Water v sports drinks

Are You Eating For A Healthy Heart? | Poster - Heart Foundation NZ

CHALLENGES FOR ATHLETES: HOME INFLUENCES

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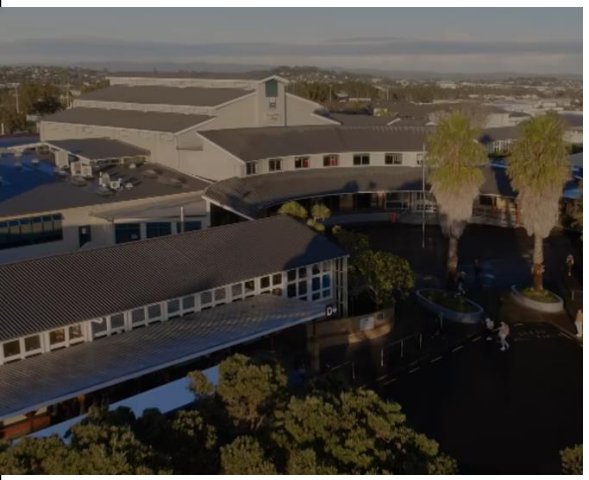
Awareness of:

Family eating style – always eating on your own in evenings
Skipping breakfast – sleeping in to catch last minute sleep (have breakfast pre prepared)
Family medical history – Family diet modoified for health - blood pressure (reduced sodium), heart disease (low fat), diabetes (restrictions sugar and carbohydrate), weight management (restricting snacks, treats and sugar)
Concerns for undesirable weight gain and obesity – limiting total food, restricting specific foods, snacks
Focus 3 meals a day – snacking discouraged, no evening snacks – less active don't need the same snacks
Food avoidance – many adults do not eat 5 a day of fruit and vegetables
Eating the same patterns each day - not adjusting for increased training or multiple sessions
Set meal patterns and volumes - standardised portions not adjusted for growth and training times
Believing supplement labels – designed for adult males often over 80kg

What are the challenges you are facing?



Or School or University

Part of multiple sports teams and trainings

Time to eat, access to and availability food

Peer group, social media

Talented Youth Athlete

Time of unique requirements for nutrition

Focus on biological not chronological age

Meet normal growth and development demands

Establishing life long behaviours e.g. health and nutrition, attitudes to food,

Learn to cook and shop – at least 8 recipes

Must account for normal life and activities, peers, social

Seeking more independence and self reliance

May have financial limitations – resources to buy food

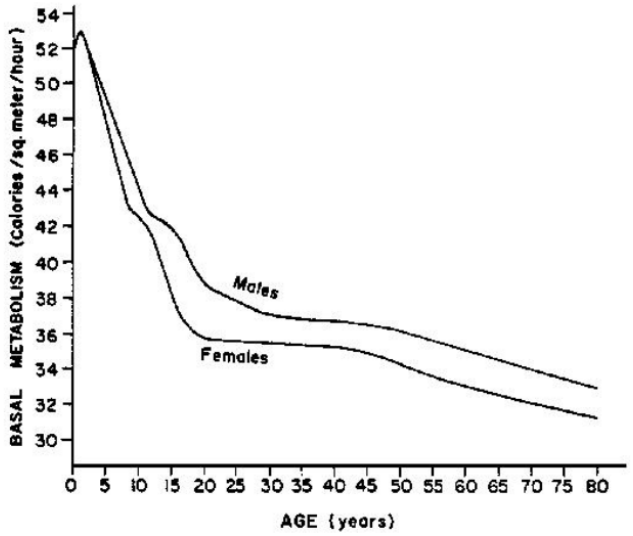
Developing self awareness – body image awareness

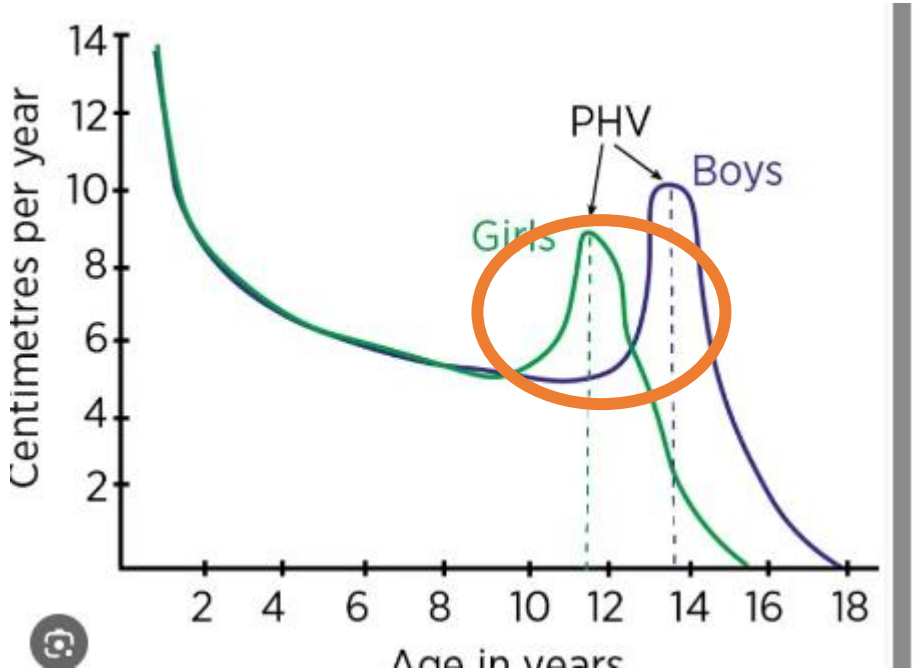
Young Adults - A time of change

- Slowing and End of Period of significant growth and physical development
  - Altered body composition
  - Metabolic and hormonal fluctuations
  - Maturation of organ systems
  - Bone maturation
  - Establishment of nutrient deposits
  - Changes in metabolic fuel preferences
  - Improve sweat response
- Social, emotional and sexual development

- Important time in establishing life-long relationship with food

Changes in metabolic rate





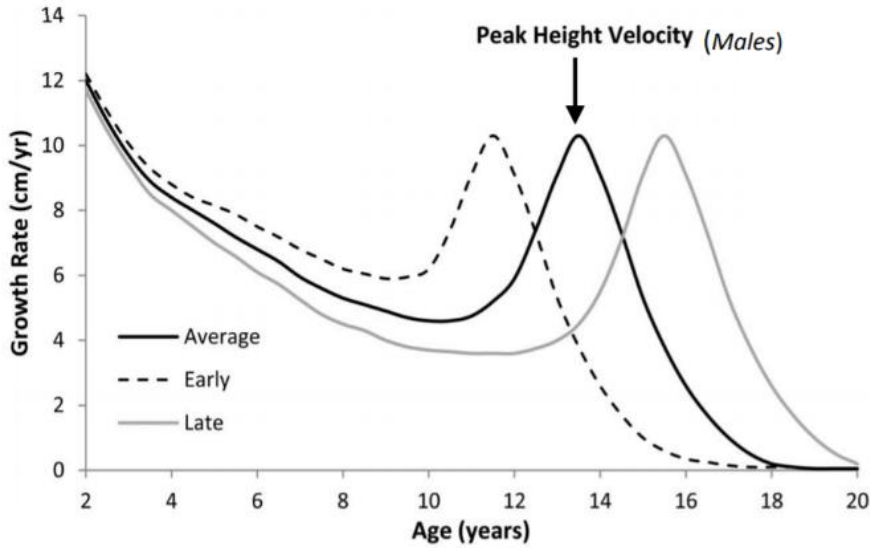


Figure 1. Growth Rate v Chronological Age of males, showing Peak Height Velocity. Note, the average female Peak Height Velocity is age 12.

Young women can grow 8cm a year
Taller = more bone, muscle, blood, larger organs, and skin = weight

Benefits early maturity

Taller

Heavier

Stronger

More muscle mass (males)

Co-ordination adjustments earlier

Challenges early maturity

Higher expectation skill set based on size
Fatigue earlier
Early onset menstruation
Hormonal influences (skin, body hair, emotions)
Increased energy demands (growth spurt)

Benefits late maturity

Smaller size – self select sports and activities

Usually maturing at slower rate than peers

Rely on skills for success than strength

Challenges late maturity

Body image

Delayed growth spurt and bone maturation

Inadequate energy can be a contributor

No one food provides all the nutrients needed:

- Food is Fuel – muscles, growth, brain and CNS
- Food is Nutrients the body can't make (vitamin C)
- Food is Health – bones, blood,
- Food is Social – with family, friends
- Food is Enjoyment – birthdays, celebrations

Think Food First

Don't train with an empty tank!

Don't let poor food choices and nutritional practices get in the way of a good performance or health

Energy

Age guide[a,b] (years)	Reference weight[c] (kg)	Reference height (m)	BMR[d] (MJ/day)	PAL 1.2[e]	PAL 1.4[e]	PAL 1.6[e]	PAL 1.8[e]	PAL 2.0[e]	PAL 2.2[e]
Girls									
12	41.6	1.51	5.2	6.4	7.4	8.5	9.5	10.6	11.6
13	45.8	1.57	5.5	6.7	7.8	8.9	10.0	11.1	12.2
14	49.4	1.60	5.7	6.9	8.1	9.2	10.3	11.5	12.6
15	52.0	1.62	5.8	7.1	8.2	9.4	10.6	11.7	12.9
16	53.9	1.63	5.9	7.2	8.4	9.5	10.7	11.9	13.1
17	55.1	1.63	5.9	7.2	8.4	9.6	10.8	12.0	13.2
18	56.2	1.63	6.0	7.3	8.5	9.7	10.9	12.1	13.3

https://www.nrv.gov.au/dietary-energy

Example:
16yr old female **5.9MJ**/day at rest x 1.8 – 2.2 PAL
= 10.62 MJ to 12.98 MJ
(2540 Kcal – 3105 Kcal/day)

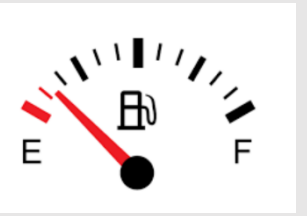
Energy Availability

This is not Energy. Caffeine is a stimulant

Variable Energy Needs

RMR = 1375 kcal/d

Female 18yrs, 62kg, 170cm



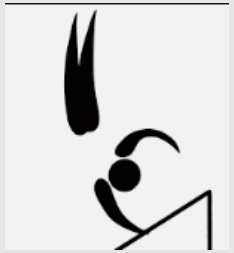
Daily energy

1650kcal/d

9 hrs sleep

Rest Day

3 hrs activity, walking, school, add 285kcal



2150 kcal/day

2 hrs session (add 215kcal)

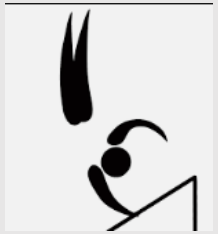
8 hrs sleep

Single Training

2 hrs active e.g. School sport, PE add 215 kcal

1.5 hr dance class add 160-200 kcal

2260 kcal/d



2 hrs session add 215kcal)

8 hrs sleep

Double Training

Variable Energy Needs

RMR = 1375 kcal/d

Female 18yrs, 62kg, 170cm

Daily energy

1650kcal/d

9 hrs sleep

Rest Day

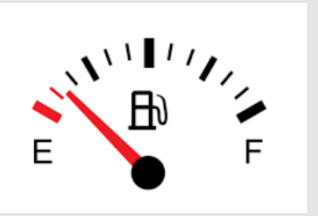
3 hrs activity, walking, school, add 285kcal

2290 kcal/day

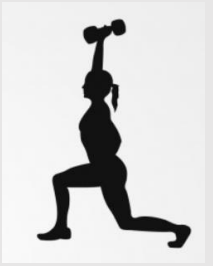
2 hrs session (add 350 kcal)

8 hrs sleep

Single Training



2 hrs active e.g. School sport, PE add 270 kcal



1.5 hr activity add 200 kcal

2840 kcal/d

2 hrs session add 350 kcal)

8 hrs sleep

Double Training

Fuel for the work required

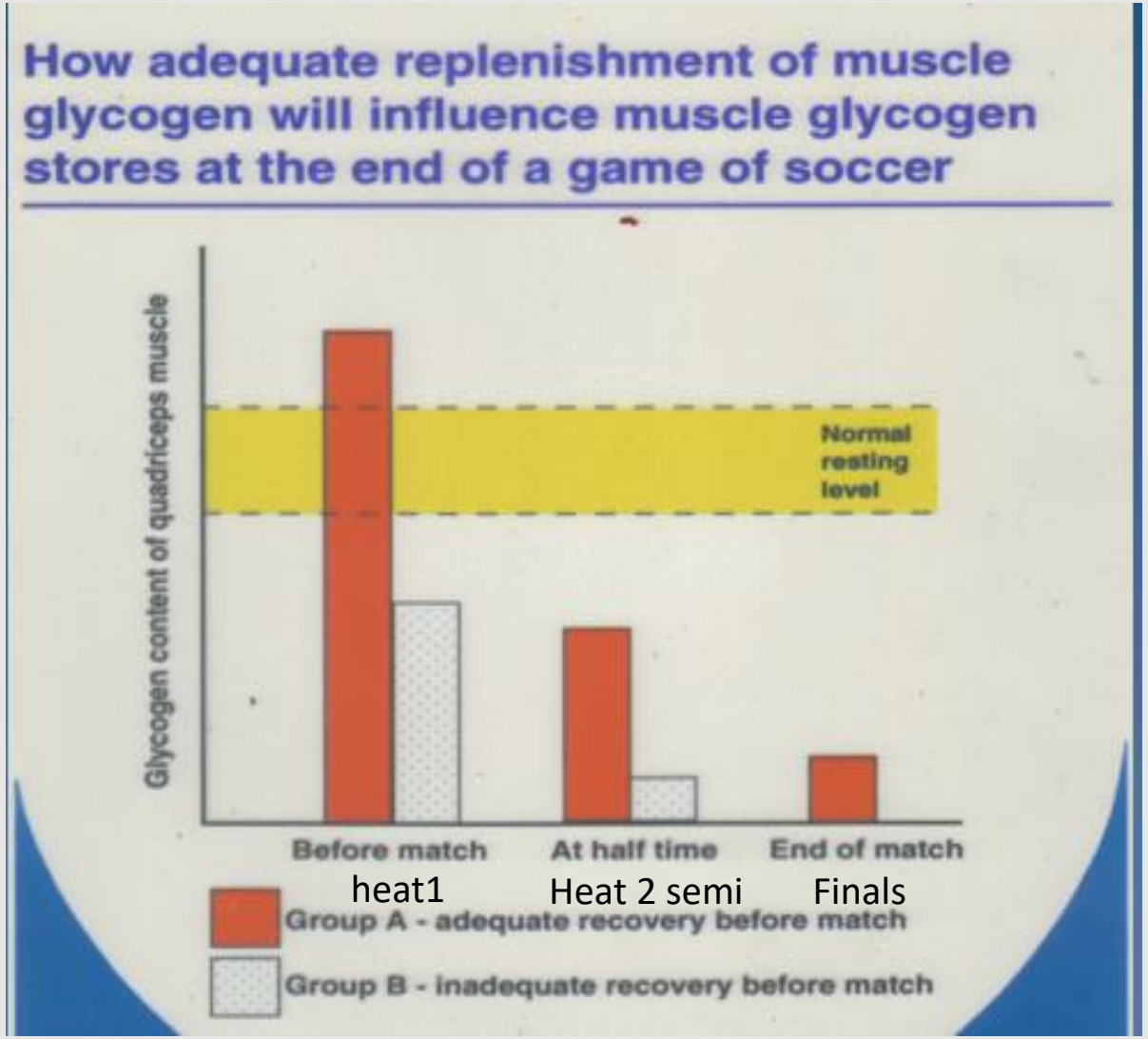
Study football men showed approx. 50% muscle fibres were identified as empty after a match

Players with low muscle glycogen covered less distance, ran less at high speed, esp in second half than those with adequate stores

For tournaments and events where multiple matches are played aim for CHO intakes at this level for 48-72 hours

Tournament with multiple matches over two day? Don't forget the warm up and cool down – these use energy

It can take 72hrs to restore muscle glycogen stores – therefore meals and snacks matter to preserve blood glucose and continue the refueling process



Causes of low energy intake (LEA)

Increased energy expenditure (doing more)

*increased volume training,
*increased intensity
*Increased duration
*Addition another sport
*clinical – fever, injury

Decreased nutrition (less fuel)

*Unintentional (fatigue, timing, finances, not eating between sessions)
*Intentional (missing meals and snacks, attempts to change body composition or body mass)
*Poor practices - lack planning and preparation (no food available)
*orthorexia, fad diets, fasting
*Clinical – disordered eating

Key Nutrients for Youth Athletes

Energy – fuel, growth and hormonal health, brain

Protein – growth, muscle, blood cells, bone

Calcium – growth, bone, blood clotting, muscle contraction

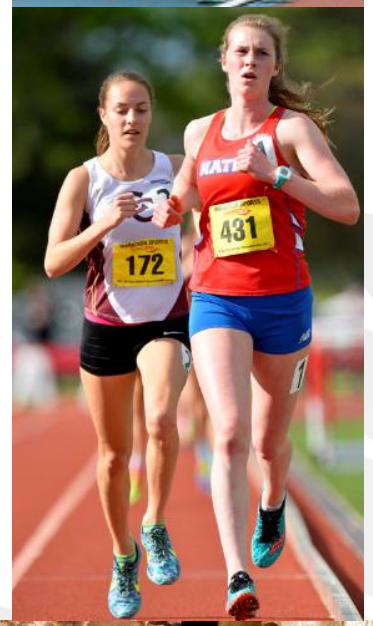
Iron – blood cells, energy production

Iodine – metabolic rate (use iodised salt, seaweed sushi)

Vitamin D – bone, immunity (sun exposure and food)

Challenges with changing body image

Others - Food security, meal timing and distribution



COMMON POOR NUTRITION PRACTICES

- Going longer than 3-3.5hrs without food
- Not arriving at training hydrated and with well fueled muscles
- Not consumed a snack 1-2 hours prior to a long, highly intense or technique session
- Weighing self either before or after sessions – morning weight 1-2x week
- No fluids at training
- No snacks at long training sessions
- No recovery snacks or long gaps before a main meal if eaten after training
- Eating the same food – lack variety limited nutrient intake
- Cutting out major food groups
- Paying too much attention to Instagram or social media

INFLUENCES: SOCIAL MEDIA

Social Media & Nutrition Advice

Survey of **2000**

MyFitnessPal, 2024

Millenials (born 1981 – 1996)

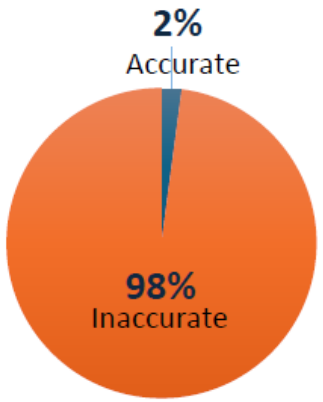
and

Gen Z (born 1997 – 2012)

Nearly **90%** use Social Media for Nutrition Advice

Nearly **60%** Adopt nutrition advice and trends they see on social media.

More than **30%** suffered Adverse Effects after adopting nutrition advice from social media.



Only **2%** of **67,000** nutrition videos on tiktok, analysed using AI, were found to be accurate.

Dublin City University, 2024

Seeking advice – look for experience and creditable education: NZRD, RD, Reg Nutritionist

You wouldn't let a plumber be your surgeon!

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When things go wrong

- Poor concentration
- Fatigue
- Distracted at training
- Don’t enjoy training
- Reduced ability to learn and adapt
- Nutrient deficiency e.g. iron
- Bone stress
- Undesirable hormone profiles
- Undesirable loss lean mass
- Orthorexia
- Fad diets
- Disordered eating
- REDS

When to eat?

Around training – Yes! before and after (sometimes at half time or during e.g. multistage event triathlon or on the bike)

First and second breakfast – swimmers, morning training

Regular meals and snacks times at school, on weekends, after school – gymnastics (have pasta and vegetables before)

What about sports drinks? Water is best if 45mins or less

What about late-night eating? Yes, try to eat some food earlier

Is it OK to eat Carbs after 6pm or late? Yes – aim for asap post activity and especially if morning training

Body changes: Awareness of weight increase (check height with weight together) with development stage of puberty for growing young athletes who should get taller and heavier!

EVERY MEAL HAS A ROLE:

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"Athletes show up for training and the need to show up for meals, otherwise they may as well not show up for training!"

Athletes/Player/Riders often undereat during the day and then have large meal before bed (interfering with sleep)

Every meal has a purpose:

Fuelling to prepare for exercise, training or performance

Refuelling to recover from exercise, training or performance

Refuelling to prepare for the next session (especially if back-to-back sessions or at a tournament)

Need good time management especially with double sessions – plan meals and snacks (mini meals)

First breakfast – fuelling and restoring blood glucose after overnight

Second breakfast – recovery and replaces burned fuel

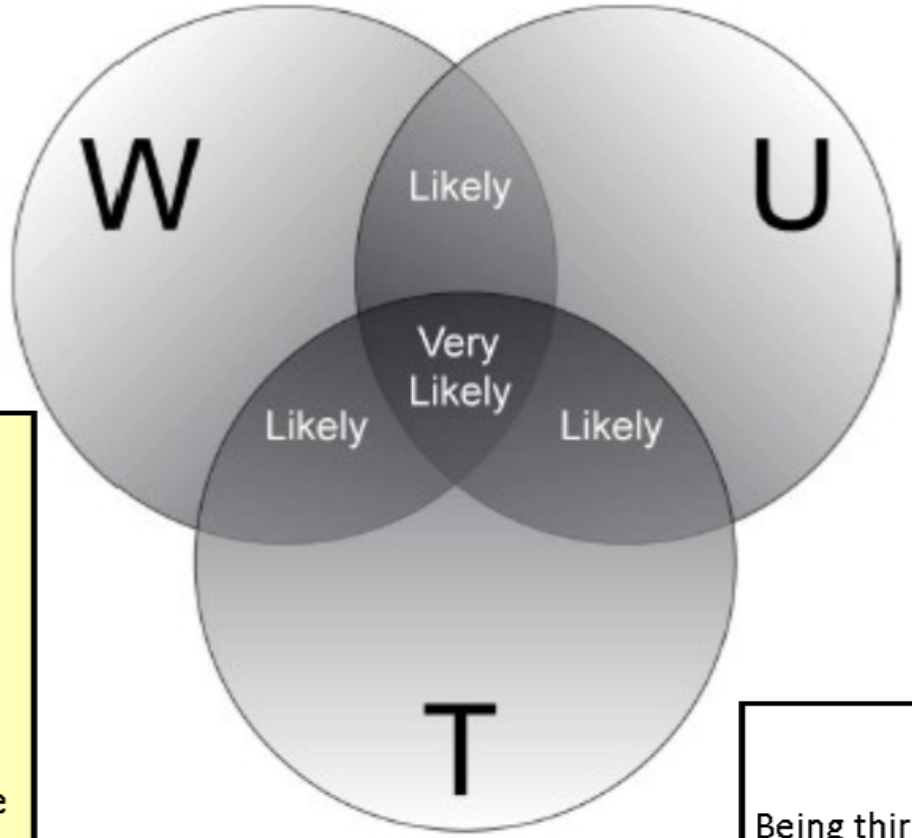
First lunch - fuelling for daily activity

Second lunch – fuelling for second session and preventing excessive hunger for dinner

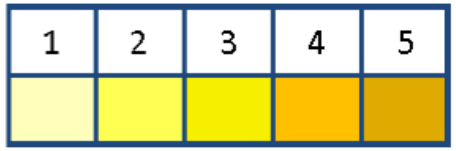
Monitoring your day-to-day hydration

W = weight

Weigh yourself each day first thing in the morning. If your day-to-day weight loss is greater than 1% this may indicate dehydration



U = urine



Passing less urine and the darkening of its colour—grade 3, 4, or 5 (taken during the first urination of the morning) may indicate dehydration.

Are you dehydrated?

When 1 of these markers are present, you **may** be dehydrated.

When 2 of these markers are present, it is **likely** that you are dehydrated.

If all three markers are present, dehydration is **very likely**.

T = thirst

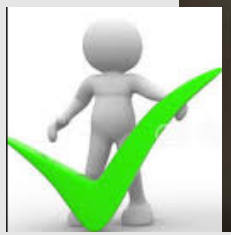
Being thirsty can indicate dehydration but it is best to combine this with the other measures to be more certain.

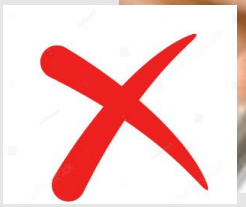
Check body mass before training without shoes and afterwards remove sweaty clothing . If change is less than 1% hydration is on track

e.g.
Pre Weight 67kg
Post Weight 65.5kg
Change = 1.5kg
This is over 2% loss = sufficient fluid consumed

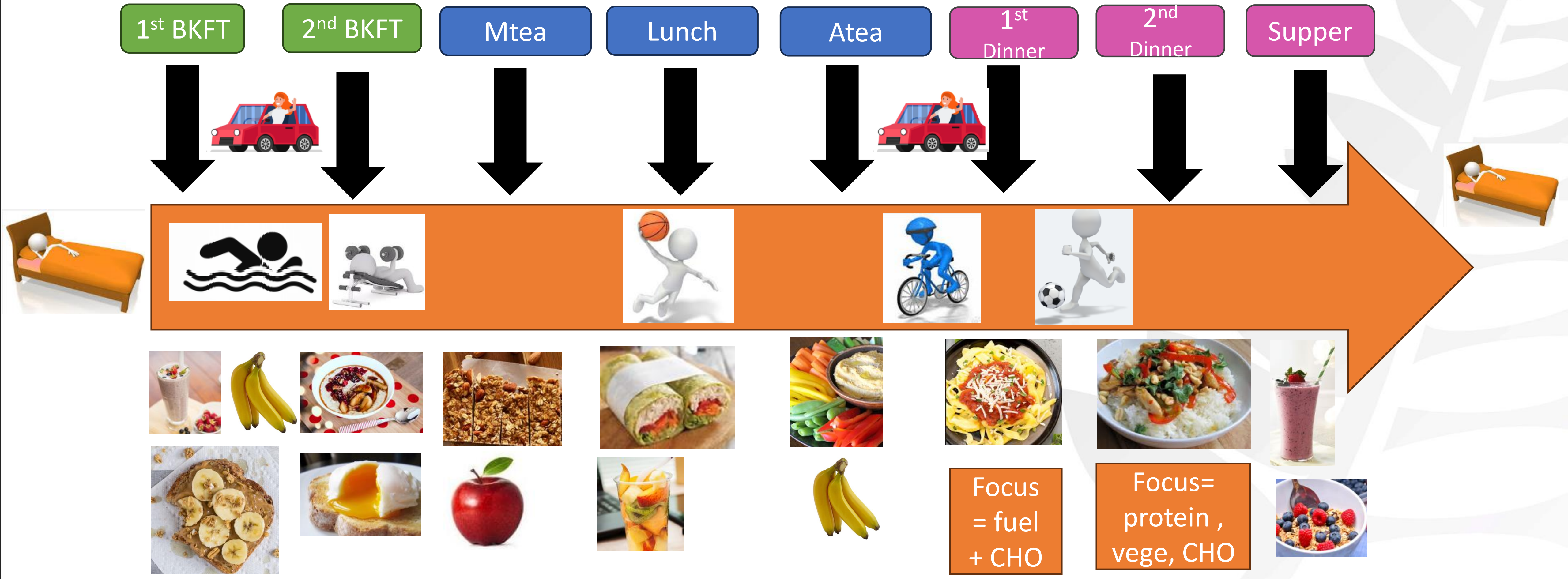
Looking after Health and Teeth

- Not sharing water bottles
- Filling bottles safely – no contact with other surfaces , especially areas that contact the mouth
- Clean water bottles
- Rinse mouth with water after using sports drinks
- Encourage one bottle water and one bottle with sports drink
- Regular brushing and cleaning (delay at least 30 mins post use of sports drink
- Sustainability - use re useable bottles rather than single use plastic





How to eat around training +



Time	Food	fluids
7.00	2 white toast	500mls
	banana	
	juice	
8.00	Gym	water
	Recovery shake	500mls
9.30	**2nd Breakfast**	
	2-3 eggs	coffee/tea
	bagel	juice/milk
	fruit salad	water
10.00	work/uni/school	fluids
	swh, bar, fruit 1-2x	
12.30	first lunch	fluids
	protein	
	wrap/swh/left overs	
	salad/veges	
	fruit	
2.30	second lunch: pre training fuel	
	pasta, rice, cereal, swh	
	muffin, toast	fluids
4.30	on court session	fluids
	snack after 1 hr	
	recovery shake or snack	
6.30-7.00	Dinner	fluids
	protein, vegetables	
	potato/rice/pasta	

WHAT DOES IT LOOK LIKE?

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Varies depending on

- Time of day, sleep in or get up and have first breakfast!!
- Access to the water – more than one bottle
- Type of session and intensity e.g. water v land training v gym v court v skills
- Number of sessions per day 1, 2 or 3
- Travel time - Use travel time to snack and drink
- What is available – take food with you, have in the car, kit bag

Protein intakes and timing – you don't need to carry protein shaker around the gym

63kg athlete female –range 63g (1g/kg) to 100g (1.6g/kg) protein per day

85kg athlete male – range 85g to 136g/d

Breakfast protein intake is the lightest

Evening meal intake is the heaviest/highest

Recommended 0.25 – 0.4g/kg/meal for elite athlete

63kg = 16g/meal = snacks x 5 and evening =96g
85kg = 22g/meal or snack x 5 + evening =128g

Protein intakes:
Lean meat, chicken, fish, seafood, eggs, milk and diary. plant based protein (soy, meat alternatives)

Include through out the day - especially 2nd Bkst, lunch, Atea if train over dinner time, 2nd Dinner and supper

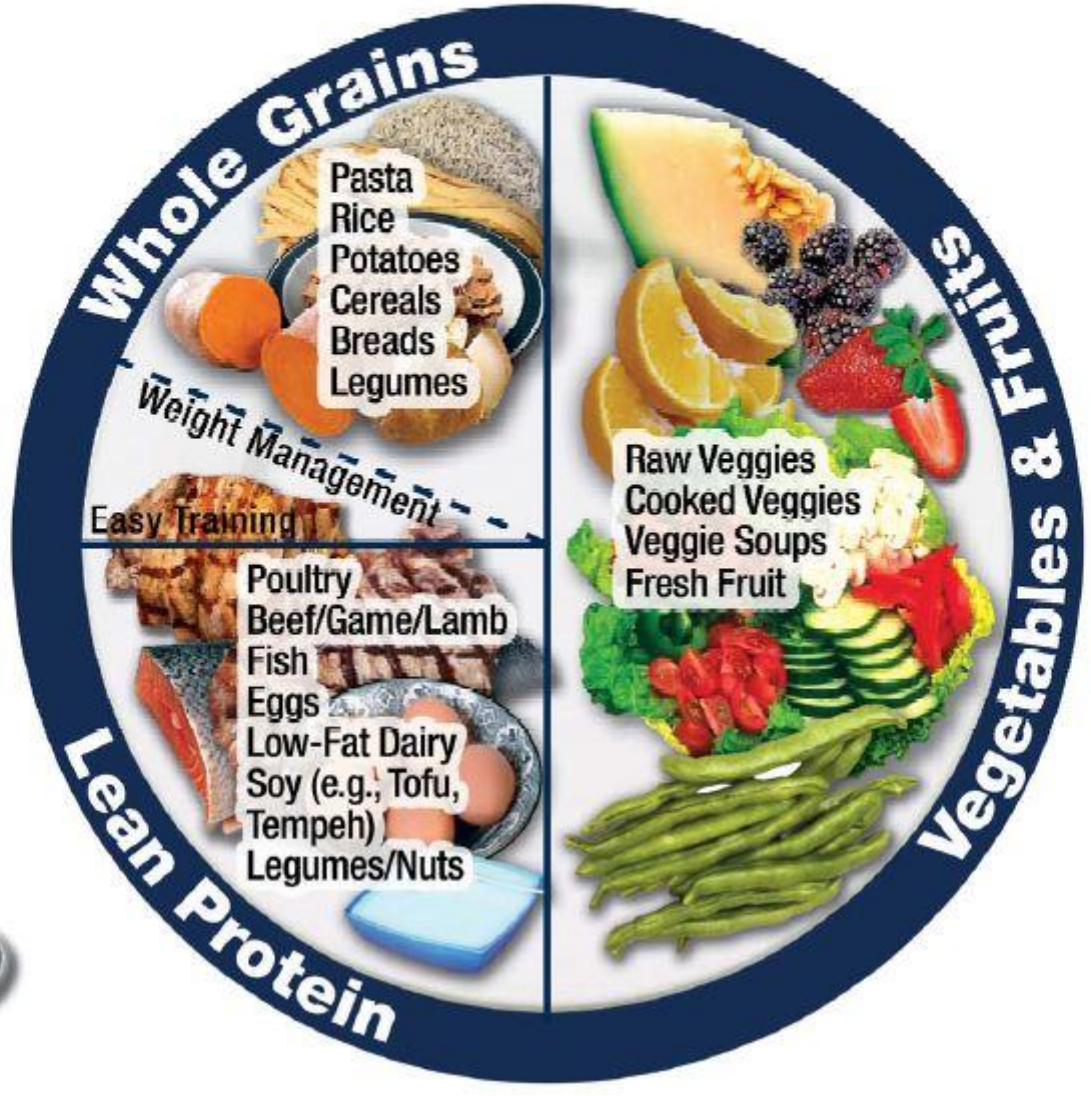
Aim for around 15g protein
100g meat/fish/ chicken= 20-25g
2 eggs No 7 = 14g

EASY TRAINING / RECOVERY RESTORE

FATS

1 Teaspoon

Avocado
Oils
Nuts
Seeds
Cheese
Butter

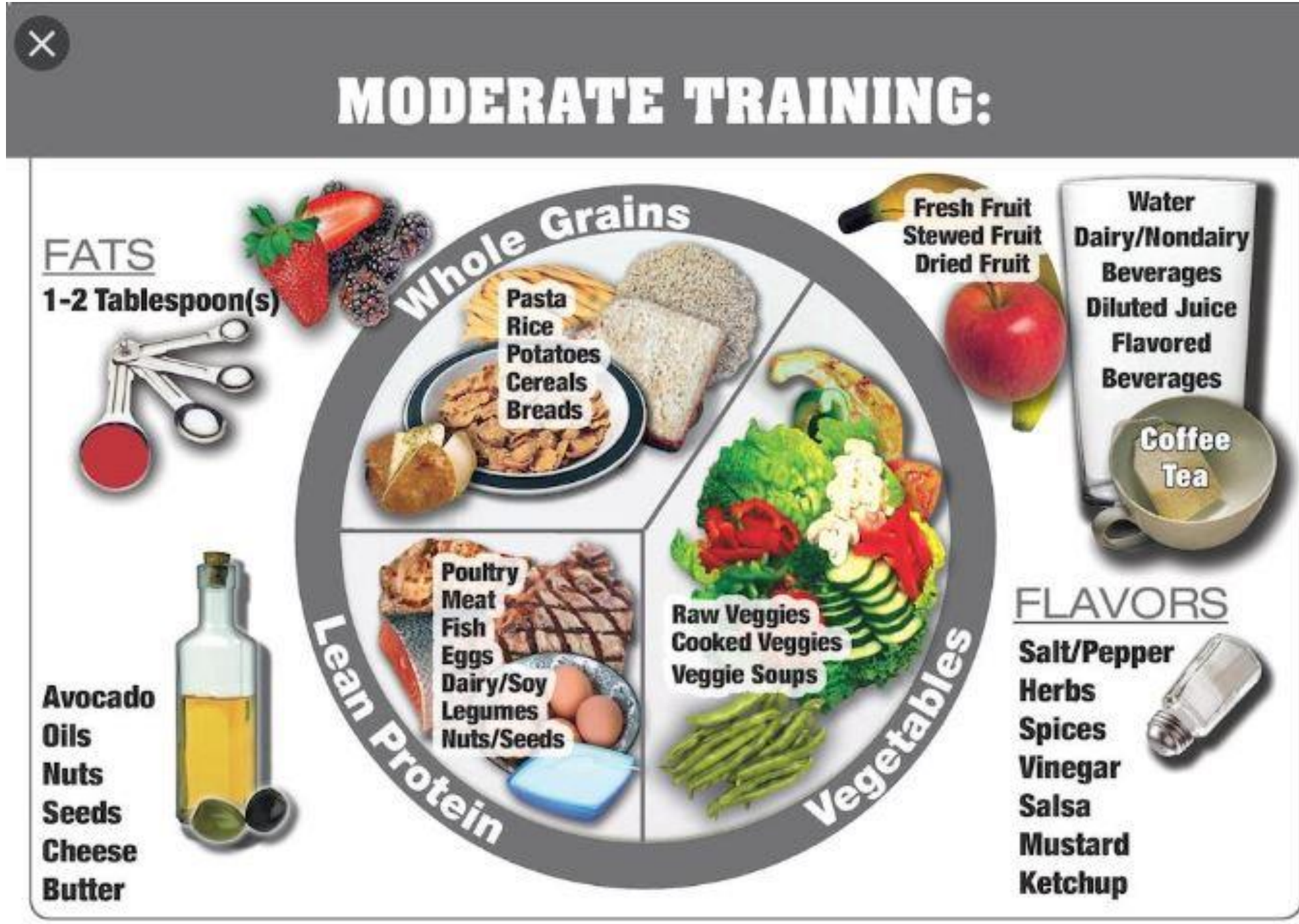


Water
Dairy/Nondairy
Beverages
Diluted Juice
Flavored
Beverages

FLAVORS

Salt/Pepper
Herbs
Spices
Vinegar
Salsa
Mustard
Ketchup

MODERATE TRAINING:



HARD TRAINING:

FATS
2-3 Tablespoons

Avocado
Oils
Nuts
Seeds
Cheese
Butter

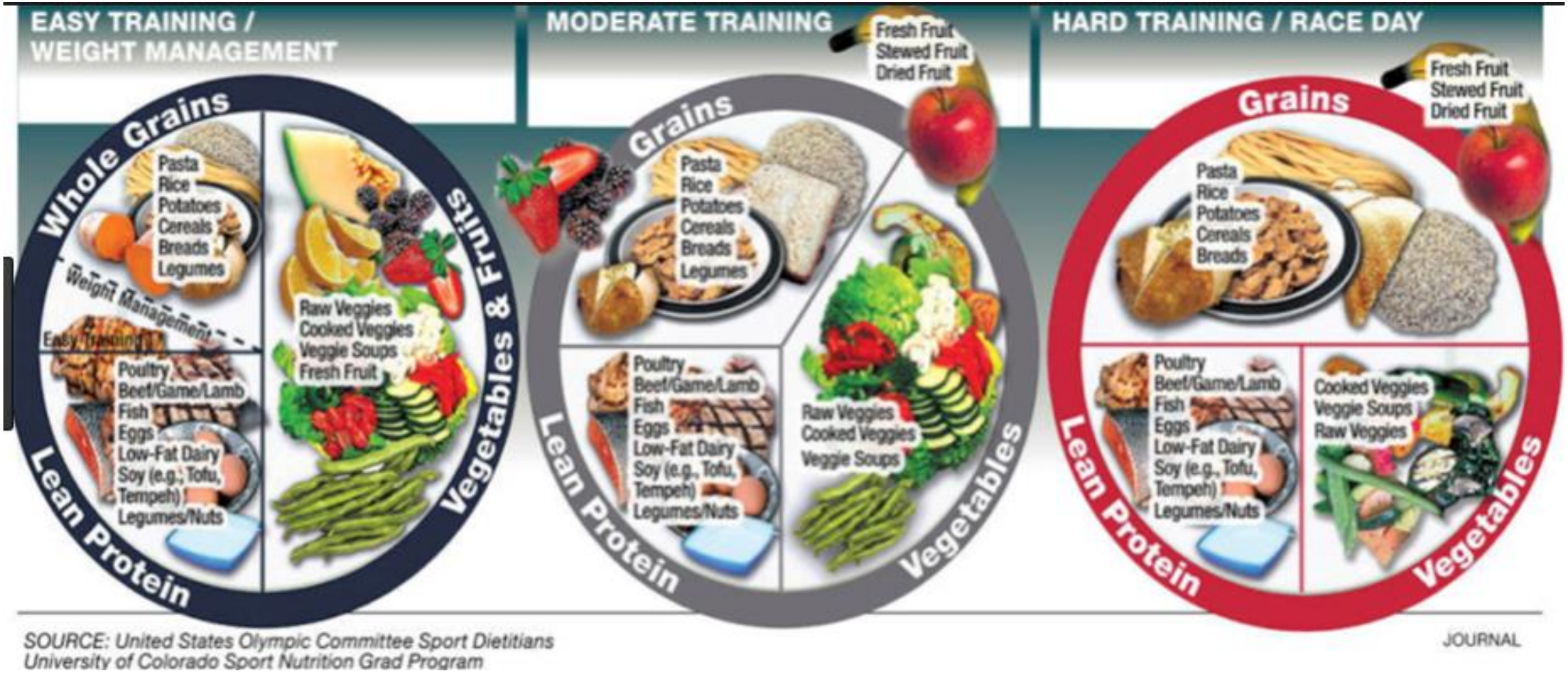
Fresh Fruit
Stewed Fruit
Dried Fruit

Water
Dairy/Nondairy
Beverages
Diluted Juice
Flavored
Beverages

Coffee
Tea

FLAVORS

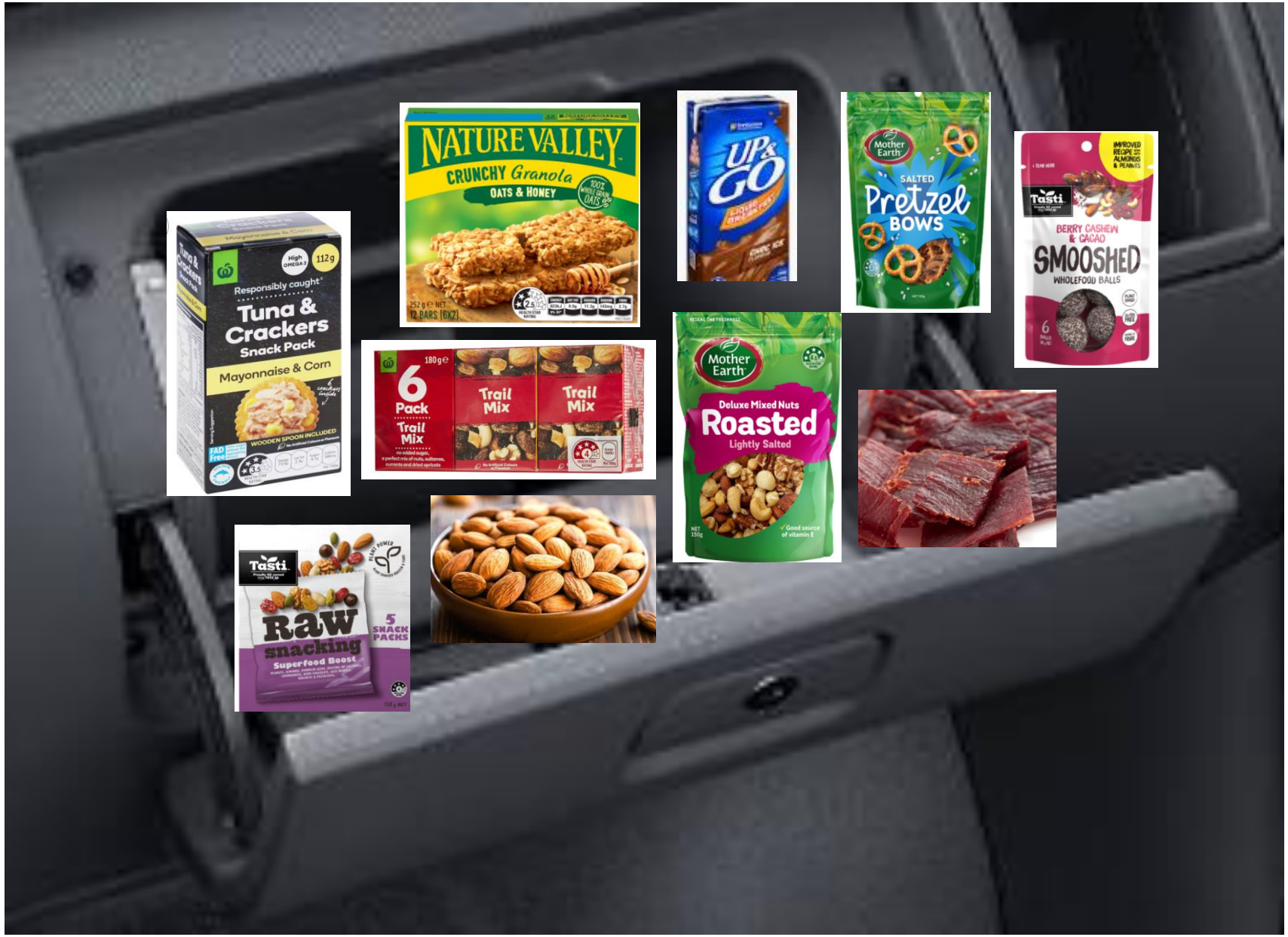
Salt/Pepper
Herbs
Spices
Vinegar
Salsa
Mustard
Ketchup



SOURCE: United States Olympic Committee Sport Dietitians
University of Colorado Sport Nutrition Grad Program

JOURNAL

Glove Box Nutrition



Planning snacks ahead for travel

For those athletes who travel significant distance (more than 1hr from home) to and from training sessions having a reserve snack box in the glove box can help refuelling. The key is to have food that has a reasonable storage life and is easy to eat in the car. Make your own energy bombs and nut combinations and don't forget the serviettes or wet wipes and a full water bottle

Meals:

Home remains the predominant source of meals

When athlete unable to eat early in the morning:

- Train the gut
- Start with fluids – juice, milk, up and go, smoothie
- Add soft fruit – banana, stewed or can fruit (peaches, pears), puree fruit
- Move onto toast, bagel, Weetbix as tolerance improves

Many have morning training before school – promote benefits 2nd breakfast

- To refuel for lunch time or afternoon training
- Fluids at breakfast are part of hydration strategies
- Milk/yoghurt at breakfast support bone, muscle and hydration
- Fruit at breakfast for vitamin C to enhance iron absorption and immunity
- Cereals for fuel and B vitamins
- Possibly elevate metabolism and buffer hunger
- Stable blood glucose to assist concentration at school/Uni

Quality Snacking Supports Performance

SEPTEMBER 14, 2023 Editors' notes

A quarter of people are undoing the benefits of healthy meals by unhealthy snacking, research finds

by King's College London

A quarter of people are undoing the benefits of healthy meals with unhealthy snacks, which increases the risk of strokes and cardiovascular disease.

Most popular snacks consumed:

- Cookies/biscuits,
- fruit, nuts and seeds,
- cheese and butter,
- cakes and pies and
- granola or cereal bars

95% of people snack
24% daily energy intake provided by snacks
47% eat two snacks per day
29% eat more than two snacks per day
26% eat healthy meals + poor quality snacks

Athletes need snacks

Snacking is not unhealthy so long as the snacks are healthy (nuts, fruit, yoghurt, cereal, smoothies, cereal bars). Young people need the energy and nutrients

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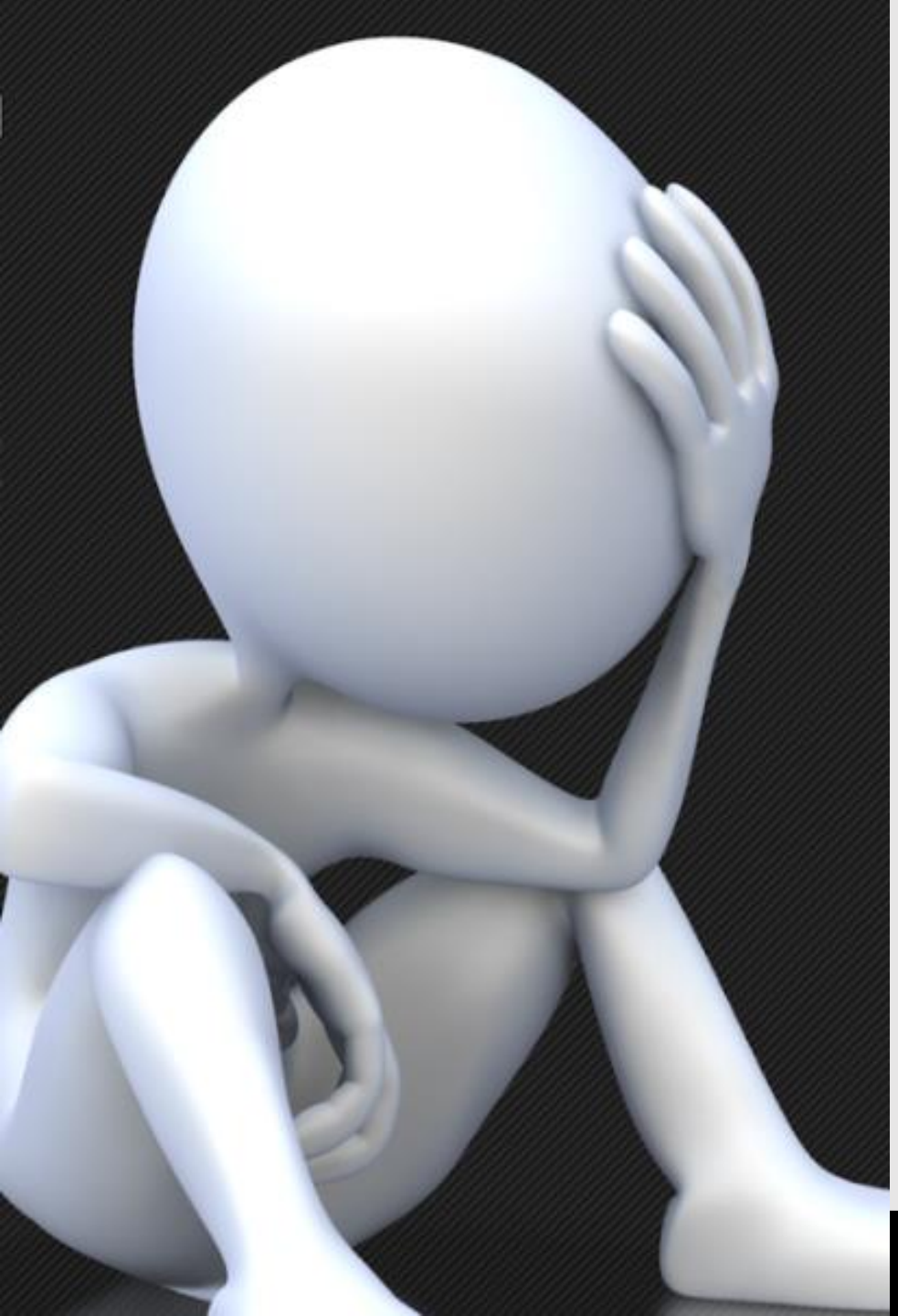
Fuel Bombs

400g dates
¼ c boiling water
1 cup protein powder (or milk powder)
70g ground almonds
3 Tbsp peanut butter
1 Tbsp cocoa
Rind of 1 large orange (or 1/4c finely chopped crystalised ginger)
75g finely grated 72% dark chocolate

Chop dates into quarters and place in a mixing bowl. Pour over boiling water over dates, cover and leave to stand for 30 mins until dates are soft and most of the water has been absorbed. Note: Microwave for 30 seconds to often if needed
Place dates in a food processor and blend for 1 minutes. Add protein powder, almonds, peanut butter, cocoa, orange rind and chocolate.
Pulse the mixture to combine, this is a dry mixture. Continue until well combine and smooth, scraping down the side to blend all the mixture evenly
Roll into 15 balls and refrigerate
Options: Cover in shredded coconut, ground almonds, finely chopped dried fruit (apricots) or nuts, or sesame seeds



Tired?? There is more than one reason you are tired

- hard training session, pre season training,
- lack fitness, increased exercise intensity,
- effect of dehydration,
- poor recovery, low fuel stores – low muscle glycogen stores, no pre exercise snack or meal, low CHO eating,
- poor eating patterns over several days (over the weekend followed by training on Monday),
- poor sleep patterns,
- infection or early stages of illness (Glandular fever) or
- effects alcohol?

- **DO NOT take supplements until you have had a blood test or seen the medical director or your GP.**
- **Taking iron may mask other conditions that are making you tired**
- **Some people carry a genetic trait – hemochromatosis – an iron storage disease that leaves you tired due to too much iron and damages the liver**

Why all the fuss about Iron Status for Athletes?

- Low iron affects many different parts of the body not just oxygen delivery and the formation of Hb and Mb in Red blood cells
- Key role in metabolism of energy, immunity, thermoregulation and brain

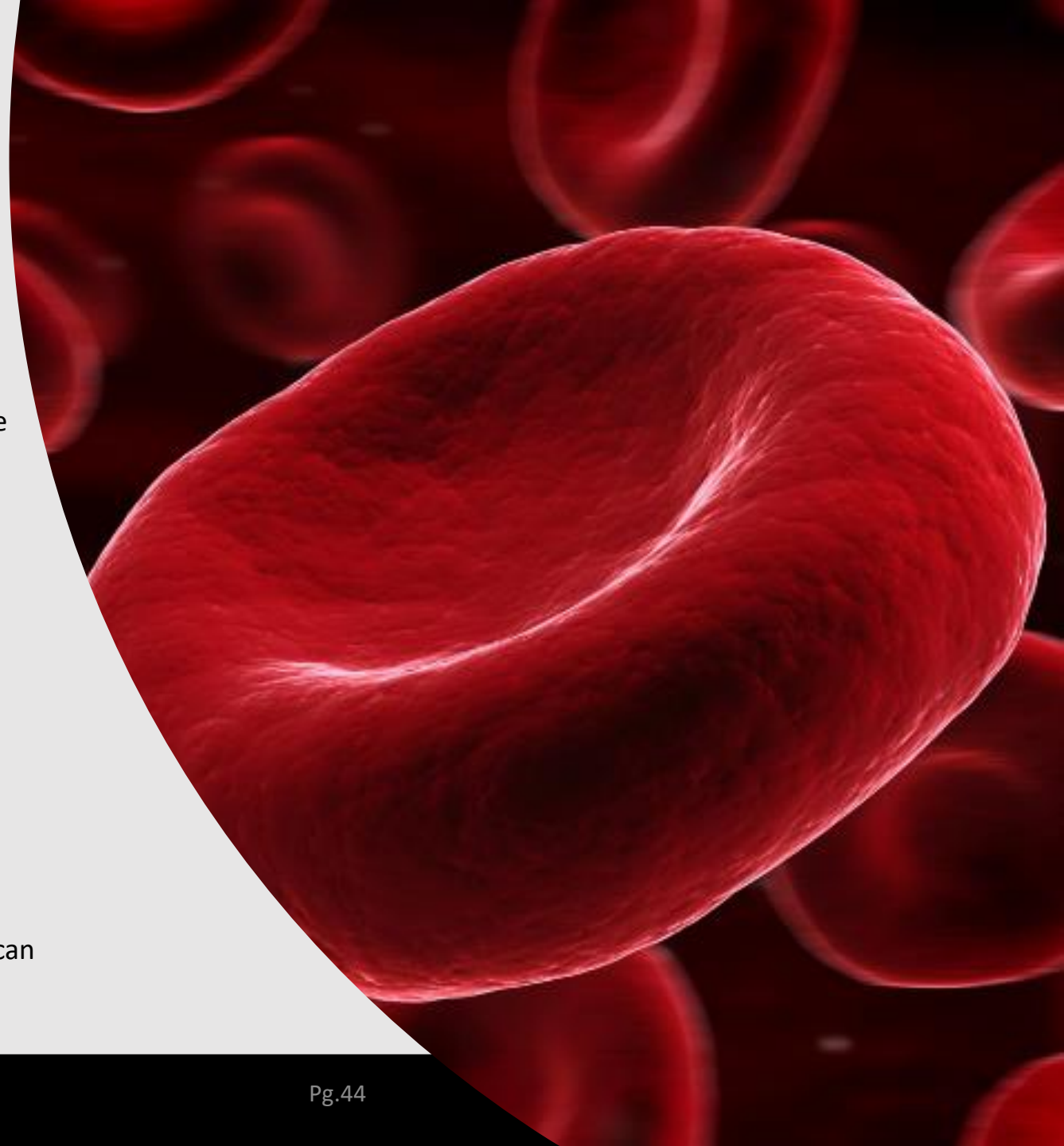
Effect low iron & deficiency:

•Fatigue & reduced tolerance to work (feels harder)
•Developmental delay & learning difficulties (poor concentration)
•Reduced resistance to the cold
•Impaired immunity (increased infections)
•Reduced appetite
•Deterioration in athletic performance due to decreased aerobic capacity
•Iron deficiency anaemia

Seafood high in iron: shrimps (8), oysters (6), mussels, octopus, clams

Who is more at risk?

- Young people growing quickly (males and females esp teenage years)
- Endurance athletes – struggle to build iron stores as increased losses and reduced iron availability
- Training at altitude (need more RBC)
- Athletes, esp endurance loose iron via sweat, urine, the GI tract, food strike (haemolysis) and muscle contraction
- Reduce recycling of iron from damaged and regraded RBC
- Blood loss due to injury
- Females loose 1mg/d iron during menstruation
- Poor dietary intake – severe weight loss programmes
- High fibre diets
- Unbalanced eating patterns – some forms of vegetarian, vegan
- Food restriction – Orthorexia, avoiding food group or groups
- Different types of anaemia: Iron, Vit B6, folate, Vitamin B12. Zinc toxicity can lead to anaemia (copper defn anaemia)

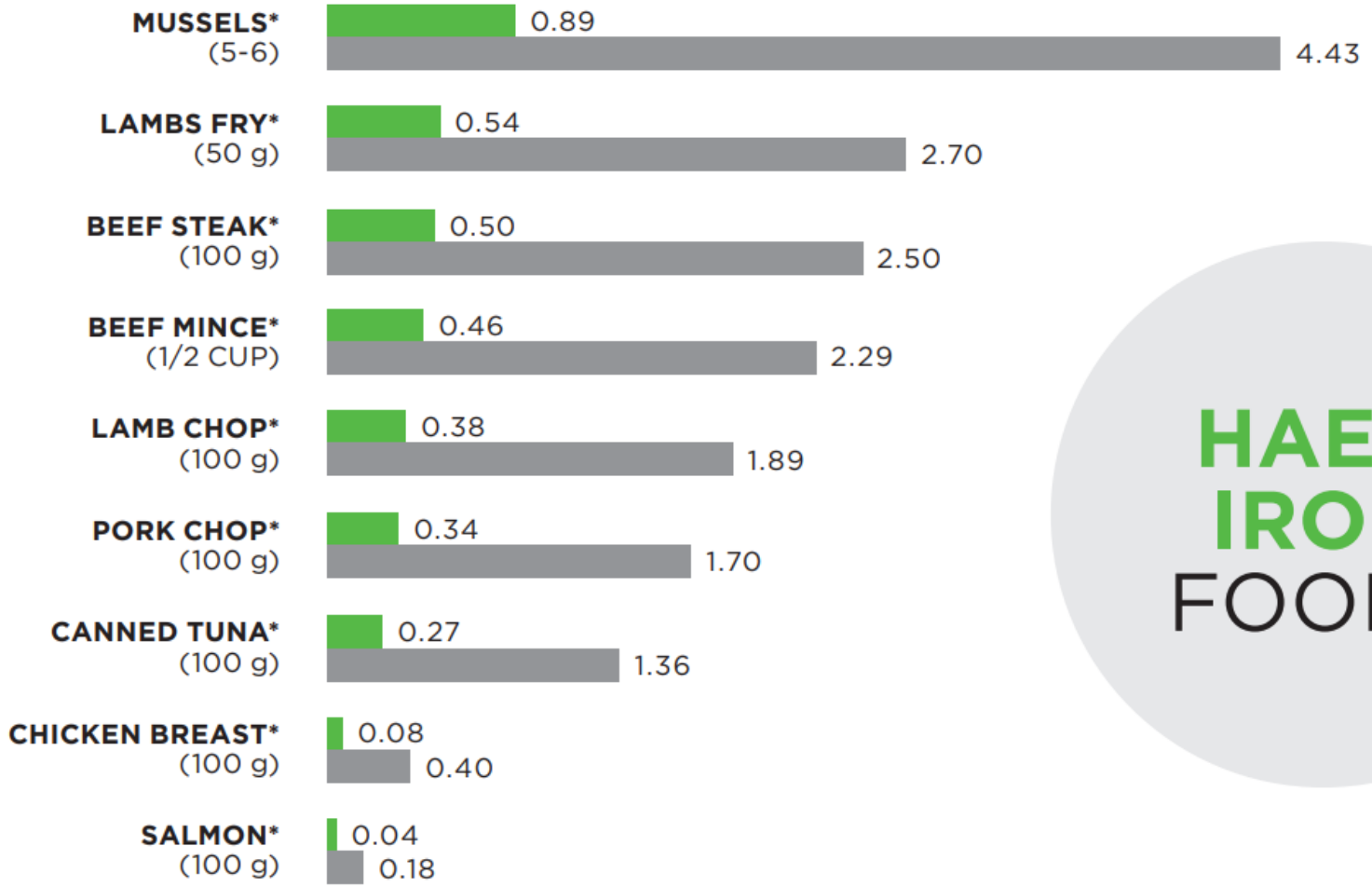


How Much Iron Each Day?

Adults	EAR	RDI
Men		
19–30 yr	6 mg/day	8 mg/day
31–50 yr	6 mg/day	8 mg/day
51–70 yr	6 mg/day	8 mg/day
>70 yr	6 mg/day	8 mg/day
Women		
19–30 yr	8 mg/day	18 mg/day
31–50 yr	8 mg/day	18 mg/day
51–70 yr	5 mg/day	8 mg/day
>70 yr	5 mg/day	8 mg/day

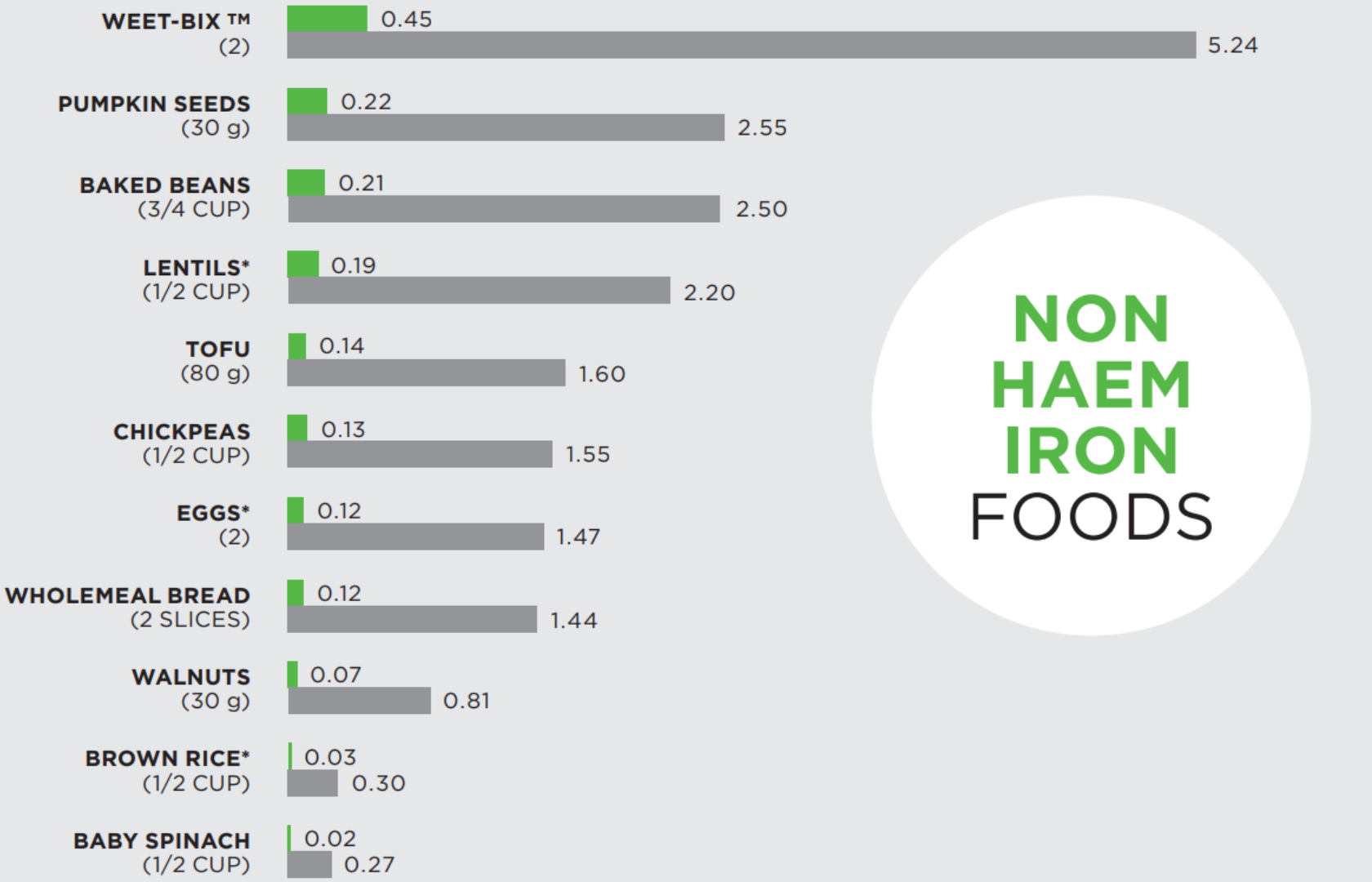
Note on blood tests – The time of day matters – ideally in the morning before exercise, do not have blood draws after training and exercise, or after starting a heavy phase of training, be well hydrated, at least 12-24hrs prior to exercise, or 2-3 days post muscle damaging exercise (eccentric) due to the stress response and inflammation. Infection and illness both influence results - be healthy (if possible)

IRON FOODS



HAEM IRON FOODS

NON HAEM IRON FOODS



The Concise New Zealand Food Composition Tables, 14th Edition (2021)

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TOP TIPS FOR IRON INTAKE

1. **Eat meat with veges**
   Pairing meat with vegetables in a meal helps your body absorb 2-3 times more iron from the vegetables.
2. **Eat a mix**
   Eat a mix of animal and plant protein foods. Our bodies absorb haem iron from animal sources better than non-haem iron from plant sources.
3. **Think red**
   Think red for higher iron content. Red meats are generally richer in haem iron than chicken and fish; a common rule of thumb is the redder the meat, the higher the iron content.
4. **Space it out**
   Space out tea and coffee as the tannins in them can reduce how much iron your body absorbs.
5. **Enjoy variety**
   Enjoy a variety of nutritious foods every day as part of a healthy, balanced diet.
6. **Enjoy red meat**
   Enjoy lean red meat up to three times a week as part of a balanced diet. Red meat provides haem iron that our body absorbs well.
7. **Add vitamin C**
   Add vitamin C foods to your meal to help iron absorption.
8. **Plan meals**
   Plan meals carefully if you are at risk of low iron.

Iron-Rich Recipes

15 mins prep | 10 mins cook

Mediterranean style lamb with Israeli couscous

10 mins prep | 10 mins cook

Steak with green sauce and spring slaw

15 mins prep | 10 mins cook

Moroccan meatball feast

15 mins prep | 2 hrs cook

Star Anise Beef and Noodle Salad

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Nutrients for Bone Growth and Health

- Energy
- Protein
- Calcium
- Phosphorous
- Vitamin D
- Vitamin K
- Vitamin A
- Potassium
- Magnesium
- Manganese
- Copper
- Boron
- Fluoride

Milk contains:

Water + Carbohydrate (Lactose) +

Nutrient	Food Sources
Protein	Eggs Lean meat Poultry Nuts Low-fat milk (dairy or fortified soy or rice milk) Low-fat yogurt Low-fat cheese
Calcium	Low-fat milk (dairy or fortified soy, rice, or almond milk) Calcium-fortified orange juice Hard cheese such as Parmesan cheese Cabbage Broccoli Canned salmon Calcium-set tofu
Vitamin D	Wild salmon Egg yolks Fortified milk, margarine, and cereal
Potassium	Bananas Low-fat milk White and lima beans Spinach Lentils
Vitamin K	Cooked greens (kale, spinach, collards) Broccoli Asparagus
Magnesium	Whole grains Almonds Cashews Spinach Raisin bran Legumes (dried beans and peas)
Boron	Fruit-based beverages Avocado Legumes Peanut butter Peanuts

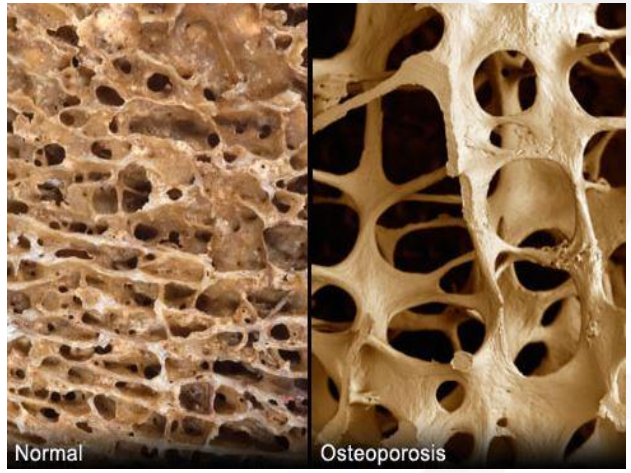
Calcium and Bone Health

TABLE 1 Factors Associated With Stress Fractures[1,2,6,13]
Low bone mineral density
Menstrual irregularities in women
Low dietary calcium intake
Low levels of serum 25(OH)D
Lower body weight
Lower body fat level
History of stress fractures
Disordered eating
Low fitness level

This is not a concern in Athletics

Calcium has many roles in the body:

- **Bone growth and mass**
- **Muscle contraction relaxation**
- **Nerve transmissions**
- **Regulating heart functioning**
- **Blood clotting**
- **Teeth**
- **Enzyme functioning**



Ways to add more calcium

Add more milk and yoghurt to cereal
Sprinkle cereal with chopped nuts
Make porridge with milk
Glass of milk with lunch
Milk drink post training
Eat canned salmon with bones
Add cheese to salads
Add almonds to salads & snacks
Eat more dark green vegetables
Eat yoghurt as snack
Add cheese to soups
Drink a glass of milk before bed
Make smoothies with fortified plant based milks

Am I getting enough CALCIUM?

	FOOD	Portion Size	Points	Calcium (mg)
300+	Milk – calcium fortified, trim	1 cup	10	510
	Yoghurt – Greek style	1 cup	9	460
	Liquid breakfast, e.g. Up & Go, Fast Start	1 cup	9	450
	Sardines – canned, drained	100g	11	550
	Milk – reduced fat	1 cup	7	330
	Milk – standard	1 cup	6	310
100+	Soy milk – regular	1 cup	6	290
	Milk – flavoured	1 cup	5	251
	Yoghurt – low fat, flavoured	1 pottle	3	130
	Baked beans in tomato sauce	1 cup	2	100
	Cheese – cheddar, edam, colby	1 slice	3	160
	Silverbeet – boiled	1 cup	2	110
	Tofu – firm	100g	2	110
	Ice-cream – vanilla, standard	1 cup	4	196
50+	Dried figs	3 figs	1½	80
	Chickpeas	1 cup	2	90
	Red salmon, canned in water	100g	2	93
	Bread – multigrain	2 slices	2	82
	Natural muesli – Sanitarium fruit & 5-grain	1 cup	1½	72
	Bok Choy	1 cup	1	59
	Boiled egg	2 eggs	1	56
	Broccoli	1 cup	1	52
30+	Dried apricots	6 apricots	½	32
	Almonds – skin on	10 almonds	½	30
	Orange	1 orange	1	37
	Muesli bar – Mother Earth, nut bar	1 bar	½	24
	Carrot	1 carrot	½	24
	Kumara - boiled	1 medium	1	33
	Cheese – cottage cheese	5 Tablespoons	1	45

*Values have been sourced from The Concise New Zealand Food Composition Tables, 10th Edition.
1 cup = 250ml, unless stated otherwise
1 point = ± 50mg

Your Total: _____ mg

Common nutrition mistakes

1. Food choices lack variety – eating the same thing everyday, same time despite varied schedules - Diversity is key - 30 different foods a week
2. Not choosing nutrient rich food – too many processed foods
3. No plan – eat on the fly (periodised to match training and demands), Backloading (saving food for evening)
4. Not fuelling for the training demands – risk under fuelling, eating the same regardless of training type and duration
5. Fasted training (poor snack and meal timing and availability)
6. Competition routine based on habit not science – gut training, timing, testing supplements and drinks, individual
7. Reliance on supplements – focus on drinks and gels at training and recovery shakes and not overall food intake and timing. Often no snacks at longer training sessions –
8. Relying on supplements – food first, then targeted, only a few work

WHEN FOOD & NUTRITION ARE OUT OF STEP

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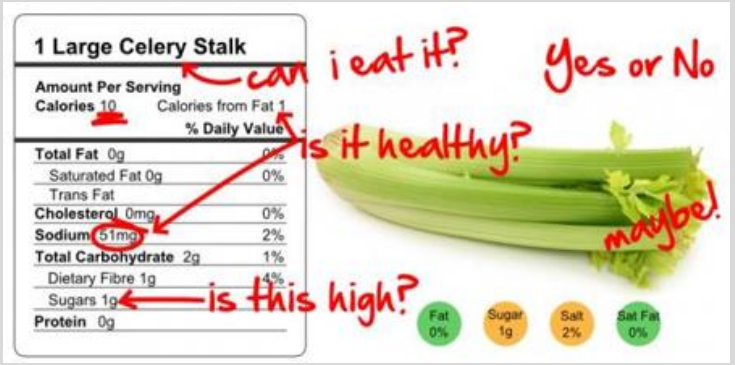
Healthy Eating Habits	Orthorexia
May limit processed foods or added sugars.	Completely avoids and views processed foods or foods with added sugars as **OFF LIMITS.**
May try including more fruits and vegetables with meals.	Spends excessive amounts of time planning meals that are "healthy" or goes to extremes (only eat fruits/vegetables).
Aims to make healthy choices when eating out (Balanced meals-potato, fish or chicken and vegetables).	Avoids foods when eating out or foods prepared by others.
Plans meals a head of time or might meal prep.	Only eats foods that have been meal prepped and has anxiety or preoccupation with meal prepping.
Sometimes might skip dessert if not feeling like having something sweet but will enjoy sweets or desserts on special occasions or when wanting to have them.	Completely avoids sweets or desserts. Never has sweets or sugar.
Reads ingredients and is aware of those that might not be as healthy as others.	Obsesses over the ingredients in foods.



How to get 10+ a day: Fruit & Veg for antioxidants

Breakfast: 1st and 2nd	
Cereal with canned or fresh fruit	1
Glass fruit juice	1
Morning tea	
Dried fruit and nut mix	1
Lunch	
Ham roll with lettuce, carrot, tomato cucumber	2
Fresh fruit	1
Afternoon tea	
Banana smoothie or noodles with frozen vegetables (peas and corn)	1
Dinner + Supper	
Minced beef or grilled chicken	
Potato/kumara	1
Carrots/pumpkin	1
Broccoli/silverbeet	1
Ice cream and berry fruit	1
TOTAL	11 serving!

Adding back fuel – Progression

- 50 calories
  - Add a slice cheese,
  - Eat the skin on chicken
  - Drink a glass of juice
  - Add more yoghurt to cereal
  - Add another egg
  - Eat an extra piece fruit
  - Add an extra potato, kumara
  - Add extra ½c pasta
  - Add spread Peanut Butter

a serve of dressing on salads
a small serve of nuts
a small glass milk
add extra slices avocado
choose a thicker slice bread/toast
add a serve dried fruit
add more peas, corn
add another ½ c rice
add extra slice protein

Start with one, then two, then three options over 2-4 weeks – not all at once

You cannot eat the same every day and do different training!

- Fuelling for the work required starts 24 hrs in advance
- Eat Today for the next session and for Tomorrow

Fuel for Competitions & Tournaments

Early morning training – may not feel hungry (influence HGH)
Can't eat – try fluids, smoothie, shake, or juice and a banana, soups

- Fruit and yoghurt
- Light cereal and milk
- Sandwich on white bread with peanut butter or spread
- Toast with mashed banana
- Toast with banana and peanut butter
- Toast with egg or egg sandwich
- Left over pasta or rice dish
- Porridge and yoghurt
- Porridge and fruit
- Muesli and fruit with yoghurt
- Baked beans on toast
- Spaghetti with egg on toast

After event – refuel rehydrate priority with second mini meal can be sandwiches, cold rice or pasta dish, wraps, filled pita – protein and carbohydrate priority + fluids

Important information about Supplements

Greater performance gains can be made with good coaching, training and good nutrition habits (including nutrient timing, hydration and recovery strategies) and this is the key message to young talented and elite athletes

Use of many sports supplements at this stage is unnecessary

Exceptions are

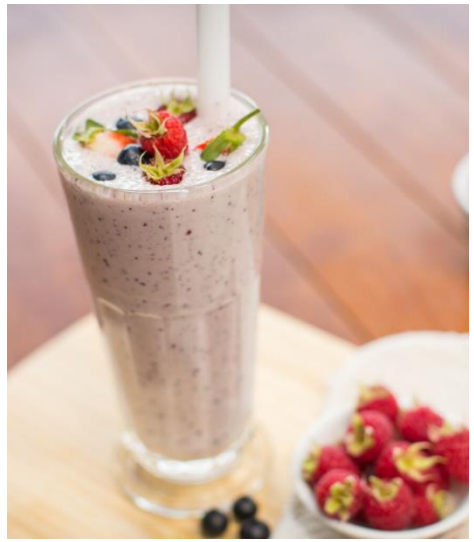
to correct a diagnosed health/medical issue such as iron deficiency, bone health and inadequacies, and

possibly the use of sport drinks, gels and bars to provide fluid and fuel during endurance based events.

Those supporting young talented and elite athletes should recognise the risks linked to the use of dietary supplements and consequences of an adverse analytical finding

Athletes at younger ages are being tested

Safe Supplement Use



- Reality: Only a few selected supplements work for performance
- You don’t need 100% of everything in a supplement and eat food
- Supplement use is very individual, most can be obtained through food with a few exceptions
- Good eating patterns and food choices are the foundations, especially for growing and emerging athletes

Safe Supplement use

Considerations:

Health
Correct deficiency
Align to allergies
Align to medication
Avoiding banned substance

Well being
Correct dose and Timing
Performance focused
Finances v benefits

Sometimes the warning is in the name!

Third Party Laboratory Testing Web Sites

- Every Batch Tested
- Selected Batches tested
- Check due to outdated logos
- Fraud – illegal use of Logos (not tested)
- IOC and WADA are not testing laboratories

[Sports Nutrition Mobile App | Informed Sport]

[Sport Integrity Apps & Virtual Reality (VR) Learning]

https://hpsnz.org.nz/journal-entries/choosing-dietary-supplements/

How to help your Parents

Plan ahead as you can't eat food that's not in the pantry or fridge
Let them know the training schedule well in advance, especially doubles
Don't forget to let them know when the packed is empty or running low
Be aware dehydration can impact your appetite
Take responsibility and be adaptable

Be brave and let them know things that don't work or need to be trailed several times
Have a plan B for food options in case a food is unaviailable or out of season
Be careful and safe with any supplements – remind parent to check
Travel between school, home, pool, track, court, venue –
plan to eat food in the car

Cook at least once a week and build up to 8-10 recipes

Food swaps

More Protein: Add milk powder, yoghurt, an egg, cheese, glass of milk to meals and snacks

More Vitamin C: Add tomato, oranges, mandarin, kiwifruit, capsicum, green leaf vegetables

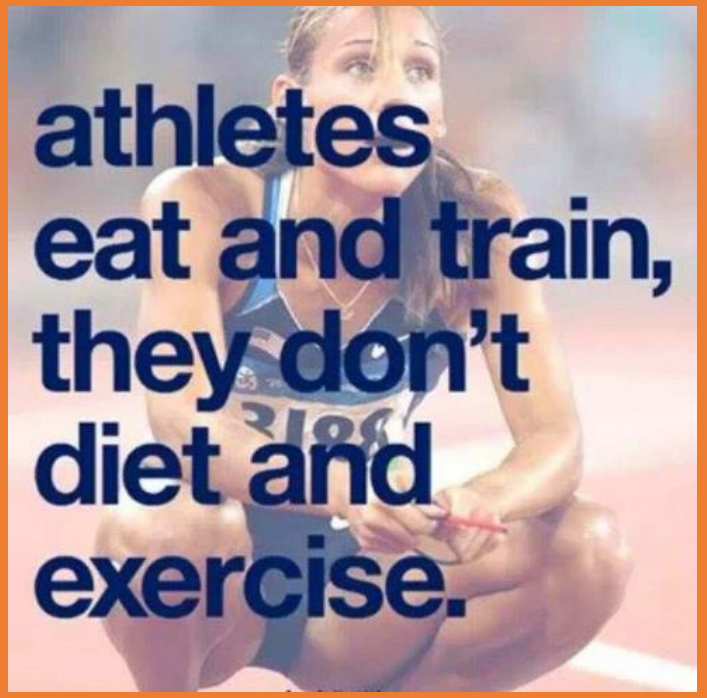
More Iron: Add lean red meat, mussels, fortified cereals, legumes into dishes

More Calcium: Add milk, cheese, yoghurt, mixed nuts, canned salmon with bones

More Magnesium: Add dark green leaf vegetables, oysters, legumes, seeds (pumpkin), dark chocolate

You cannot eat the same every day and do different training!

- Fuelling for the work required starts 24 hrs in advance
- Eat Today for the next session and for Tomorrow



Want to know more?

[SDA_Junior-Athlete_FINAL.pdf (sportsdietitians.com.au)]

Athletes can be directed by their Performance Nutritionist to specific modules or following the sequence in order.

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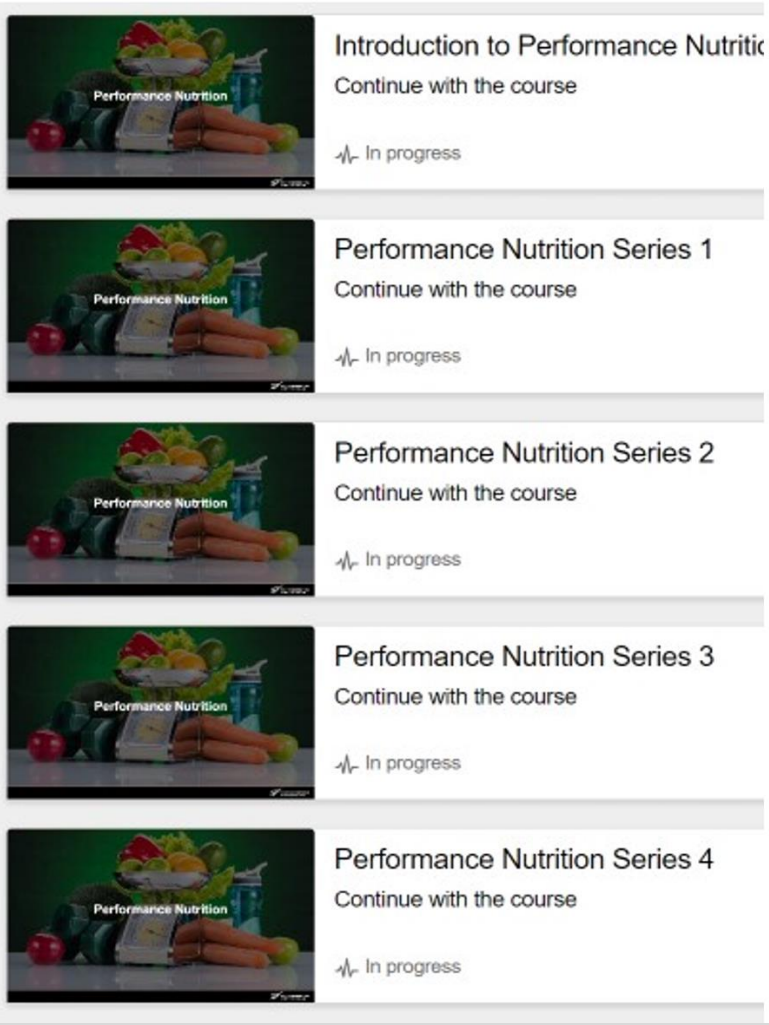
Regional Pathway pick n mix nutrition support and resources – linked to athlete IPP and based on areas of impact and specific requests for knowledge– suggestion is to highlight the recommended content for athletes



Introduction – what athletes need to know and why

1.1 Food groups – what is in the food we eat
1.2 Key nutrients for health and performance
1.3 Iron + vitamin C
1.4 Calcium+ vitamin D
1.5 Preparation

2.1 Energy and growth
2.2 Fuelling for training
2.3 Hydration for athletes 1
2.4 Food on the go
2.5 Safe Food and Hygiene at home
2.6 How to Read and make sense of food labels

3.1 Pre-event nutrition
3.2 Nutrition during events
3.3 Recovery Nutrition
3.4 Sports foods
3.5 Travel
3.6 Hygiene and safe food away from home
3.7 Portion Control – why is this needed

4.1 Performance Pantry
4.2 Performance Parents

Additional Nutrition resources:
Nutrition – Hygiene for performance
Nutrition – Hydration for Performance

Athlete Sports Nutrition Assessment Platform

The Athlete Daily Intake and Athlete Nutrition Knowledge online Assessment are free to use and no login codes are required. Riders will need to use their national EQNZ ID number (HPID) e.g. 123456, their email address and the email address for Jeni (jeni.pearce@hpsnz.org.nz). Riders should be aware the deidentified data will used in future research. Completion of the Assessment takes 15-20mins. The two options: ADI (how your diet is currently) Peak-Q your knowledge.

Setting up: Enter ID number, check the consent for data requirements and enter they are in the HPSNZ Sports system

Accelerated Sports Nutrition Assessment Platform – ASNAP

THE UNIVERSITY OF SYDNEY

| Home | About | ADI | PEAKS-NQ | Publications | Contact Us | Privacy Policy

The Accelerated Sports Nutrition Assessment Platform

The Platform for Evaluating Athlete Knowledge in Sports – Nutrition Questionnaire

Before you start:

Please enter a survey ID.

You may choose to use an ID number (athlete ID) provided to you by your sporting institution. Otherwise, enter an anonymised ID of your choice.

Please indicate which sporting institution, organisation or research study you belong to. Your results may be shared with your respective choice.

- ◯ Australian Institute of Sport
- ☒ High Performance Sport New Zealand

HIGH PERFORMANCE SPORT NEW ZEALAND

If you like you would like to receive an individualised summary report, please enter **your email address**.

It is your responsibility to confirm with your dietitian that they consent to you providing their email address, and that the email address you provide for them is accurate.

Jeni.pearce@hpsnz.org.nz

What is Plant based and Vegetarian Eating

• No red meat	Eats Fish and chicken
• Flexitarian	Eats vegetarian during the week 2-4 x
• Plant based	Eats 80% Plant based foods
• Lacto Ovo Vegetarian	Eats Diary and eggs
• Ovo Vegetarian	Eats Eggs
• Lacto Vegetarian	Eats Dairy
• Pisco Vegetarian	Eats Fish (and shellfish)
• Vegan	Eats plant foods only, may exclude honey

Some foods which catch new vegetarians and vegans unaware:

- Gelatine – made from pork and found in Marshmallow, wine gums, jelly
- Honey
- Stir fry sauce using oyster or fish sauce (Asian cooking)
- Chicken or beef stock in risotto or soups
- Gravy made from meat juices
- Roast potato cooked in duck fat