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Some people with SARS-CoV-2 develop prolonged symptoms that can last for months or years. In some cases, this is due to organ damage in people who had very advanced disease. About 10% of people develop a chronic condition known as long COVID. This is most likely to occur after severe illness, but some young, healthy people with mild illness still develop long COVID. Studies have shown that vaccination and treatment with Paxlovid or metformin may lower the risk of long COVID.

People with long COVID have reported [more than 200 symptoms](#). These include severe fatigue, brain fog (cognitive impairment), postural orthostatic tachycardia syndrome (changes in heart rate and blood pressure when standing up) and post-exertional malaise (inability to recover from physical or mental exertion). In many cases, long COVID resembles myalgic encephalomyelitis/chronic fatigue syndrome, which is often triggered by a viral infection. In some cases, the condition can be disabling.

The biology of long COVID is not well understood. Leading hypotheses include persistent SARS-CoV-2 infection, reactivation of existing latent viruses (such as Epstein-Barr virus), a leaky gut, changes in the microbiome, abnormal immune responses that persist after acute infection and autoimmunity. Ongoing immune activation and inflammation can cause problems throughout the body, such as abnormal blood clotting, mitochondrial dysfunction, hormonal imbalances and impaired neurological signaling.

People with long COVID have tried [a wide variety of treatments](#), including antivirals, blood thinners, beta blockers, statins, antihistamines, probiotics and low-dose naltrexone. While some patients report improvement, and some therapies have shown some benefit in small studies, there are currently no approved treatments, and this is an active area of clinical research.

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