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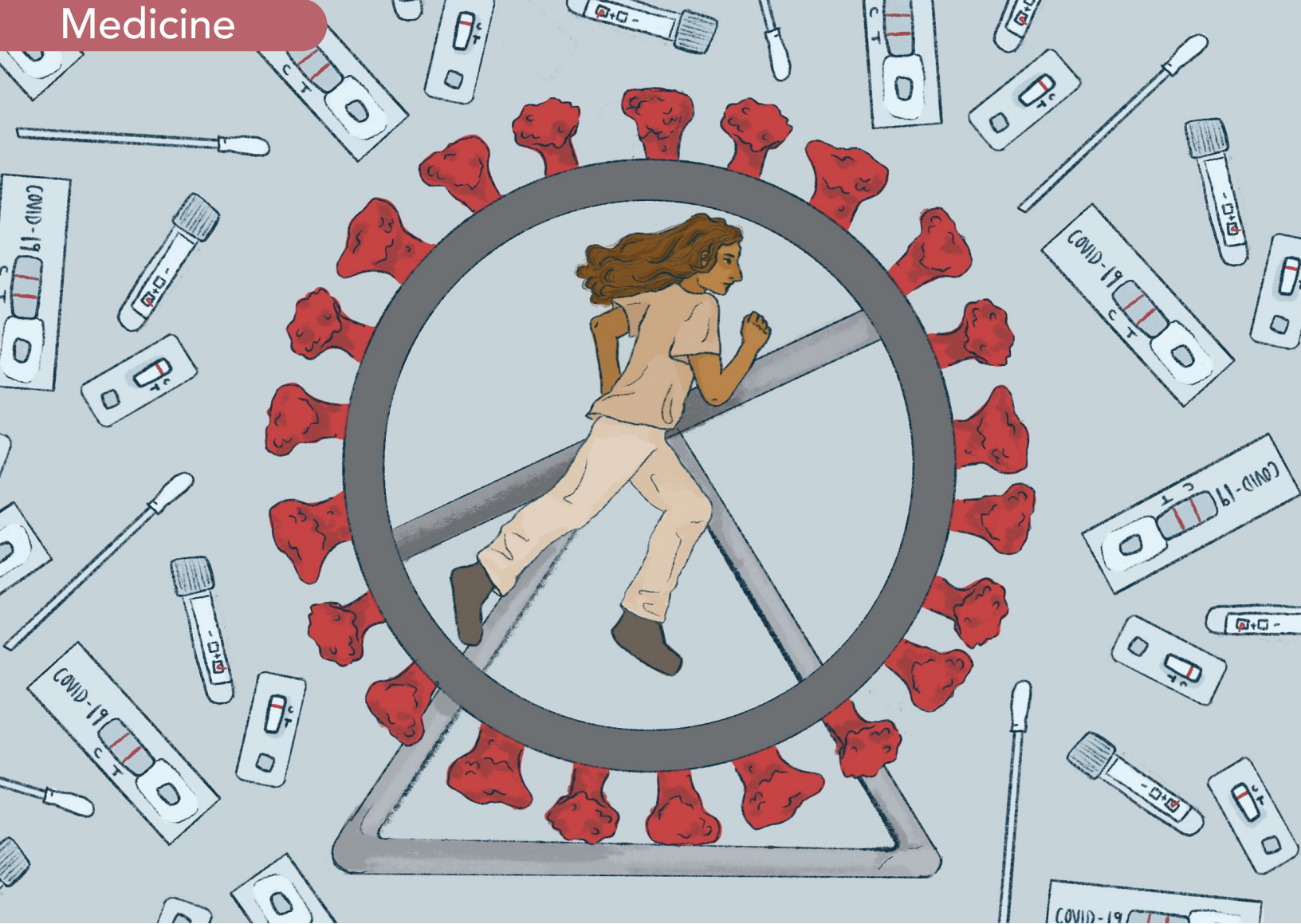
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The Long Haul Virus

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Is the pandemic at its end? The coronavirus outbreak sent the world into a two-year panic, and as much as we yearn for the battle to finally be over, there may be one more hurdle: post-COVID condition (PCC). What first appeared to be a temporary illness has been found to leave traces of its impact on individuals across all ages and backgrounds. Long COVID, a term spreading around the internet to articulate the experience of PCC, continues to perplex scientists and stump healthcare professionals. Symptoms in the gastrointestinal, respiratory, neurological, and cardiovascular systems are leaving physicians at a loss regarding diagnoses and researchers unable to find a singular cause. With professionals baffled, you can only imagine the anxiety that has set into many of the suspected 43 percent of people worldwide afflicted with long COVID.

At the beginning of April 2020, roughly a month following the declaration of the COVID-19 pandemic, the CDC announced that the recovery period for the illness lasts approximately 14 to 21

days. By August of the same year, coronavirus survivors suspected that something may be wrong when they found that their symptoms lasted months and were still not at optimal health. Patients with symptoms so severe that they were unable to work, clashed with doctors who wrote off the symptoms as a post-viral syndrome (the fatigue that follows the effort of recovery). Between hopes for herd immunity and the waning mortality of the virus, long COVID was not a primary concern. That is, until people began reporting abnormal symptoms.

Today, those with long COVID report a wide range of symptoms affecting various bodily systems. The Wall Street Journal found a list of over 205 symptoms attributed to long COVID in a patient-led initiative on the issue. People stated that they feel they have aged several years since they contracted the virus, with symptoms similar to dementia, heart disease, irritable bowel syndrome, arthritis, and many other conditions. However, one unexpected symptom, in particular, raised the most eyebrows:

parosmia, a warped sense or loss of smell. The sheer commonality of this symptom indicated that the virus did not just populate the lungs but existed in other parts of the body like the brain. The broad spectrum of long COVID symptoms makes diagnosing the condition near impossible. Many people suffering from the condition noted having to see numerous health specialists before realizing their health problems could be credited to their SARS-CoV-2 infection. There is a sense of hopelessness and anxiety with the growing presence of long COVID. Individuals are eager to resume life as before the spread of the coronavirus but are met with unclear answers from professionals.

While the CDC and WHO have continued to recognize post-COVID conditions since late 2021, there needs to be more data regarding the longevity and severity of symptoms. Rather, both organizations have released more information about preventive action. The CDC and WHO encourage the use of masks indoors, social distancing, and frequent sanitizing, especially for those with preexisting health conditions. Although long COVID is not transmissible, taking the actions necessary to prevent getting the coronavirus is the first step in preventing the virus' toll on the body from escalating. Also, the CDC stresses the significant reduction in long COVID cases due to vaccinations. A cross-case analysis involving 57 patients found conclusive evidence that while 50 percent of unvaccinated people were likely to develop long COVID, only 19 percent of vaccinated people were to experience the same.

Additionally, adults are at a higher risk for post-COVID conditions than children, but cases involve all age groups with no noteworthy differences. There is a notable difference between males and females that experience COVID-19. Females, particularly middle-

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aged females, are much more likely to experience long COVID than males.

As healthcare professionals and those suffering from long COVID continue to grapple with this emergent condition, questions remain regarding the causes and the extent of this affliction experienced by COVID survivors. However, researchers came up with various hypotheses that explain, at least in part, why so many patients are experiencing post-acute COVID symptoms lasting longer than 12 weeks. One explanation states that even mild-to-moderate COVID-19 infections can trigger a long-lasting immune response affecting several organ systems. While the activation of this immune response is not precisely understood, it could be attributed to antigens produced by the virus and left behind in the body. Another theory states that microclots, which block capillaries and inhibit the transportation of oxygen to tissues, are to blame for lingering symptoms.

To help explain the causes of the condition and get a better idea of the extent of post-COVID symptoms people suffer,

scientists are focused on different ways to categorize these symptoms. There was one study in particular, which groups long COVID symptoms into three clusters: a cardiorespiratory cluster, a central neurological cluster, and a severe, multi-organ cluster. According to the article, the cardiorespiratory cluster may reflect lung damage brought on by the initial COVID-19 infection and can contribute to chest pain and dyspnoea or shortness of breath. The central neurological cluster, characterized by symptoms such as fatigue, brain fog, depression, and headaches, correlates with issues such as tissue damage in certain regions of the brain as well as a reduction of gray matter thickness. Finally, the third cluster is characterized by abdominal symptoms and systemic/inflammatory issues. Although not yet peer-reviewed, this study provides a promising categorization of a confusing array of symptoms and ailments. However, much more research is needed in assessing and treating long COVID.

Can we safely say that the pandemic will be over soon? The UN Health Agency says that "The finish line has come into view", but that also means that now is also the time to put our greatest amount of energy into reaching the end of the pandemic. They urge that we remain steadfast in maintaining healthy pandemic practices and are cognizant that the coronavirus can become much worse if no preventative action is taken. Scientists and researchers must continue researching the coronavirus variants and their effect to aid the numerous people affected by post-COVID conditions. Recovery may not meet its full potential in many people, but with an increased understanding of long COVID's impact, people may be able to begin to navigate "normal" living once again. Ultimately, it is important to remember: while the pandemic may feel over for some, it is a reality that many people still face every day. ● ● ●

