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ATHERTON living

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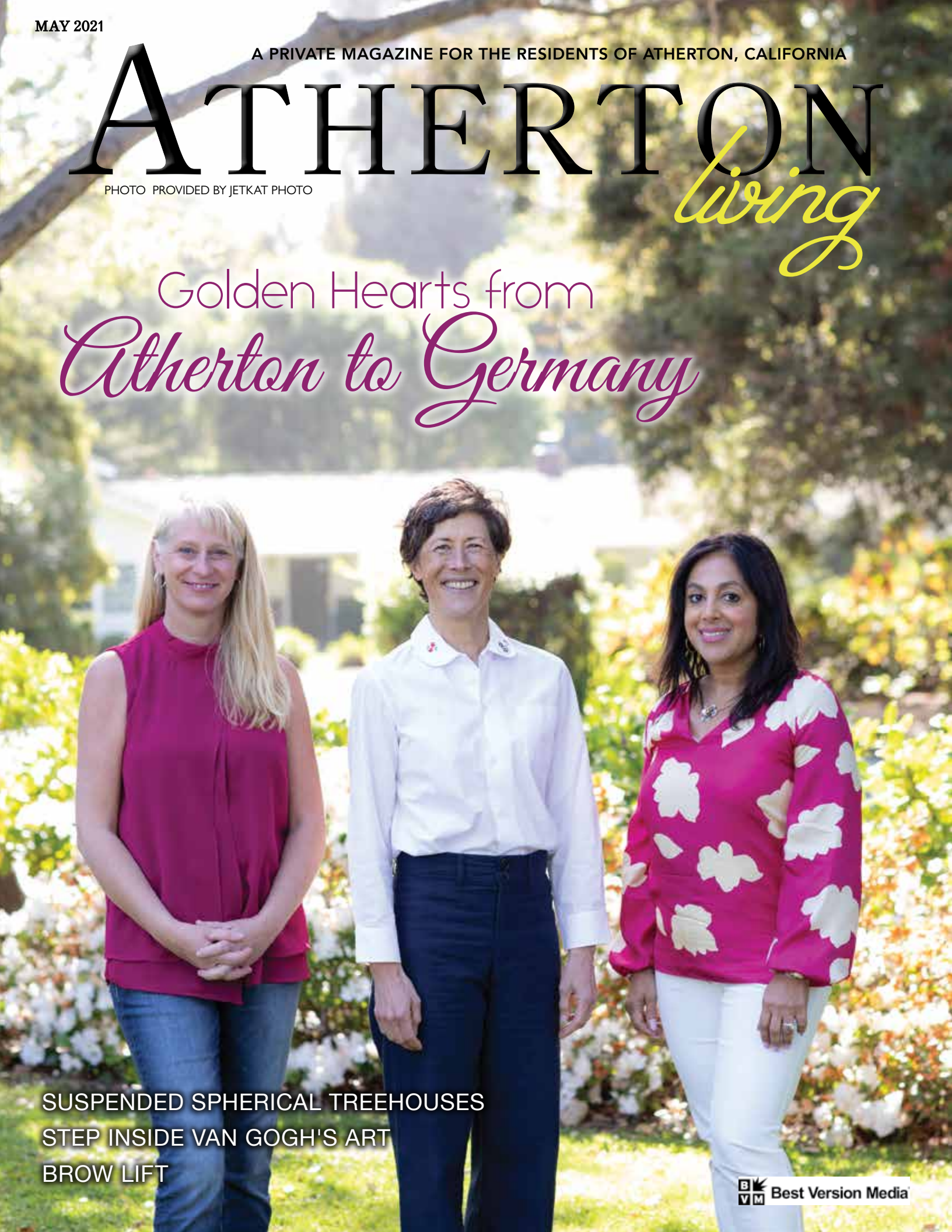
Golden Hearts from Atherton to Germany



SUSPENDED SPHERICAL TREEHOUSES

STEP INSIDE VAN GOGH'S ART

BROW LIFT

Best Version Media

Dr. Adamson and her team are offering to support local community members affected by long-COVID.

In for the Long Haul with COVID-19

By Rita Hitching, M.Sc., BSc. Psychology

It's almost 18 months since the first diagnosed case of COVID-19 in December 2019, or more precisely SARS-CoV-2. Named in part due to the associated severe acute respiratory symptoms (SARS) that follow infection and the external shape of the virus (V) itself resembling a corona (Co). The need to distinguish the current strain of the virus from prior SARS epidemics resulted in the number 2 being added to the name.

Since then, infection rates rose exponentially. Many of us saw family members and friends battle the virus, and sadly, some succumbed to it. The recent Centers for Disease Control (CDC) statistics show that the number of new infections appears to be declining - welcome news indeed.

Atypical Virus

Despite COVID's high transmission rate, the majority of patients experience mild and self-limiting symptoms - fever, sore throat, shortness of breath, cough, and chest pain. About 20% of infections are deemed severe enough to warrant medical care, in some instances even hospitalization. Severity is primarily attributed to the impact of the virus on multiple-organ systems and its greater force on those with pre-existing conditions such as diabetes or coronary heart disease. Thankfully, even in cases where hospital admission is needed, only 5% will need critical care, often assisted ventilation.

Most viral infections, like the common cold, do not require medical intervention. Rather a period of typically 2 weeks of rest and good nutrition while the body recovers. Consequently, it's understandable that the initial prognosis given to the majority of patients infected with COVID-19, which as a reminder - is a viral and not a bacterial infection, was that a full recovery is anticipated within a couple of weeks. Regrettably, this is not always the case.

COVID-19 does not seem to be behaving in a traditional viral way. Prolonged periods of recovery are common. Patients with initial mild reactions following infection or not deemed severe enough to require medical care are experiencing ongoing impairment. The type and severity of impairment varies, but mirror those of feeling jetlagged, and has resulted in these patients being labeled as having "long-hauler syndrome or long-COVID."

Long-COVID

The sheer number of patients reporting persistent symptoms beyond the initially anticipated 2 week recovery period typical of other viral infections, paired with the significant viral load and colossal autoimmune response, resulted in a revision of the guideline for what a normal recovery period should be. Currently, the term "long-COVID" is being given to patients that are reporting symptoms that are continuing beyond 12 weeks. Patients report a combination of physiological, neurological, and psychological symptom clusters. Breathlessness, cough, tiredness, fatigue, and aches and pains; persistent fever, and gastrointestinal symptoms. In addition to impaired memory, attention, focus, and ability to think, colloquially called "brain fog", low mood even depression, increased anxiety, disrupted sleep. The implications of long-COVID are significant. Patients are unable to resume many of the activities they engaged in before becoming infected, including returning to work.

The nature of long-COVID is mercurial and labile. Over time patient's unique presenting symptoms wax and wane, emerge and fade, morph and transform, and range from mild to incapacitating. Our understanding of the virus is dynamic. So far, we know that being older or having experienced 5 or more symptoms associated with initial COVID infection appears to increase the risk of developing long-COVID. Interestingly long-COVID appears to affect women more than men, and asthma is the only pre-existing condition with any evidence of a greater risk profile for long-COVID.

The prevalence of long-COVID is hotly debated, and epidemiological data scarce. A March 2021 report by Francis S. Collins, M.D., Ph.D., Director of the National Institute of Health (NIH) states 1/20 will have symptoms that persist beyond 8 weeks and 1/50 beyond 12 weeks. If like me, math is not your strong suit, and your grappling with the numbers or what the implications of those statistics are - even if long-COVID continues to only affect a small proportion of patients when you consider the number of people who've been infected, the potential public health impact is likely profound. Millions of people whose lives have not returned to normal, and it remains unclear when they will.

Looking Ahead

Scientists continue to converge on the myriad of ways COVID affects the body, but there's limited consensus as to the mechanism of action of long-COVID. Researchers have proposed long-COVID is linked to the physical deconditioning that results from the body's attempt to fight the virus by generating a powerful anti-inflammatory response. That response generates a "cytokine storm" that is very taxing on the

body, explaining why recovery is protracted. Other scientists suggest the opposite, that the body's initial weak autoimmune response to the virus is the reason why symptoms persist.

Maheen Mausoof Adamson, Ph.D. is a clinical associate professor (Affiliate) of Neurosurgery at Stanford School of Medicine and Clinical Research Director for Rehabilitation Services at VA Palo Alto, and part of a global team of researchers investigating biomarkers associated with Long COVID. Adamson added, "We've started looking into identifying the risk factors and exploring the underlying mechanism for long-COVID; and more needs to be done. We are starting to shift the focus on devising a phenotype of the disorder that facilitates early detection, and most importantly treatment."

Currently, there are no approved diagnostic or evidence-based treatment guidelines for patients experiencing long-COVID. Typical lab tests that clinicians rely on to corroborate a diagnosis or guide severity such as blood biomarkers or radiological tests are not reliable, let alone a unified definition of long-COVID.

The anticipated long-term morbidity risk associated with long-COVID has led the NIH to announce a $1.15 billion investment to support research into what is being collectively referred to as PASC (Post-Acute Sequelae of SARS-CoV-2 Infection) syndrome. One of the ways the funding has been allocated includes a longitudinal follow-up study of 40,000 people infected with the virus to uncover who goes on to develop long-COVID.

Shortcomings the NIH's PASC Initiative is hoping to address in funding research focused on deciphering the underlying cause of long-COVID and developing treatments for patients that don't recover.

Post-Viral Infections

The presenting symptoms of patients with PASC echo those of other post-viral and autoimmune diseases such as Myalgic Encephalitis (ME)/Chronic Fatigue (CF). As Dr. Adamson explained, "ME/CFS is characterized by unexplained fatigue, cognitive deficits, post-exertional malaise (PEM), and chronic pain, including headaches. Approximately 36% of long-COVID patients report similar manifestations, suggesting that SARS-CoV-2 is a neuroinvasive virus with a neurological symptom profile similar to ME/CFS."

Considering the overlap in presenting symptoms of all post-viral infection disorders, it's not surprising that the secondary aim of the PASC initiative is – to understand how we recover from viral infection.

Conclusion

The pandemic has given us all a new perspective on life and a newfound appreciation for science. We should all celebrate the declining infection rates and the growing number of vaccinations. Thankfully not all patients infected with COVID-19 go on to develop long-COVID. However, if you're struggling with symptoms of long-COVID know that researchers like myself will go above and beyond to help.

Dr. Adamson and her team are offering to support local community members affected by long-COVID, her website www.adamsonlab.stanford.edu is a good place to start.

Los Altos Hills resident Rita Hitching is the founder of www.teenbrain.info.