Immune Health

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Holistic and Naturopathic Wellness

QUALIFICATIONS:

- ✓ Naturopathic Nutrition and Health Coaching: *Diploma-College of Naturopathic Medicine (CNM)*
- ✓ Hypnotherapy and Psychotherapy: *Mindworks*
- ✓ Mindfulness Teacher: *Teach 10 Institute*
- ✓ *IEMT Practitioner*

MEMBERSHIPS:

- ✓ National Council for Integrative Psychotherapists (NCIP)
- ✓ UK & International Health Coaching Association(UKIHCA)
- ✓ The Association of Naturopathic Practitioners (ANP)
- ✓ The Personalised Care Institute
- ✓ Association of IEMT Practitioners

Lived Experience of Lyme Disease, MCAS, Dysautonomia and Chronic Pain

Socials: Live Well With Chronic Illness
Email: livewellwithchronicillness@outlook.com
Website: https://livewellwithchronicillness.co.uk

How Healthy Is Your Immune System?

Do you suffer from any of the following.....

- Frequent colds and flu
- Fungal infections
- Slow wound healing
- Easy bruising
- Inflammation

This could indicate your immune system is under strain

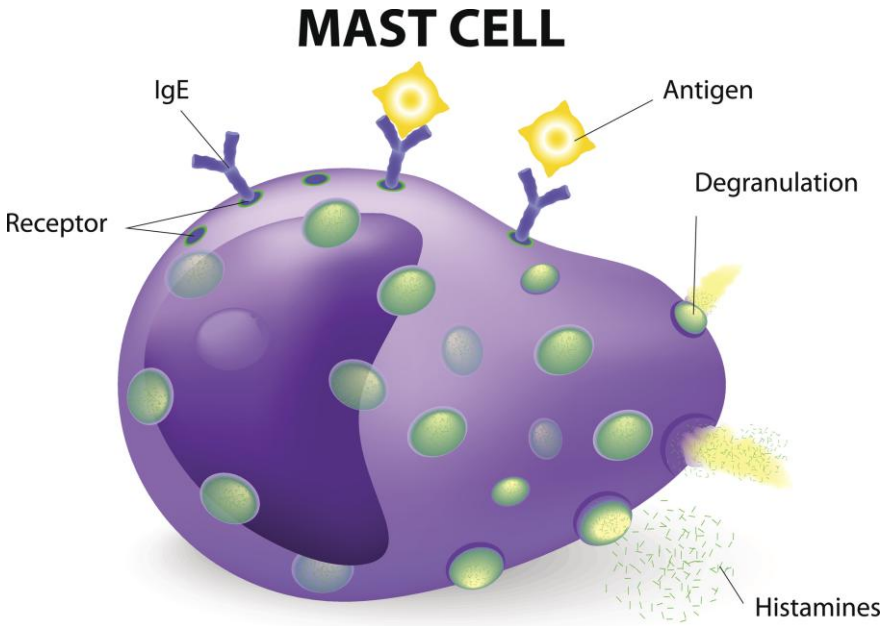
How Does The Immune System Work?

Innate

We are born with it
We can't survive without it
Non-specific – attacks everything that is foreign
Creates inflammation

Adaptive

We develop it at around 2 years of age
Develops in response to exposure to 'germs'
We could survive if we lost it
Specific – makes antibodies which are specifically targeted to a specific antigen, or 'invader'.



Credit:ttsz Getty Images Istock

Innate Immune System

Neutrophils

Engulf foreign cells and dissolve them with nasty chemicals, killing themselves in the process

Macrophages – eat the neutrophils, cleaning up the debris from the neutrophil attack

Natural Killer Cells – kill cells that have been infected, are diseased or abnormal, including cancer cells.

Mast Cells – inflammation and signalling chemicals

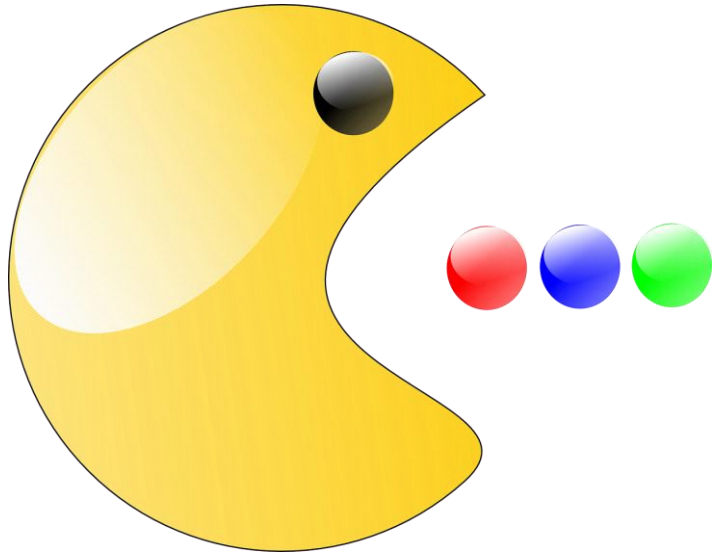


Image by Clker-Free-Vector-Images from Pixabay

Adaptive Immune System

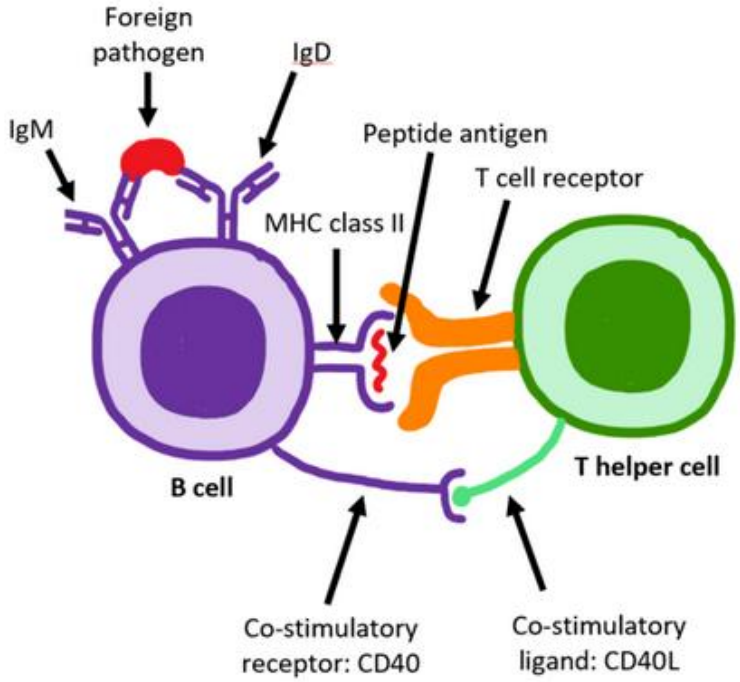
Specific – creates antibodies to specific antigens

Lymphocytes (white blood cells) – 2 types

- T-Cells – mature in the thymus.

Attack and destroy antigens and trigger the B-cells to produce antibodies

- B-Cells – produced in the bone marrow. Once triggered by T-Cells, they produce antibodies to create immunity, enabling the immune system to recognise pathogens again.

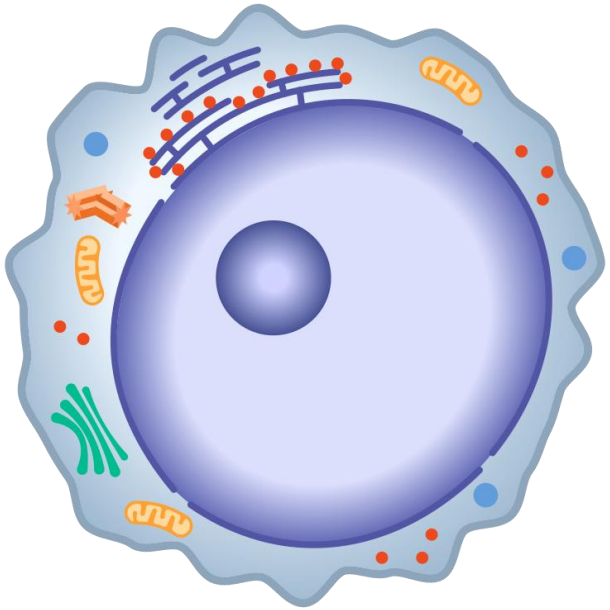


T-Cells

T-Cells mature in the Thymus

Depending on what they are exposed to, they mature into one of 4 types of T-helper cells, or Th cells

TH1 – bacterial or viral infection
TH2 – parasite, allergy
TH17 – autoimmunity
T-Reg – Regulates the immune response



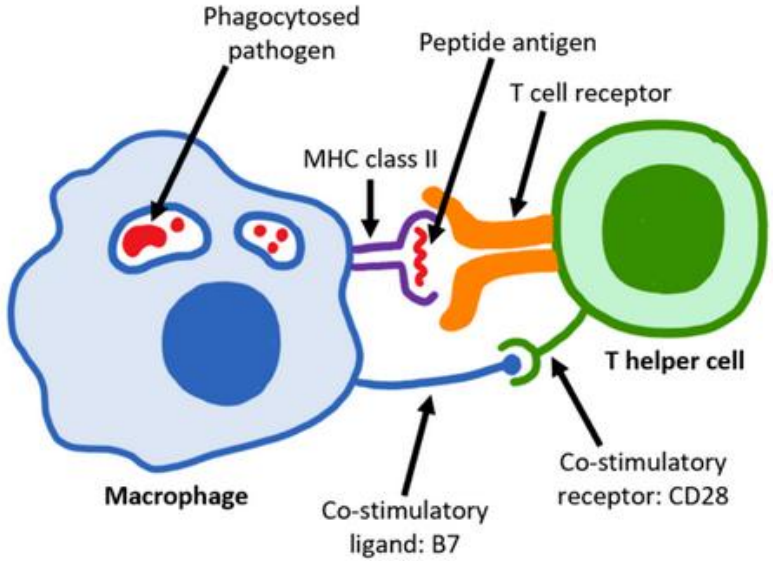
Adaptive and Innate Immune Systems

Innate Immune System and the Adaptive Immune system work together
When germs enter, innate immune cells (like macrophages and neutrophils) attack the germs right away.
The innate system also sends out signals (like alarms) to alert the adaptive immune system. (Cytokines)
Macrophages display pieces of the destroyed pathogens (called antigens) on their surface and travel to the lymph nodes and show the antigen to T cells, which are part of the adaptive immune system.

T Cells signal to the B-Cells what type of antibody to make

B cells create antibodies that stick to the germ

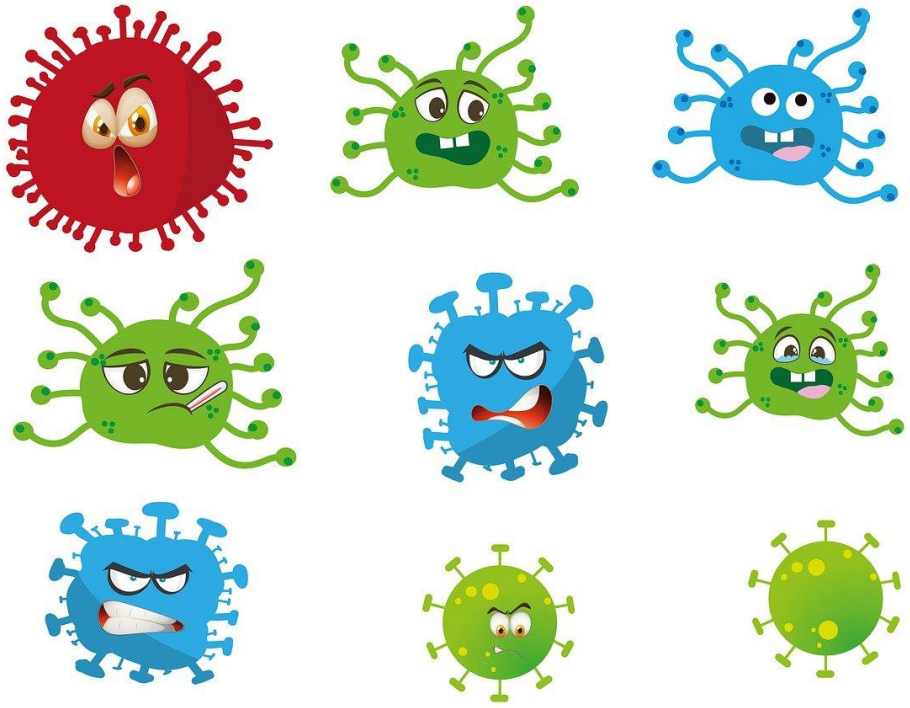
After the fight, the adaptive system creates memory cells to remember the germ in case it returns.



What Weakens The Immune System?

Viral infections
Bacterial infections
Mould exposure
Toxin exposure
Gut Dysbiosis
Inflammation
Autoimmunity
Nutrient deficiency
Stress

A combination of these might mean that your immune system becomes overwhelmed and struggles to fight off infections as efficiently as possible



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Viral Infections

Epstein-Barr Virus (Glandular Fever)
Herpes (Herpes Simplex Virus HSV)
Chickenpox (Varicella Zoster)
Hepatitis B and C
Cytomegalovirus (CMV)
Covid (SARS-CoV-2)

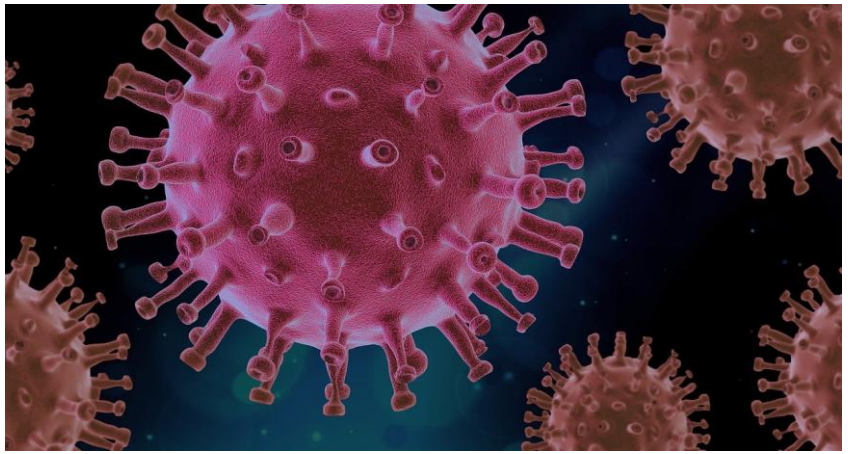
The human microbiome is made up of viruses as well as bacteria.

The immune system has to suppress these viruses and keep them in check.

Research is increasingly linking viruses with illnesses, such as cancer and MS.

When we become stressed or experience reduced immune function, these viruses can become reactivated

The more pathogenic viruses we have in our body, the greater strain on the immune system to keep them under control.



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Bacterial Infections

Some bacterial infections can weaken or suppress the immune system

For example, Lyme Disease bacteria ‘Borrelia Burgdorferi

One study showed that Lyme bacteria triggered abnormalities in lymph nodes that impair the adaptive immune response.

For months after infection, those lymph tissues fail to produce the B cells and antibody-producing cells that are crucial for producing lasting immunity.

In effect, the bacteria prevent the immune system from forming a “memory” of the invading bacteria and launching a protective immune response against future infections.

The researchers found that following *Borrelia burgdorferi* infection, this process even prevented a strong immune response to an influenza infection.

Autoimmunity – molecular mimickery

https://www.ucdavis.edu/news/lyme-disease-subverts-immune-system-prevents-future-protection

Mould Infections

Exposure to mould dysregulates the immune system function

Mycotoxins released by mould spores

Dysregulates the innate immune response and the Th1 response causing increases susceptibility to viral and bacterial infections

Upregulates Th2 and Th17 – causing inflammation, mast cell activation syndrome, and autoimmunity.

Mould produces gliotoxins. Research shows that these disarm the innate immune system and prevent it from being able to launch an effective response.

‘Gliotoxin inhibits production of the messenger leukotriene B4 in neutrophilic granulocytes by switching off the enzyme LTA4 hydrolase. “This interrupts communication between the immune cells and destroys the defense mechanism. As a result, it is easy for spores – in this case the fungus – that enter the organism to infiltrate tissues or organs,”

https://www.sciencedirect.com/science/article/abs/pii/S0889159119303010

Toxin Exposure

Exposure to other toxic substances can also dysregulate the immune system function

For example, endocrine disruptors such as BPA, phthalates and parabens found in many household products, can have effects on the immune system by altering the levels of hormones that alter the growth of immune organs such as the thymus or spleen.

Prolonged exposure to immunostimulants may predispose someone to develop allergies, or inflammation, or autoimmune diseases.

PFAs (Per and Polyfluroaklyl substances) found in waterproofing, non-stick pans, also known as ‘Forever Chemicals’. Over a decade ago, studies showed that these could suppress immune function.

Exposure to these chemicals from birth (or in utero) are also associated with poorer antibody production after vaccination.

https://www.pnas.org/doi/full/10.1073/pnas.2105018118
https://www.ncbi.nlm.nih.gov/books/NBK235670/
https://www.sciencedirect.com/topics/medicine-and-dentistry/immunotoxicity

Gut Dysbiosis

70% of the immune system is in the gut, so If you want your immune system to function well, you need a healthy gut.

The gut microbiome

- Orders immune cells to produce anti-viral proteins
- Teaches T-cells how to distinguish between foreign cells and our own body cells.
- Produces butyrate, which soothes the immune system and reduces inflammation.

Dysbiosis can cause the immune system to function abnormally, leading to autoimmune disease.

Nutrient Deficiency

The immune system is very ‘expensive’ to run in terms of nutrients

It ‘costs’ the body a lot of energy and nutrients to create inflammation and produce antibodies.

Protein is essential to immune function. Even subclinical deficiency in protein impairs the immune response and leads to increased risk of infection.

Vitamin D is essential to immune function. It modulates both the innate and adaptive immune responses. Deficiency leads to an increased risk of infections.
Vitamin D deficiency also linked with autoimmunity like Type 1 diabetes, MS, Lupus, IBD, RA

Other nutrients essential for Immune Health

- Essential Fatty Acids (Omega 3)
- Vitamin A
- Vitamin E
- Vitamin C
- B Vitamins
- Zinc
- Iron

https://pubmed.ncbi.nlm.nih.gov/21125142/

https://www.ncbi.nlm.nih.gov/books/NBK230970/

Stress

When we are in ‘fight or flight’ the body releases the stress hormone cortisol

One of the functions of cortisol is to switch off the immune system

When we are in an immediate ‘life or death’ situation, we must prioritise energy on fighting or running away. Fighting infections becomes of lesser importance

When we are experiencing chronic stress, we are producing high levels of cortisol all the time

This has a very negative impact on immune health, and increases our risk of developing infections.

Excessive exercise also produces cortisol, and can also impact immune health. Prolonged exposure to cortisol can also lead to immune dysregulation, where the inflammatory response is not switched off, and chronic inflammation or autoimmunity results.

ACE is highly correlated to the development of autoimmune disorders. One study showed people with more than 2 ACEs were at 70% increased risk for hospitalizations and an 80% increased risk for autoimmune disease

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9222834/

https://www.sciencedirect.com/science/article/abs/pii/S0145213421003914

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4465119/

Boosting the Immune System

There are 3 ways you can support your immune system

- **Understand** – know what your immune system needs and support it, not suppress it
- **Boost** - Consume more of the nutrients that your immune system needs to function
- **Support** - Consume plants, herbs and other substances that contain antibacterial and antiviral properties, which can help out the immune system in killing pathogens

Understand Immune Health

The more exposure we get to bacteria and foreign cells in early childhood, the better our immune system is ‘trained’ to detect and destroy harmful bacteria in later life, but also to distinguish harmless bacteria, reducing inflammation and allergies.

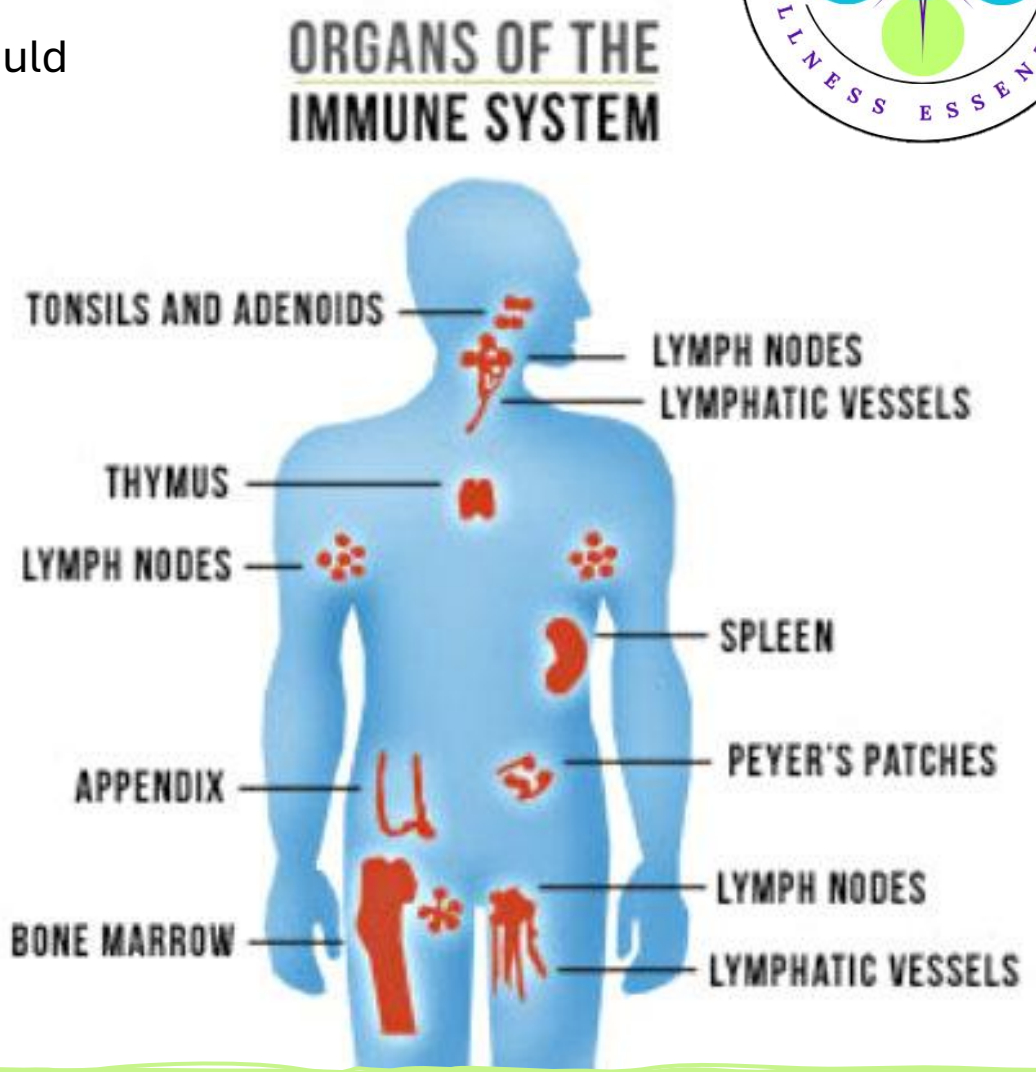
Understand Immune Health

A strong immune response to a virus is a good thing and should be supported.

Feeling ill is the body's way of telling you to rest- Don't try and push through.

The immune system travels through the lymphatic system, and swollen lymph nodes are a sign that the body is fighting an infection.

The immune system requires a lot of energy, and the body needs to prioritise energy for it.



Understand Immune Health

A strong immune response to a virus is a good thing and should be supported.

When you sneeze, cough and produce mucous, that is your immune system expelling the virus from the body and should be encouraged and supported.

A fever/ high temperature is a GOOD thing and should be supported.

The immune system will raise the body temperature to kill invasive pathogens. Reducing a fever or seeking to lower the temperature is counterproductive.

A fever is only dangerous if it goes above 39.5 degrees. Between 37 and 39 degrees, the body is fighting off infection and should be allowed.

Suppressing fever or sneezing stops the body from being able to fight the virus effectively.

A temperature over 40 degrees is dangerous.

Understand Immune Health

What to do when you have a virus:

- Allow a fever to run its course unless it gets above 39 degrees C.
- Drink plenty of water and herbal teas – hydration is key
- Herbal teas for fever – peppermint, yarrow, elderflower, chamomile, ginger
- Avoid eating heavy meals that tax the system
- Drink soups and bone broths to obtain essential nutrients
- Take lukewarm baths
- Promote sweating
- Do not suppress with paracetamol
- Rest

After a virus, consider lymphatic drainage to help the body eliminate immune byproducts.

Boost the Immune System

Gut Health

Eating foods that contain beneficial probiotics helps to support the immune system

Probiotics are beneficial bacteria that help maintain a healthy balance in the gut microbiota, which plays a significant role in immune regulation.

Studies have demonstrated that probiotics can enhance immune responses and reduce the incidence of respiratory and gastrointestinal infections.

Probiotics have been shown to stimulate immune cell activity, including macrophages and natural killer cells.

- **Sources**:
- Live Yogurt
- Kefir,
- Sauerkraut
- Kombucha
- Natto
- Tempeh
- other fermented foods.

Boosting the Immune System

B Vitamins (especially B6, B9, B12)

B6, B9 (folate), and B12, are essential for the production and function of immune cells, including white blood cells.

They are involved the production of antibodies.

B vitamins also help regulate the production of cytokines, which are signaling molecules that mediate immune responses.

Deficiency in these vitamins can lead to immune suppression. For example, B6 deficiency has been linked to reduced production of antibodies and cytokines, while B12 and folate deficiencies are associated with impaired immune cell proliferation

Sources:
Poultry
fish
eggs
leafy greens
Beans, pulses, peas
Nuts, seeds

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Boosting the Immune System

Vitamin C

To boost the immune system, increase the consumption of foods that are high in vitamin C.

Vitamin C stimulates the activity of white blood cells, which are essential cells that fight infection.

Vitamin C is an antioxidant that protects the cells from damage.

Eating a high-sugar diet stops Vitamin C from being absorbed properly.

Being very stressed causes us to eliminate Vitamin C more in urine, meaning we need to consume more.

Some foods rich in Vitamin C

Boosting the Immune System

Zinc

Zinc activates enzymes that break down proteins in viruses and bacteria, making them less able to spread.

It has also been shown to cut the length of a cold and increase the activity of immune cells that fight infection.

A lack of zinc can lead to inflammation.

Boosting the Immune System

Iron

Iron is necessary for the proliferation and maturation of immune cells, particularly lymphocytes, (T and B Cells) which are key to the body's adaptive immune response.

It also plays a role in the production of enzymes required for immune function.

Iron helps maintain the integrity of mucosal barriers and supports oxygen transport to cells, which is crucial during infection.

Iron deficiency anemia has been linked to impaired immune function, leading to increased susceptibility to infections.

Research suggests that maintaining adequate iron levels supports the immune response.

Sources:
Red meat, poultry, beans, lentils.

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Image by yilmazfatih from Pixabay

Boosting the Immune System

Vitamin D

Frequent infections can indicate a vitamin D deficiency.

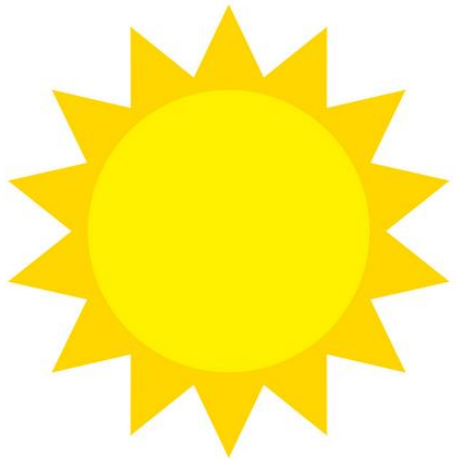
Many people living in the Western Hemisphere are deficient in Vitamin D, especially during the winter months

Vitamin D modulates both the innate and adaptive immune responses.

It enables the immune system to attack harmful pathogens like viruses and bacteria through its effect on activity of T and B Cells

It preventing excessive over-activation of immune reactions, which can cause inflammation and autoimmune diseases

A study of people with Fibromyalgia found they all had lower levels of Vitamin D than 'healthy' controls
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5665736/



Sources of vitamin D
Sunlight Exposure to at least 15 minutes of sunlight per day
Fatty fish like salmon, mackerel, herring
Egg yolks
Dairy yoghurts
Liver
Mushrooms
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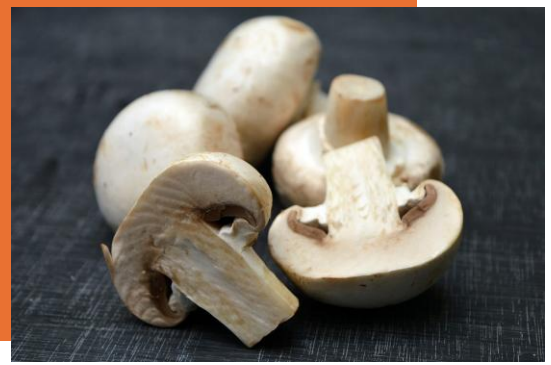

Image by Guillermo Vuljevas from Pixabay

Boosting the Immune System

Garlic

Garlic contains sulphur, which boosts the way immune cells are able to attack viruses like colds and flu.

One study gave 146 healthy volunteers either garlic supplements or a placebo for 3 months. The garlic group had a 63% lower risk of getting a cold.

A different study found that colds were significantly shorter for subjects who ate 2.56 grams of garlic extract daily during cold and flu season compared with a placebo group.

Beneficial compounds in garlic can be deactivated by heat.

However, crushing garlic and allowing it to stand for 10 minutes before cooking can help prevent the loss of its medicinal properties.

Supporting the Immune System

Manuka Honey

The Manuka bush grows in New Zealand, and manuka honey is made from the nectar of its flowers.

It contains Methylglyoxal, which has strong antibacterial effects.

Studies have revealed that manuka honey can stimulate the production of cytokines, the body's natural defence against viral infections, empowering your immune system to fight back.

Supporting the Immune System

Ginger

Ginger has been shown in studies to be anti-inflammatory, anti-oxidant, and to have antimicrobial effects.

By reducing chronic inflammation, it can enhance the function of the immune system.

In addition, many studies support the presence of anticancer properties in ginger.

One study found that fresh ginger had antiviral effects against the virus that causes respiratory infections and helped boost the immune response against this virus (21Trusted Source).

Supporting the Immune System

Liquorice root

Liquorice root contains a compound called glycyrrhizin, which has been found to be antiviral in studies.

It is also antioxidant and anti-inflammatory, particularly beneficial for respiratory issues.

Supporting the Immune System

Elderberry

Two studies showed that elderberry extract supplements shortened the duration of the flu by four days as compared to a placebo.

Very high in vitamin C and also antioxidants, which can help to fight off colds and flu.

Studies have shown it can have antibacterial effects, can increase the amount of white blood cells, and also potentially inhibit cancer cell growth.

Caution! Freshly picked, raw elderberries contain small traces of cyanide, and so shouldn't be eaten raw.

Avoid it in children, adolescents, pregnancy, and breastfeeding.

Supporting the Immune System

Meditation

Studies have shown that people who meditation increase the production of antibodies and immune cells.

A study by the University of Florida found Eight days of intense meditation causes robust activation of the immune system,

Lower inflammation. Other studies show that regular Mindfulness practice affected specific markers of inflammation in the blood, and lowered CRP levels. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4940234/

Compassion practices in particular have been shown to reduce levels of IL6, inflammatory markers. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2695992/

The 'Mother Theresa Effect' Harvard study also found that watching acts of compassion led to a boost IGA antibodies in saliva.
https://drdavidhamilton.com/the-mother-theresa-effect/

Supporting the Immune System

‘Forest Bathing’

Phytoncides are organic compounds emitted by plants, particularly trees, as a defense mechanism against insects, bacteria, fungi, and other harmful organisms.

The term "phytoncide" comes from the Greek words *phyton* (plant) and *cide* (to kill), meaning "plant killer,"

These compounds, found in the forest air, are believed to have numerous health benefits for humans, particularly in enhancing the immune system.

Boosting Natural Killer (NK) Cells Phytoncides have been shown to increase the activity and number of **natural killer (NK) cells**, which are a crucial part of the immune system. NK cells target and destroy infected cells, including those affected by viruses or cancer.

Antimicrobial Effects Phytoncides such as **α-pinene** and **limonene** possess **antimicrobial properties**, helping protect the body from bacteria, viruses, and fungi.

Image by Amore Seymour from Pixabay

Natural First Aid

- Mild skin infections - Oregano Oil – antibacterial
- Sore skin/rashes – calendula cream – healing
- Cuts and grazes - Witch-hazel - antibacterial
- Insomnia - Chamomile tea, Epsom Salt Bath
- Coughs and colds - Ginger tea, chicken broth
- Fever – yarrow tea, elderflower tea
- Minor burns – Aloe Vera gel (neat from the plant)
- Insect bites – peppermint oil
- Tummy upset – peppermint oil, apple sauce, rice, banana, apple cider vinegar
- Antihistamine – nettle tea

Test everything to ensure you tolerate it. Just because it's natural, it can still trigger MCAS!

Contacts

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Contacts

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The End

Thank you for Listening