How the novel coronavirus attacks our entire body

COVID-19 is known primarily as a respiratory illness. However, the aggressive pathogen SARS-CoV-2 attacks not only the lungs but also the heart, nerves, brain, vessels, kidneys and skin.

Deutsche Welle (English edition) · 14 May 2020 · 37

Of course, the lungs and airways are the main focus of attention with the COVID-19 respiratory disease. Since the new SARS-CoV-2 pathogen mainly attacks the lower respiratory tract, infected persons who experience a moderate or severe course of the disease have a dry cough, shortness of breath and/ or pneumonia.

However, there are now numerous indications that the new coronavirus also attacks other organs on a massive scale and can severely affect the heart, blood vessels, nerves, brain, kidneys and skin.

Heart

Several studies and papers from countries including the US, China and Italy suggest that SARS-CoV-2 also attacks the heart. The evidence is based not only on the significantly higher mortality of COVID patients with cardiovascular diseases and high blood pressure: Several studies have also shown that patients with severe courses of the disease often had elevated blood biomarkers released by destroyed and dying heart muscle cells. In many previously healthy patients, the virus infection has been shown to cause myocarditis, or inflammation of the heart muscle.

Whether the new coronavirus SARS-CoV-2 itself causes this damage to the heart or — as seems more likely — the harm is done by the immune reactions triggered by the infection remains to be seen. However, acute heart damage has also occurred in the past in some SARS and MERS patients, and these

SARS-CoV and MERS-CoV pathogens are very closely related to the current coronavirus SARSCoV-2.

Lungs

During the COVID-19 disease, the lung is massively attacked, but the damage doesn't always stop there: Many recovered patients have presented partially reduced lung function as a late consequence. Chinese researchers have found a milky glass-like cloudiness in the lungs of some people who have recovered from COVID-19, which suggests permanent organ

damage has occurred. Further investigations must now show whether the patients have developed pulmonary fibrosis, in which the connective tissue of the lung becomes inflamed. This makes it harder for oxygen to reach the blood vessels, stiffens the lungs and makes breathing shallow and rapid. Respiratory disorders, shortness of breath and a dry, irritable cough are the consequences; physical performance decreases and even everyday activities become difficult.

Pulmonary fibrosis cannot be cured because the scarred changes in the lung tissue do not regress. But the progression of the condition can be delayed and sometimes even stopped if it is detected in time.

Vessels

During the autopsy of deceased COVID- 19 patients, pathologists at the University Hospital of Zurich discovered