



IMMUNITY SUPPORT

The human immune system evolved with, not separate from, the whole of nature. Support the immune system by eating nutritious food grown in a flourishing soil biology. The health of the immune system is cradled in the gut microbiome, so it is important to eat foods that can support the diversity, quality & quantity of bacteria in the gut.

- * choose food grown in a healthy regenerative farming/growing system
- * eat lacto fermented foods regularly - **sauerkraut, kimchi, yogurt**
- * include prebiotic foods daily - **cabbage, beetroot, onions, leeks, apples**
- * include glutamine rich foods - **spinach, cabbage, walnuts and chickpeas**
- * eat plenty of polyphenol rich foods – **blueberries, linseed, cacao**
- * ensure your diet includes adequate essential fatty acids - **hemp, chia, walnuts**
- * minimise the use of sugar which encourages the growth of pathogenic bacteria
- * eat plenty of **garlic** which provides beneficial effects on the immune system.
- * include **shiitake** in your diet which are hugely beneficial to the immune system

We need a whole range of nutrients for the immune system to function efficiently including good quality protein, essential fatty acid, phytonutrients, vitamins and minerals. A number of vitamins A, B6, B12, folate, C, D & E and minerals zinc, copper, selenium and iron have key roles in supporting the immune system and reducing risk of infection. Here is a run down of key vitamins and minerals

Vitamin A is important for intestinal immune response, many aspects of innate immunity, are modulated by vitamin A and its metabolites found in **oily fish, eggs & butter**
The carotenoids alpha carotene & beta carotene are pro vitamin A and found in foods like **sweet potato, carrots and kale**.

Vitamin B6, deficiency leads to decreased levels of white blood cells and decreased production of antibodies. sources include **cauliflower, cabbage, spinach**

B12 is integral to red blood cell production, ensuring the immune system gets the oxygen it needs. found in **meat, eggs and dairy** a plant based diet will need a supplement

Folate - is essential for immune response found in **lentils, cauliflower, Brussels sprouts.**

Vitamins B6 and B12 and folate all support the activity of natural killer cells

Vitamin C has many different immune enhancing effects. It influences cellular immunity involved in defence against invading pathogens improves the integrity of mucous membranes as well as being antibacterial and antiviral. Levels are soon depleted during stress and infection.

found in **broccoli, kale, blackcurrants**

Vitamin D has important immuno-regulatory properties - **oily fish, pastured eggs, shiitake**

Vitamin E improves the function of T & B cells, major cells in adaptive immunity, found in **sunflower seeds, hemp-seeds, green leafy vegetables**

Zinc has wide ranging actions on the immune system and is directly antiviral.

Oats, peanuts, mung beans, pumpkin seeds are all good sources of zinc

Copper has a key role in pathogen engulfing macrophages and is found in **shiitake, sesame seeds & walnuts**

Selenium affects all components of the immune system and is found in **wholegrain barley & rice mushrooms**

Iron deficiency commonly causes immune dysfunction,

There are 2 forms of iron, heme iron is only in animal-derived foods and non heme iron is mostly in plants, including **lentils, cacao, hemp-seeds, & Swiss chard**



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