

Whether the Corona Virus Has Completely Left the Human Body or Remains in the Body and Causes Other Viral Diseases

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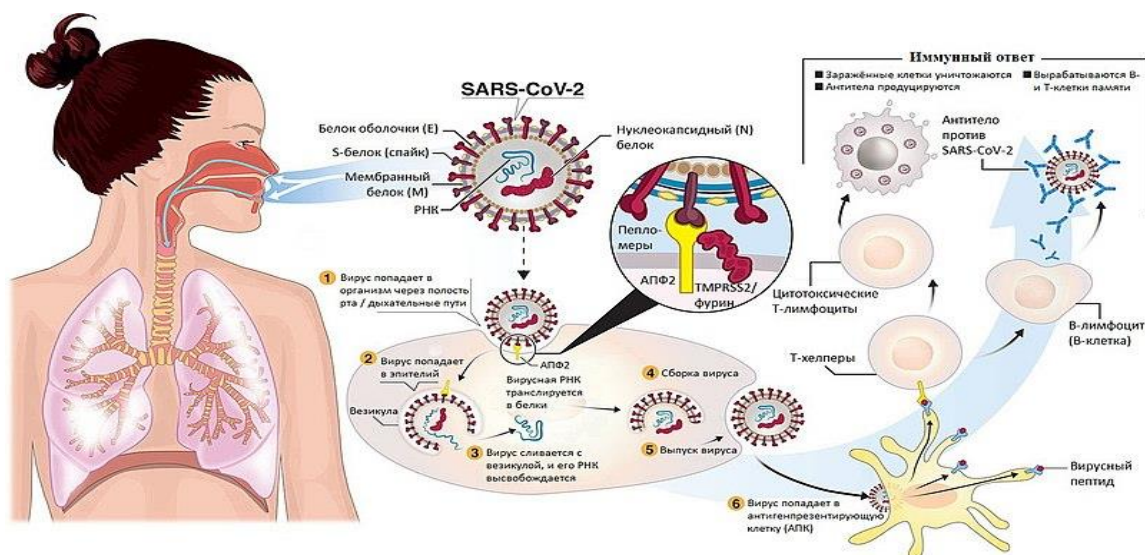
ABSTRACT

Whole viruses, also called virions, comprise either RNA or DNA surrounded by a protein coat. Those that persist in sanctuary sites can continue gradually infecting the cells around them. There they hijack the host cell(s) to make copies of themselves. RNA viruses such as hepatitis C virus⁵ and HIV⁶ can evade immune control and can continuously produce infectious virions throughout a patient's life.

KEYWORDS: Orthocoronavirinae, Coronaviridae, Nidovirales, Riboviria, 5'-leader-UTR-replicase.

Coronaviruses are a group of related RNA viruses that cause diseases in mammals and birds. In humans and birds, they cause respiratory tract infections that can range from mild to lethal. Mild illnesses in humans include some cases of the common cold (which is also caused by other viruses, predominantly rhinoviruses), while more lethal varieties can cause SARS, MERS and COVID-19, which is causing the ongoing pandemic. In cows and pigs they cause diarrhea, while in mice they cause hepatitis and encephalomyelitis.

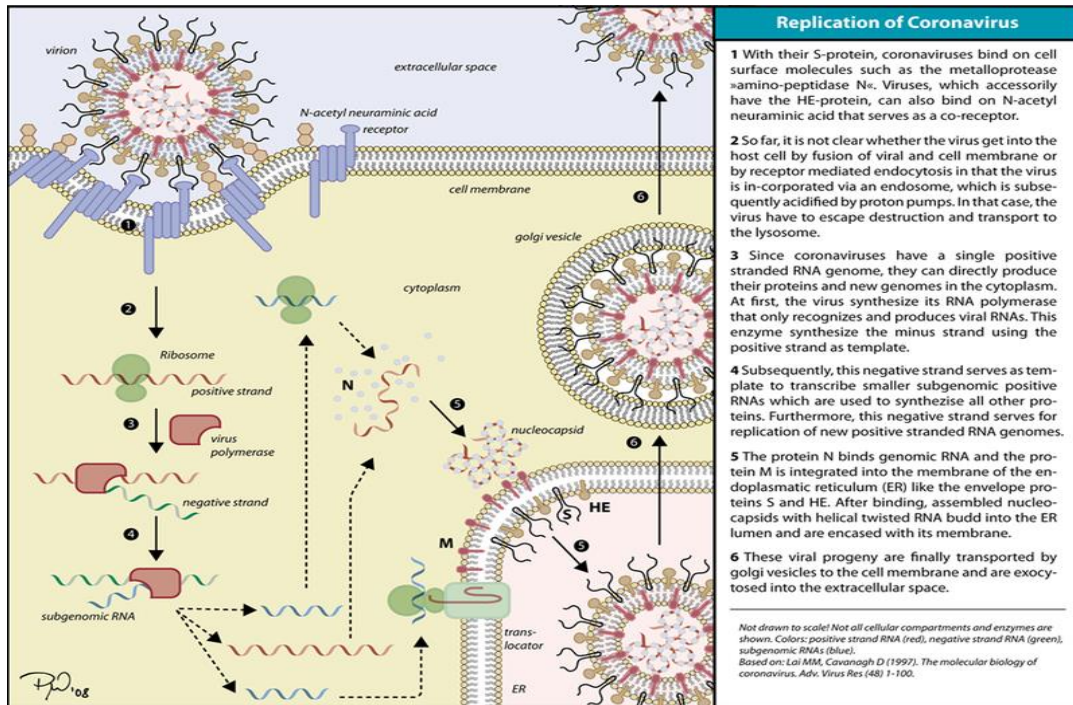
Coronaviruses constitute the subfamily *Orthocoronavirinae*, in the family *Coronaviridae*, order *Nidovirales* and realm *Riboviria*. They are enveloped viruses with a positive-sense single-stranded RNA genome and a nucleocapsid of helical symmetry. The genome size of coronaviruses ranges from approximately 26 to 32 kilobases, one of the largest among RNA viruses. They have characteristic club-shaped spikes that project from their surface, which in electron micrographs create an image reminiscent of the stellar corona, from which their name derives.



Coronaviruses contain a positive-sense, single-stranded RNA genome. The genome size for coronaviruses ranges from 26.4 to 31.7 kilobases. The genome size is one of the largest among RNA viruses. The genome has a 5' methylated cap and a 3' polyadenylated tail.

The genome organization for a coronavirus is 5'-leader-UTR-replicase (ORF1ab)-spike (S)-envelope (E)-membrane (M)-nucleocapsid (N)-3'UTR-poly (A) tail. The open reading frames 1a and 1b, which occupy the first two-thirds of the genome, encode the replicase polyprotein (pp1ab). The replicase polyprotein self cleaves to form 16 nonstructural proteins (nsp1–nsp16).

The later reading frames encode the four major structural proteins: spike, envelope, membrane, and nucleocapsid. Interspersed between these reading frames are the reading frames for the accessory proteins. The number of accessory proteins and their function is unique depending on the specific coronavirus.



As a general rule, most people with mild to moderate COVID are no longer contagious 10 days after symptoms first appear. But it can take longer for people with severe symptoms or weakened immune systems to clear the virus and no longer be contagious.1

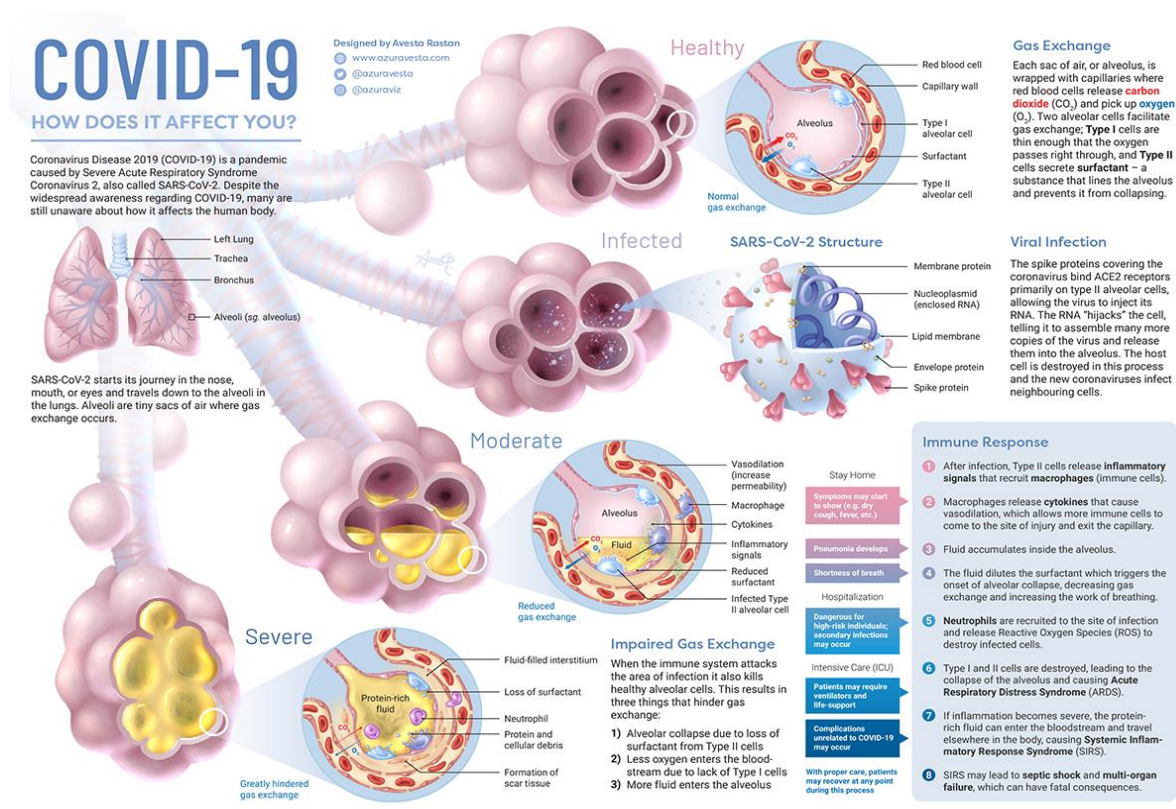
When you get COVID, you are contagious because your body is continuously shedding infectious particles (called viral shedding). Until viral shedding fully ceases, there is a chance you can infect others. The shedding can persist whether you have symptoms or not and even after you no longer test positive for COVID.

However, as time passes, the potential for infection dramatically decreases as there are generally too few viral particles for an infection to be viable.

According to a 2022 study published in Emerging Infectious Diseases, vaccinated people with mild or asymptomatic COVID experience shedding 6 to 9 days after being diagnosed or developing symptoms.4 While shedding can persist well after this time, any viruses shed after the first 10 days are considered non-viable due to their low numbers.

The same may not be true for people who remain unvaccinated against COVID-19. A 2022 study published in PLoS Pathology reported that unvaccinated people continue to experience viable shedding an average of 7.5 days compared to 6 days for those who were vaccinated.

While a 15% difference may seem incidental, as new variants of COVID-19 continue to emerge, the length of time people are contagious may change and the difference in shedding times between vaccinated and unvaccinated people may widen.



The symptoms, such as chronic pain, brain fog, shortness of breath, chest pain, and intense fatigue, can be debilitating. Severe cases of Long COVID can even affect the body's organs. But imaging tests don't always show the origins of those symptoms, most viral infections clear after a few days to weeks when the body's immune system launches an attack against them. However, some viruses, known as latent viruses, can remain in the body silently after the initial infection for prolonged periods without causing any symptoms and reactivate later on. After recovering from COVID-19, some people can have non-infectious fragments of the virus left in their bodies for some time. As a result of these effects, people who have had COVID-19 may be more likely to develop new health conditions such as diabetes, heart conditions, blood clots, or neurological conditions compared with people who have not had COVID-19. The symptoms, such as chronic pain, brain fog, shortness of breath, chest pain, and intense fatigue, can be debilitating. Severe cases of Long COVID can even affect the body's organs. But imaging tests don't always show the origins of those symptoms. Self-care can include exercise, meditation, walking outside, reading, taking a bubble bath, painting, journaling, gardening, cooking a healthy meal or enjoying a favorite hobby- the best way to get rid of coronavirus.

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