

LONG COVID:
WHAT TO DO?
Saul Rosenthal

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“Long COVID is broadly defined as signs, symptoms, and conditions that continue or develop after initial COVID-19 or 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 worsening 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.”

–U.S. Federal Working Definition

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POSTACUTE SEQUELAE OF
SARS-COV-2 INFECTION (PASC)

- Published May 25, 2023 by *Journal of American Medical Association*
- NIH Researching COVID to Enhance Recovery (RECOVER) Initiative
- 9,764 participants

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POSTACUTE SEQUELAE OF SARS-COV-2 INFECTION (PASC)

- 37 symptoms reported in at least 2.5% of cohort
- 12 symptoms "hang" together
- Up to 21% meet criteria

Smell/taste
Postexertional malaise
Chronic cough
Brain fog
Thirst
Palpitations
Chest pain
Fatigue
Sexual desire or capacity
Dizziness
Gastrointestinal
Abnormal movements

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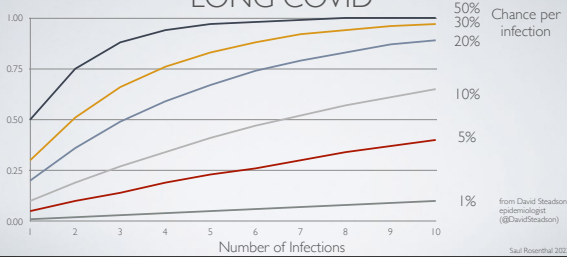
RISK FACTORS FOR LONG COVID

- Older
- Female
- Pre-existing chronic health conditions

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PROBABILITY OF CONTRACTING LONG COVID



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COVID TODAY

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- COVID-19 infections as of April 2023:
 - WHO: 760 million cases, 7 million deaths worldwide
 - CDC: 104 million cases, 1.1 million deaths in U.S.
- 10%-20% of COVID cases develop Long COVID
- Over 200 documented symptoms

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WHAT DOES LONG COVID LOOK LIKE?

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- Respiratory / Cardiac
- Gastrointestinal
- Ear, Nose, and Throat
- Fatigue / Exercise Intolerance / Post-Exertional Malaise
- Dysautonomia
- Cognitive and Mood

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CURRENT INTERVENTION APPROACHES

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"There is no specific treatment for Long COVID yet." — NIH

- Pulmonary Rehabilitation
- Autonomic Conditioning
- Cognitive Rehabilitation
- Smell Retraining
- Psychosocial and Behavioral Therapy

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AMERICAN ACADEMY OF PHYSICAL MEDICINE AND REHABILITATION

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- Focus on neurologic symptoms
 - Cranial Neuropathy (facial, olfactory, glossopharyngeal, vestibulocochlear)
 - Headaches
 - Sleep Disturbance
 - Peripheral Neuropathy and Neuropathic Pain
 - Muscular Pain, Weakness, and Tremors

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POST-COVID CARE CLINICS

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- One unified guidelines or consensus statement
- Tend to start with interdisciplinary assessment
- Some are interdisciplinary, others more focused
- Approach is frequently self-care

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YALE MEDICINE

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- **Fatigue.** "[P]acing, Planning, Prioritizing, and Positioning" activities."
- **Respiratory symptoms.** "[B]reathing exercises, use of supplemental oxygen, and pulmonary rehabilitation"
- **Cardiac symptoms.** "Treatment may involve cardiac rehabilitation. Medications may also be used to control specific symptoms."
- **Neurological symptoms.** "[E]xercise and...remain physically active. [T]reatment might involve memory exercises and the use of memory aids such as calendars and planners"
- **Psychological symptoms.** "[C]ounseling, support groups, and medications to manage depression, anxiety, or other conditions."
- **Smell and taste symptoms.** "[T]opical (drops or sprays) corticosteroids. They may also perform olfactory training."

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EXPERIMENTAL TREATMENTS

- Corticosteroid for Olfactory Dysfunction (Vaira et al., 2021)
- tACS for Visual Impairment (Sabel et al., 2021)
- Hyperbaric Oxygen for Fatigue (Robbins et al., 2021)
- Cognitive Behavioral Therapy for Fatigue (Kaut et al., 2023)
- Guanfacine for Brain Fog (Fesharaki-Zadeh et al., 2023)
- Neurofeedback for Brain Fog (Lackösz et al., 2021)

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THE CASE PRESENTATION IS NOT INCLUDED IN THE HANDOUTS FOR REASONS OF CONFIDENTIALITY

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FORMULATING CASES

- Multi-system impact significantly disrupts normal function
- Flexible, multidisciplinary intervention (functional medicine, psychotherapy, applied psychophysiology)
- Interactions among long COVID, pre-existing trauma, daily life
- Expect surprises

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<https://www.advancedbehavioral.care/aapb2023/>

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AAPB, June 3, 2023
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