

Covid-19 – how to protect yourself against it?

Covid-19 - Testing the Strength of the Immune System

Covid-19 has completely changed our lives. The death rate and viral complications among the population are so high that the search for methods of treatment and prevention of Covid-19 has become a priority problem for all countries in the world.

A cytokine storm is believed to be the root cause of the severity of the disease. This is a potentially lethal response of the immune system, characterized by rapid proliferation and increased activity of T cells, macrophages, and natural killer cells with the release of various inflammatory cytokines and chemical mediators by protective cells ([1](#)). The essence of the condition is the production of a large number of inflammatory mediators, which lead to the activation of immune cells and the release of a new portion of mediators due to the presence of uncontrolled positive feedback between these processes ([2](#)). A vicious circle destroys the tissues of the inflammation focus, while the reaction spreads to neighbouring tissues and, as it develops, becomes systemic, covering the entire body as a whole ([3](#)).

Blood clotting disorders during and after Covid-19

Another very important finding in patients with severe Covid-19 is a predisposition to thromboembolic complications in the venous and arterial systems ([4](#)). In particular, attention should be paid to thrombotic complications in the pulmonary circulation, which are called pulmonary intravascular coagulation and pulmonary coagulation ([5](#)). Careful monitoring of patients with Covid-19 ([6](#)) has shown that many of them have abnormalities in laboratory studies of the blood coagulation system that resemble other systemic coagulopathies, such as disseminated intravascular coagulation (DIC) or thrombotic microangiopathy (TMA), with elevated D-dimer levels and prolonged prothrombin time (PT) in more severe patients ([7](#)). At the same time, Covid - 19-associated coagulopathy has features that distinguish it from both DIC and TMA ([8](#)). Some people with Covid-19 develop abnormal blood clots in the smallest blood vessels. The clots may also form in multiple places in the body, including in the lungs. This unusual clotting may cause different complications, including organ damage, heart attack, and stroke. Several potential mechanisms could explain the clotting disorder caused by Covid-19 which is likely the result of a cooperation between all these different processes:

The first mechanism involves “cytokine storm,” which rapidly activates Th1 cells to secrete pro-inflammatory cytokines, such as granulocyte-macrophage colony-stimulating factor (GM-CSF) and interleukin-6 (IL-6). GM-CSF, in turn, activates CD14+ CD16+ inflammatory monocytes to produce large quantities of IL-6, tumour necrosis factor- α (TNF- α), and IL-1 ([9](#); [10](#)). IL-6 seems to be the key mediator in initiating hyper-coagulation. Fibrinogen and Factor VIII production are also stimulated by IL-6, which acts as well on endothelial cells to induce vascular permeability by stimulating vascular endothelial growth factor (VEGF) secretion ([11](#); [12](#); [13](#)). Also, severe inflammation might trigger endothelial injury and result in thrombosis. And activated endothelial cells become a reason for exocytosis, microvascular inflammation, and thrombosis ([14](#)).

Another mechanism of coagulopathy could relate to viral-induced autoimmunity with the induction of antiphospholipid antibodies (aPL), recognized risk factors for different viral infections associated with thrombosis ([15](#)).

At last, but not least, as Covid-19 binds to its receptors, ACE2 expression is decreased leading to activation of the renin-angiotensin system (RAS), promoting platelet adhesion and aggregation ([16](#)). Attachment can also cause direct endothelial dysfunction promoting the formation of a platelet plug ([17](#)). The accumulation of angiotensin II can result in the production of reactive oxygen species

(ROS) leading to oxidation of beta 2 glycoprotein 1 (β 2GP1), which depletes non-oxidized β 2GP1 from binding Von Willebrand Factor, leading to a cascade of platelet adhesion, activation, and aggregation ([18](#)).

Covid-19 and leaky gut syndrome – is there any connection?

Patients infected with Covid-19 most commonly complain of different breath symptoms and fever. But we should not forget that inflammation impacts all the organs but first may have no symptoms. A sizable fraction of patients hospitalized with breathing problems also have diarrhea, nausea, and vomiting, suggesting that when the virus does get involved in the GI tract it increases the severity of the disease. It was shown that chronic diseases associated with severe Covid-19 are also associated with altered gut microbiota. A growing body of evidence suggests poor gut health adversely affects prognosis ([19](#)). Also, such a negative symptom as platelet activation is observed simultaneously with Covid-19 and a leaky gut syndrome and appears to be another link between these two diseases ([20](#)). Accordingly, they can increase the severity of each other, and leaky gut needs to be treated as soon as possible ([21](#)).

Who is at risk for severe Covid 19, blood clots, and inflammatory complications?

Due to CDC data among adults, the risk for severe illness from COVID-19 increases with age, with older adults at the highest risk ([22](#)). Severe illness means that the person with COVID-19 may require hospitalization, intensive care, or a ventilator to help them breathe, or they may even die. People of any age with certain underlying medical conditions (which now include pregnancy) are also at increased risk for severe illness from SARS-CoV-2 infection. For example, asthma, blood disorders, cancer, cerebrovascular disease, chronic obstructive pulmonary disease (COPD), chronic kidney disease (CKD), cystic fibrosis, diabetes, Down syndrome, heart disease, hypertension, immunosuppressant medications, use of corticosteroids or other immunosuppressive medications, solid organ or blood stem cell transplantation, neurological conditions, obesity, etc. increase the Covid severity and possibility of complications ([23](#)). Thus, most of the people are in the risk group.

Also, it should be mentioned that blood clotting disorders and different chronic inflammatory diseases may appear after a couple of weeks or months after recovery from Covid-19. Even if you had a mild or asymptomatic illness ([24](#)).

Is vaccination the solution to the Covid problem? Silent inflammation and thrombocytes

Today vaccination is meant to be the only salvation from Covid-19. But is it so?

Firstly, there is no straight assurance that vaccination will prevent you from getting ill. Those who are elderly or whose immune systems are faulty, damaged, or stressed by some other illness are less likely to mount a robust response than someone younger and fitter ([25](#)). In addition, there is evidence that vaccination is ineffective with other strains of Covid-19, especially the Delta variant ([26](#)).

Different research reports that injection site pain (89.8%), fatigue (62.2%), headache (45.6%), muscle pain (37.1%), and chills (33.9%) were the most commonly reported side effects ([27](#)). At the same time, there is data about much more dangerous vaccination side effects – blood clots, that appeared to be a reason for serious cardiovascular and nervous systems diseases, and even death ([28](#); [29](#); [30](#)).

How to deal with inflammation and thrombosis and protect cells from damage?

This way, there seem to be two main problems with Covid-19 that may lead to severe disease and long-Covid complications – inflammation (especially silent gut inflammation) and blood clotting disorders. How to protect yourself and your loved ones?

To deal with inflammation the best decision is to modulate and strengthen immunity and to fulfill your organism with antioxidants and vitamins. Also, it is very important to balance your microbiome for better protection from viruses and bacteria. Special supplements are required to be used for these aims.

NEOVITAL® - vitamins and polyphenols power against diseases

For example, NEOVITAL® - the innovative concept for treating intestine inflammation, biological anti-ageing, and more vitality for your cells and organs. In this unique product, we combined powerful polyphenols from natural plants and fruits with selected vitamins and vital substances. Numerous studies confirmed the remarkable properties of polyphenols, in particular their anti-inflammatory and antioxidant properties. In NEOVITAL®, the combined strength of beta-glucan, alpha-lipoic acid (ALA), quercetin, beta-carotene, curcumin, resveratrol, Triphala Churna, Aronia, and moringa with the active forms of vitamins B12 and folic acid and vitamins A, C, and E with the highest bioavailability, beyond what is known so far ([31](#), [32](#), [33](#), [34](#), [35](#), [36](#)).

Thus, folic acid, vitamin C, and vitamins of the B12 group contribute to the normal function of the immune system, reduce tiredness and exhaustion, and return to normal psychological performance. Folic acid and B12 vitamins play a role in cell division. Vitamin C and Vitamin E reduce oxidative stress. Vitamin C and B12 vitamins contribute to the relaxation of energy and normal functioning of the nervous system. Vitamin A helps maintain normal mucous membranes. The key function of the product is to reduce and control inflammation that occurs in the body due to damages of the gastrointestinal mucosa. EFSA approved claims for NEOVITAL® about:

- Cell protection and rejuvenation
- Regeneration of the mucosa
- Antioxidant action
- Immune system boosting
- Neuro-regeneration activation

NEOVITAL® is suitable for all chronic diseases that developed from inflammation due to damages of the gastrointestinal mucosa (cardiovascular disease, diabetes, leaky gut syndrome, metabolic syndrome, cancer, multiple sclerosis, Parkinson's disease, Alzheimer's dementia, autism, ADHD, celiac disease, rheumatoid arthritis, etc.). NEOVITAL® is effective for fighting autoimmune and neurological diseases, for breaking the circle of chronic inflammation. It is the first natural treatment solution for gut-associated diseases that supports cellular detoxification. This way NEOVITAL® is ideal for regulating gut-associated and inflammatory health problems, also connected with Covid-19.

Premium OMEGA-3 VIDA®

Another supplement that has a significant efficacy to deal with inflammation, blood clotting, and to renovate cells is Premium OMEGA-3 VIDA®.

Premium OMEGA-3 VIDA® consists of 2750 mg Omega fatty acids, Alpha Tocopherol (Vitamin E) mixture, natural Astaxanthin from microalgae, Wild Pollock concentrate (Alaska) + Norwegian cod liver oil, and natural lemon aroma. It is a completed and concentrated formula with a high dosage of 2750 mg Omega 3 fatty acids per tablespoon: 1150 mg EPA + 1000 mg DHA + 600 mg free fatty acids (e.g. DPA) from 100% Triglycerides. Taking Premium OMEGA-3 VIDA® supplement can help lower the risk of chronic diseases ([37](#)) such as:

- Cardiovascular and nervous systems diseases
- Stroke
- Cancer
- Lower LDL or “bad” cholesterol
- Studies show that diets high in amounts of EPA and DHA help with brain and eye development

- Help to prevent Alzheimer's disease.

A lot of experimental data strongly suggests the involvement of Omega-3 acids and their metabolites SPMs in the resolution of inflammation in atherosclerosis. Notably, Omega-3's may reduce the inflammatory pathway in atherosclerosis by both reducing productions of pro-inflammatory eicosanoids, as well as by increasing synthesis of SPMs, that helps in inflammation resolving without chronization (38). As a result, we get plaque stability features, fibrous cap thickness, and lesional efferocytosis rise. At the same time, lesional oxidative stress, oxidized LDL uptake, necrotic core formation, and plaque size and progression decrease (39).

In Premium OMEGA-3 VIDA® we have one more very important component – Astaxanthin, a red-coloured xanthophyll carotenoid, that has a strong antioxidant capacity and can scavenge singlet oxygen and free radicals, and thus prevent lipid peroxidation (40). Owing to its antioxidant ability and cell signal modulating properties, Astaxanthin exhibits a variety of beneficial biological activities and effects. These include protection against UV damage, anti-inflammatory and immunomodulatory activity, alleviation of metabolic syndrome, cardioprotective effects, anti-diabetic activity, prevention of neuronal damage, anti-ageing, and anti-cancer activity, as well as inhibition of cell membrane peroxidation (41). In general, Astaxanthin can exert an inhibitory effect on the development of oxidative stress-associated diseases and mitochondrial dysfunction.

Also, Astaxanthin has a role in fighting Covid-19. First of all, due to its antioxidant capabilities (42). Secondly, Astaxanthin proved its huge anti-inflammatory action, which has significant importance in Covid-19 (43). Covid-19 dysregulates autophagy, thereby causing organ damage. Since it is regulated by several signalling pathways, targeting autophagy is of great importance. Astaxanthin has shown modulatory effects on the aforementioned pathways to reduce the autophagy-related complications of Covid-19 (44).

This way, Astaxanthin (45):

- gives joint, tendon, and muscle support and helps in athletic performance
- maintain anti-ageing & cellular health and repairment
- is the strongest antioxidant
- possesses huge anti-inflammatory action
- proceeds high energy level and prevent male infertility
- modulates the immune system and regulate autophagy
- is essential for brain and eye health and cardiovascular support
- gives skin health & UV protection

So, Premium OMEGA-3 VIDA®, the unique formula of 2750 mg Omega fatty acids, Vitamin E mixture, and Natural Astaxanthin from microalgae is essential for health and life quality.

Premium OMEGA-3 VIDA® has proved efficacy in treating inflammation and protects from viruses (including Covid-19), it lowers the risk of heart disease, depression, dementia, inflammations, and arthritis. It is a perfect harmony for the brain, heart, and eyes that has no fishy aftertaste, no reflux, is easy to take, and consists of 100% pure triglycerides without esterified or oxidized oils, is free of heavy metals, toxins, and GMO. The product has approved quality and is suitable for kids and pregnant women.

Conclusion

So, today, due to the Covid-19 pandemic, we live in constant stress and fear for our loved ones. And despite the active development of medicine and science, there is no 100% cure for the disease. But we can try to minimize the effects of the virus on the body or prevent severe disease. To do this, it is necessary to lead a healthy lifestyle, eat the right food and help the body fight the virus

with special additives that promote recovery at the cellular level, help maintain immunity and protect the body from negative external and internal influences.

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