

STRONG IMMUNITY IS VITAL FOR LEADING ACTIVE & HEALTHY LIVES

1 Your immune system is an unsung hero

The immune system is your body's protective shield against health challenges. It works continuously and a well functioning immune system triggers the right responses to protect our bodies against pathogens, allergens and diseases.



2 Delving deeper into the immune system

Firstly, let's understand the two ways of immune defence before we discuss how we can proactively support our immune system.

The innate immune system:

Reacts quickly in an **unspecific** manner to pathogens.

Comprises phagocytic cells (e.g. natural killer cells, neutrophils, macrophages) circulating through the body at any time, ready to destroy threats.

Recognizes pathogens as foreign. Destroys and eliminates them in an inflammatory process with subsequent healing.

Supported by a range of antimicrobial peptides, enzymes and signaling molecules.

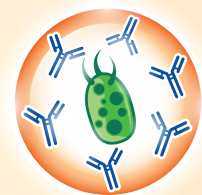
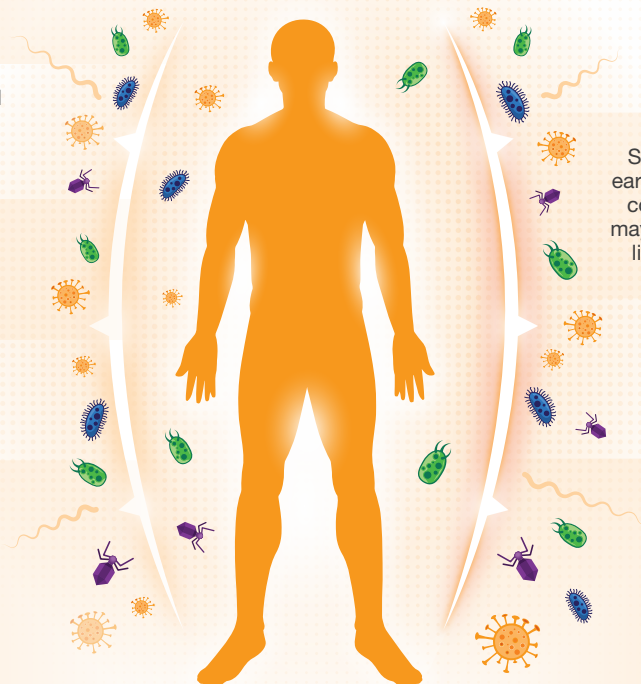
Key defense system during first-time exposure to pathogens. But often not fast and strong enough to prevent symptoms of disease. Hence, complemented by the acquired immune system.

The acquired immune system:

Reacts quickly and vigorously with **pathogen-specific** antibodies, if available.

Such antibodies must be produced earlier in life after vaccination or after contracting the disease. Antibodies may be stored in the body throughout lifetime or only for a certain period.

Antibodies bind the pathogen. Immune cells will destroy and eliminate them before symptoms of disease occur.



A well-balanced diet comprising a variety of health ingredients serve specific functions in both parts of the immune system. For example:


Required for maintenance and proper function of entry barriers (skin, eyes, airways, GI-tract).

For production and function of phagocytic cells, antimicrobial peptides, enzymes, antibodies.


For regulating inflammation and for enabling a proper healing process afterwards.

3 Reasons for a weak immune system


The typical sign of a weak immune system is frequently falling sick beyond what is normal in your stage of life. Some reasons may include:




Unbalanced diet
Not consuming a diet rich in fresh fruits, vegetables coupled with insufficient intake of micronutrients, proteins, essential fatty acids.




Lack of physical exercise
Insufficient stimulation of body tissues.




Extreme, strenuous physical exercise
Leads to short-term weakened immune system post exercise.




Poor quality or lack of sleep
Leads to disturbance in immune system regulation.




Medications
Immune suppressants.




Lack of sunshine exposure
Insufficient vitamin D production in skin.




Chronic stress
Stress hormones can suppress the effectiveness of the immune system.



Exhaustion
Insufficient resources available for proper immune function.



Ageing
Decline in immune defences is a normal process during ageing.



Diseases
Chronic diseases, allergies, leukaemia.

4 Good nutrition & exercise supports the immune system

Generally, a balanced diet rich in vitamins and minerals in combination with sufficient physical exercise are fundamentals for a healthy immune system. Make the right choices with foods rich in these vitamins and other health ingredients to support the immune system so the various pathways can function properly.

Health ingredients	Link to immunity	Recommended dietary allowance (RDA) <small>[Based on U.S. RDA levels but may vary according to your region]</small>
Vitamin A	Precursor of retinoic acid, which is highly important for steering immune system function. Serves to strengthen barrier functions & enhances effectiveness of vaccinations.	700-900 RAE* (19 – 50 years) <small>*RDAs for vitamin A are given as retinol activity equivalents (RAE).</small>
Carotenoids	Beta-carotene (a carotenoid & the precursor of vitamin A and retinoic acid) offers the same benefits for immunity as vitamin A. All carotenoids offer antioxidant & tissue protective effects.	While there is no RDA established by the authorities, speak to your healthcare practitioner to find out how much is beneficial for your state of health.
Vitamin B6 / B12	Modulation of immune cells, important for steering lymphocytes to infected tissues.	1.3 mg (19 – 50 years) / 2.4 µg (> 14 years)
Vitamin D	Strengthens barrier function by regulating anti-microbial defense proteins.	15 µg (19 – 70 years)
Vitamin E	Anti-inflammatory effects. In addition, stimulates immune cells, particularly in elderly people.	15 mg (> 14 years)
Omega-3	Anti-inflammatory effects.	While there is no RDA established by the authorities, speak to your healthcare practitioner to find out how much is beneficial for your state of health.
HMO	Supports the gut to inhibit pathogen adhesion, modulates immune responses, and promotes growth of beneficial bacteria.	While there is no RDA established by the authorities, speak to your healthcare practitioner to find out how much is beneficial for your state of health.

5 Am I consuming the right amount (dosage)?

As a rule of thumb, at least 100% of RDA levels should be consumed daily together with a well-balanced diet. Achieving the RDA can also be achieved through complementing your diet with dietary supplements and functional nutrition.

To support the immune system, higher amounts may be necessary depending on your individual health status. Please consult your doctor prior to taking dietary supplements above RDA levels to ensure that your intake levels are well within the thresholds of the Upper Safe Levels of Intake.