

**LaDR** Ihr Labor  
vor Ort



Information for Patients

# A Robust Immune System for Good Health



# The immune system protects us from intruders

**Some people suffer more frequently from infections than others – the immune system may be the reason.**

Are you also a person who enjoys life and work and does not want to be disturbed by frequent colds, a runny nose or a cough? Or do you feel stressed or maybe catch an infection more frequently than people around you? Some people fall ill more often than others. Why is that?

To a large extent we owe our health to the immune system. This extraordinarily effective defence mechanism protects the body from intruders that make us ill, for instance bacteria, viruses, parasites and fungi. It attacks everything that is alien to our bodies – even our own rogue cells, like cancer.

This defensive mechanism builds on complex interaction, mainly between the various subtypes of white blood cells and the numerous messenger substances. Each one of us has a natural defence system that is unspecific. It uses so-called scavenger cells and certain proteins in the blood quite simply to destroy every intruder. But there is also an 'intelligent' immune system, also known as specific defence. It deploys so-called lymphocytes, which are also a subtype of white blood cells.

Specific antibodies attack particular pathogens, and the immune system remembers the intruder for the next time.

## When the defence mechanisms are not working properly

Control of the immune system may become disturbed. This makes things easier for micro-organisms and foreign substances. Acute and chronic infections, eczemas, allergies, wound healing impairments, frequent infections, autoimmune diseases and tumours might indicate that something is amiss with the immune system.

Your doctor will investigate the causes of these health problems and will examine you carefully. In addition, a variety of laboratory tests can help to identify the reason for increased susceptibility to infections and other things.

My blood count? Leukocytes? The immune status? Antibodies? Vitamins and minerals? Antioxidants? I do want to know what is wrong with me and what is fine.



## Helpful blood tests

A complete blood count mainly determines the number of red blood cells (medical term: erythrocytes) and white blood cells (leukocytes). The various leukocyte subtypes are also analysed, as they are responsible for different functions within the immune system. This can provide information on the possible causes for reduced protection against infection.

A full immune status also reveals changes in the white blood cells. It is a good method of monitoring progress during treatment that stimulates the immune system, but there should be at least four weeks between each test. Cellular immune status indicates how the various cell types and their subtypes are distributed in the blood. This can reveal both immunodeficiency, as well as excessive stimulation of the immune system. In turn, the humoral immune status provides information about certain antibodies and messenger substances that play a mediating role in immune responses.

Additional medical analyses can also help with particular medical questions. If a virus infection is suspected, for instance, determining the messenger substance neopterin may be a good option. Chronic fatigue can be the result of vitamin or mineral deficiency, so analysis in these areas is possibly helpful.

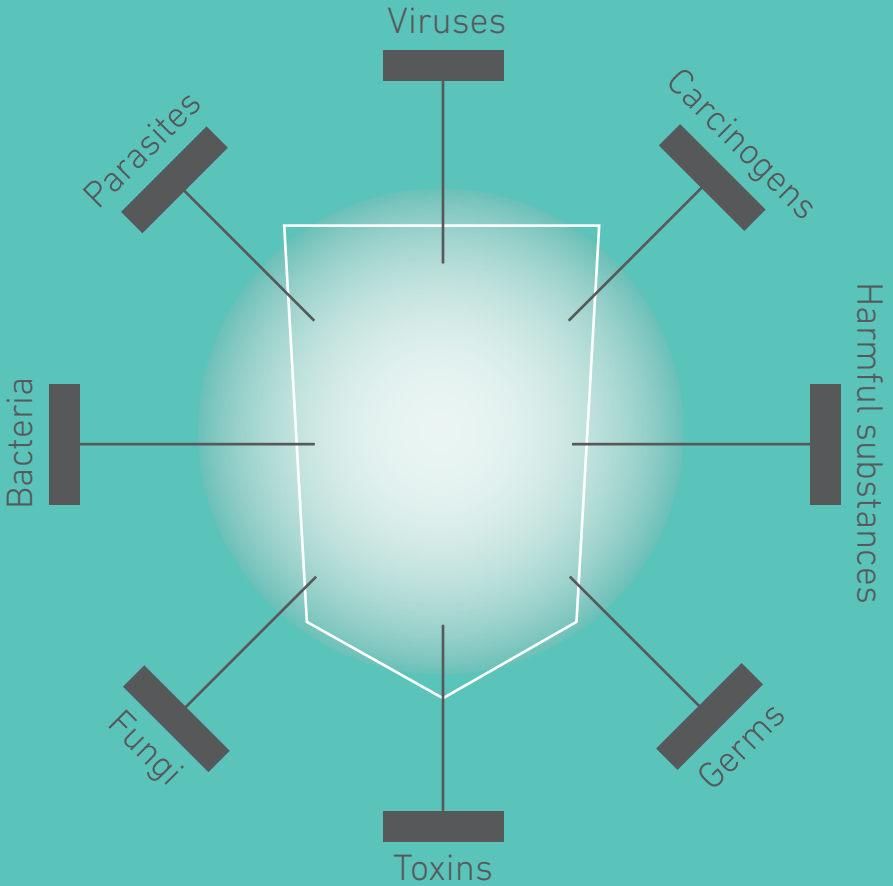
Determining so-called antioxidants also provides information on how the human organism is coping with free radicals. Free radicals are aggressive molecules containing oxygen that can damage the cells and the DNA, although they may help the immune system as well, for instance in the elimination of bacteria.

### Recommended laboratory screening

- **Complete blood count**
- **Full immune status**
- **Cellular immune status**
- **Humoral immune status**
  - Immunoglobulin: IgA, IgG, IgM, IgE
  - IgG subclasses: IgG1–4
  - Complement system: C3, C4
  - Serum protein electrophoresis
- **Neopterin**
- **Clarification of chronic fatigue**
  - Haemogramme, CRP, cortisol, ferritin, folic acid, magnesium, selenium, zinc, vitamin B12, vitamin D3
- **Antioxidant status**
  - Malondialdehyde, selenium, zinc, vitamin E, antioxidant capacity, coenzyme Q10



My immune system is like a defensive shield, if it is working properly.



## Individual health services

It is possible that the requested services and laboratory analyses will not be included in statutory health insurance. This means that your provider will not be required to cover any or perhaps all of the costs. In these cases you can have the tests done as optional services. You will receive an invoice, which you will be required to settle. We will then send the laboratory findings to your doctor.

**Ask your doctor to explain the costs for the requested analyses and enquire with your health insurance provider which costs it will cover!**

For further patient information on many other health issues, go to:

[www.LADR.de/patienteninformation](http://www.LADR.de/patienteninformation)



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**Informationen zu den regionalen Facharztlaboren im deutschlandweiten  
LADR Laborverbund Dr. Kramer & Kollegen unter [www.LADR.de](http://www.LADR.de)**

LADR Der Laborverbund Dr. Kramer & Kollegen GbR  
Lauenburger Str. 67, 21502 Geesthacht, T: 04152 803-0, F: 04152 803-369, [interesse@LADR.de](mailto:interesse@LADR.de)

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