



S08: **An Integrative Approach To Long COVID**

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DISCLOSURES





Objective One

Describe the complexity and lack of resources for this novel illness

Objective Two

Identify symptoms and signs of Long COVID and distinguish it from other conditions

Objective Three

To explore the role of spirituality in coping with Long COVID, highlighting its impact on emotional resilience, meaning-making, and holistic recovery

Objective Four

Manage Long COVID with integrative techniques that are evidence based

Health and Human Services



Long COVID, also known as Post-COVID Conditions (PCC), is an infection-associated chronic condition that can occur after SARS-CoV-2 infection, the virus that causes COVID-19, and is present for at least 3 months as a continuous, relapsing and remitting, or progressive disease state that affects one or more organ systems

WHO Definition



It is defined as the continuation or development of new symptoms 3 months after the initial SARS-CoV-2 infection, with these symptoms lasting for at least 2 months with no other explanation.



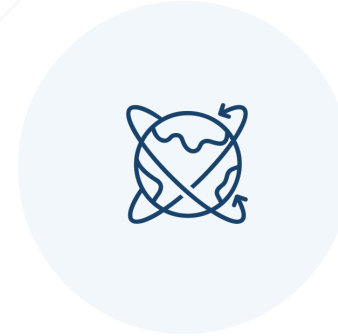
ECONOMIC IMPACT



Mass Disabling Event



1 in 5 adults



Estimated 400 million people worldwide



Economic impact of about \$1 trillion

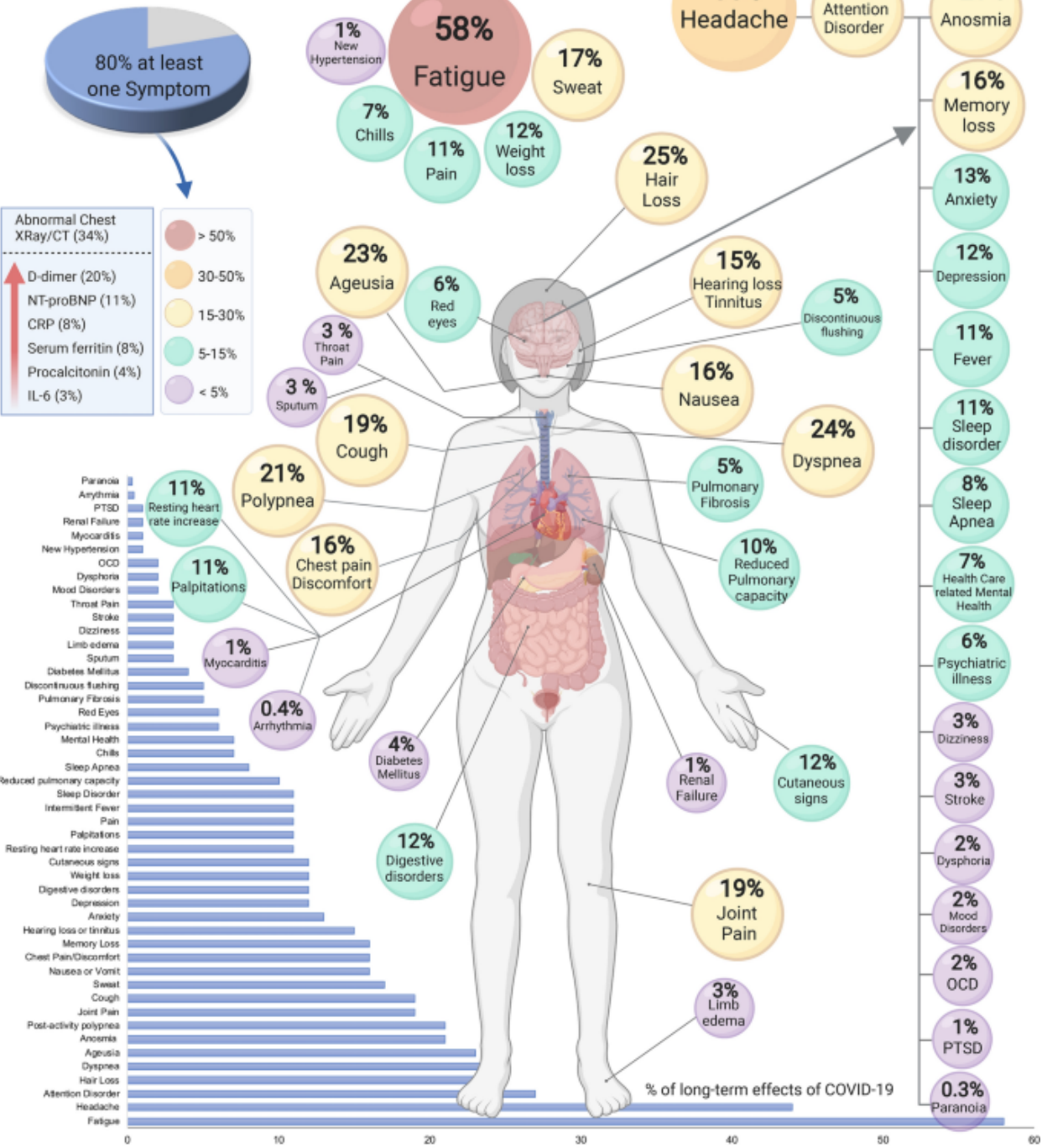


Roughly 1% of global economy



Only 7-10% fully recovered at 2 years

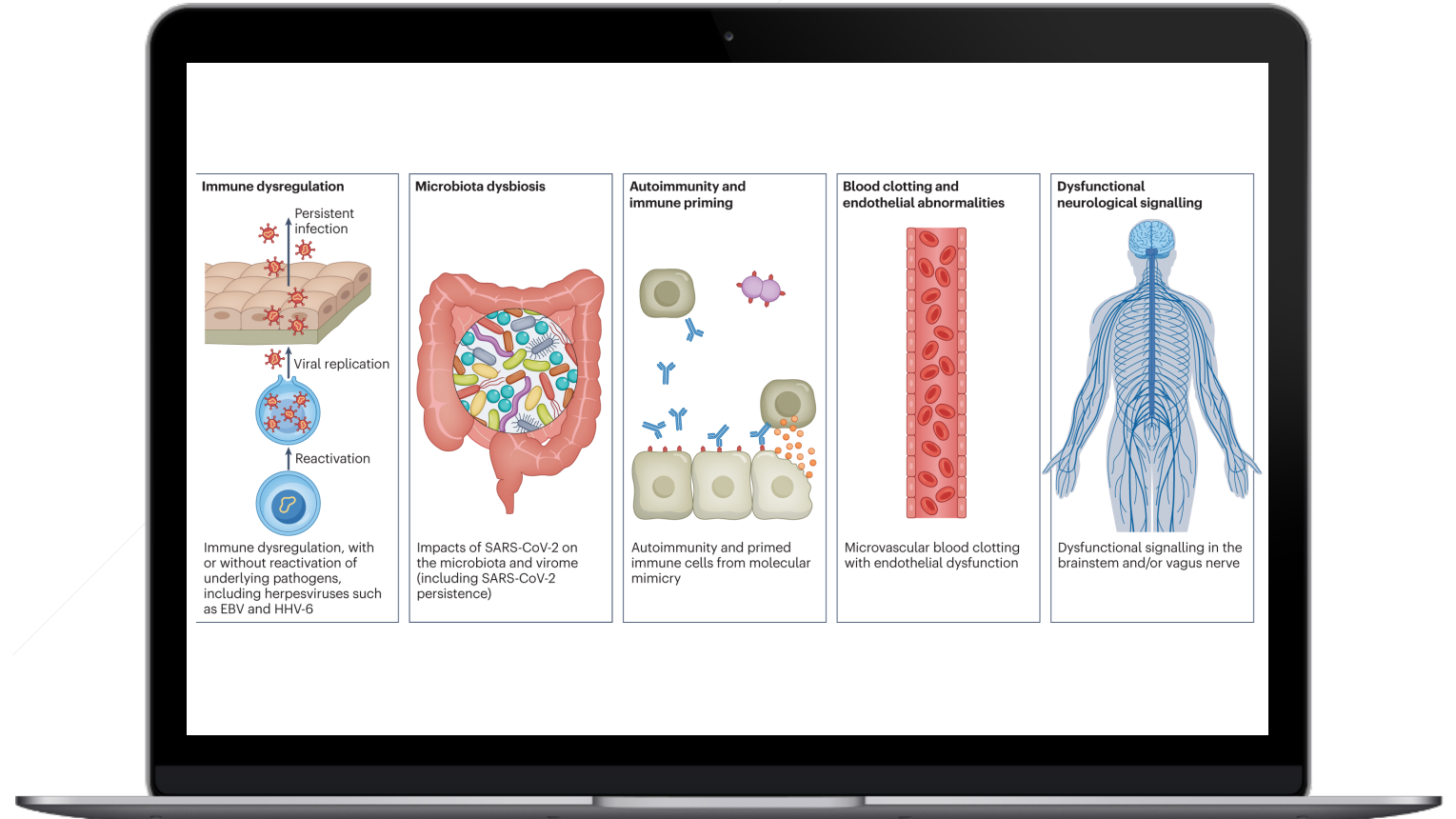
Long-term effects of COVID-19



Lopez-Leon, S., Wegman-Ostrosky, T., Perelman, C. *et al.* More than 50 long-term effects of COVID-19: a systematic review and meta-analysis. *Sci Rep* 11, 16144 (2021). <https://doi.org/10.1038/s41598-021-95565-8>

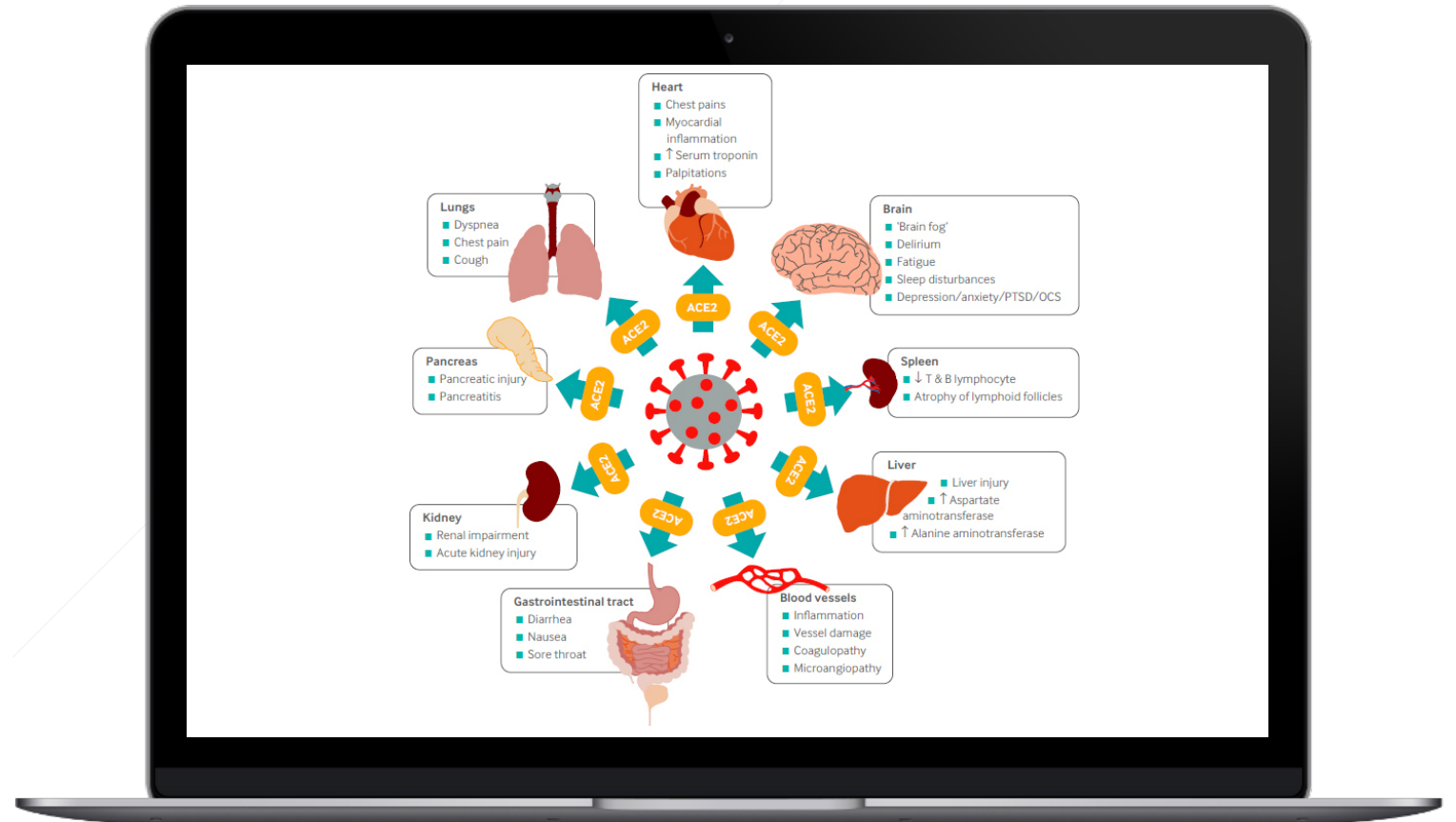
MECHANISMS

- ✓ **Persisting viral reservoirs**
- ✓ **Immune dysregulation**
- ✓ **Gut Dysbiosis**
- ✓ **Reactivation of EBV/HSV**
- ✓ **Microclotting**
- ✓ **Endothelial dysfunction**
- ✓ **Vagal nerve dysfunction**
- ✓ **Autoimmunity**



COMPLEXITY

- ✓ Breeds scarcity
- ✓ Very few Long COVID programs
- ✓ Many losing funding and ending
- ✓ Extended wait times
- ✓ Lack of resources for novel whole body disease
- ✓ Research years before yields actionable results





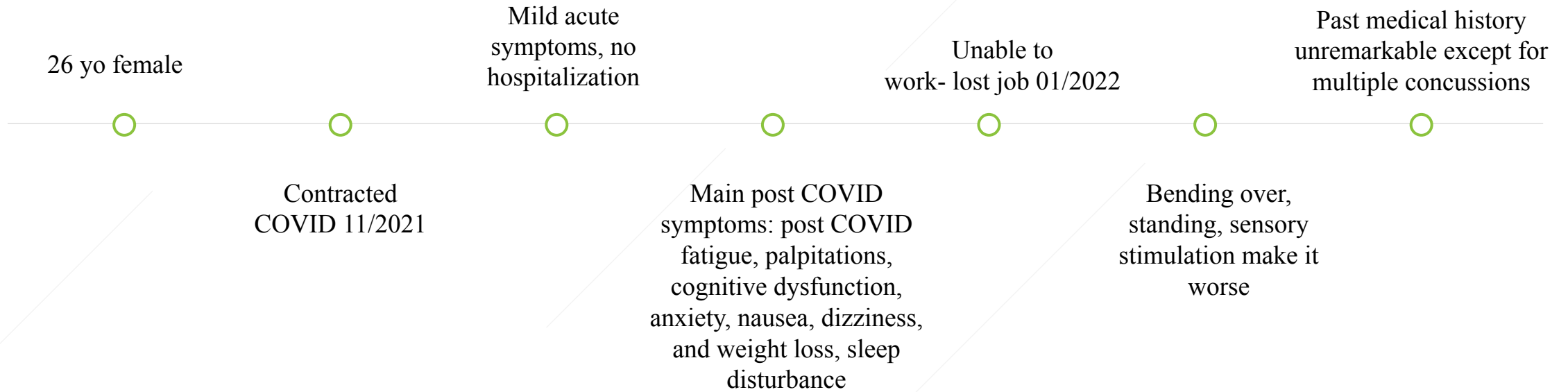
Multidisciplinary Clinics often employ about 6-10 different specialists

A study published in the *Irish Journal of Medical Science* found that only 8% of surveyed general practitioners (GPs) felt confident in diagnosing Long COVID

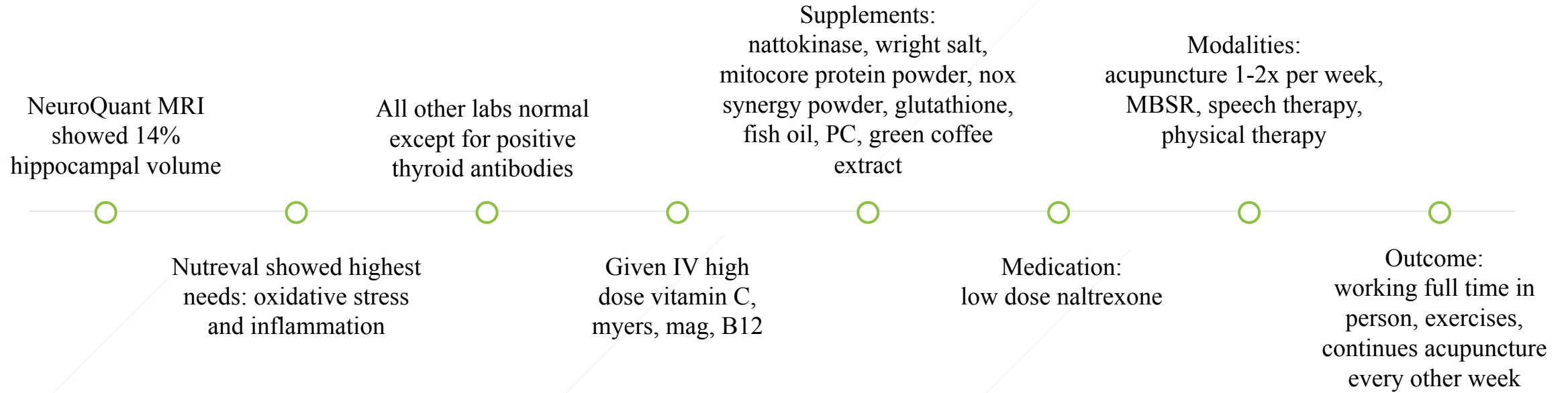
A *JAMA Health Forum* study (2022) found that post-COVID patients had **significantly higher healthcare utilization**, including specialist visits.

A 2021 *Brookings Institution* report estimated that many patients saw **more than 4 specialists** in their search for diagnosis and treatment

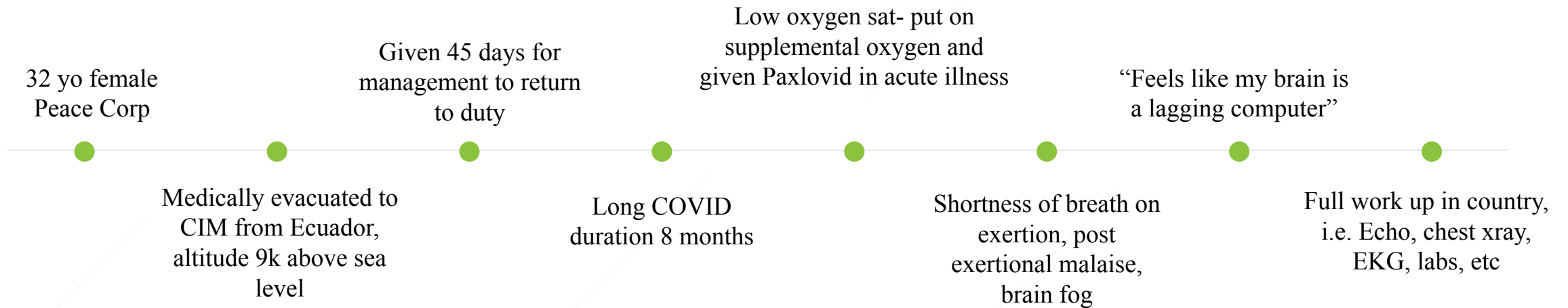
CASE STUDY #1



CASE STUDY #1



CASE STUDY #2



CASE STUDY #2

Low dose naltrexone-
titration to 4.5mg

Acupuncture 2x
per week

Long COVID
Groups 1x per
week

Heartmath device
and training by
breath coach

Referral to speech

Supplements:
L-tyrosine, lions mane,
Bryonia Albia, BCQ,
DHA, Mitocore,
vitamin D3/K2, CBDA

Outcome 1 month later:
About 80% improvement,
SOB resolved, able to hike
1.5 miles per day, brain fog
improved, Peace Corp
discharged patient led to
huge regression in symptoms

COLLABORATIVE PARADIGM



- ✓ **Work with rehabilitation services I.e speech, PT, OT**
- ✓ **Frequency of visits**
- ✓ **Grows agency over symptoms/disability**
- ✓ **Expands knowledge about movement/effective pacing**
- ✓ **Complementary modalities:
Acupuncture/craniosacral/SE/massage**
- ✓ **Breath work**
- ✓ **Whole body care**

MANAGEMENT STRATEGIES



Validate and listen



Establish patient goals



Optimize lifestyle
factors



Pharmacological
options



Hands on modalities



Rehabilitation



Supplementation



Refer appropriately

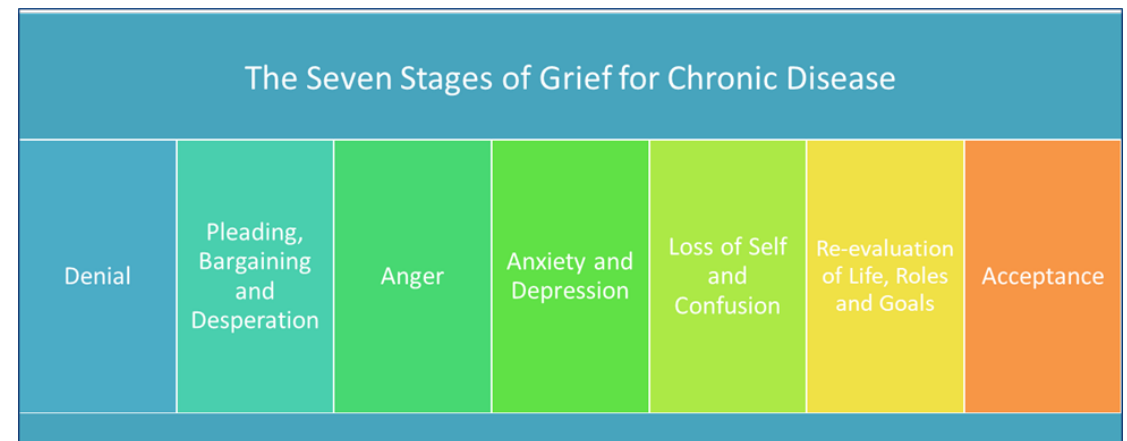
INTEGRATIVE MODALITIES

- ✓ Need for multi-disciplinary approach
- ✓ LDN
- ✓ Mitochondrial support
(cytokines injure mitochondria)
- ✓ Gingko, ginseng, Chinese herbs
- ✓ Flavonoids:
quercetin and Luteolin protect against neuroinflammation/oxidative stress
- ✓ Treat any toxicity
- ✓ Caffeine
- ✓ Green tea

Vitamins	Vitamins C, D and E, thiamine, riboflavin
Minerals	Magnesium, calcium, phosphate
Lipids	Membrane phospholipids, unsaturated fatty acids
Metabolites	Creatine, pyruvate
Cofactors	CoQ ₁₀ , α-lipoic acid, NADH, nicotinic acid
Transporters	l-Carnitine, membrane phospholipids
Antioxidants	CoQ ₁₀ , α-lipoic acid, NADH, glutathione
Enzyme inhibitors	α-Lipoic acid, dichloroacetate
Herbs	Curcumin, schisandrin

The Spiritual Dimension of Long COVID: Finding Meaning and Resilience

- ✓ *The Lancet Psychiatry* reported that individuals with long COVID experienced a 10% increase in suicidal ideation compared to those without the condition
- ✓ Individuals who had COVID-19 were 46% more likely to experience suicidal thoughts during the post-acute phase than those who did not contract the virus
- ✓ Positive correlation between social support and resilience in long COVID

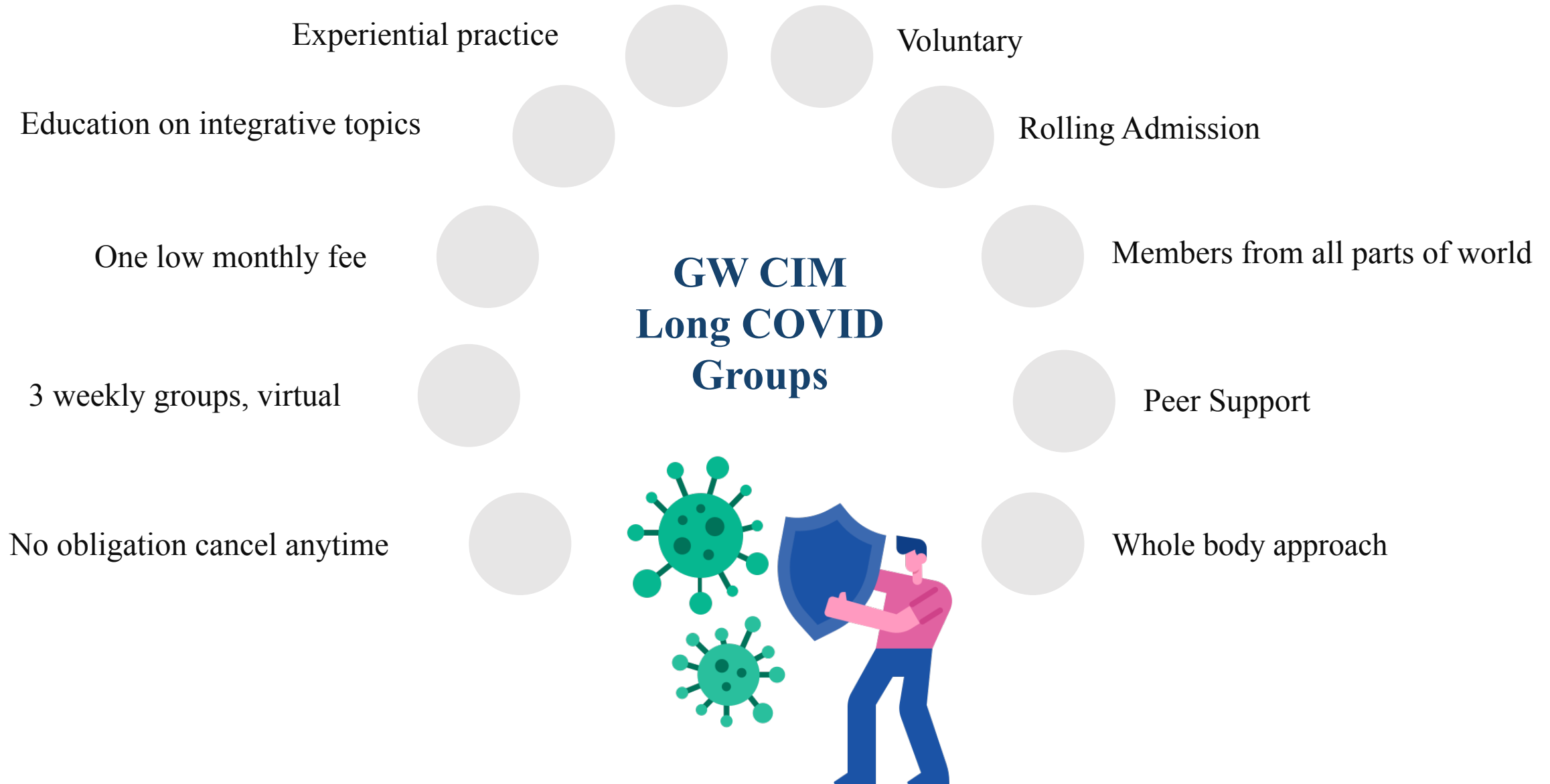


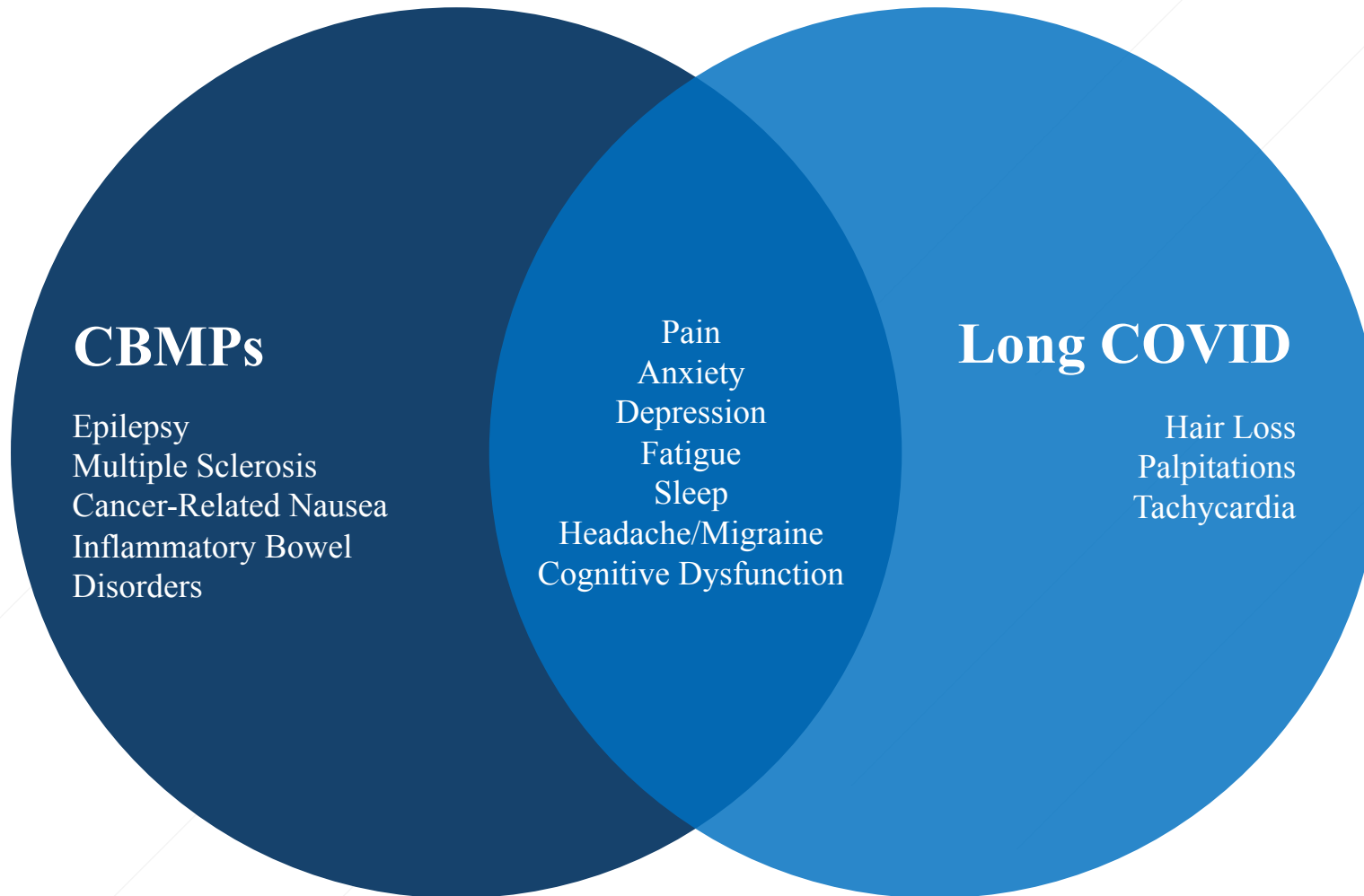
Sher L. Long COVID and the risk of suicide. *Gen Hosp Psychiatry*. 2023 Jan-Feb;80:66-67. doi: 10.1016/j.genhosppsy.2022.12.001. Epub 2022 Dec 5. PMID: 36494289; PMCID: PMC9721155.



- ✓ Hosted an 8 person long COVID retreat weekend using IM ketamine
- ✓ Participants knew each other from groups
- ✓ Diversity in previous use history
- ✓ Matched into pairs
- ✓ On follow up, all saw improvements in perspectives related to their disease
- ✓ Improvements in anxiety and depression
- ✓ Several patients had pain relief, one patient had resolution of pain for 3 months

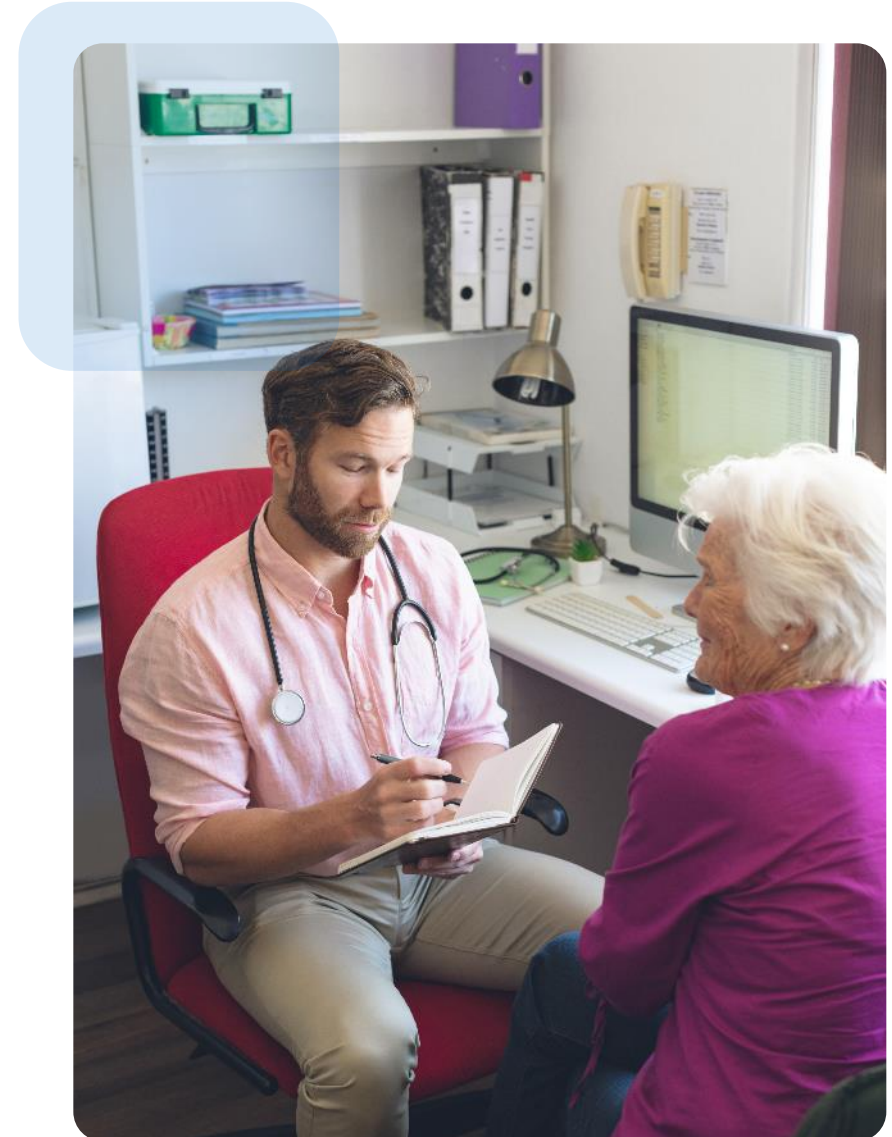
GW CIM LONG COVID GROUPS





ACUPUNCTURE

- ✓ Comprehensive analysis evaluated acupuncture's impact on symptoms common in long COVID, such as fatigue, depression, cognitive impairment, headache, and insomnia
- ✓ Concluded that acupuncture significantly improved these conditions compared to standard treatments or sham procedures
- ✓ Case report concluded that acupuncture alleviated chest pain and heart palpitations
- ✓ Ongoing study looking at fatigue related to long COVID and acupuncture



LDN AND LONG COVID

- ✓ 2022, interventional study Long COVID showed improved in symptoms 6/7 parameters measured
- ✓ Naltrexone competitive opioid receptor antagonist
- ✓ Blocks the effects of opioids
- ✓ Works at mu, delta, and kappa receptors
- ✓ Increases endorphins and enkephalins= pain relief, reduce autoimmune dysfunction
- ✓ Enkephalin is opioid growth factor
- ✓ Acts as growth factor in neural and non-neural tissue
- ✓ Plays a role in cell proliferation, helps in angiogenesis

LDN



- ✓ **Reversible, can use opioids with LDN if needed or emergency**
- ✓ **Not addicting**
- ✓ **Disease modifying, not symptom relieving**
- ✓ **Uses: chronic pain, fatigue, autoimmune dysfunction, Mast cell activation, brain fog**
- ✓ **Acts on Glial cells (*immune cells of the brain*)**
- ✓ **Glial cells get activated-produce neuro-inflammatory chemicals (*toll like receptors*)**
- ✓ **Neurons get inflamed**

MAST CELL ACTIVATION SYNDROME

Disease first reported in 2007, prevalence of 17% population

Often goes undiagnosed

Dysfunction in behavior of mast cells following COVID leads to release of cytokines

Inappropriate activation of mast cells = histamine, heparin, tryptase, chemokines, prostaglandins

Lung biopsies of COVID patients, large numbers of mast cells

Histamine, Plasma >8

Tryptase

Serum Chromogranin-A

Random and 24 hour urine- N-methyl histamine, histamine, prostaglandin D2, leukotriene

Heparin- difficult to detect, lab ranges need to go down to 0

▼ GI tract is the best- biopsy staining for CD117 >20 mast cells positive for MCAS

MCAS AND LONG COVID

✓ Does mast cell activation baseline/pre-existing explain hyper-inflammatory responses in acute COVID and long COVID?

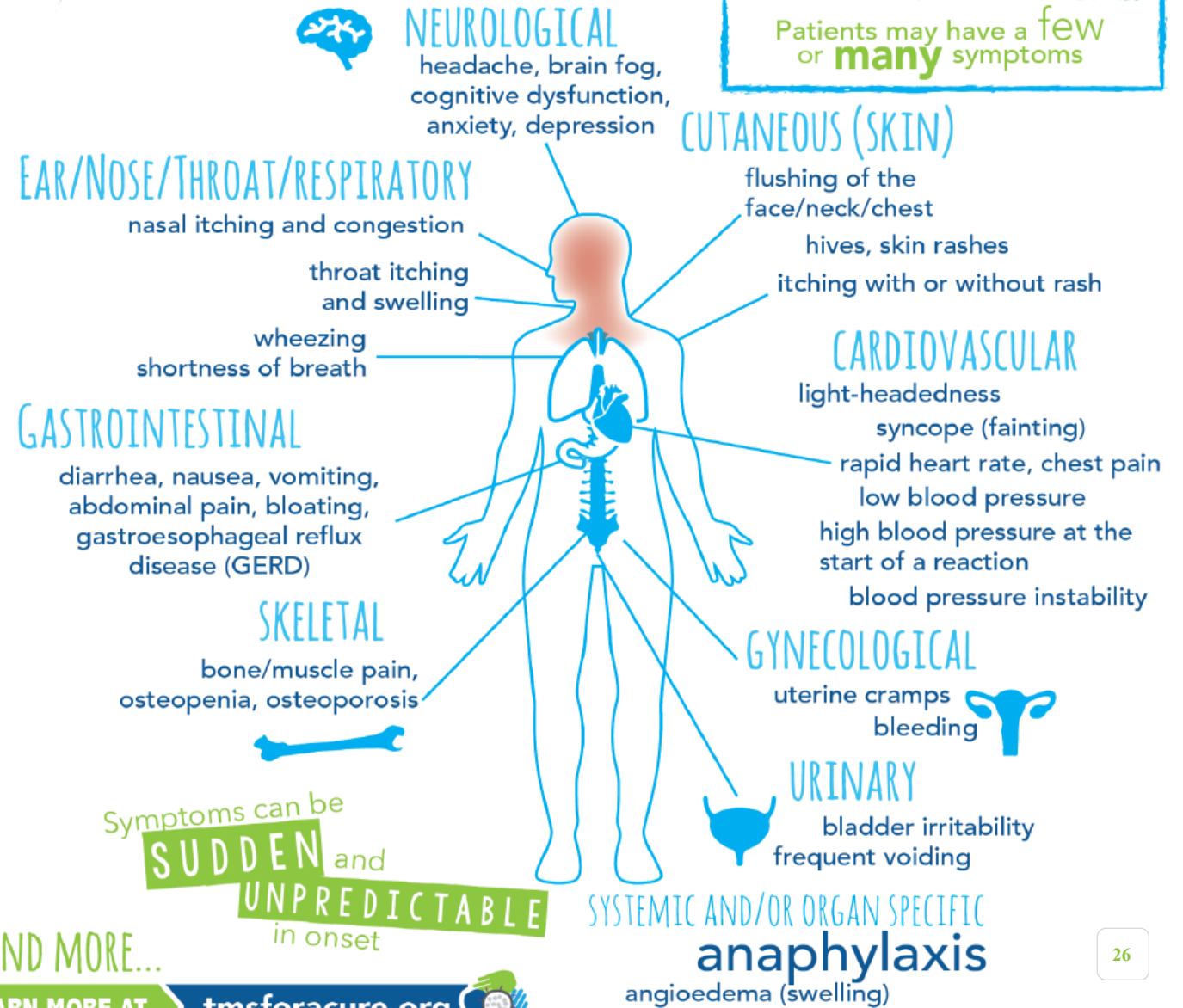
✓ 2021 study in International Journal of Infectious Diseases



SYMPTOMS

Some common SYMPTOMS of MAST CELL DISEASE that are caused by mast cell mediator release

Patients may have a few
or **many** symptoms



LEARN MORE AT

tmsforacure.org

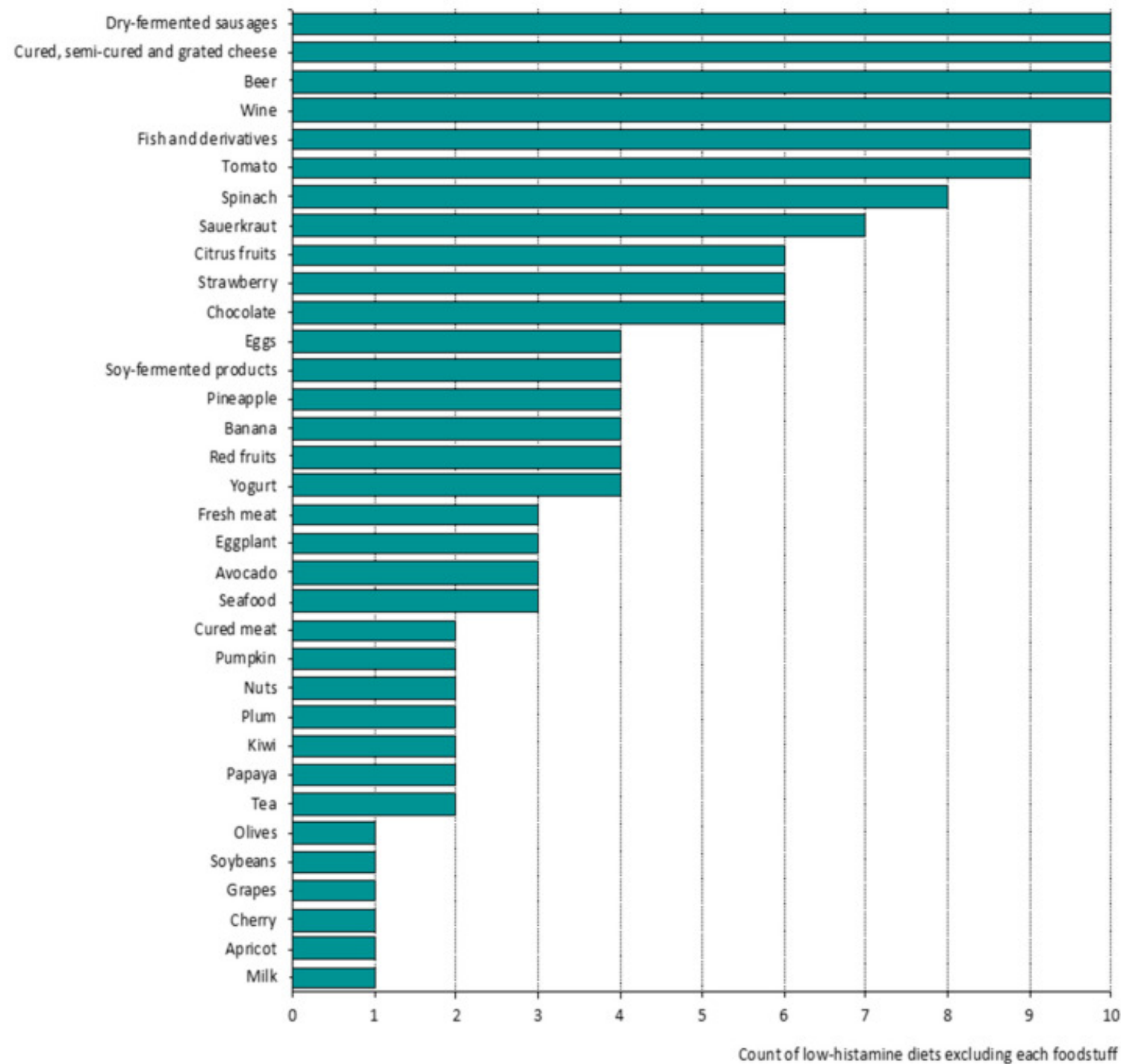


TREATMENT

TREATMENT

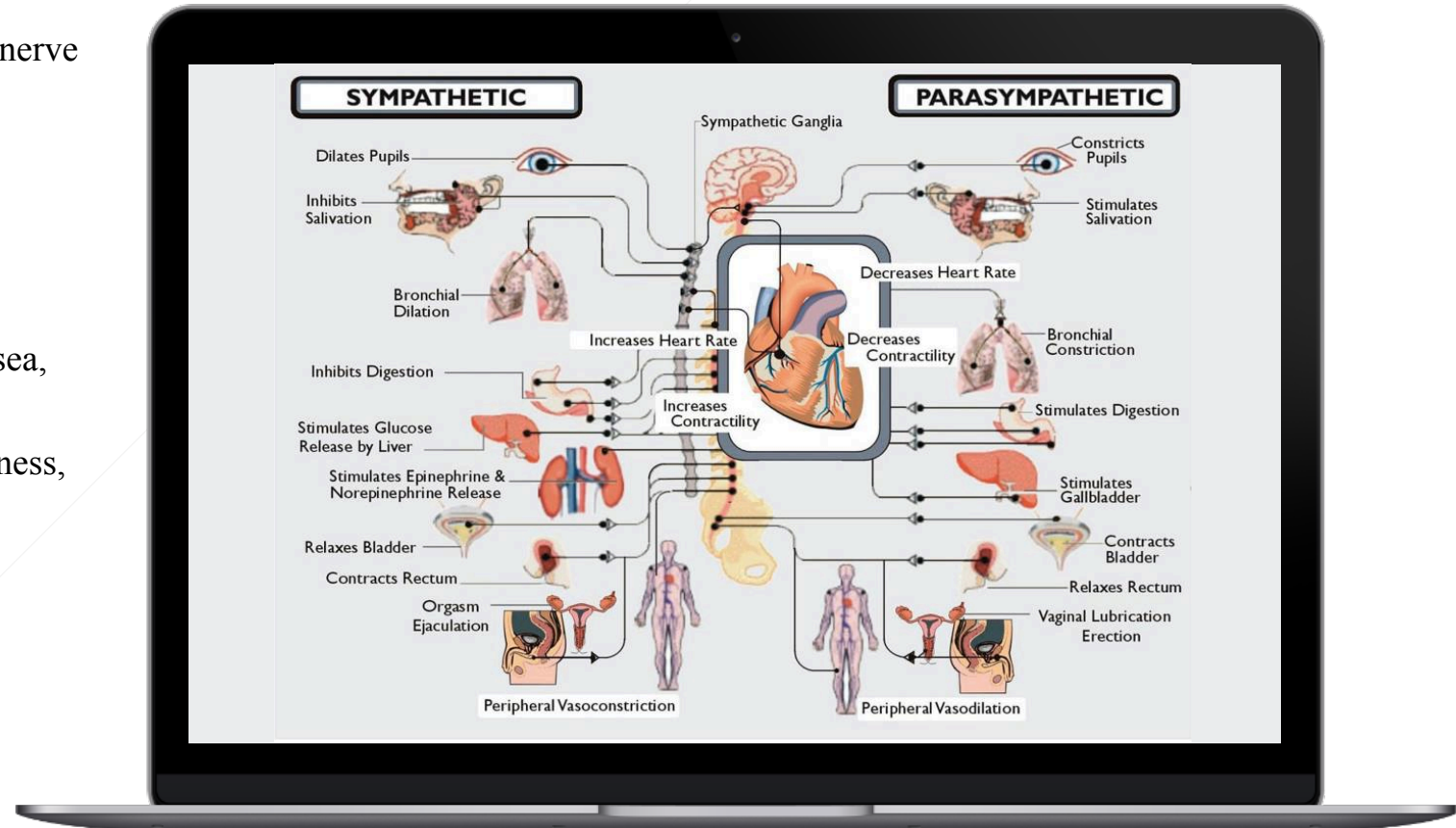
- ✓ Block H1 and H2 by antihistamines, i.e. zyrtec, pepcid
- ✓ Mast cell stabilizers- cromolyn
- ✓ Other mediator inhibitors- LDN, NSAID COX2 (celebrex), corticosteroids, benzos
- ✓ Singulair
- ✓ Reduce inflammation and methylation defects
- ✓ Low histamine diets
- ✓ Quercetin, Luteolin, Vitamin C, D, NAC, Turmeric, alpha lipoic acid, B12/folate if needed, natural D hist, Dao enzyme
- ✓ Lactobacillus rhamnosus- certain probiotic strains decrease histamines
- ✓ Limbic retraining

HISTAMINE FOOD



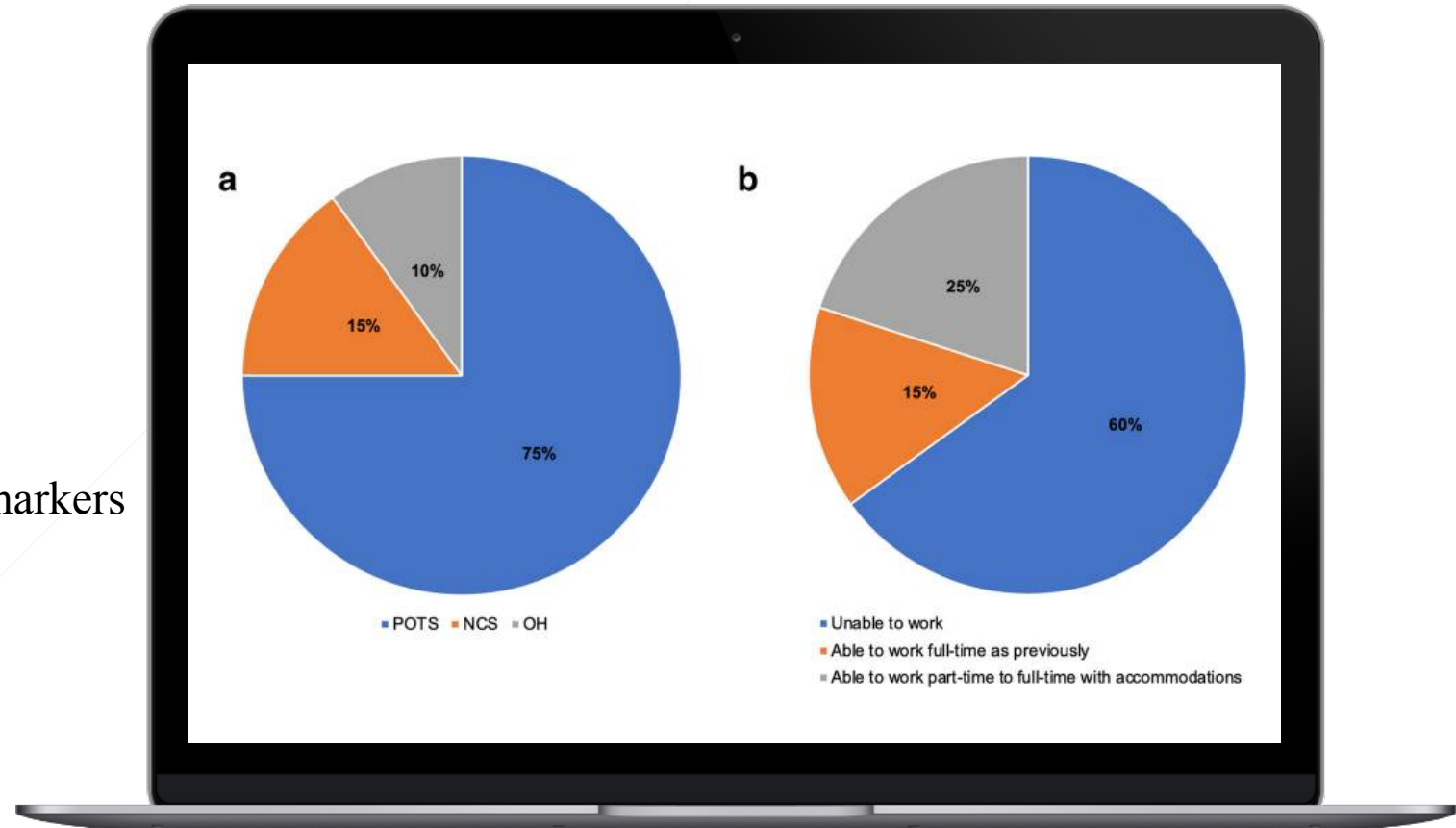
DYSAUTONOMIA

- ✓ Recent study shows that COVID-19 infects the vagus nerve causing inflammation
- ✓ Vagus nerve impacts most systems of the body
- ✓ Symptoms: chronic fatigue, headaches, myalgias, nausea, brain fog, exercise intolerance, shortness of breath, weakness, lightheadedness, blurriness of vision, shakiness, anxiety
- ✓ POTS, Orthostatic hypotension
- ✓ Decreased blood flow to brain
- ✓ Can cause syncope



AUTONOMIC DISORDERS AFTER COVID

- ✓ 20 patient case study
- ✓ 70% female
- ✓ 15 POTS, 3 neurocardiogenic syncope, 2 orthostatic hypotension
- ✓ 4 elevated autoimmune or inflammatory markers
- ✓ 6-8 months after infection, 85% residual autonomic symptoms
- ✓ 60% unable to return to work



Blitshteyn S, Whitelaw S. Postural orthostatic tachycardia syndrome (POTS) and other autonomic disorders after COVID-19 infection: a case series of 20 patients. *Immunol Res.* 2021 Apr;69(2):205-211. doi: 10.1007/s12026-021-09185-5. Epub 2021 Mar 30. Erratum in: *Immunol Res.* 2021 Apr 13; PMID: 33786700; PMCID: PMC8009458.

DYSAUTONOMIA TREATMENT

✓ Treatments: increase salt and fluid (*2-3g salt and 2L of fluid*), salt retains fluids in blood vessels and maintain a healthy blood pressure

Compression study: waist high most important

- ✓ Volume expansion is important but does not prevent flares/reverse symptoms in significant way
- ✓ way

✓ Medications: Increase blood volume (*Florinef*), improve vasoconstriction (*stimulants, midodrine*), Interfere with release of nor/epi (*beta blockers*)

IVIG 2g/kg every 4 weeks, can take 6-7 months to work, indef

✓ Other meds: plaquenil, methotrexate (*good for jt/muscle pain*), rituximab (*if IVIG fails*)

✓ Integrative approach: lifestyle factors, testing for micronutrient deficiencies, food sensitivities, gut health

Long COVID: major findings, mechanisms and recommendations

Published: 13 January 2023

Hannah E. Davis, Lisa McCorkell, Julia Moore Vogel & Eric J. Topol

Nature Reviews Microbiology volume 21, pgs 133–146 (2023)

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- <https://patientresearchcovid19.com>
- <http://www.dysautonomiainternational.org>
- <https://supertmastcell.org>
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Questions?

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