



DNAMap

Your Nutrition & Lifestyle Guide

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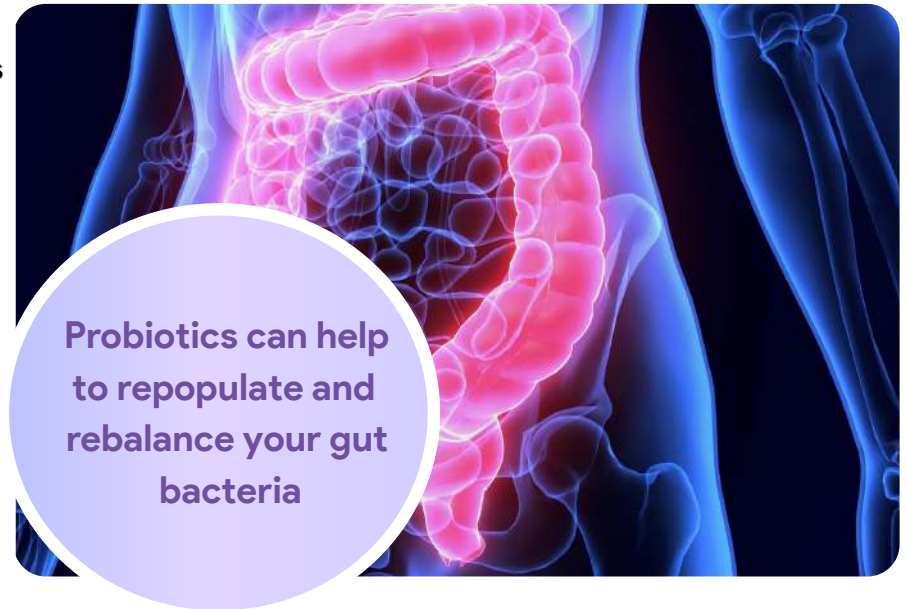




Gut Healing

Intestinal permeability commonly called 'leaky gut syndrome' is a condition where small holes develop in our digestive lining. This can happen as a result of infection, certain medication (particularly steroids and anti-inflammatories), alcohol consumption, poor diet, intestinal dysbiosis and chronic stress. These holes allow larger molecules (such as bits of food) to pass into the blood stream where they are tagged by the immune systems as 'invaders'. This can lead to multiple food sensitivities, chronic inflammation and is thought to be a trigger for autoimmune conditions Vojdani & Lambert, 2012.

Intestinal dysbiosis is the term used to describe an excess of harmful bacteria, fungi or yeast in the intestines. This can cause many unpleasant symptoms from flatulence and diarrhoea to mood swings, hormone imbalance (particularly high oestrogen) and poor immunity. Dysbiosis can occur as a result of antibiotic use, an infection and driven by poor diet Bull & Plummer, 2015.



Probiotics can help to repopulate and rebalance your gut bacteria

Avoid for 4 weeks:

All yeast-containing foods: bread, wine, beer, cider, vinegar, stock cubes

Caffeine: coffee, black tea, chocolate, coca cola

Dairy: cheese, milk, yoghurt, cream

Grains: wheat, rye, spelt

Sugar

Alcohol

Good foods:

Protein: eggs, oily fish, nuts, seeds, protein powders

Fruit & Veg: beetroot, butternut, sweet potato, tomatoes, peppers carrots, courgette, aubergine, spinach, kale, lettuce, rocket, berries, oranges, bananas, apples

Herbs & herbal teas: peppermint, ginger, turmeric, liquorice, red bush

Dairy alternatives: coconut milk, almond milk

Grains: buckwheat, brown rice, quinoa, oats, chia seeds

Water!



Serotonin

Serotonin is a neurotransmitter (chemical) most commonly associated with positive mood, however, the majority of serotonin is actually located in the digestive tract where it also regulates intestinal movement (constipation can be a sign of low serotonin and, conversely, high serotonin can cause stomach upsets and diarrhoea) particularly if you have a 5-HT2A genetic variant.

Serotonin is derived from tryptophan, an essential amino acid found in many common foods listed below. Serotonin is also converted into melatonin, crucial for good sleep. Due to the relationship between the gut and the brain (gut-brain axis), serotonin levels can affect both digestive function, mood and sleep. Recent studies have found that imbalanced gut bacteria (dysbiosis) can affect your mood and digestive function [Rogers et al, 2016](#)

90% of your serotonin is produced in your gut and not your brain!



Meat & Fish:	chicken breast, turkey, lamb, beef, salmon, halibut, mackerel, haddock, trout, cod
Shellfish:	lobster, prawns, crayfish, oysters, scallops
Grains & Legumes:	whole oats, buckwheat, butter beans, kidney beans, black beans, lentils
Cheese:	parmesan, mozzarella, cottage cheese, gruyere
Nuts & Seeds:	chia, sesame, sunflower, flax, pistachio, cashew, almonds & hazelnuts
Eggs	



Gluten & Gluten Alternatives

Gluten is the main protein found in various grains such as wheat, barley and rye and is known to cause an immune reaction in people with celiac disease. If you are at risk of celiac disease (family history and possess the variant on the HLA-DQA1 gene) and/or experience symptoms such as chronic bowel upsets, joint pain, inflammation and migraines after consuming gluten products you should try avoiding gluten completely to see whether your symptoms improve gluten.org

If you are gluten sensitive, you may be able to re-introduce gluten into your diet once your digestive system has healed. See page 3 [Gut Healing](#) above.

If you are celiac, you should stay away from gluten for life.

✓ GLUTEN FREE:

Buckwheat, amaranth, millet, quinoa, rice, oats (must state that they are not produced in a factory that produces gluten goods), fruit and vegetables, beans, seeds, legumes, nuts, potatoes, eggs, dairy, oils and vinegar, fish, lean red meat, chicken and seafood. Rum, tequila and wine are generally gluten free, as are some whiskeys



Most gluten-free grains are also available as flour and are great for baking!

X CONTAINS GLUTEN:

Barley, bulgur, oats (processed in factories that produce gluten-containing grains), rye, seitan, couscous, cracked wheat, durum, einkorn, fu (common in Asian foods), gliadin matzo, semolina, spelt, pastas, breads, crackers and many seasonings and spice mixes including soy sauce, MSG, marinades, preservatives and stabilisers. Most beer unless specifically brewed to be gluten free. Some whiskeys



Avoiding Dairy

Lactose and Casein are two components found in milk and dairy products. Lactose is sugar, while casein is a protein. People with lactose intolerance (more common in people of Asian and African-Caribbean descent) do not produce the enzyme lactase, needed to break down the sugar in the digestive system. Lactase normally stops being produced after infancy, however, in some populations where dairy has made up a large part of the diet, particularly Caucasians, the gene has evolved to produce lactase throughout adult life. Lactose intolerance is a genetic condition that can cause unpleasant symptoms such as bloating, gas, cramps and diarrhoea.

Some people, particularly babies, develop an allergy towards casein. This is NOT a genetic condition but usually a result of a compromised or underdeveloped digestive system Pal et al, 2015

Luckily, there are plenty of dairy-free alternatives to choose from:

✓ DAIRY ALTERNATIVES :

Almond, coconut, rice, oat, hemp, quinoa, hazelnut, cashew and soy milk. Coconut yoghurt, vegan cheeses

X CONTAINS DAIRY:

Any product containing milk, cream, cheese, yoghurt, whey or butter



Other reasons to avoid dairy:

- High in saturated fats
- Can aggravate IBS and allergies
- Pesticides, hormones & antibiotics



Simple vs Complex Carbs

Simple carbohydrates are easily digested releasing energy and raising blood sugar quickly. This is good if you are about to do hard exercise, but not if you are sitting at the office or in front of the TV, in which case it is stored as fat.

Complex carbohydrates require the body to work harder to digest, releasing energy and raising blood sugar more steadily. Eating too many carbs can cause obesity and type 2 diabetes. Carbs should make up no more than 1/4 of your meal. Wherever possible, choose complex carbs, especially those high in fibre diabetes.co.uk



✓ **COMPLEX**

X SIMPLE

Breads:	Oatcakes, multigrain/ wholegrain breads, German rye bread, sourdough rye bread	White bread, bagels, white baguette, croissant, crumpets, pitta bread, white wraps
Breakfasts:	Millet porridge, rolled oats porridge, low GI muesli	Most boxed breakfast cereals (including Special K)
Grains, beans and starchy veg:	Buckwheat, quinoa, brown rice, wholewheat pasta, butter beans, black eyes beans, borlotti beans, broad beans, cannelloni beans, chickpeas, green lentils, haricot beans, kidney beans, yellow split peas, green peas, carrots, sweet potato, parsnips, pumpkin, swede	Couscous, white pasta, white rice, rice noodles, Udon noodles, instant noodles, white vermicelli, instant mash potato
Fruit:	Apples, apricot, blackberries, blueberries, raspberries, strawberries, melons, cherries, grapefruit, peaches, pears, plums, kiwi fruit	Dates, prunes, raisins, sultanas, dried cranberries, grapes, banana
Drinks:	Almond milk, carrot juice, herbal teas, vodka with soda and fresh lime	Most fizzy and 'energy' drinks, beer, wine





Blood Sugar Balancing



Highs and lows in blood sugar plays havoc on our metabolism, disrupts hormone balance and ends up causing us to store fat, put on weight, severely increases our risk of developing type 2 diabetes, causes us to suffer from low energy, irregular moods and poor concentration as well as experiencing cravings and prompting us to rely on caffeine and sugary foods as a pick-me-up Harvard Health

Here are some practical ways to get off the blood sugar rollercoaster:

- Eat regular, balanced meals and try to avoid snacking
- Retrain your tastebuds by gradually reducing your intake of sugar and decreasing the amount of additional sugar you add to food and drinks
- Cut out all artificial sweeteners

Avoid processed foods:

Where possible avoid processed, white flour products and anything containing high fructose syrup

Choose complex carbs:

They break down more slowly causing more steady energy release. They also contain more nutrients and fibre than simple carbs

Protein:

Keeps you feeling fuller for longer and slows down the breakdown of carbohydrates. Try to include protein in every meal, including snacks. Approx. 1g of protein/ kg of body weight is required per day (more if you are pregnant)

Building up muscle mass increases your metabolism, encourages the uptake of glucose into your cells and improves your ability to burn fat



Stress Management



Want to be more warrior than worrier? Try these stress-busting techniques to help you manage the demands of a busy life:

Time:	Leave home 10-15 mins earlier allowing time to stop and smell the roses or for unexpected set-backs to avoid running late
Clothing:	Wear clothing that feels comfortable and allows natural movement. Tight, uncomfortable clothes or bad fabrics can cause discomfort and stress
Consciously remove stressors:	Are there specific places, people or situations that cause you stress? Can you avoid them or reduce contact? Do you take on too much at home or work? Could you delegate more?
Balance blood sugar:	When your blood sugar drops it causes your adrenal glands to produce the stress hormone cortisol which triggers the release of sugar to allow you to keep going
Exercise:	Physical activity boosts the production of feel-good endorphins and improves our sense of well-being. Get moving but don't overdo it - excessive exercise creates stress. 40-60 minutes per day is considered good for stress busting!
Take a break:	Whether that's a short breather away from your desk or a longer vacation - you need to recharge! Do something you love that brings you joy
Mindfulness:	Be present in each moment instead of re-living the past or pre-living future worries. Meditation, yoga and even just enjoying cooking or each bite of your food have been found to improve anxiety and depression - and your digestion :)



Anti-inflammatory Foods

Your immune system attacks anything in your body that it recognises as foreign - such as invading bacteria and viruses, plant pollen, or chemicals. Inflammation is a natural immune response essential for healing, however, prolonged or chronic (systemic) inflammation is damaging and contributes to serious illnesses such as cardiovascular disease, arthritis, diabetes, Alzheimer's, and ageing. Diet, stress, being overweight, lack of exercise, smoking, poor oral health, allergies, excessive alcohol consumption and other prolonged conditions all contribute to chronic inflammation. Research shows that anti-inflammatory foods provide as much if not better long-term relief than conventional anti-inflammatory medication. [Harvard Health](#)

"The best way to quell inflammation lies not in the medicine cabinet, but in the refrigerator"- Harvard Health Watch



✓ ANTI-INFLAMMATORY

X PRO-INFLAMMATORY

Veg: Most veg including green leafy vegetables, celery, beets, broccoli, cabbage, onions and tomatoes

Processed foods: simple carbohydrates, fried foods, refined sugar

Fruit: Blueberries, pineapple, strawberries, papaya, cherries, pomegranate, apples and oranges

Dairy: milk, cheese, cream

Fats: Fatty fish (omega-3), olive oil, coconut oil

Fats: Saturated and trans fatty acids

Nuts & Seeds: Chia, flax, walnuts, almonds, Brasil nuts

Meat: red and processed

Spices: Ginger, turmeric, cayenne, cloves, cinnamon, rosemary, parsley, thyme and nutmeg

Drinks: Caffeine, alcohol, carbonated beverages

Drinks: Green tea, ginger tea, 1 glass of red wine, bone broth



Histamine

Alcohol encourages the release of histamine in the body and blocks its breakdown - double whammy!



Histamine intolerance happens when the body is unable to break down accumulated histamine resulting in allergy-type symptoms such as itching, redness, rash, eczema, hives, runny nose, tight chest, asthma, chronic cough, nasal congestion, low blood pressure, dizziness, headaches, insomnia and anxiety histamineintolerance.org.uk

Triggers vary from person to person but the most common include: eating histamine-rich foods, digestive system injury, chronic stress which activates mast cells and genetic variants on the HNMT & DAO genes. Do you have these? Check page 11 of your DNA report! Below is a list of high histamine foods to avoid, as well as some anti-histamine foods to include in your diet:

Fermented foods: Sauerkraut, pickels, vinegar, fermented soy, yeast, yoghurt, kefir, kombucha and aged cheese

Alcohol: Especially wine, champagne and beer

Cured Meats: Bacon, sausage, pepperoni, salami, smoked salmon, herring, sardines etc.

Some fruit and veg: Spinach, tomatoes, avocados, aubergine, dried apricots, dates, figs, raisins and most citrus fruits

Anti-histamine Foods (the good guys): Watercress, garlic, onion, turmeric, ginger, apples, peppermint, nettle, chamomile, broccoli, parsley, fennel

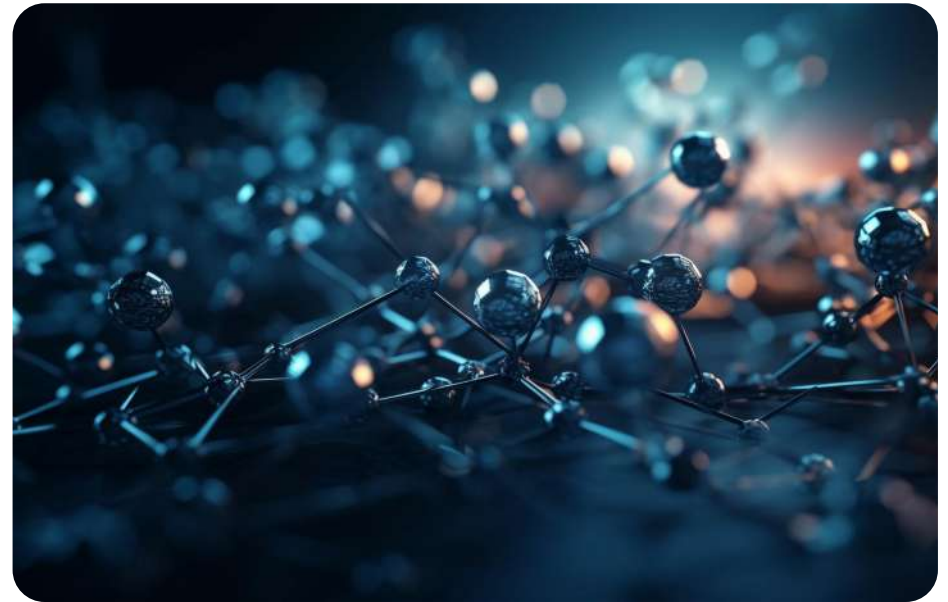


Methylation

Methylation is a process that occurs in your body every second of the day. It is important for detoxification (particularly of hormones and neurotransmitters), but also maintains DNA integrity, gene expression/ suppression, is involved in energy production, controlling inflammation, immune function, neurotransmitter balance and maintaining healthy pregnancy.

Environmental factors such as diet, chemical or drug exposure and stress are known to play a role in supporting or blocking methylation.

Poor methylation, due to genetic or environmental factors, can lead to cardiovascular disease, poor foetal development, mood disorders, megaloblastic anaemia, free radical damage, DNA damage, hampered gene expression/ suppression and even some forms of cancer [Thorne Research](#).



Below are some helpful ways to improve your methylation:

Important co-factors: B vitamins (especially B6, B9 and B12), methionine, TMG, choline, magnesium and zinc

Best foods:

Green leafy vegetables (spinach, kale, broccoli), beetroot, whole grains, poultry, seafood, liver and eggs

Methylation blockers:

Smoking, digestive problems (malabsorption), low stomach acid, medication (especially methotrexate), oral contraceptives, high alcohol consumption, low nutrients esp. B vitamins, magnesium and zinc



Vitamin D



Vitamin D is stored in the liver for up to 4 months

Vitamin D is dubbed the 'sunshine' vitamin due to the fact that our bodies produce it when our skin is exposed to direct sunlight. The vitamin D produced this way can last twice as long as the vitamin D we obtain from food or supplements.

Vitamin D is an important nutrient for bone and muscle strength, healthy immune function and for combatting depression. Too much vitamin D can (ironically) lead to increased incidence of bone fractures, excess calcium and kidney stones. The most important factor is your serum levels which should be 25-50 nmol/L national institutes of health

Vitamin D deficiency is on the rise, mostly due to vigilant sun protection (SPF 30 reduces vitamin D production by 95%) and lack of time spent outdoors. Below are some helpful tips to help you keep your vitamin D levels optimal:

Sun exposure:

Try to spend time outdoors with your skin exposed to the sun. You cannot overdose vitamin D from sun exposure since the body only makes what it needs, however, make sure never to burn your skin!

Vitamin D foods:

Include fatty fish (mackerel, salmon, sardines, herring), beef liver, cheese and egg yolks in your diet. Some foods are also fortified with vitamin D such as dairy and cereals but are not as good a source.

Supplements:

If you need to supplement, make sure you choose a supplement containing vitamin D3 (cholecalciferol) - the form naturally produced by your body - which is more bioavailable.



Fat: The Facts

Despite its bad reputation over the past few decades, fat is essential for the proper functioning of the body and vital for the health of your cell membranes, nerves, skin, hair and hormones. Fat also helps the body absorb vitamins A, D, E and K through the bloodstream. All fats are high in energy (1g = 9kcal) but not all fats are created equal. Dietary fat provides the body with energy. Your body can also make fat from excess calories. If you eat more than you need, you will gain weight which is linked to poor health. A growing body of research suggests that we should focus on eating healthy fats and avoiding unhealthy ones Harvard Health There are 3 main types of dietary fat:

Unsaturated fats (mono & polyunsaturated) - these are considered 'good fats' since they have been shown to promote healthy cholesterol balance, have anti-inflammatory properties and promote good health.

Saturated fats - are the most common type of fat in the modern diet. High amounts can increase 'bad' cholesterol and lead to heart disease.

Trans fats - are a byproduct of hydrogenation and are the worst type of fat, they are highly inflammatory, increase 'bad' cholesterol and are linked to heart disease, stroke and diabetes.



✓✓ Unsaturated Fats:

Olive oil, avocado (fruit & oil), most nuts & seeds (and their oils) and fatty fish

✓ Saturated Fats:

Red meat, poultry, coconut oil, butter, ghee, lard, duck fat, and full-fat dairy products

✗ Trans/ Hydrogenated Fats:

Margarine, canola, corn oil, safflower oil, rice bran oil, hydrogenated soybean oil, sunflower oil, vegetable oil, grapeseed oil, shortening, most fast and processed foods



Omega-3 Fats

Omega-3 fats are known as “essential fatty acids” or EFAs due to the fact that they cannot be made in the body and must be obtained through the diet. They are important for health and have been proven to lower risk of heart disease, are a powerful anti-inflammatory agent, aid hormone production, support the healthy development during pregnancy and breastfeeding, maintain cell membranes, promote memory and prevent depression.

There are 3 different types of Omega-3 fats: ALA (alpha-linolenic acid), EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid). EPA and DHA have the most direct health benefits and can be produced to some extent from ALA in the body. On the right is a list of good sources of Omega-3s Dr. Mercola

ALA: Walnuts, brazil nuts, cashews, hazelnuts, chia seeds, flaxseeds and flaxseed oil, hemp seeds, pumpkin seeds, butternut, grass-fed beef, Brussels sprouts, kale, spinach, soybeans and watercress

EPA & DHA: Mackerel, trout, kippers, salmon, herring, tuna, anchovies, sardines, white fish, fresh crab meat, egg yolks, cod liver oil, Omega-3 supplements

Eat one to two portions of oily fish per week. Large fish such as tuna may contain mercury which is harmful to the nervous system. Stick to smaller fish such as mackerel and sardines





Antioxidants

Antioxidants are food-based substances that inhibit oxidative damage to the body. Oxidative damage occurs via free radicals which are responsible for damaging our cells, accelerating ageing and impairing our immune system. Our bodies naturally create free radicals via normal daily metabolism but these are generally kept in check by available antioxidants.

Environmental factors such as pollution, radiation, cigarette smoke, stress, heavy exercise and a poor diet can lead to increased free radicals and decreased antioxidants.

The antioxidant content of any food is measured by its Oxygen Radical Absorption Capacity (ORAC) score and is based on a 100g quantity.



10 Best Antioxidant Foods (ORAC)

Goji berries 25,000
Wild blueberries 14,000
Dark chocolate 21,000
Pecans 17,000
Artichoke 9,400
Elderberries 14,000
Kidney beans 8,400
Cranberries 9,500
Blackberries 5,300
Cocoa 80,933

10 Best Antioxidant Herbs (ORAC)

Clove 314,446
Cinnamon 267,537
Oregano 159,277
Turmeric 102,700
Cumin 76,800
Parsley 74,349
Basil 67,553
Ginger 28,811
Thyme 27,426
Coriander 5,100



Caffeine

Caffeine - friend or foe? Caffeine can be beneficial in moderation. It is rich in polyphenols which decrease blood pressure reducing risk of cardiovascular disease and increase blood supply to the brain which may protect against dementia. It can also improve concentration and memory. On the other hand, caffeine is a psychoactive and can contribute to making you feel more tired, stressed out, nervous, irritable, restless and cause insomnia (creating a vicious cycle of dependency). It can also lead to digestive upsets and block the absorption of certain vital nutrients such as calcium and iron.

Your genetic predisposition largely determines how you react to caffeine and whether it is likely to be beneficial or detrimental to your health and wellbeing. Other outside factors that slow down caffeine metabolism are pregnancy (up to 2x slower), oral oestrogens and certain anti-depressant medications. Nicotine, intense exercise and brassicas all speed up the metabolism of caffeine. If you are a slow metaboliser due to genetic or outside factors you would benefit from eliminating caffeine or sticking to a max of 200mg of coffee per day (approx. 1-2 cups [Mayo Clinic](#))



Below are some helpful tips to minimise caffeine and break your caffeine dependency:

Coffee alternatives: Green tea (less caffeine than coffee), peppermint tea, Siberian ginseng tea, chai tea, protein smoothie (to balance blood sugar), warm water with lemon and ginger, green smoothie

Reduce:

Coffee (max 1-2 cups per day), decaffeinated coffee, black and green tea, energy drinks, sugar (causes imbalanced blood sugar which leads to the afternoon slump) and chocolate

Helpful habits:

Get quality sleep, swap coffee for herbal teas or opt for a lighter roast, never consume caffeine after midday to ensure restful sleep, exercise (improves energy levels & sleep), balance your blood sugar to avoid energy crashes



Injury Prevention & Recovery

Exercise injury can be painful and frustrating. Follow the below tips to help ensure that you are less vulnerable to injuries and to speed up recovery after exercise:

Warm up: Low intensity movements prepare the joints and muscles for the workout, ensure more fluid joint movements and aid flexibility

Strength: Tendons and ligaments develop alongside muscles. Strength training is a good way to build muscles, tendons and ligaments, and reduce risk of injury

Technique: Correct technique, especially with strength training, is important for reducing risk of injury

Take care: When practicing sports that require a lot of twisting movements, or full contact, where risk of injury is particularly high

Cool down: Practice an active, low intensity cool down period that ensures your heart rate drops back toward resting levels and encourages the removal of lactic acid from your muscles



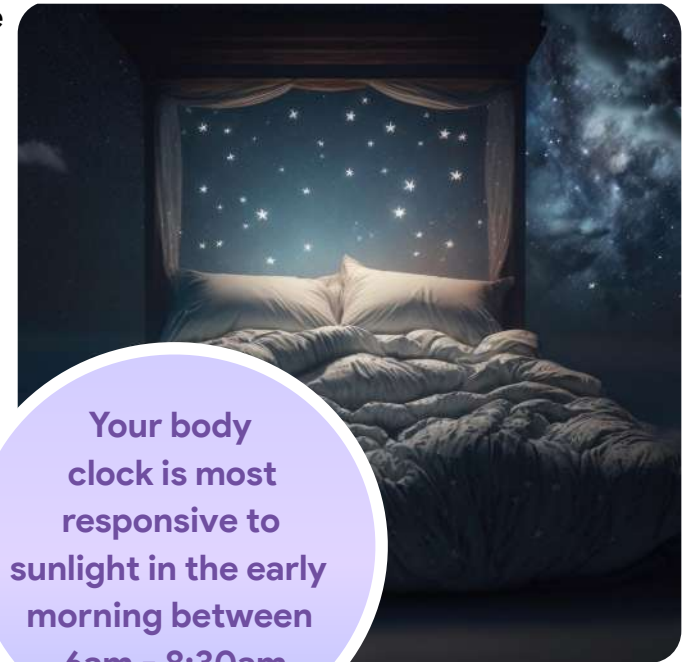
Protect your joints by warming up before training



Pro Sleep Tips

Sleep hygiene is a variety of different practices and habits designed to encourage good quality sleep and daytime alertness. Besides mental and physical health benefits, good sleep also encourages weight loss and improved overall health and quality of life.

Timing:	Most people need between 7-9 hours to allow the body to rest and restore. Aim to sleep and wake at similar times to keep your body clock in sync
Bright light & electronics:	Keep lights dim in the evening to create a sense of winding down. Turn off computers, tablets, phones and TVs at least 1 hour before bed. Bright light and stimulation can block the release of melatonin and make you feel wired, disrupting sleep
Environment:	Make your bedroom as dark and uncluttered as possible. A tidy, comfortable bedroom with dim lighting encourages sleep
Routine:	Establish a regular nightly routine that helps the body prepare for sleep. This could be taking a warm shower or bath or reading a book
Exercise:	Do some physical activity every day but avoid strenuous exercise in the evening since it may prevent you from feeling tired at bed time
Meals:	Avoid heavy meals in the evening. Meals should be eaten no later than 3 hours before bed. Meat and fatty foods are particularly difficult to digest and may interfere with sleep. If you need a snack, opt for <u>complex carbs</u> to keep your blood sugar stable in the night, preventing you from waking up due to hunger during the night
Stress:	Learn how to relax. Practising meditation or breathing or doing something enjoyable can reduce stress and help you sleep better at night. Avoid checking emails out of work hours. Stop feeling guilty about resting!
Caffeine & alcohol:	Avoid caffeine (e.g. coffee, black tea and green tea) completely after midday and stick to one cup per day maximum. Although alcohol may help you fall asleep, it often disrupts sleep later and leaves you feeling unrefreshed
Go outside:	Exposing yourself to sunlight during the day and darkness in the evening helps to reset or maintain a healthy sleep-wake cycle



Your body clock is most responsive to sunlight in the early morning between 6am - 8:30am