TUNE YOUR IMMUNE

orthoplex®

GOOD HEALTH CAN OFTEN BE TAKEN FOR GRANTED, **UNTIL YOU GET SICK!**

The foundation of your health – and the reason that you're alive and reading this – is your immune system. You might not give it much thought until you're feeling really under the weather. Then, you may find yourself trying to give it all the tender loving care you've got, to bolster the battalion inside as you fight off unseen forces. What's going on beneath the surface of your skin, you may wonder? It can feel like there's a war waging inside…

Well, that's not far from the truth! Your immune system is your body's personal defence force, called into action when it detects a threat to your life. Think of it as your own internal army of wellness warriors. While the battlefield might be out of sight, your soldiers need to be as robust as possible to slay invaders.

Getting sick isn't fun. But unfortunately, it's not always possible to prevent or avoid illness – as much as we might wish it were. The good news is, what you can do, is strengthen your capacity to deal with illness. By understanding how your body serves to protect you, you can better serve your body and support it in taking on this task.

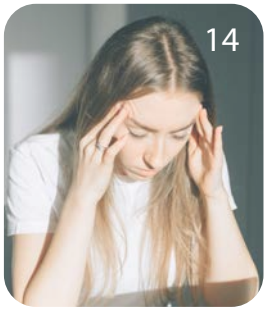
Knowing that you're innately equipped with the internal resources and external tools to tackle trying times can give you confidence when your body is fighting off illness. Having coping strategies and tools in your emergency kit can help you maintain a sense of empowerment and control when you fall unwell.

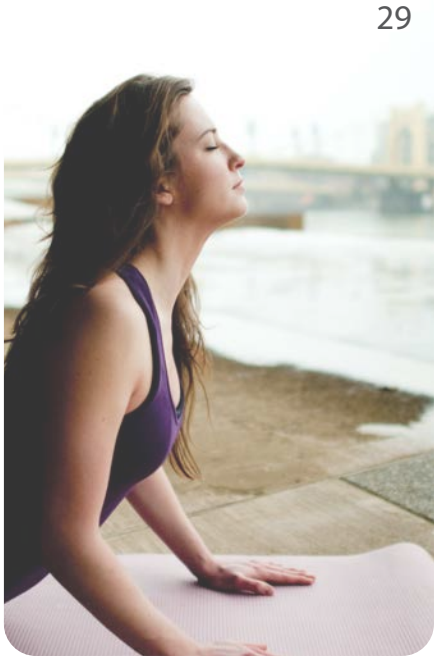
There's so much information out there around strategies and superfoods to boost your immune system. But at the core of good immune health are simple health principles and practices. Healthy lifestyle choices are your first line of defence. They are easy to adopt and not only help your immune system, but every part of your body, function properly. Remember, your immune system can only handle so much. So, it's important to support it – both in sickness AND in health!

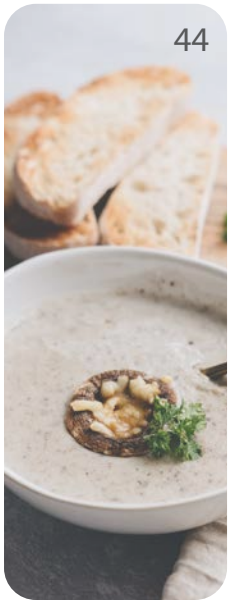
This booklet has been designed to:

- Help you learn more about your immune system, your body's personal defence force and protective mechanisms
- Highlight key diet and lifestyle factors to support your immune health
- Provide recommendations and resources that can accompany the advice of your healthcare practitioner

The information in this booklet is generic in nature, so please consult your healthcare practitioner before making any dietary or lifestyle changes.







WHAT'S INSIDE

THE ARMY INSIDE:
YOUR IMMUNE SYSTEM

Every day, unbeknownst to you, you encounter potential invaders who want to move in and make you their home! As you're exposed to germs and toxins throughout your day – hidden bacteria, viruses, fungi and parasites (also known as pathogens) – your body is quietly going about its business of keeping you safe. It's comforting to know that you're never fighting life alone – you have a whole host of internal soldiers on your side, in the form of your immune system.

Your immune system is your body's own personal defence force. Its duty is to serve and protect you from infection, illness and disease; to guard against all who threaten you – both external and internal. Without it, quite simply, you would die.

Enlisted are a vast and powerful army of cells, tissues and organs that have different roles and responsibilities in battle. When they detect any threat to your health, they coordinate their defences to protect you.

The efforts of your immune system won't always stop you from getting sick, though – but that's not its main mission. Rather, it's to stop a threat from escalating to dangerous levels inside your body and to help you recover after an injury or illness.

Your immune system is engaged in constant surveillance. It keeps a record of every microbe it has ever defeated in its memory cells so that if one comes back, it remembers them and knows just what to do! Quickly, it identifies and destroys a returning invader if it re-enters your body, before it can spread and affect you more severely. An example of this is chicken pox or measles – being infected by these viruses once is usually enough to protect you for life. This memory mechanism helps us develop long term immunity.

So, in fact, germs aren't *all* bad – you need them to stay healthy! And getting sick from time to time ensures that you maintain a robust immune system.

However, some infections, like the common cold or flu, have to be fought many times because many different viruses or strains can cause these illnesses. In these cases, catching one does not give you immunity against others.

INTERESTING FACT:

The common cold is exactly that – common! Children may get between 5 to 10 colds a year while adults may get 2 to 4 colds each year. The average adult will get 200 colds in their lifetime!

SERVE + PROTECT

HOW YOUR IMMUNE SYSTEM WORKS

Your immune system operates via an intricate network of pathways and stages in the body. The main military personnel making up your immune army are:

White (knight) blood cells (a.k.a. leukocytes)

There are two main types:

- Phagocytes
- Lymphocytes (B-cells, T-cells and "natural killer cells" – eek!)

Other critical characters include:

- Antibodies
- Spleen
- Thymus
- Bone marrow
- Lymphatic system
- Complement system

The white knights of your immune system are leukocytes – white blood cells that originate in your bone marrow and migrate into your blood stream and lymphatic system, where they ride gallantly into battle for you. Leukocytes serve as sentinels, constantly guarding your wellbeing by screening your blood, tissue and organs for any suspicious signs of invaders.

They detect the presence of invaders by identifying their hallmark antigens – molecular traces on the surface of foreign substances; a dead giveaway that ranks have been infiltrated. These antigens set off the security system and the body's protective immune response goes into gear within minutes.

As threats come in innumerable disguises, the immune response has to be adaptive to outsmart them. So, there are many different leukocytes to take on many different threats, each in their own unique ways. The two main types of leukocytes are phagocytes and lymphocytes (T-cells, and B-cells). In their arsenal, they each contain antibodies to lock into their antigen targets, attacking and destroying them.

PATHOGENS (NOUN)

path·o·gen |

Pathogens *are microbes that can infect the body and cause illness. They include bacteria, viruses, fungi and parasites.*

ANTIGEN (NOUN)

ant·i·gen |

An antigen *is a molecule attached to a pathogen, a substance that the body labels as foreign or harmful, which alert the body to an invader and trigger an immune response. These molecules can originate externally or internally. Each antigen has distinct surface features prompting specific immune responses.*

ANTIBODY (NOUN)

ant·i·body |

An antibody *is a protective cell produced by the body's immune system in response to exposure to antigens. Each antibody is designed to recognise a specific antigen and binds to its surface – like a lock and key mechanism. This binding helps remove antigens from the body, thereby stopping or preventing illness.*

{ immune encyclopedia }

SHOW ME A SIGN!

Fever and inflammation, whilst unpleasant to experience, are actually good signs that your immune system is doing its job properly! These are both important, normal steps in the body's innate immune response and aid your recovery from illness.

FEVER (NOUN)

fe·ver |

Fever *releases white blood cells, increases metabolism and stops pathogens from multiplying.*

INFLAMMATION (NOUN)

in·flam·ma·tion |

Inflammation *occurs when pathogens attack healthy cells and tissue and your immune system counterattacks. This response actively calls in immune cells to the site of infection by increasing blood flow to the area. Specific signals are also sent to recruit white blood cells into the fray and these "first responders" multiply rapidly, while other cells are brought in to clean up the debris. This process can generate swelling, redness, heat, pain and the release of fluids to flush out the irritant. Prolonged inflammation can lead to tissue damage and may overwhelm the immune system.*

BACTERIA VS. VIRUS

Both are too tiny to be seen by the naked eye! Often spread in the same way, both viruses and bacteria can cause similar symptoms when they infect their host (human or animal). But it's important to know whether an infection is viral or bacterial because treatments differ.

BACTERIA (NOUN)

bac·teria |

Bacteria, *for the most part, aren't harmful. In fact, we all have trillions of bacteria living on and inside our body, especially in our gut, where they can help keep us healthy. A bacterium is a single, complex cell that can survive inside or outside the body.*

VIRUS (NOUN)

vi·rus |

Viruses *are dependent on a host to survive and grow. Viruses cause infections by entering and multiplying inside the host's healthy cells.*

TO IMMUNITY + BEYOND!

There are three types of immunity. Think of them like the army, navy and air force – all working together for the common goal of protecting the nation, that is you!

Innate Immunity

This is the immune response that you're born with. It's your first line of defence and can be activated immediately when an invader attacks. It includes the physical barriers of your body such as your skin, gastrointestinal and respiratory tracts, and eyelashes. Other defense mechanisms include mucous, stomach acid, saliva, tears and sweat. General immune responses such as inflammation are also part of your innate immunity.

This type of immunity is more general and non-specific. If an invader gets past your innate defenses, adaptive immunity kicks in.

Adaptive (Acquired) Immunity

This response learns to recognise invaders and your immune system adapts accordingly. This form of protection is personally tailored to you, developing as you move through life. As you are exposed to illnesses, you build up a library of antibodies to different foreign substances. Your immune system then remembers previous pathogens, calling on the corresponding antibodies to defend against them if they revisit – thus, more quickly and efficiently destroying them.

It's through this adaptive or acquired response that your immune system becomes stronger during adulthood – which is why adults tend to get sick less often than children. From childhood, with each new immune challenge, you build and strengthen your acquired immunity. Pets and getting dirty builds stronger immune systems for children.

Passive Immunity

This form of protection is "borrowed" from another source and does not last forever. For example, a baby receives antibodies from its mother through the placenta when in the womb and then via breast milk after birth. This protects the baby from some infections during their early years of life.

THE IMMUNE CONNECTION

Inflammation-Immune Connection

Inflammation is the normal response of your body's immune system to injuries and invaders. It is a short-term response for eliminating pathogens and initiating healing. But things that trigger your inflammatory response can deplete your immune system if it continues over time. Chronic, systemic inflammation is a sign of a dysregulated immune system and can increase the chronicity of disease.

Gut-Immune Connection

There's a lot of interaction between your immune system and gut bacteria (microbiome) as a huge portion – up to 70 percent – of your immune system actually resides in your gastrointestinal tract! These gut residents regulate immune balance.

Certain cells in the lining of the gut release antibodies as your body tries to control the delicate interaction between outside and inside environments. Changes to the gut microbiota can cause immune dysregulation and activation. An amped-up inflammatory response starting in the gut can trigger activation of the immune system.

Studies have found that the composition of the gut changes in different diseases and alternately, that gut composition can impact disease. As a result, we know that diet – since it influences the gut environment – can alter the immune response and impact inflammation.

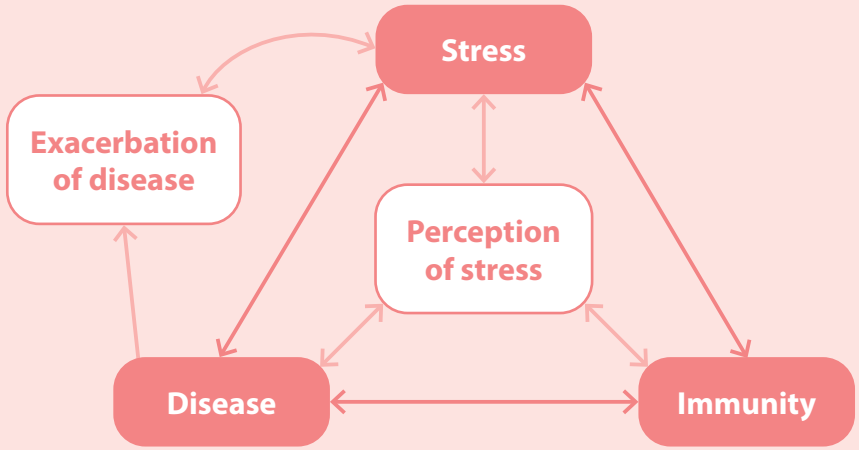
Brain-Immune Connection

Stress is not just a psychological state experienced by the brain. It can trigger physiological responses too, and this reach can be systemic, extending throughout your body. One of the systems that is impacted by stress is the immune system. Over time, stress can dysregulate and break it down.

During acute stress, as part of the "fight or flight" response, pro-inflammatory cytokines increase to prepare the body for injury or illness. Chronic stress is associated with higher pro-inflammatory cytokines and has potentially longer lasting consequences. Chronic stress can activate dormant viruses as your body loses control over the virus, and frequent activation can impair the immune system.

Your hormonal response to stress is an increase in cortisol levels. While cortisol is ordinarily anti-inflammatory, chronic elevations can lead to immune resistance. Accumulation of stress hormones triggers increased inflammation, which makes matters worse.

Research suggests that the immune system plays a role in communicating with the brain and supporting us in times of psychological stress. Conversely, immune dysregulation can exacerbate symptoms of psychological illness. Immune activation also stimulates the nerves associated with serotonin, a neurochemical implicated in behavioural and emotional regulation.



WHEN THINGS GO AWRY

The way that your unique immune system responds to the environment around you plays a major role in immune-related conditions.

Allergies

Allergens are a type of antigen and can include grass, pollen, dust, and pet hair. Food can also be allergens, and can include gluten or wheat, dairy, fish, shellfish, peanuts and nuts, soy and eggs. Allergens can cause a hyper-reactive immune response, known as an allergy.

Allergies are caused when your body mistakes a harmless environmental element, like pollen or dust, as an invader. Your body launches an immune response against it, which causes you to experience symptoms, as in the case of hay fever.

Allergies don't affect everyone. People's sensitivity to allergens varies depending on how robust their immune system is. An allergen that triggers a reaction in one person, may not affect another.

Asthma

Asthma is another condition characterised by an overactive immune response, in which the body reacts aggressively to usually harmless environmental triggers (such as air temperature, chemical fumes, exercise), by releasing cells that incite inflammation in the airways.

Asthma can also be triggered by infections, including respiratory viruses. As the virus attaches to the airways, it sets off the immune system to attack, leading to inflammation, airway restriction and the onset of asthma.

Auto-Immune Disorders

For some people, their immune system doesn't always work as it should. Instead, it becomes over-zealous and hypersensitive, even attacking the body's own healthy cells.

Autoimmune diseases self-sabotage the immune system and unfortunately, it's not known what causes these disorders, although they can have genetic patterns. They include multiple sclerosis, lupus, rheumatoid arthritis, psoriasis and type 1 diabetes.

Eczema

Also known as atopic dermatitis and allergic eczema, this is a common skin condition where a rash develops, becoming irritated, red, dry, bumpy and itchy. As with allergies and asthma, this condition tends to be linked to an over-reactive immune system, where substances can trigger an inflammatory immune response.

COLD vs. FLU

Colds are a common upper respiratory tract infection usually caused by a virus. They come on gradually over a few days and usually improve within a week to 10 days. Symptoms are often milder than the flu. While more common during the winter months, you can still catch a cold any time of year.

Influenza, or the flu, is a highly contagious viral infection. Whilst it is another upper respiratory illness, it's more severe than the common cold. Symptoms come on quickly and can be severe, lasting 1 to 2 weeks. The flu is generally seasonal, peaking during the cooler winter months. Active strains of influenza virus vary year to year, which is why a different flu vaccine is developed every year. The flu can develop into more serious conditions, including pneumonia.

COLD OR FLU?

SPOT THE DIFFERENCE

	SYMPTOM	COLD	FLU
	Symptom onset	Gradual	Abrupt
	Fever	Rare	Common
	Aches and pains	Rare	Common
	Chills	Rare	Common
	Fatigue and weakness	Mild	Severe
	Sneezing	Common	Sometimes
	Runny or stuffy nose	Common	Sometimes
	Sore throat	Common	Common
	Cough	Common	Common
	Headache	Rare	Common

A DENT IN **YOUR DEFENSES**

RISK FACTORS

Some conditions and circumstances can put a dent in your immune defences, making you more susceptible to illness. Recognise risk factors for reduced immune health so you can better support your system.

Older age

Excess weight

Poor diet and nutritional status

Environmental toxins
(smoke and air pollution, chemicals, mould)

Chronic disease and medical conditions

Medications or medical treatments

Chronic mental stress

Lack of sleep and rest

Pregnancy

TELL-TALE SIGNS

There are some tell-tale signs that your immune system may not be functioning to the best of its ability. These are quite general, so consult your healthcare practitioner for more guidance on your individual condition.

You have high stress levels

You often have a cold

You are sick for a long time

You have digestive complaints

Your wounds are slow to heal

You have frequent infections

You feel tired all the time

PREVENTION IS BETTER THAN CURE

Don't wait until cold and flu season knocks you for six before you take steps to support your immune system. Prevention, and reducing the risk of illness, is better than sniffling on the sofa. Prime your body to be fighting fit and maintain resilience with healthy habits.

Your first line of defence: make healthy lifestyle choices.

In order to stay well, it's important to be actively involved in laying firm foundations for a robust immune system. If you do get sick, your state of health at the time of illness can significantly influence the severity of the illness and your recovery. Optimising your physical and psychological health every day by following general good-health guidelines is the single best step you can take to naturally keep your immune system in ship-shape.

- ✓ **Eat fresh whole foods**
- ✓ **Stay well hydrated**
- ✓ **Move and exercise regularly**
- ✓ **Maintain a healthy weight**
- ✓ **Skip smoking**
- ✓ **Get plenty of sound sleep**
- ✓ **Try to minimise stress**
- ✓ **Spend time outdoors**
- ✓ **Foster positive connections with others**
- ✓ **Take steps to avoid infection** (i.e. washing hands)

{ deeper dive }

NOURISH NATURALLY

Eating enough nourishing nutrients is required for the holistic health of your whole body – not just your immune system! Your body's overall nutritional status helps your immune system to function and optimises your ability to fight infection. Many micronutrients are needed at each and every stage of your immune response.

A diet lacking in variety and nutrients can have a negative knock-on effect for your immune system. The standard Western diet, for example, is commonly high in refined sugar, red meat and highly processed foods and is often lower in vegetables, fruits and other whole foods. This type of diet can also promote gut disturbances, chronic inflammation and associated suppressed immunity.

Your immune army can't operate on an empty stomach! As your immune system is constantly active it regularly requires essential energy from vitamins and minerals to keep it fuelled and running smoothly. Consider your diet and nutrition before, during and after illness to optimise your outcomes.

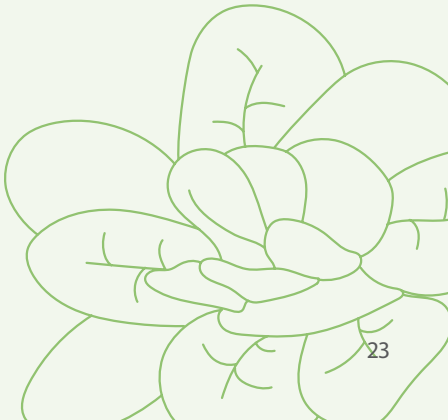
HOW TO NOURISH:

TO PROTECT FROM ILLNESS

Make a habit of eating a healthy, balanced diet to nourish your immune system and overall wellbeing. As there are many nutrients involved with normal immune system functioning, ensure you're eating a variety of whole foods, close to their natural state – vegetables, fruits, lean sources of protein, beans and legumes, whole grains and healthy fats. Regularly adding fresh garlic and ginger to your meals can bolster their immune benefits.

A healthy, balanced diet with plenty of fibre will help to keep your gastrointestinal tract and its resident microbiota happy – critical for optimal immune function and your overall health. In addition to diet, the composition of the gut microbiota is influenced by many factors such as stress, sleep and medications, so consider a holistic approach.

Ensure you drink plenty of filtered water every day – at least 8 glasses. For your immune system to benefit from the nourishing nutrients you're eating, they need to be transported around your body via your blood stream – which is mostly water. Drinking enough water helps deliver nutrients where they need to go. H_2O helps prevent the build-up of toxins by carrying waste away from your organs and flushing them out of your body. Water also builds up mucosal barriers in areas like your mouth and eyes, which help prevent infections from gaining entry.



HOW TO NOURISH:

DURING ILLNESS

During illness, it's important to nourish and hydrate. Any significant physical illness induces a systemic inflammatory reaction and elevates the metabolic rate, increasing demand for nutrients. Consuming a nutrient-dense, anti-inflammatory diet may help to reduce inflammation and optimise nutrient status at this time, improving resilience to illness and speeding up recovery. Choose more veggies and less refined, processed foods.

When you're fighting off an infection, your appetite is likely to be low, so keep portion sizes small and regular. You might prefer easy-to-digest yet nourishing, nutrient-dense soups such as chicken and vegetable or mushroom and miso. Toss in some garlic and fenugreek to help break up dense mucous congestion and nourish mucous membranes, particularly in the lungs and other parts of the upper respiratory tract.

Keep your fluids up and stay well hydrated. Sip on warm water with lemon (juice, pith and rind can all go in!) and medicinal honey to soothe a sore throat. Or chamomile and peppermint tea (with some fresh slices of ginger) for their calming, anti-inflammatory properties. Gargling warm water with Himalayan salt also can help ease a sore throat.

HOW TO NOURISH:

AFTER ILLNESS

After illness, you need to re-fuel. Energy depletion starts at a cellular level, so you need to feed your mitochondria – these are the powerhouses of your cells that fuel all your body's processes. Protein is needed to rebuild enzymes and neurotransmitters so incorporate lean sources of protein alongside plenty of fresh vegetables, fruit, whole grains, and healthy fats. In addition to diet, cold showers once well can stimulate mitochondrial function.

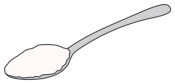
FOODS FOR IMMUNE HEALTH

Complex carbohydrates

Like quinoa are a source of energy

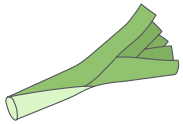
Foods high in Vitamin A

Oily fish, carrot, sweet potato



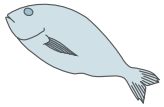
Minimal added sugar

Sugar suppresses the immune system



Prebiotic foods

Like leeks and lentils, to feed good gut bacteria

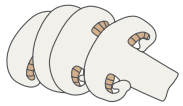


Protein

To support production of white blood cells

Vitamin C - rich fruit + vegetables

Tomatoes, red peppers, cauliflower, broccoli, oranges, kiwi fruit



Anxioxidants

Support stress and reduce inflammation

Fermented foods

Such as kimchi and kombucha for their protective probiotic benefits

IMMUNE SUPERSTARS

These common cold and flu fighters are firm favourites for the slew of immune-supporting strengths in their arsenal!

LEMON		A source of vitamin C; natural antioxidant with antibacterial and antiviral properties; can help relieve congestion
ONION		Contains vitamin C, sulphur, zinc, selenium and is one of the best sources of quercetin, a potent antioxidant; helps break down mucous and regulates histamines
GARLIC		A natural antibacterial, antifungal and antiseptic; may help the body ward off invaders
GINGER		Stimulates circulation to clear toxins; anti-inflammatory effects
CHILLI		High in vitamin C; warming and sinus-clearing
TURMERIC		A natural anti-inflammatory
MEDICINAL HONEY		Antibacterial; helps soothe a sore throat

MAKE A MOVE

Regular physical exercise keeps your body functioning well and strengthens your immune response, priming it for when illness comes knocking, reducing inflammation and supporting infection-fighting cells. Movement gets your blood circulating, allowing immune cells and lymph to move freely through your body and go about their daily tasks. The endorphins from exercise also help soothe stress. So, it's important to maintain regular exercise or get started! Aim for at least 30 minutes of physical activity three days a week, such as walking, cycling, swimming, yoga or other low impact workouts.

HOW TO MOVE:

AFTER ILLNESS

When you're experiencing fatigue and low energy post-illness, exercise is likely to be the last thing you feel like doing! It may seem counter-intuitive, but the exercise that you think is going to further wear you out, can actually help to improve your energy levels.

Exercise will help you to regain muscle tone and strength, re-conditioning your body, whilst also producing mood-boosting "happy hormones". Just don't overdo it and go in too hard, too fast. Start slow and steady and gently re-introduce activities. In time, you will regain the strength to return to your daily tasks and usual physical activities.

{ exercise }

STRIKE A **POSE**

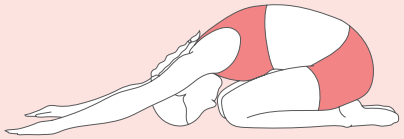
Regular yoga practice can help support the immune system, particularly the lymphatic system.

This is a network of tissues and organs that help rid the body of toxins and waste. Bacteria and viruses are picked up and transported out of the body via lymph, a watery fluid that also contains critical infection-fighting white blood cells.

Unlike blood, lymph is circulated through your body by contraction of your muscles, rather than your heart pumping. Physical exercise, like yoga, keeps lymph moving. And, if done often, yoga helps reduce stress in the body, which lowers inflammation.

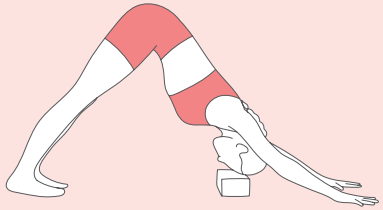
Alongside asana (the physical yoga poses), pranayama or yogic breathing also effectively supports your immune system. This form of deep breathing energises and invigorates your body, encouraging circulation and alleviating stress.

If you're unwell, you can still do the below postures that feel good for you, in your pyjamas with a pillow for support.



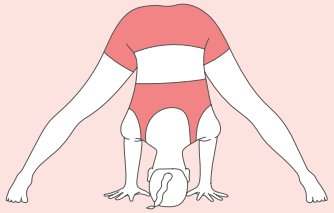
Child's Pose

With toes together and knees separated towards the edge of your yoga mat, sit buttocks back on your heels and fold your torso forward. Rest your forehand on the floor, a block or blanket, so that your head and neck can relax. Place your arms out in front.



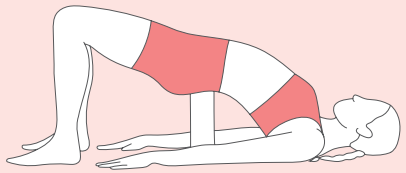
Supported Downward-Facing Dog

From child's pose, press your hands into the floor, tuck your toes under and lift your hips up and back into Down Dog. Rest your head on a block for support. Extend through your arms while pressing your thighbones back and away from your face.



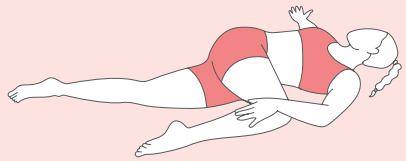
Wide-Legged Standing Forward Bend –

Come to standing, then place your feet about a metre apart and fold your torso forward at the hips. If your hands reach the floor, place them between your feet and rest your head on a support. Alternatively, rest your hands on your shins, keeping your back and neck straight.



Supported Bridge Pose

Lie on your back with your knees bent and feet flat on the floor. Lift your hips and place a block (standing on its tall end) underneath your sacrum at the base of your spine. Press your outer shoulders into the floor and lift your torso, keeping your front broad.

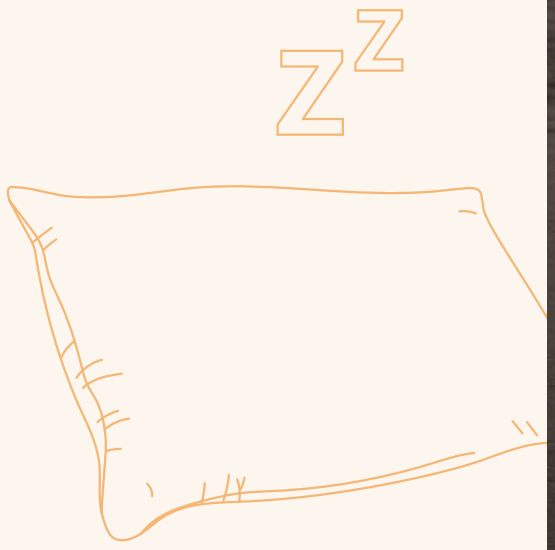


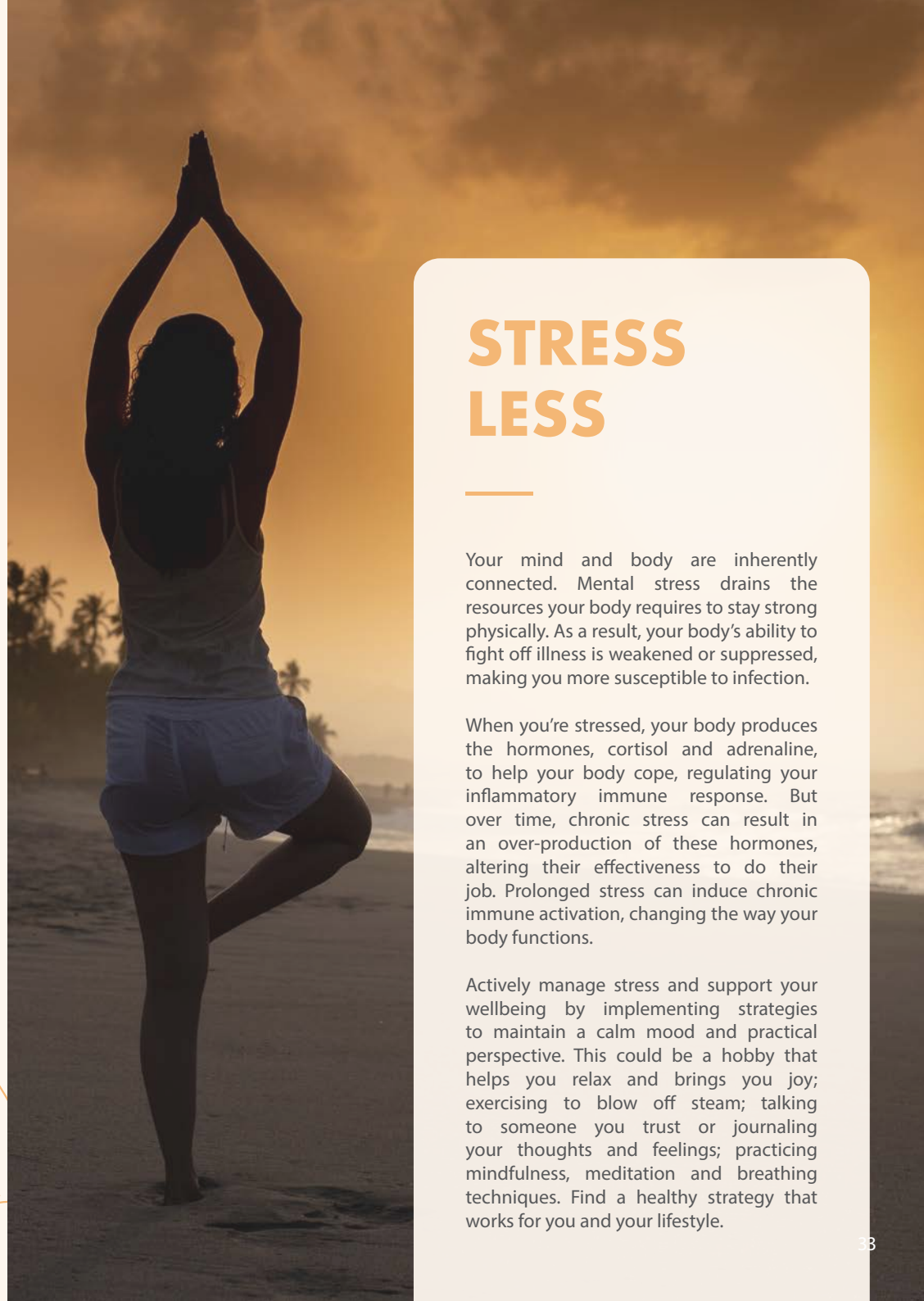
Reclining Spinal Twist

On your back with legs outstretched, draw one knee up to a 90-degree angle and stretch it across your body using your opposite hand. Extend the opposite arm out to your side at a right-angle. Turn your head to look to your extended arm. Repeat on opposite side.

SLEEP SOUNDLY

Sleep is an essential piece of the puzzle for maintaining your immune health. It's a regenerative time for your body, when it relaxes, repairs and restores all your systems. Poor sleep can compromise your immune system and increase your risk of illness, leaving you open to colds, flu and infection. When you're sleep deprived, your protective immune cells go down and inflammation goes up. Conversely, restful sleep before, during and after illness can build your resilience to illness. Aim for 7 to 9 hours of sleep each night. Ensure that your bedroom is cool, airy and dark for deep sleep. Try following sleep hygiene recommendations if you have trouble falling or staying asleep.





STRESS LESS

Your mind and body are inherently connected. Mental stress drains the resources your body requires to stay strong physically. As a result, your body's ability to fight off illness is weakened or suppressed, making you more susceptible to infection.

When you're stressed, your body produces the hormones, cortisol and adrenaline, to help your body cope, regulating your inflammatory immune response. But over time, chronic stress can result in an over-production of these hormones, altering their effectiveness to do their job. Prolonged stress can induce chronic immune activation, changing the way your body functions.

Actively manage stress and support your wellbeing by implementing strategies to maintain a calm mood and practical perspective. This could be a hobby that helps you relax and brings you joy; exercising to blow off steam; talking to someone you trust or journaling your thoughts and feelings; practicing mindfulness, meditation and breathing techniques. Find a healthy strategy that works for you and your lifestyle.

NURTURE IN NATURE

Balance screen time with sunshine! This helps to encourage your body's natural melatonin production to promote restful sleep and regulates your circadian rhythm, as well as other biological functions, including supporting your immune system.

Exposure to sunlight is how your body processes vitamin D – an important ingredient for immune health. You only need around 10 minutes on a sunny day, two to three times a week, to get all the vitamin D you need.

Keep in mind that while some sun exposure is good, too much can temporarily damage your immune system or increase the risk of skin cancer long-term. Protect your skin and stay out of the sun during the middle of the day. Instead, get outside early in the morning or late in the afternoon, which will also help you tap into the circadian benefits of sunlight.

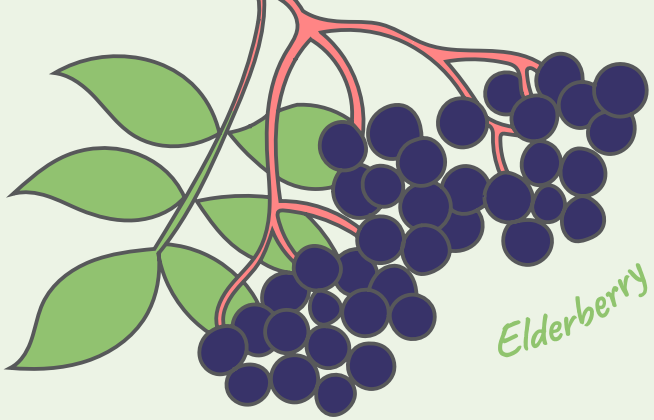
Being outdoors in nature, you'll also expose yourself to negative ions. Despite what their name might suggest, these ions actually have a positive influence! Negative ions are electrically charged particles floating in the air or atmosphere. They're abundantly present in nature, especially around waterfalls, creeks and rivers, and the ocean's edge (wherever water collides), as well as during a thunderstorm; in the sun's rays; and they are produced during the growth process of many plants.

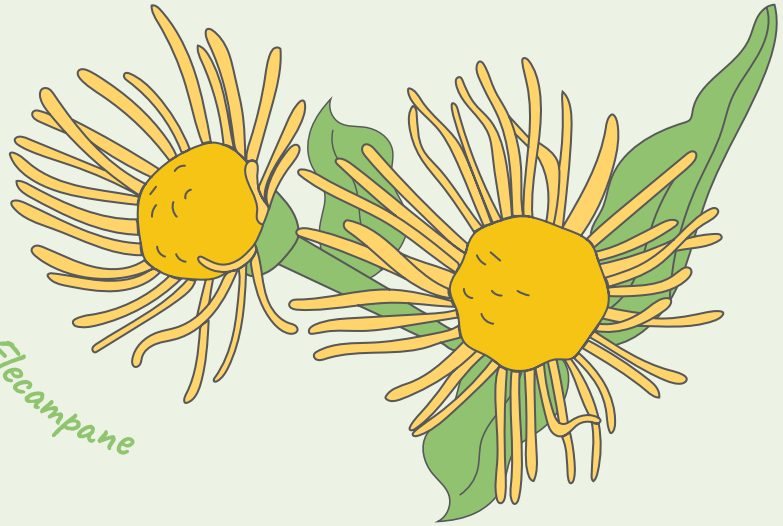
It's thought negative ions can have a positive effect due to the chemical reactions they have within your body. Research suggests that they can promote antimicrobial activity, improving your body's natural defences as well as enhancing overall vitality. So, dance in the rain, go chasing waterfalls, or bask in the glory of nature at the beach!

LAUGH A LITTLE

As the old adage goes, laughter is the best medicine! Humour and laughter relax the body, relieving physical tension, stimulating diaphragmatic breathing and promoting lymphatic flow. It also releases dopamine and feel-good chemicals in the brain that can help decrease stress, having a positive knock-on effect for your immune system. Go gather with some friends who give you the giggles or watch your favourite cheesy comedian!

HELPFUL HERBS FOR IMMUNE HEALTH





{ article }

NIFTY NUTRIENTS

FOR IMMUNE HEALTH

One of the best ways to afford yourself protection from infection is to support the innate immune system. For our innate immune system to respond immediately and efficiently it requires a vital orchestration of micronutrients each with individual and synergistic roles.

Antioxidants and optimal microbiome health also play an imperative role in bolstering immune function and since stress can cause suppression of vital immune cells, it is crucial to safeguard the stress response.

While a healthy and varied diet may offer some of these nutrients, certain population groups may not have adequate intake or may have underlying medical conditions or stress which can increase the body's demand.

When we have an infection, our innate immune system goes to work as our first line of defence. Nutrients such as vitamins A, C and D, quercetin and zinc are the heroes when it comes to fighting infections.

In fact, the synergistic actions of these nutrients enhance the proliferation of natural killer cells, increasing our immune cell response and communication. As the name suggests, these cells detect infected cells to terminate them immediately.

However, if the immune system cannot stop the invader from replicating, it goes into overdrive and ramps up inflammation, especially in the lungs. When part of the lung is damaged, oxygen cannot reach the blood efficiently, causing further debilitation.

Curcuminoids, N-acetylcysteine and willow bark all regulate natural killer cell activity and are used together to ease mild pain and muscle aches.

Ensuring adequate intake of micronutrients is just as important in recovery as in prevention. Mitochondrial support that can aid energy production and rebuild immunity is key. Nutrients that may have become depleted during illness will be required, along with those that nourish the nervous system, heal the gut and re-populate the microbiome.

Oftentimes, pressures from illness and the broader impact it may have on other areas of life, can affect mood. The combination of magnesium, zinc, selenium, biotin and vitamins E and B6, along with acetyl-l-carnitine have been found to support mental wellbeing.

{ toolkit }

NUTRIENT TOOL KIT

FOR IMMUNE RESILIENCE

CORE KIT

- ✔ Vitamin A
- ✔ Vitamin C
- ✔ Vitamin D
- ✔ Curcumin
- ✔ Glutamine
- ✔ Magnesium
- ✔ Probiotics
- ✔ Quercetin
- ✔ Selenium
- ✔ Zinc

HELPFUL TO HAVE

- ✔ Biotin
- ✔ Vitamin B6
- ✔ Vitamin E
- ✔ Acetyl-l-carnitine
- ✔ N-acetylcysteine
- ✔ Willow bark

RECIPES:

FANTASTIC FUNGI

Mushrooms are an often-underappreciated food. Whilst they've been eaten and used medicinally to support wellbeing for thousands of years, today these fantastic fungi are becoming increasingly researched and used in contemporary culture for their health benefits.

Rich in B vitamins, beta-glucans and a powerful antioxidant, selenium, mushrooms are known for their immune-regulating properties. That means they stimulate your immune system when it has something to fight and calm it when it's overactive.

So rather than picking them out of your dinner like you may have done as a child, you'll be looking to include them in as many ways as you can! Powdered forms are particularly popular at the moment and can be added into soups, lattes, smoothies and even cookies. If you're not quite up for that adventure just yet, sticking to the whole varieties is just as nourishing. Here we've covered two ways to get your mushies.

{ recipe }

MUSHROOM + NOODLE HOT POT

Chicken soup is a common go-to when you're feeling under the weather. For something different, similar benefits also abound in this tasty twist on tradition! A light broth with hearty health-promoting ingredients, this mushroom noodle soup is very therapeutic. It's easy on the stomach when your appetite isn't all there and provides fluids and electrolytes to prevent dehydration which can occur with a fever. You can drink the broth alone or ladle over noodles for extra energy and top with a portion of protein. This soothing soup is a tasty food to include when you're feeling under the weather – and it doesn't need a doctor's prescription!

Ingredients

2 tbsp extra virgin olive oil
3 cloves garlic, thinly sliced
Small knob ginger, thinly sliced
1L filtered water
500g Swiss brown mushrooms, thinly sliced
3 shiitake mushrooms, thinly sliced
1-2 tbsp white miso paste
1 tbsp tamari (gluten-free soy sauce)
1 long red chilli, thinly sliced (or ¼ - ½ tsp red pepper flakes – adjust depending on heat preference)
3 spring onions, thinly sliced
Small handful coriander, to serve
Nori seaweed, to serve
200g buckwheat soba noodles, cooked (or noodles of your choice)

Optional add-ons:

1-2 tbsp bone broth (powder or concentrate)
1-2 tbsp marine collagen
225g organic firm silken tofu, to serve (or steamed white fish, pulled chicken)

Method

1. Heat 1 tbsp olive oil in a large pot, add garlic and ginger and stir for 2 minutes.
2. Pour water into the pot and bring to a boil.
3. Meanwhile, in a fry pan, heat 1 tbsp olive oil, then add mushrooms and sear on both sides for a few minutes until golden brown.
4. Add caramelised mushrooms, miso, tamari, chilli, and bone broth (if using) to the hot water and simmer, partially covered for 15 minutes until the flavours have infused into the stock.
5. Add spring onion, coriander, seaweed and collagen (if using) and mix through.
6. To serve, divide hot cooked buckwheat noodles into bowls and ladle the broth over the noodles.
7. Top with warm tofu or fish if desired, for an extra protein boost.

{ recipe }

ROASTED MUSHROOM + WALNUT SPREAD

You can also binge on the benefits of shrooms before you get sick, as a potential preventative. This vegan spread is perfect on organic spelt sourdough, crackers or as a dip with veggies. With ginger, garlic, onion, lemon and mighty mushrooms of course, this pâté packs a punch of immune benefits.

Ingredients

2 cups mixed mushrooms (like cremini and shiitake), sliced and any tough stems removed
1 cup walnuts
1 cup red onion, chopped
3 garlic cloves, minced
1 tsp fresh ginger, peeled and grated
2 tbsp extra virgin olive oil
1 tsp white wine vinegar
1 tsp lemon juice
1 tbsp fresh thyme leaves
1 tbsp fresh rosemary leaves
¾ tsp ground coriander
1 tsp sea salt
¼ tsp black pepper
½ cup parsley
2 tbsp coconut aminos
1 tbsp nutritional yeast (optional)

Method

1. Preheat fan-forced oven to 180 degrees Celsius.
2. Gently toss mushrooms with olive oil, garlic, thyme, rosemary, coriander, coconut aminos, salt and pepper until well coated.
3. Place on a parchment lined baking tray.
4. Roast in oven for 15-20 minutes, tossing once halfway until tender.
5. Remove from oven and let cool.
6. Meanwhile, place walnuts on a baking sheet and toast in the oven for 5 minutes.
7. Combine roast mushrooms, toasted walnuts, red onion, ginger, parsley, white wine vinegar, lemon juice and nutritional yeast (if using) together in a food processor and pulse until chunky yet spreadable.
8. Serve fresh or store in the fridge until ready.

SOOTHING SIPS

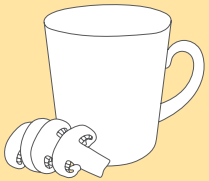
FOR IMMUNE HEALTH

GINGER TEA

LEMON + HONEY TEA

ECHINACEA TEA

ELDERBERRY TEA



MUSHROOM LATTE

TURMERIC TEA OR LATTE

RECIPE:

SICK TEA

Ingredients

1 lemon, juice, pith and zest
1-3 cloves garlic, crushed
Knob of ginger, crushed
1 heaped tsp honey, with a high UMF (20+) equivalent to MGO 40+ (Manuka honey)
Pinch cayenne pepper

Method

1. Boil filtered water and add the other ingredients.
2. Cover to retain the powerful volatile oils that are released.
3. Allow to cool to body temperature, drink and go to bed wrapped up warm to sweat it out.

Your next appointment is:

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Bio Concepts Pty Ltd
19a Guardhouse Road, Banyo QLD 4014 Australia
www.orthoplex.com.au
Clinical support: 1800 077 113
Phone: +61 (07) 3868 0699