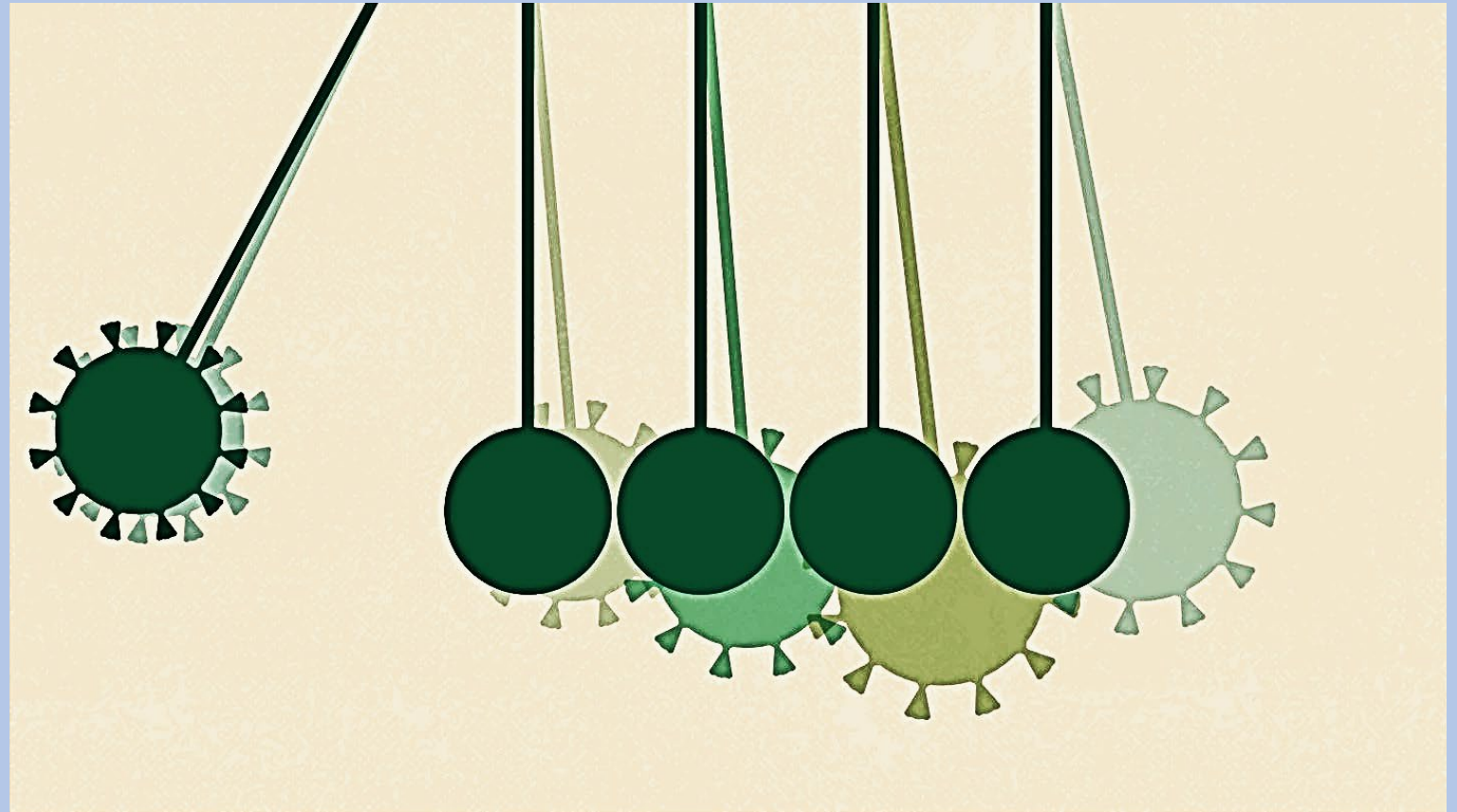


Recognizing the Long Haul: Long Covid /Post-Covid Conditions

Liza DiLeo Thomas, MD, CPXP, FACEP
Ochsner Neurosciences Symposium
May 17, 2024



Disclosures

I have nothing to disclose.

What is “Long Covid?”

PASC

Post-COVID 19 conditions

Post-COVID syndrome

Long Term Effects of COVID-19

Long Covid

Long COVID - Defined

WHO: post-COVID-19 condition “occurs in individuals with a history of probable or confirmed SARS-CoV-2 infection, usually 3 months from the onset of COVID-19 with symptoms that last for at least 2 months and cannot be explained by an alternative diagnosis.”

CDC: Long Covid is a patient created term broadly defined as signs, symptoms, and conditions that continue or develop after initial SARS-CoV-2 infection. The signs, symptoms, and conditions are present **four weeks or more** after the initial phase of infection; may be **multisystemic**; and may present with a relapsing–remitting pattern and progression or worsen over time, with the possibility of severe and life-threatening events even months or years after infection. Long COVID is not one condition. It represents many potentially overlapping entities, likely with different biological causes and different sets of risk factors and outcomes.

Post-acute Sequelae of SARS CoV-2 is a term used in the scientific and medical communities that refers to ongoing, relapsing, or new symptoms or other health effects occurring after the acute phase of SARS-CoV-2 infection. This definition will be revised in an iterative manner based on existing and new data, medical literature, and feedback from the scientific community



EDITORIAL | ONLINE FIRST

Long COVID: the elephant in the room

The Lancet Diabetes & Endocrinology

The Long COVID Road Ahead

We don't know what we don't know, but we are learning. And what we're learning is pretty alarming.

BUSINESS

Long covid is destroying careers, leaving economic distress in its wake

Suffering from debilitating exhaustion and pain for months, patients find themselves on food stamps and Medicaid



By Christopher Rowland

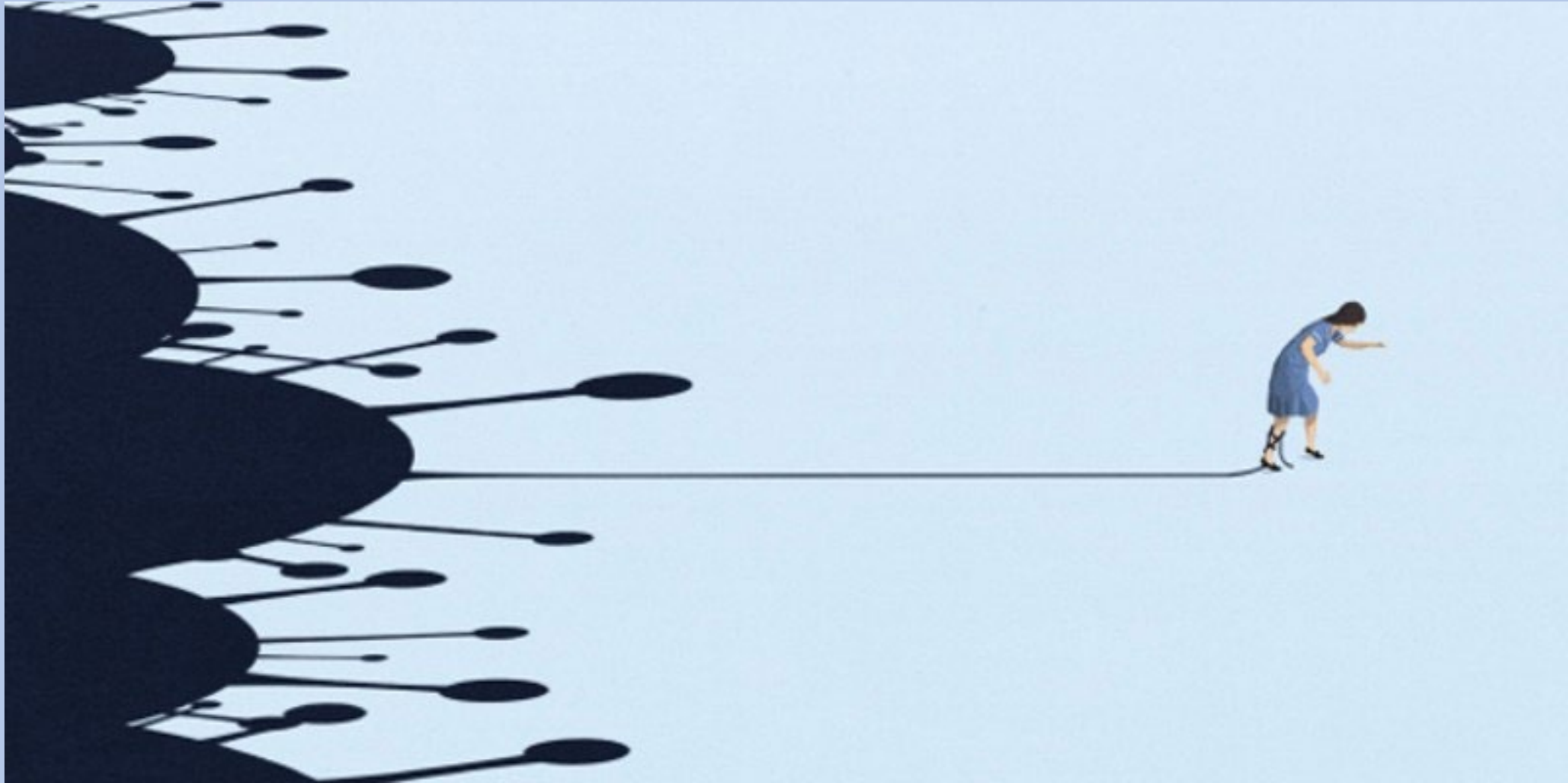
December 9, 2021 at 10:23 a.m. EST

HEALTH • COVID-19

Why the physical and economic pain of 'long COVID' will probably well outlast the pandemic

BY JASON GALE AND BLOOMBERG

November 16, 2021 3:41 AM CST



Long COVID & its Economic Impact

The November 2022 Household Pulse Survey found:

6.8% of all American adults are currently experiencing long COVID



78.5% of adults who currently have long COVID have an activity limitation from the condition



23.1% of adults who currently have long COVID have significant activity limitations from the condition

An August 2022 Brookings report found:

2 to 4 million people are out of work due to long COVID



3 million people out of work due to long COVID translates to **\$168 billion a year** in lost earnings

Sources: National Center for Health Statistics, Long COVID, Household Pulse Survey, November 29, 2022.; New data shows long Covid is keeping as many as 4 million people out of work, Katie Bach, Brookings, August 24, 2022.

Understanding the economic impact

Long Covid brings economic consequences, affecting individuals' work capacity, necessitating ongoing healthcare, and potentially leading to long-term disability. Kathryn Bach, an expert in Long Covid's labour market impacts, has observed a significant number of people unable to work: "We probably have about 700,000 people fully out of work due to long Covid," she tells us.

One study estimated the annual medical costs ranging from \$43bn to \$172bn and lost income from \$101bn to \$430bn, based on nearly 86m documented US Covid-19 survivors as of June 25, 2022, and a range of 5-20% of those survivors currently afflicted with long Covid.¹⁸

Understanding health economics in US

Indicator	Value
Gross Domestic Product (GDP) in US\$ ¹⁹	\$28.5trn
Current Health Expenditure (CHE) ²⁰	\$4.0trn
CHE as % GDP ²⁰	17%
CHE per capita in US\$ ²⁰	\$12,012
Out-of-pocket Expenditure (OOPS) as % of CHE ²⁰	11%
Out-of-Pocket Expenditure (OOPS) per capita in US\$ ²⁰	\$1,285

Workforce impact

While long Covid symptoms have prompted some individuals to leave the workforce, others take time off work or reduce their work hours due to symptoms. When these changes in employment status are considered, long Covid could result in 1.5bn work hours lost in 2024[‡] – a potential cost of more than US\$152.6bn (See Figure 2).

Figure 2: Estimating the workforce impact[‡]

Work hours lost due to long Covid

Hours lost for those that exit the workforce

953.6m

Hours lost for those that reduce work hours

366.3m

Hours lost for those that continue working after acute infection

177.5m

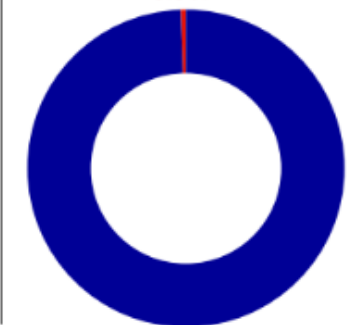
Total work hours lost

1.5bn

GDP loss due to long Covid

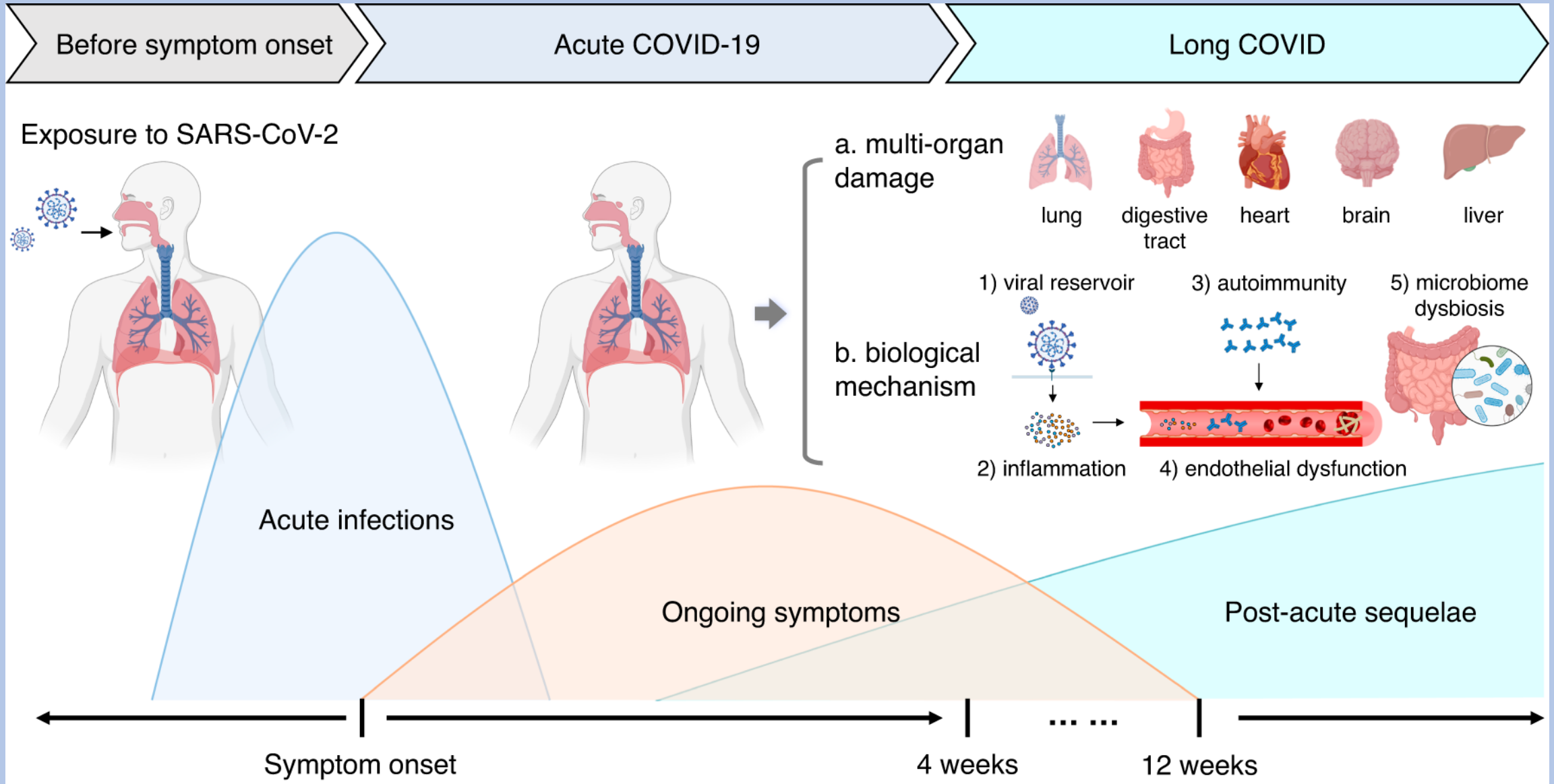
\$152.6bn

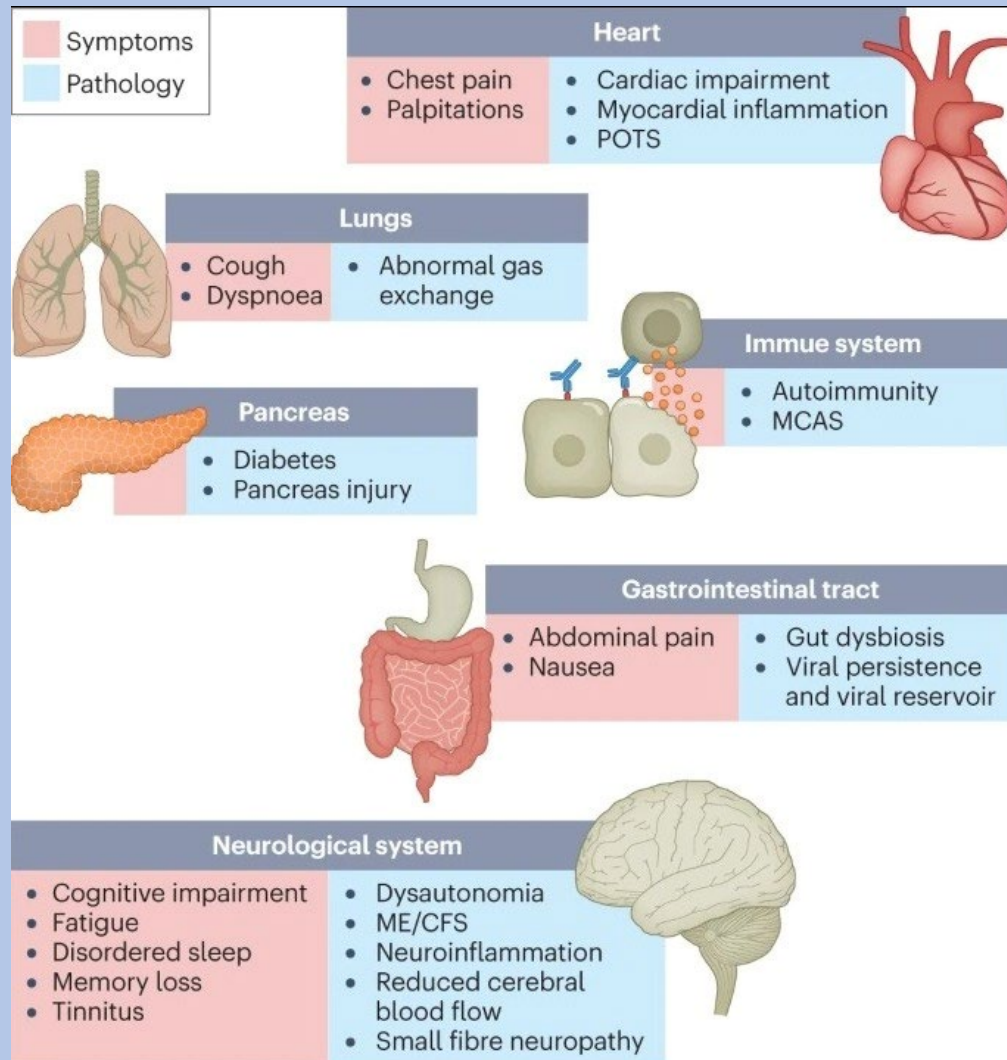
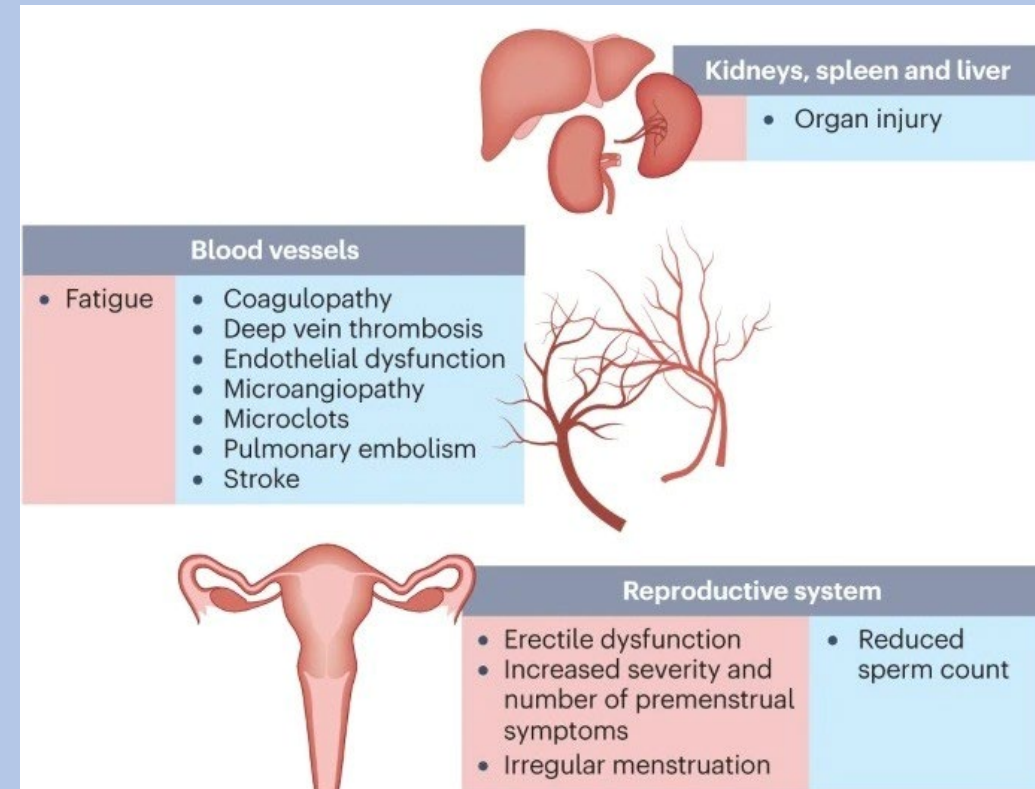
-0.5%



Economist impact calculation

[‡] For more information, see Appendix A: Methodology





Davis, H.E., McCorkell, L., Vogel, J.M. *et al.* Long COVID: major findings, mechanisms and recommendations. *Nat Rev Microbiol* (2023).



In the brain and beyond

Xu E, Xie Y, Al-Aly Z. Long-term Neurologic Outcomes of COVID-19. Nature Medicine. Sept. 22, 2022.

Far-reaching effects of COVID-19

Neuroinflammation

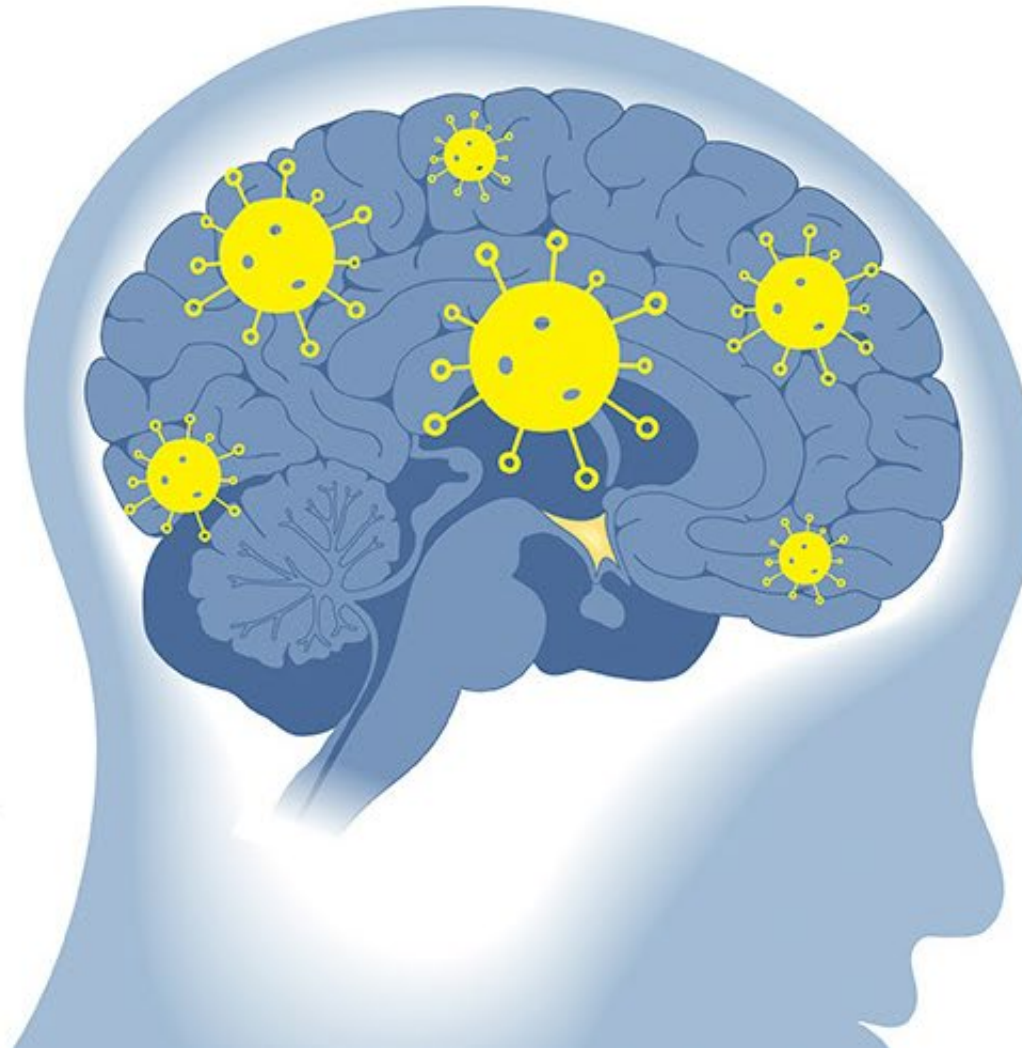
invites inflammatory cells into the brain and activates the brain's own immune cells.

SARS-CoV-2 spike protein or fragments of the virus

enter the brain, initiating or further exacerbating inflammation.

Damaged blood vessels and lining of blood vessels

can cause microclots or microbleeds that can lead to strokes, memory problems and other complications.



Common effects

- Memory problems or brain fog
- Dizziness
- Muscle and joint pain

Moderate

- Strokes
- Numbness and tingling
- Autonomic nervous system disorders
- Headaches and migraines
- Epilepsy and seizures
- Involuntary muscle twitching

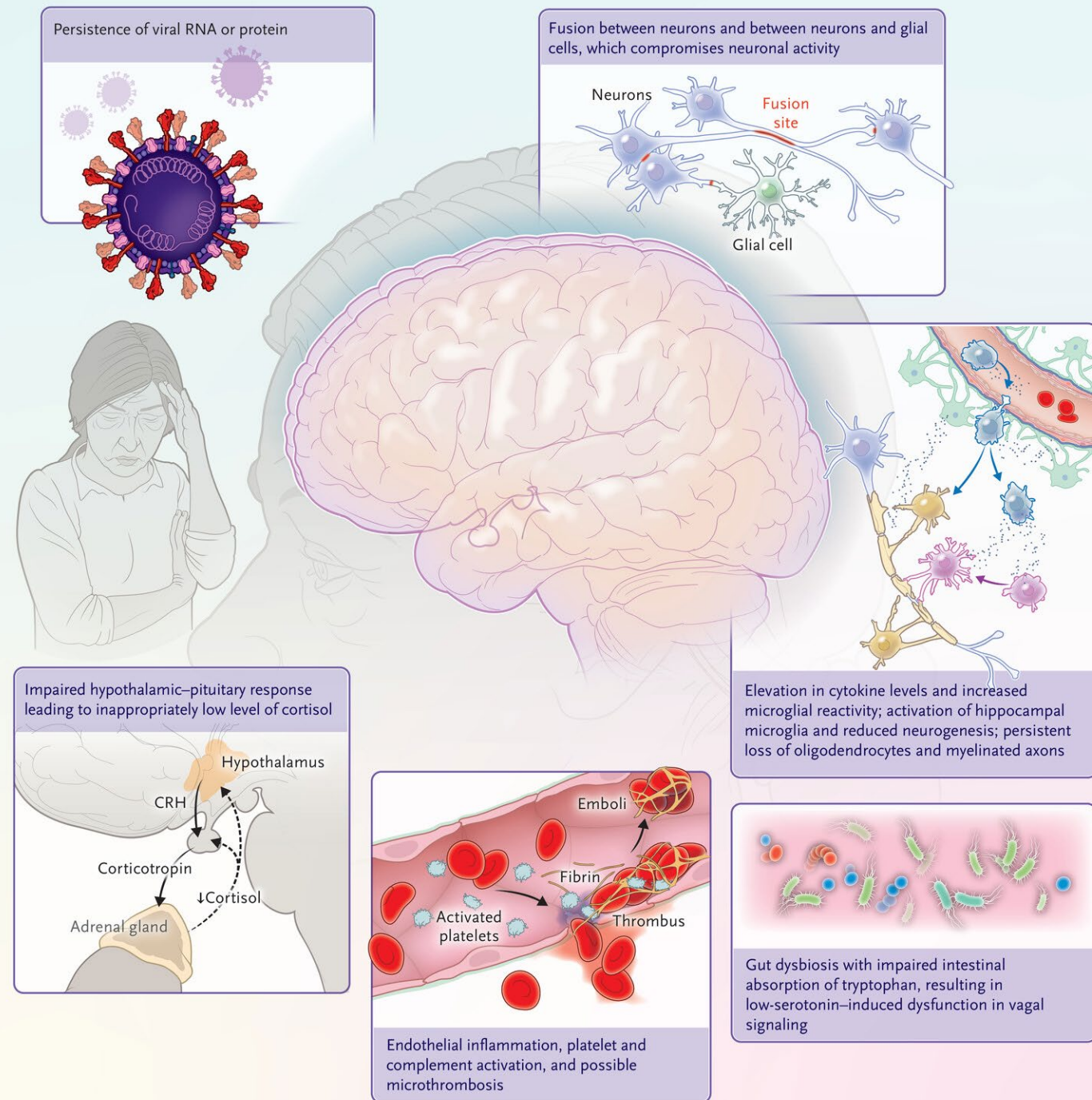
Rare

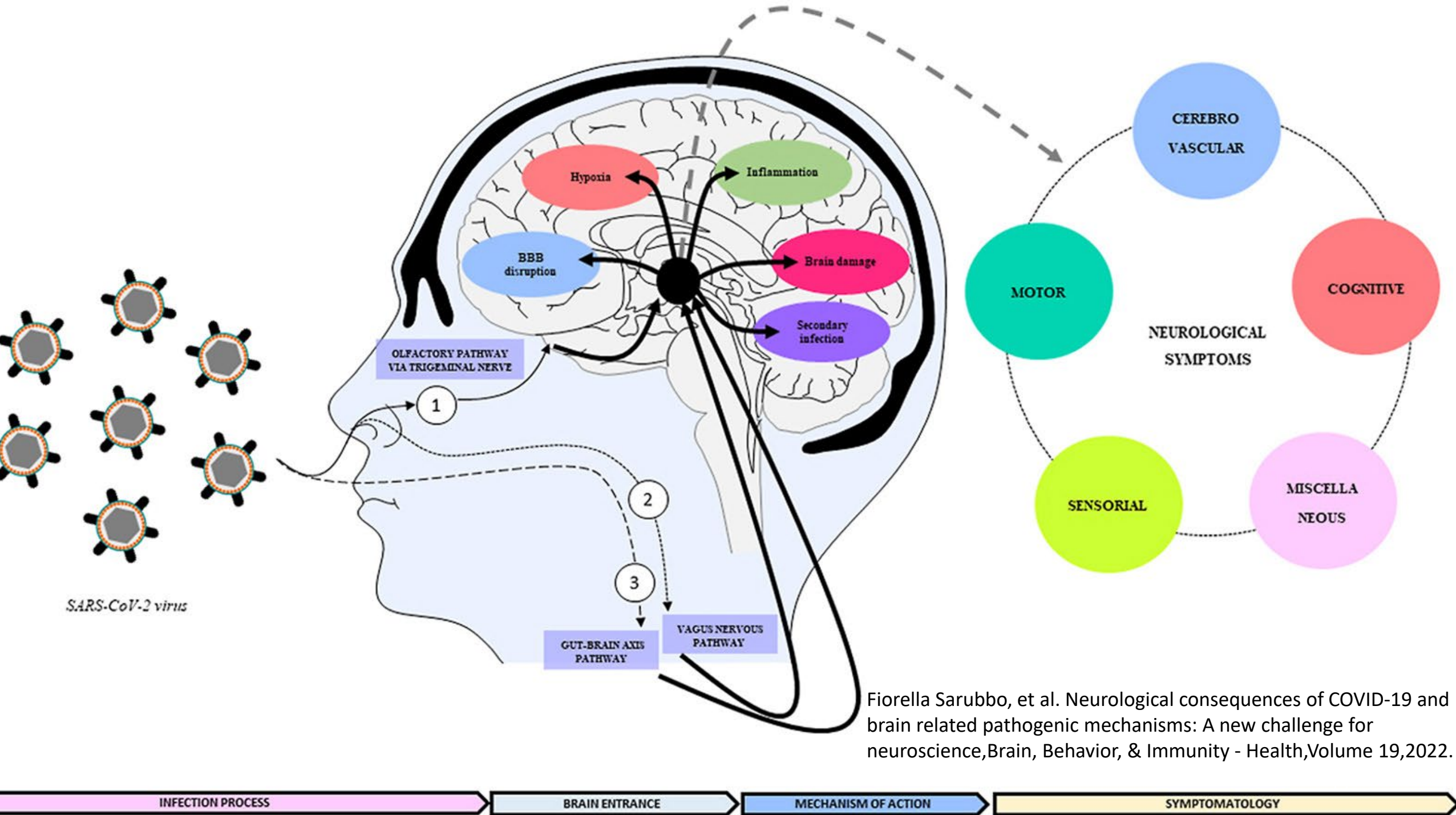
- Brain inflammation
- Spinal cord inflammation
- Prolonged muscle weakness
- Parkinson-like disease



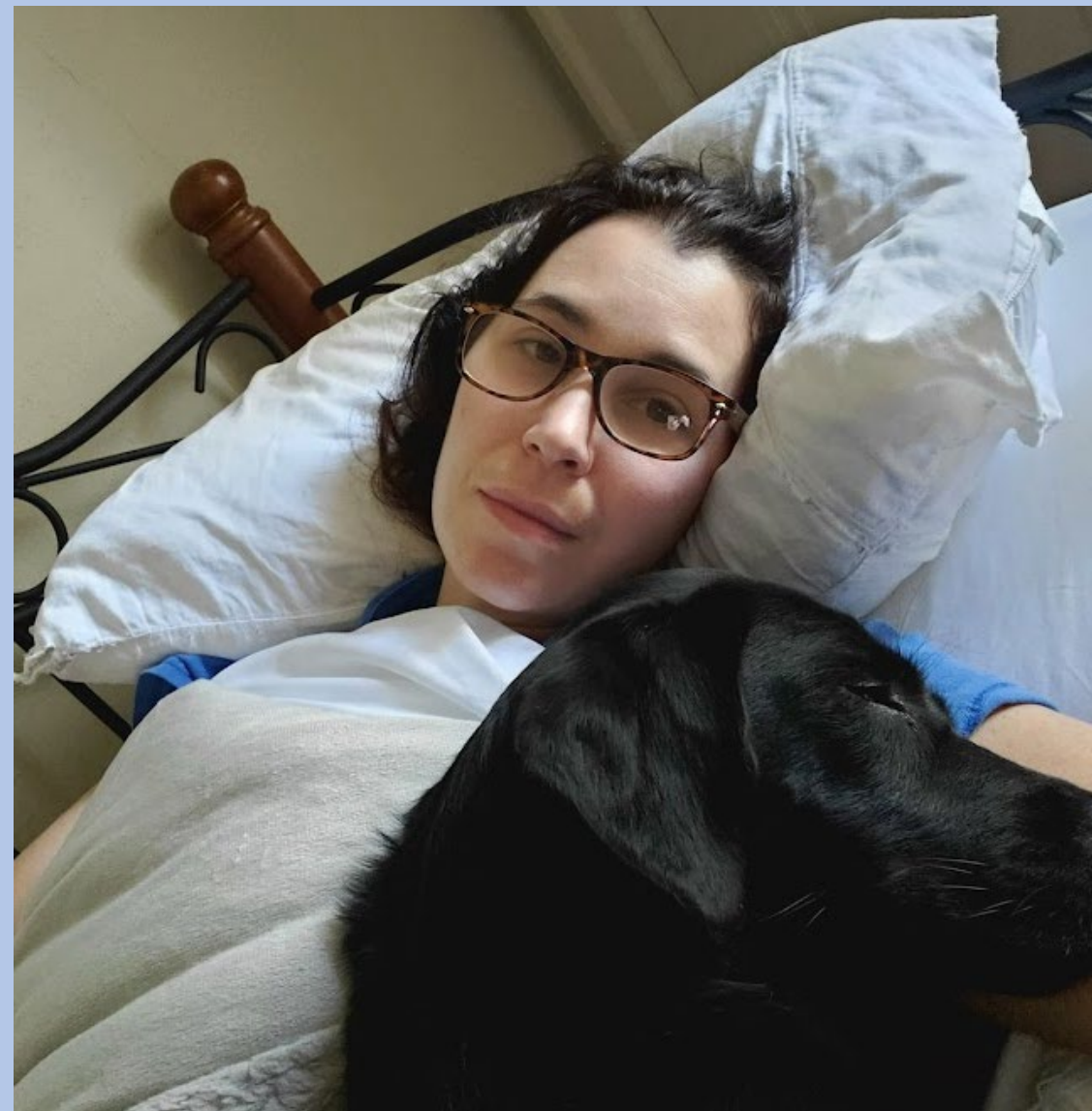
“Brain Fog”

- Participants with unresolved persistent symptoms – equiv. 6-point loss in IQ
- Participants who were admitted to ICU – equivalent of 9-point loss in IQ
- Greatest cognitive deficits occurred with original strain (prior to Dec 2020) and B.1.1.7, alpha (Dec 1, 2020-April 30, 2021).





Fiorella Sarubbo, et al. Neurological consequences of COVID-19 and brain related pathogenic mechanisms: A new challenge for neuroscience, Brain, Behavior, & Immunity - Health, Volume 19, 2022.

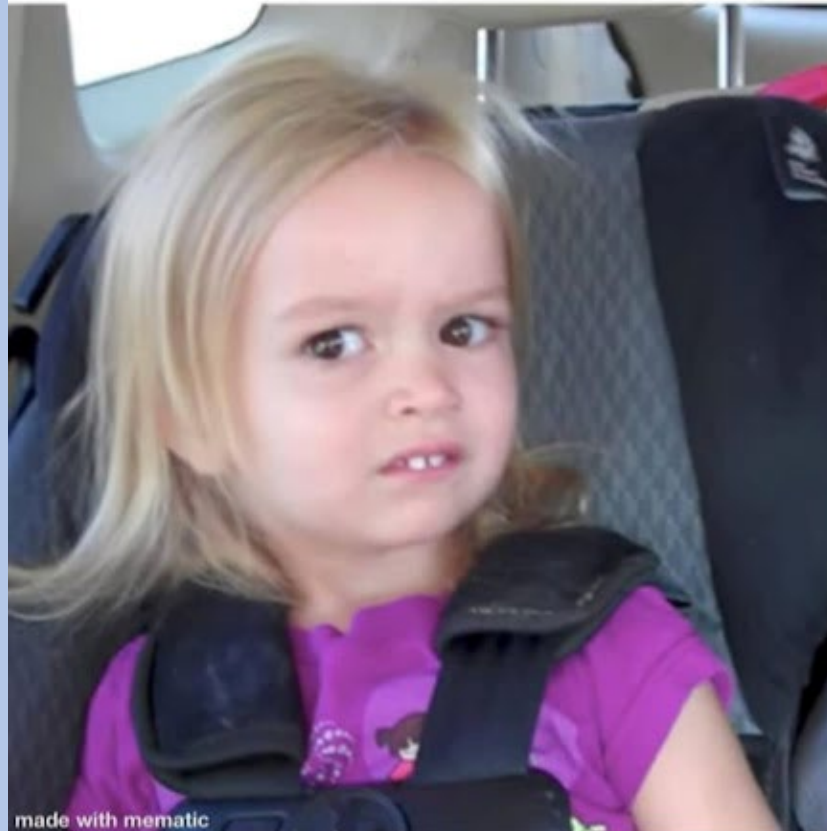




longcoviducks 5h



WHEN YOU REALISE YOU KNOW MORE
ABOUT YOUR CONDITION THAN THE
DOCTOR.



made with mematic

Good news! Your lab results look great.
Everything is normal; you are the picture of health





Hutch in Zen

@DocHutch



It took me 25 years of practicing medicine to learn the power of this phrase: “I don’t know what this is but I believe you and we’ll work to figure it out”

5:10 PM · Jan 29, 2022 · Twitter for iPhone

13.5K Retweets **1,285** Quote Tweets **160.5K** Likes

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THANK YOU

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