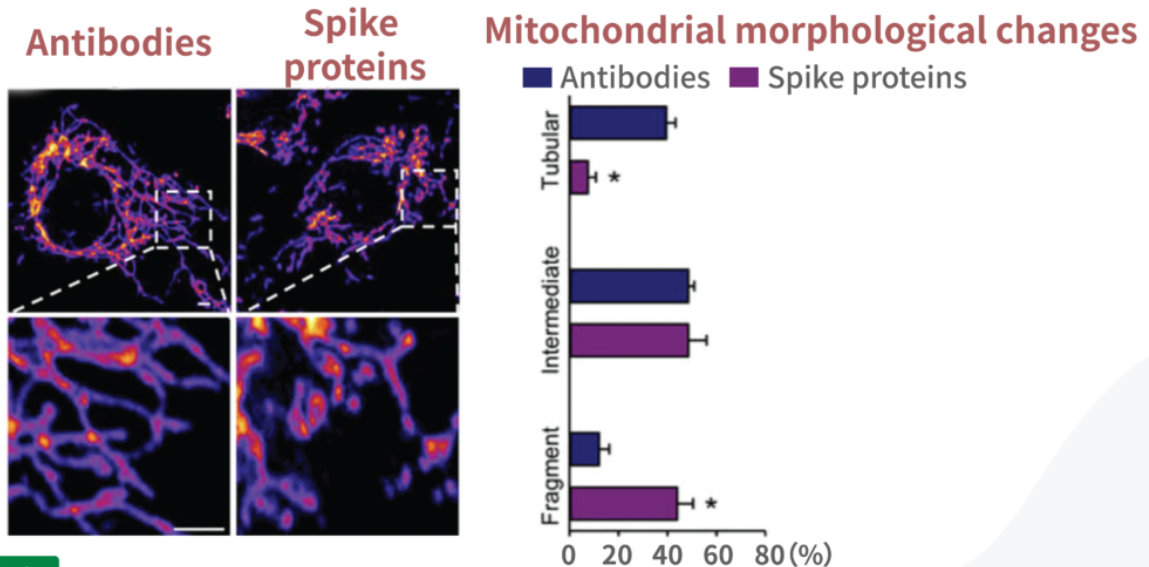


THE EPOCH TIMES

BRIGHT

Spike Proteins Possibly Damage Mitochondria



健康1+1 圖解

Source: Circulation Research

(Health 1+1)

PREMIUM HEALTH SCIENCE

How to Remove Harmful Spike Protein From Your Body

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PRINT

Since the Covid-19 pandemic swept across the world more than two years ago, more than 4.5 billion people worldwide have become fully vaccinated. Now, more and more people are concerned about the effects on the body of the spike proteins, which are contained in the vaccines. Is spike protein in fact the cause of their long Covid syndrome?

The spike protein, also known as the S protein, is the largest structural protein in the SARS-CoV-2 virus that causes Covid-19. It is a large structure that protrudes from the surface of the virus.

When the pandemic first started to spread, people's understanding of the spike

protein was very limited. It was thought that the spike protein only played the role of binding to the ACE (angiotensin-converting enzyme) receptors and helping the virus invade cells. However, scientists have slowly discovered that the effects of this protein are multifaceted, and it interacts with other cellular tissues beside the ACE2 receptors.

8 Ways the Spike Protein Harms the Body

During the two-plus years of the Covid-19 pandemic, many studies have analyzed the threat posed by the spike protein from different aspects, and have discovered that it is harmful to the human body in several ways, including:

1. Damaging the lung cells (including the pulmonary alveoli and pulmonary endothelial cells);
2. Damaging the mitochondria and DNA structures;
3. Damaging cardiovascular cells;
4. Increasing the risk of blood clots;
5. Damaging brain cells;
6. Promoting inflammation;
7. Suppressing immunity;
8. Increasing the risk of cancer

We will go into the details of each of these points.

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diet, exercise, and lifestyle.

PREVIEW

S Proteins Can Affect Multiple Organs

When the virus enters the human body, the spike proteins will affect multiple organs in different ways. Studies have shown that many organ cells can be affected by spike proteins, such as those in the heart, brain, and cardiovascular system. In addition, a paper published in 2021 in the [bioRxiv](#) preprint repository states that the S proteins cause:

- the Type 1 catalytic receptors in the kidneys to increase in kidney cell tissues, and this type of receptors can become hosts for the virus, making the kidneys more susceptible to virus infection
- cells in the small intestine to stimulate a large amount of L-SIGN (liver/lymph node-specific intracellular adhesion molecule-3 grabbing non-integrin) receptors to defend against pathogens. However, after a large amount of adhesions on the surface of small intestinal cells bind to the viruses, it will make the small intestine more susceptible to viral infection. A similar situation can also occur in other organs, such as the kidneys and duodenum
- the amount of DC-SIGN (Dendritic Cell-Specific Intercellular adhesion molecule-3-Grabbing Non-integrin) receptors in the lungs to increase, which may cause inflammatory symptoms in the lungs

In addition, spike proteins can cause different degrees of oxidation of the organs, leading to more cells' premature deaths and putting the body in a hyperoxidized state, which may further increase the risk of cancer.

A new study published in the [Journal of the American Heart Association](#) found that spike proteins have a direct effect on lung functions.

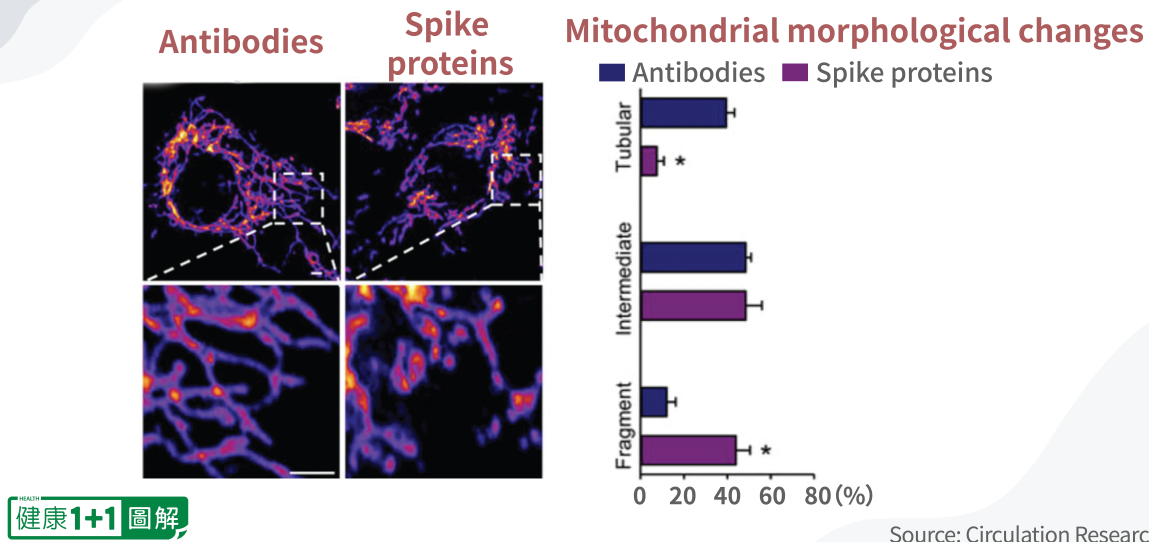
When spike proteins are present in the human body, the pulmonary alveolar cell walls will begin to thicken and solidify, and lung functions will decline. Furthermore, the proteins will also affect the functions of the pulmonary cell mitochondria, which are the body's energy base.

Spike Proteins Damage Mitochondria, Possibly Causing Long Covid

Under normal circumstances, mitochondria in cells are tubular "cellular power stations" responsible for synthesizing energy.

When pulmonary alveolar cells or endothelial cells are stimulated by spike proteins, the mitochondrial structure will change dramatically and become heavily fragmented, and the number of tubular mitochondria will be greatly reduced. As the majority of the cells in the alveoli or endothelial tissues are severely damaged in form and function, they will be unable to produce energy efficiently, which is likely to cause the cells to enter a state of premature decline and death

Spike Proteins Possibly Damage Mitochondria



(Health 1+1)

Therefore, it has been hypothesized that the prolonged Covid-19 syndrome may be caused by damages to the mitochondria. It is well-known that one of the major symptoms of the chronic Covid-19 syndrome is fatigue. This may be due to the fact that the cells in some important organs and tissues are not completely dead, but their mitochondrial functions have been severely damaged, causing the cells to enter a state of premature decline and death. This results in a lack of energy and renders the person particularly prone to fatigue.

Mitochondrial damages in different cells can also bring about different symptoms. If the mitochondrial functions of lung cells are damaged, then the pulmonary alveoli's functions to expand and contract will be weakened, the oxygen absorption will be poor, and the body's metabolic level will also be reduced. This also makes one more prone to fatigue.

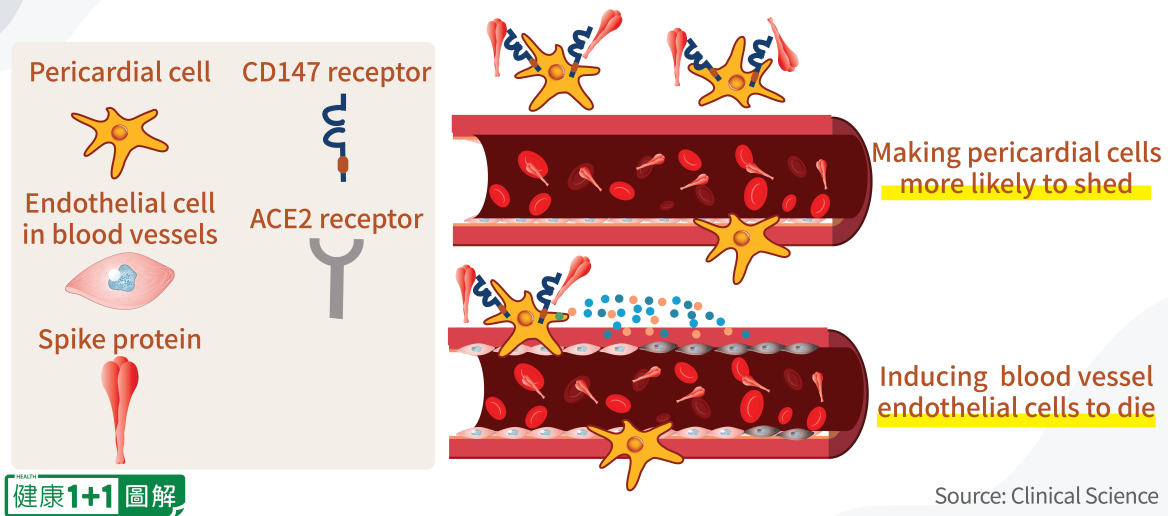
Spike Proteins Damage Cardiovascular System and Cause Blood Clots

The cardiac system and the myocardial system contain a very important type of cell: the pericardial cells, which are outside the endothelial cells of blood vessels and are usually combined with endothelial cells to help blood vessels transmit different signals.

A study published in Clinical Science discovered that when the SARS-CoV-2 virus

enters the body, the spike proteins will bind to the CD147 receptors on the surface of the pericardial cells, making them more likely to shed from the surface of the endothelial cells. This will affect some of the functions of the endothelial cells and accelerates the death of the vascular wall cells.

Spike Proteins Possibly Damage Heart and Blood Vessels



Source: Clinical Science

In addition, spike proteins themselves can directly stimulate pericardial cells to produce more pro-inflammatory factors that can damage the myocardium and cause blood clots.

Spike proteins can also induce thrombosis. Another experiment published in the BioRxiv preprint repository investigated how platelets would change after being stimulated by spike proteins.

The experiment compared the SARS-CoV-2 virus spike protein with another viral protein called VSV (Vesicular stomatitis virus), and found that more platelets were induced to clot in the presence of the spike proteins.

Spike Proteins Impair Immunity

When the human body is infected by viruses, the spike proteins activate the immune systems to respond to this external crisis, including the innate immune system, the acquired immune system, and the cytokines released after the immune systems are stimulated, so the impact of spike proteins on the immune systems is also comprehensive. This is also shown in a paper published in the journal *Leukemia*.

For instance, there are 11 types of toll-like receptors in the innate immune system, and the seventh type of these toll-like receptors can recognize the RNA of single-stranded viruses. The mRNA (Messenger RNA) that enters the body after Covid-19 infection or vaccination is also single-stranded, and immune cells will recognize the virus's RNA and attack it. In the presence of spike proteins, the toll-like receptor expression quantity may increase in response to the viral attack, and complementary immune cells may release more interferons in response to different viral variants.

If the amount of viral spike proteins in the body is too high, they may over-activate the expression of interferons, which may even induce the body's immune systems to attack its own cells.

Do Vaccine Spike Proteins Stay in the Body?

As we know, the Covid-19 vaccines have incorporated an expression mechanism for the viral spike proteins, which allows our immune systems to recognize the virus. However, how long do the spike proteins from the vaccines remain in the body?

The spike proteins are divided into two parts: S1 and S2, with S1 remaining in the blood and S2 bound to the cell membranes.

A study published in Clinical Infectious Diseases discovered that the S1 proteins would appear in humans soon after the first dose of the Moderna vaccine, and that some people would still have intact spike proteins two weeks after the first dose of the vaccine.

However, other proteins in the virus, such as the nucleocapsid protein, weren't present, because they were not included in the vaccine.

The finding that intact spike proteins were still present in human bodies two weeks after vaccination was beyond expectations.

Another study published in the Journal of Immunology found that S2 proteins could still be detected four months after the second dose of the Pfizer vaccine.

However, the harm of spike proteins is related to their amount. The aforementioned side effects are all based on in vitro studies and animal models, and the relatively serious damages occurred only when the amounts of spike proteins were large.

If the viral mRNA in the vaccine only appeared in small amounts in the muscles and didn't enter the blood or organs in large amounts, then these serious side effects would not occur.

How to Get Spike Proteins Out of the Body

If we develop the prolonged Covid-19 syndrome after infection or vaccination, what medicines can be used to expel the spike proteins and improve the symptoms? The [World Council for Health](#) (WCH) has made several recommendations of nutrients and medications.

1. Nutrients that can help improve symptoms:

Vitamin C

Vitamin D

Omega 3

Quercetin

Melatonin

Zinc

These are all nutrients helpful in boosting the immune system, thereby helping the body remove spike proteins.

2. Common medications used to improve symptoms:

Aspirin

Antihistamines

Steroids

Colchicine

Mast cell stabilizers

Ivermectin

3. Plant Extracts

Some plant extracts in nature can also help detoxify the body, including:

Selfheal extract

Pine needle extract

Dandelion leaf extract

Rheum emodin

Some of these ingredients, such as the shikimic acid contained in pine needles, have antioxidant properties that can reduce oxidized free radicals in the body and provide a detoxifying effect.

The above suggested medicines are not cures, but they can help boost the body's immunity and balance the body's immune mechanism, which is helpful in the overall fight against the virus.

It is important to emphasize that everyone's situation is different. So it is necessary to talk to your physician before taking the medications recommended by the WCH, to make sure they are suitable.

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