



Micro-immunotherapy
International Medical Experience

Micro-immunotherapy & Infections



Immune resilience

Protection against viruses and bacteria

Treatment and prevention

The natural protection against infections
for the whole family

As the cold season draws closer, many of us suffer from frequent respiratory infections. A stuffy or runny nose, coughs, sore throat or fatigue are some of the annoying symptoms that keep coming back year after year. Even though we are permanently exposed to pathogens, autumn and winter's low temperatures make it easier for some viruses to spread¹. Yet, how is it that some people enjoy good health during the cold season and others do not? How can we actively prevent infections? It is all about keeping the immune system in shape!

Our defence against pathogens

Immunity is the body's natural defence mechanism against pathogens and other potentially harmful external factors. It is a complex network of organs, cells and immune messenger substances distributed throughout the body. Two closely intertwined subsystems make up the immune system: innate immunity and adaptive immunity².

The innate, non-specific defence system

Our body's first line of defence comprises barriers such as the skin and the mucosa, which hinder pathogens from entering the body. If they nevertheless cross this protective barrier, cells of the innate immunity such as macrophages (scavenger cells) or natural killer cells are activated and start to eliminate the pathogens. If needed, these cells release immune messenger substances to get help from further immune cells. Fever may also appear as part of our natural defence process. Innate immunity usually acts very quickly and in a non-specific way.

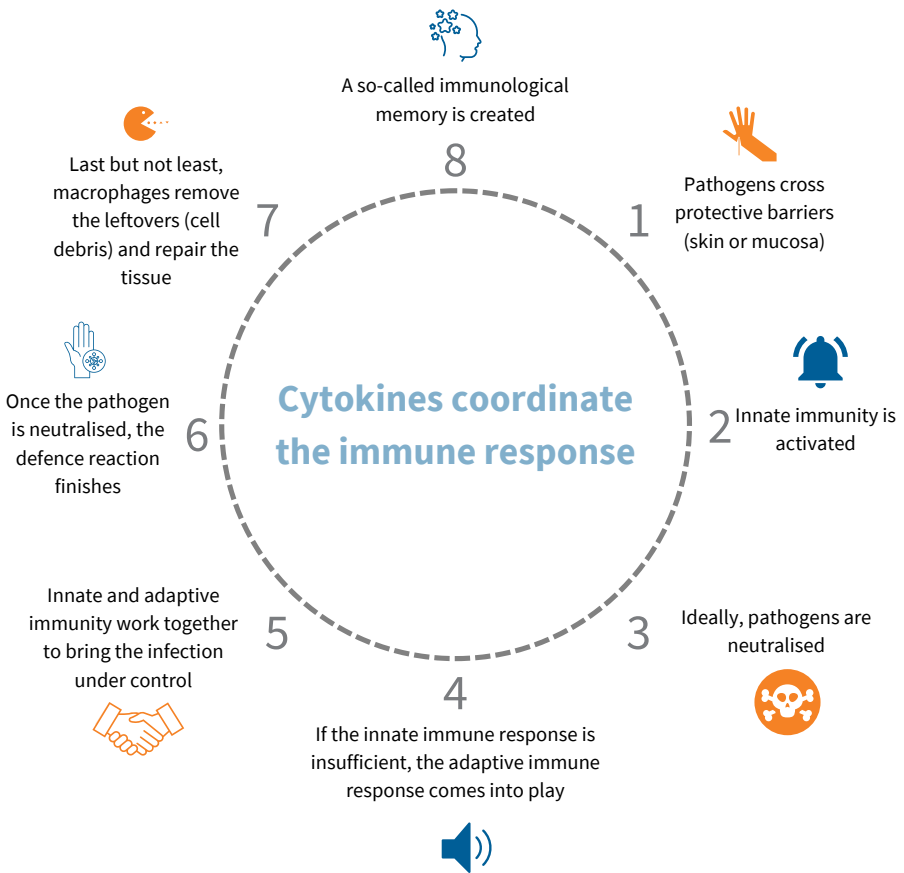
The adaptive, specific defence system

In most cases, innate immunity is not sufficient to bring the infection under control. When macrophages and natural killer cells are unable to fight the pathogen, the adaptive immune system comes into play. Its main actors are immune cells like T and B cells as well as molecules such as antibodies. Even though it takes longer, its action against pathogens is more specific and targeted than that of innate immunity.

Innate and adaptive immunity work together, coordinating their response through immune messenger substances in order to keep pathogens under control.

Once pathogens are neutralised, other immune messenger substances are released in order to resolve the immune reaction. Macrophages then clear the “leftovers” (cell debris).

After this first “battle”, a so-called immunological memory is created: if a pathogen which is already known to the immune system re-enters the body, it can be dealt with much quicker and more efficiently.



*Fig. 1. Phases of the immune response
In a balanced immune system, the immune reaction runs smoothly and pathogens are fought off successfully.*

Note: The specific defence mechanism develops throughout life through contact with various pathogens. This explains the frequency of infections during childhood, as the immune system is not yet fully trained.

Conversely, it is known that the function of the innate and the adaptive immune system decreases with increasing age. Thus, the elderly are more susceptible to infections and other diseases³.

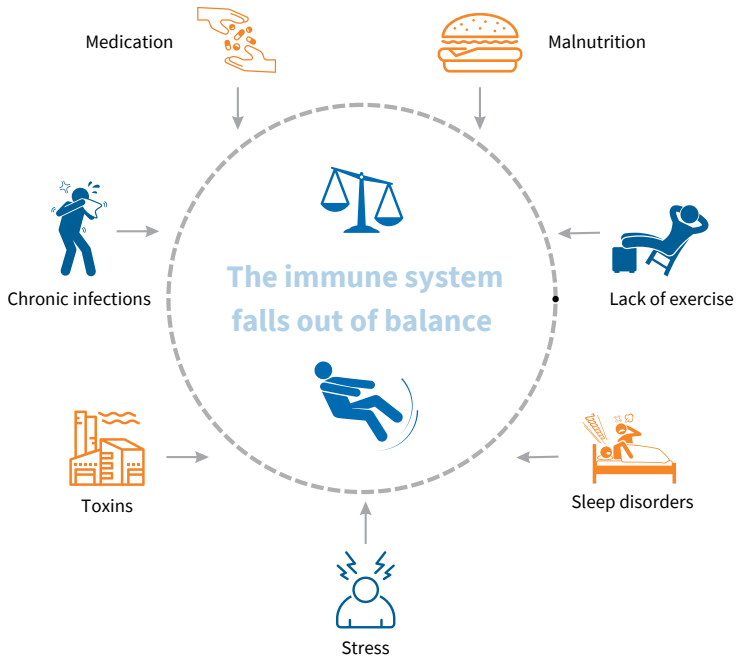
So, why do we fall ill despite our smart immune system?

Just as any complex system, our body's defence system is dependent on each party involved fulfilling its role and performing its task properly. There are various factors which may potentially disrupt the balance of our immune system (so-called immune stressors), increasing the risk of infections and other diseases. These include malnutrition, lack of exercise, sleep disorders, chronic stress and environmental factors (e.g. toxins). Chronic or persistent infections can also be the cause of an immune imbalance. For example, it is known that herpesviruses such as the Epstein-Barr virus (EBV) impair the immune function and can trigger various disorders like recurrent infections.

Note: Do you suffer from recurrent, severe infections? Ask your doctor to perform a serology test to rule out an EBV burden.

Certain medication (e.g. antibiotics and antipyretics) may also impair our complex natural defence system as it is often prescribed rapidly and inappropriately.

It is therefore important to relieve our immune system as far as possible from potential stressors, strengthening its resilience so it adapts to changing internal and external challenges in a flexible and appropriate way.



*Fig. 2: Possible immune stressors
Various factors can unbalance the immune system*

The micro-immunotherapy approach

Micro-immunotherapy supports the immune system to overcome infections by regulating its function through immune messenger in low doses. It aims to prevent the replication of the pathogen while strengthening the immune system, thereby dampening the infection of further cells and counteracting the onset or progression of associated diseases.

Micro-immunotherapy helps the immune system to re-attain a proper, balanced and efficient function in a sustainable way. It is often used preventively during the cold season or whenever there is a higher risk of infection, although it has also proven to have a beneficial effect on the course of disease during an infection.

Sharing their experience, many patients reported to have a more stable and efficient immune system upon using micro-immunotherapy against infections. Symptoms tend to be milder and the affected recover faster. In most patients who previously suffered from frequent infections, susceptibility decreases through micro-immunotherapy.

Note: The coronavirus pandemic has brought to the foreground the importance of a balanced immunity for overall health. The immune system needs to be in good shape to fight off pathogens swiftly and efficiently without reacting too strongly, since an excessive response may lead to tissue being increasingly damaged. Immunoregulatory treatments like micro-immunotherapy help to reestablish or maintain immune balance.

Micro-immunotherapy can be applied in all age groups, it is easily taken sublingually (under the tongue) and has a good safety profile given its low dosage. It is compatible with other therapeutic approaches and can be integrated into any preventive program or treatment plan.

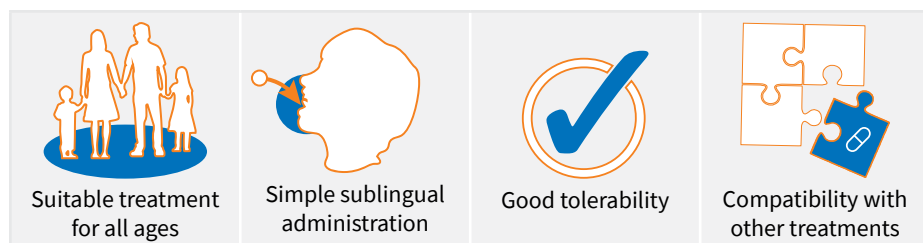


Fig. 3: Benefits of micro-immunotherapy

Studies

A study published in 2021 showed the immunostimulatory effect of micro-immunotherapy on various immune components in cell cultures and a respiratory infection model⁶. In light of the results, the authors suggest that micro-immunotherapy is a promising approach for the prevention and treatment of acute, chronic and recurrent infections, particularly respiratory infections.

In another study on cell cultures, the use of low doses of a compound used in micro-immunotherapy called IFN- γ (interferon gamma) was proven to promote the activation and multiplication of various immune cells. This substance plays an important role in the antiviral response⁷.

Conclusion

Current clinical experience suggests that micro-immunotherapy is a valuable and safe treatment option for infections which can as well provide immune support as part of preventive programmes. A gentle immune booster, micro-immunotherapy aims at strengthening our immunity sustainably so that it manages to neutralise viruses and other pathogens before they get to harm our body. It is thereby recommended to start with prevention in time in order to enjoy an easygoing autumn and winter season in all its facets with good health.

Literature

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