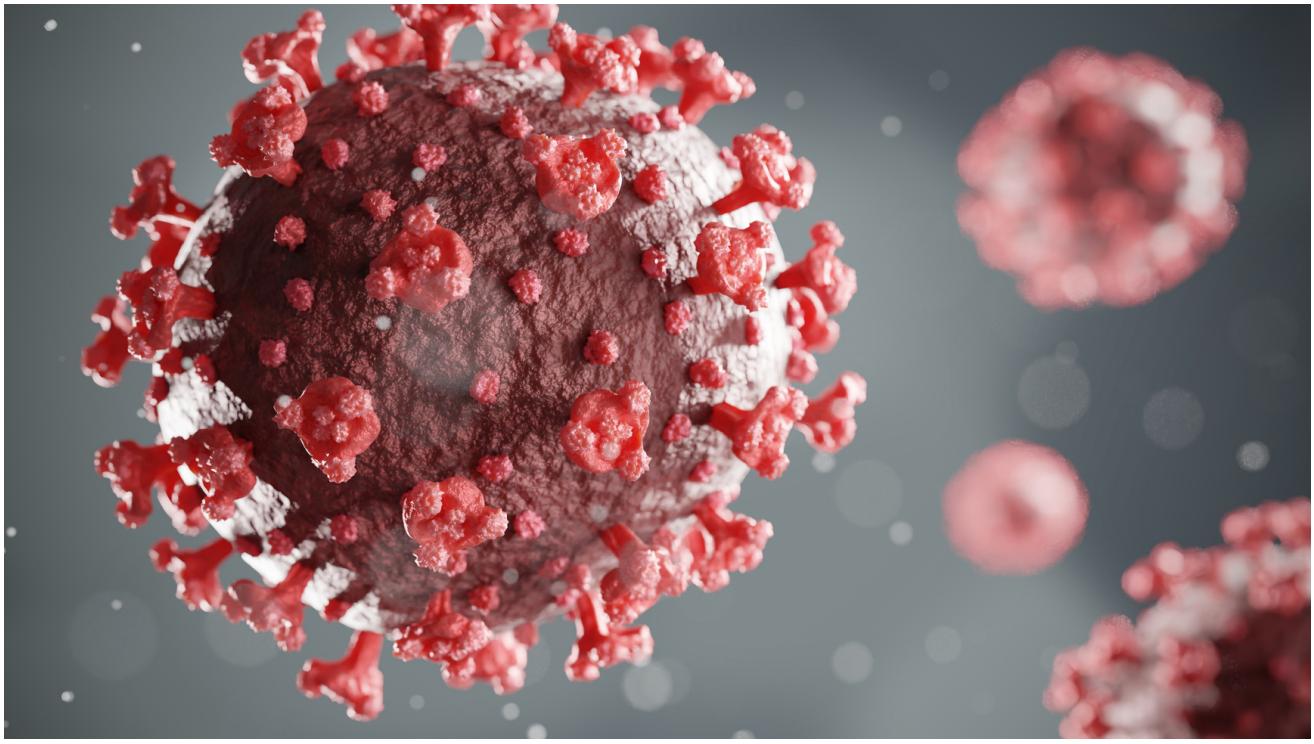
How COVID-19 Affects Cardiovascular Health



COVID-19 & What It Does

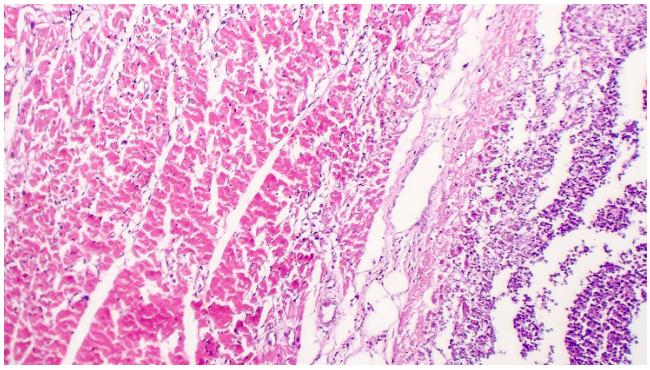
COVID-19 has undeniably changed the dynamics of the world. In the year since the outbreak of the COVID-19 virus, life as we know it came to a grinding halt, emulating a shift towards an entirely new lifestyle. Nevertheless, human perseverance lingers on as the fight to end the worst virus outbreak of this turn of the century persists.

SARS-CoV-2 is the virus responsible for causing COVID-19. It enters the body via the nose, mouth, or eyes via the mucous membranes, finds a healthy cell to target then rapidly multiplies. It then makes its way into the upper or lower part of the respiratory tract. In most cases, individuals who are not immunocompromised suffer only a few mild symptoms, such as a fever and a dry cough – most are even asymptomatic. However, senior citizens, children, and people with underlying medical issues are more likely to succumb to the effects of the virus.

Still, the actual nature of the virus and the problems it can cause down the line are being researched. Although it is agreed that it ultimately targets the respiratory system first, COVID-19 has recently been linked to cardiovascular health as well.

Viruses And Their Link To Cardiovascular Diseases

According to research conducted by Dr. Slava Epelman, a heart and stroke researcher, and his team, whenever our bodies are infected with a virus, the immune system signals white blood cells to remove the threat effectively. The core body temperature rises, and the cells work in overdrive to handle the virus. However, the cells responsible for "fighting" off the threat (white blood cells, killer T-cells) may cause further damage even after the virus is effectively expunged from the body. This immune response holds true for every virus, including COVID-19. This response causes Myocarditis symptoms: Exhaustion, weakness, and shortness of breath.



Usually, most cases of Myocarditis have little to no complications. However, a more prolonged case makes the body vulnerable to numerous other coronary artery diseases and high blood pressure. These, when left untreated, progress into much more severe heart diseases – even heart failure.

A literature search was conducted to find a conclusive link between COVID-19 and how it affects people with underlying cardiovascular disease(s) or develop acute cardiac injury throughout their illness. After extensive research, it was found that COVID-19 (as researched by Dr. Epelman) worsened preexisting conditions of cardiovascular patients.[1]

Some clinical studies have showcased the link between COVID-19 and cardiovascular diseases. There have even been reports as to how COVID-19 can induce arrhythmia, acute coronary syndrome, myocardial injury, and venous thromboembolism.[1]

People who are severely immunocompromised, especially those undergoing chemotherapy, are the most susceptible to COVID-19 and the cardiovascular diseases it presents.

It is important to note that the cardiovascular aspect of COVID-19 still requires a significant amount of research – which had not been possible due to the overwhelming response of the virus. But, the research that has been conducted so far all point towards the same conclusion. For now, the most prominent link between COVID-19 and its detrimental effects on the cardiovascular system are due to the ACE2 sequencing in the DNA.

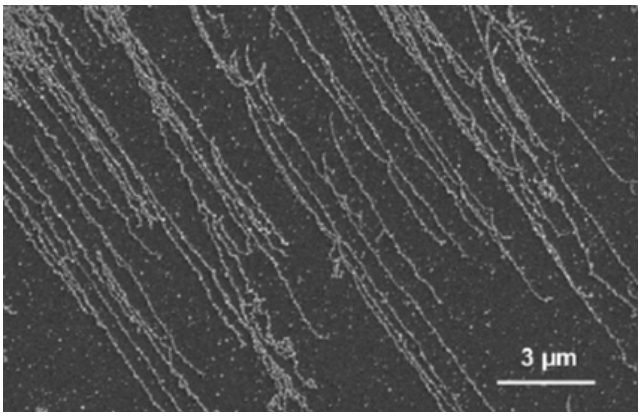
The COVID-19 binds a viral S protein to the human ACE2 sequence. The ACE2 sequence has been a subject of research for many years, and it is known that it hosts a crucial link between the cardiovascular system and the immune system – both of which COVID-19 targets.[1]

COVID-19's effects linger much longer after being cured and on many other parts of the body. Ongoing research has linked how COVID-19 can cause a range of extrapulmonary manifestations, including stroke, seizures, liver damage, gastrointestinal symptoms, and strokes.

ECGs And Their Role In Finding Cardiovascular Problems

An electrocardiogram (ECG) test detects electrical activity inside the heart by using various sophisticated sensors attached to the body, usually on the chest. The procedure in itself is painless, with the results available in a matter of minutes. The tests can be conducted inside of the doctor's office; sometimes, it might even be done while a patient walks/runs on a treadmill.

ECGs play an instrumental role in the early detection of numerous cardiovascular diseases caused by the buildup of plaque in the arteries, mainly the coronary, cerebrovascular, and peripheral arteries. As the arteries get blocked, the flow of oxygenated red blood cells gets restricted (depending on the blockage percentage).



This results in shortness of breath, especially after physical exertion and pain in the chest. However, some people might have heart disease but do not have any apparent symptoms. By getting an ECG done, any underlying symptoms become evident. People at a higher risk of cardiovascular diseases, such as obese individuals, benefit the most from these preemptive screenings.

The Benefits Of Preemptive ECG Screenings

Cardiovascular diseases cause millions of deaths worldwide annually. A large portion of which could be prevented if necessary precautions are made in the form of preemptive screening. As useful as it is for people who might get cardiovascular diseases, it can also act as an early warning system for individuals with no prior cardiovascular disease symptoms.

It is a cheap and efficient method that is readily available everywhere. According to research, subtle abnormalities in the baseline ECG are closely associated with numerous cardiovascular diseases; the predictive number being similar for men and women.[1]

With COVID-19 devastating countries across the globe, with millions of people infected, it is necessary for those affected to get an ECG done down the line. As we've read before, viruses are responsible for causing and worsening cardiovascular diseases.
As such, a preemptive measure to eliminate all risks is essential.

Resources

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