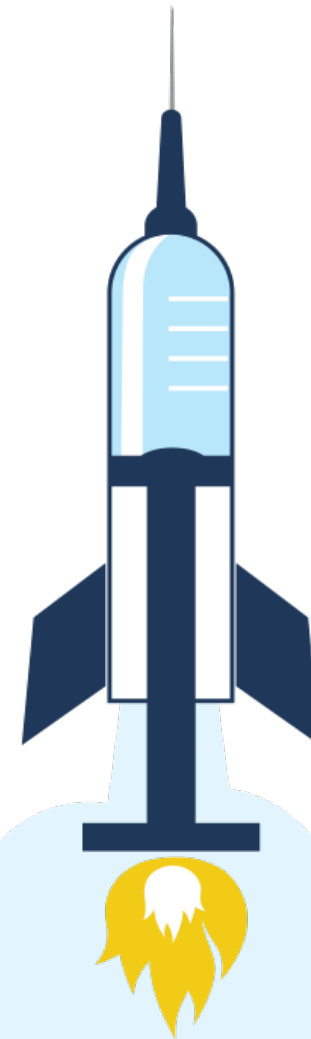


Long COVID: Understanding Post- Acute Sequelae of COVID (PASC)

Diane Sanders-Cepeda, DO, CMD
UHC Retiree Solutions Senior Medical Director



Making Health Care Better *Together*



About Alliant Health Solutions

Diane Sanders-Cepeda, DO, CMD

SENIOR MEDICAL DIRECTOR, UNITEDHEALTHCARE RETIREE SOLUTIONS

Dr. Diane Sanders-Cepeda is a geriatrician and certified medical director who has focused her career on geriatric care across the post-acute and long-term care continuum. She began her career at Nova Southeastern University as an assistant professor in geriatrics. Her passion for program development and the practical application of medical models led her to start a medical practice focused on geriatric medical care, resource management and transitions of care across the post-acute and long-term care continuum. As Dr. Sanders-Cepeda grew her practice, her expertise in geriatric medicine led her to create an inpatient geriatric care unit at South Florida Hospital, develop palliative care initiatives for home health and skilled nursing facilities, and serve as a physician advisor and medical director for multiple skilled nursing facilities, inpatient units and hospice groups. Dr. Sanders-Cepeda then transitioned to United Health Group as an Optum medical director for the South Florida market. While in Optum, she used her skills to focus on clinical strategic planning, educational initiatives and clinical development of Optum's advanced practice clinicians. Currently, Dr. Sanders-Cepeda works with United Health Group as a senior medical director for United Healthcare Retiree Solutions.

Dr. Sanders-Cepeda is an active member of the American Medical Directors Association. She serves on AMDA's board of directors and is chair of AMDA's online education subcommittee. She also sits on the program planning subcommittee and the education committee. On the state level, Dr. Sanders-Cepeda is president of the Florida Medical Directors Association and chair of FMDA's Journal Club.

Dr. Sanders-Cepeda also serves on the statewide Medical Care Advisory Committee for the state of Florida. In addition, Dr. Sanders-Cepeda has presented regionally and nationally on a multitude of topics.







What is Long COVID?

Long COVID

Long Haulers COVID

Post-Acute Sequelae of COVID

Post-COVID Conditions

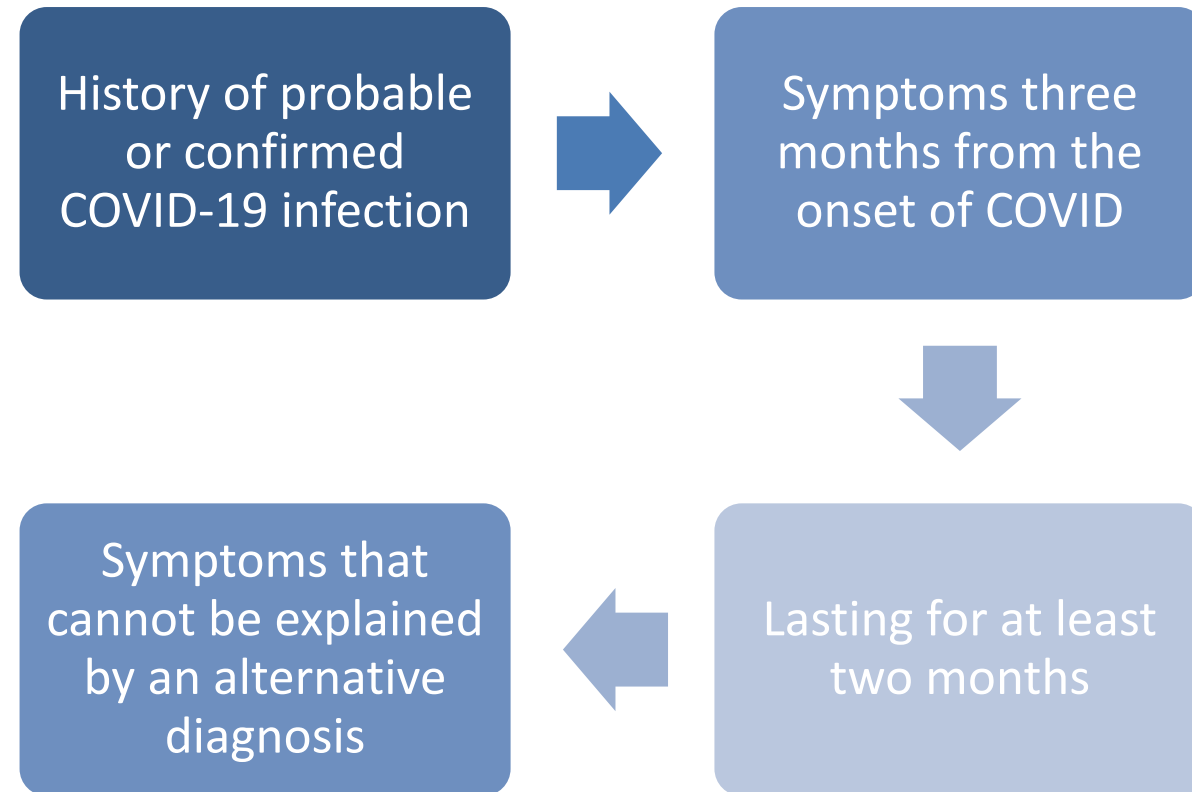
[Health Topics](#) ▾[Countries](#) ▾[Newsroom](#) ▾[Emergencies](#) ▾[Data](#) ▾

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A clinical case definition of post COVID-19 condition by a Delphi consensus, 6 October 2021

6 October 2021 | COVID-19: Clinical care

Post-Acute Sequelae of COVID (PASC): WHO Definition



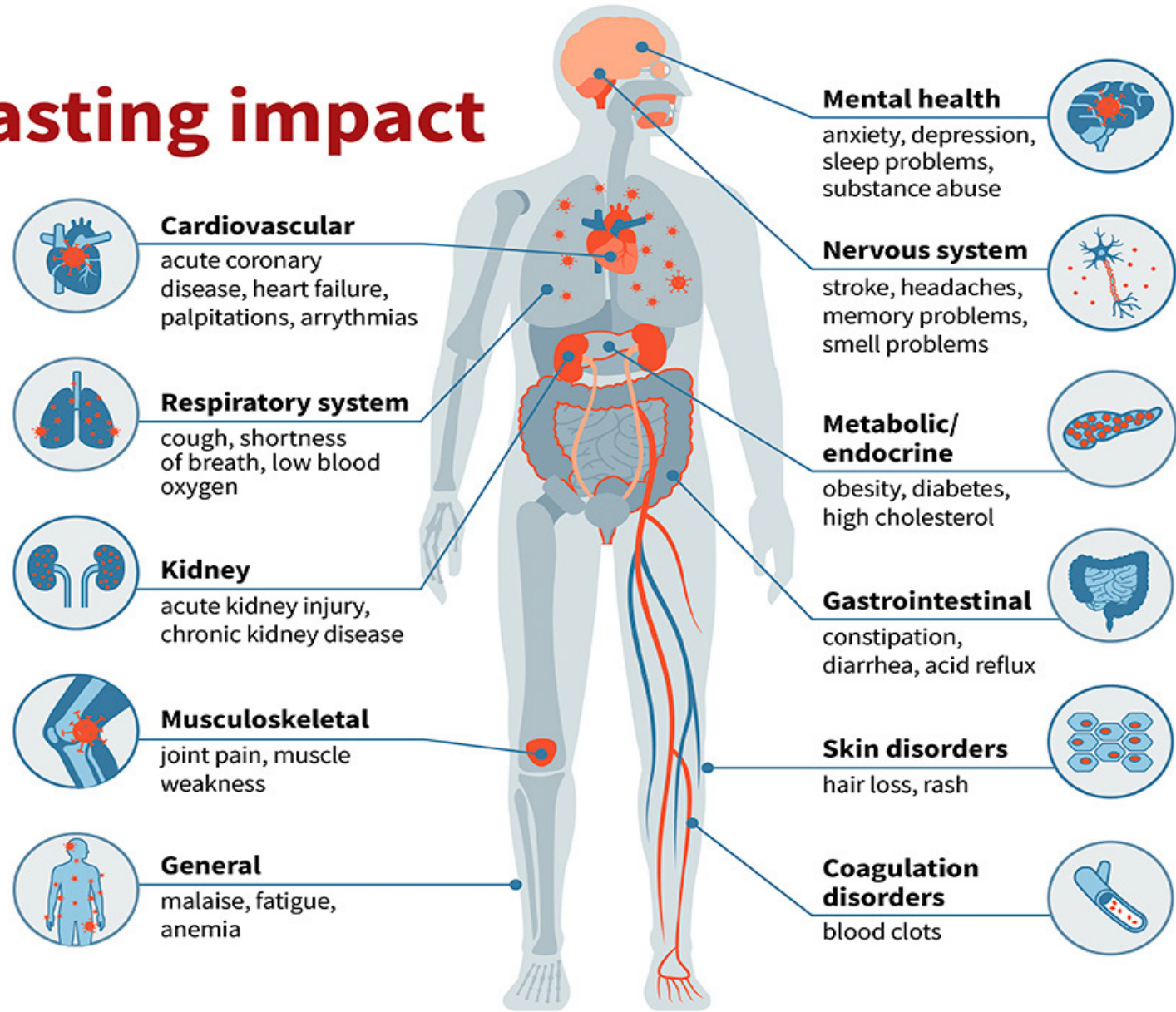
When Is It Post-COVID Complications vs. Long COVID Symptoms?



COVID-19: Lasting impact

Even those survivors with mild initial cases can have wide-ranging health issues for six months or more.

WashU researchers link many diseases with COVID-19, signaling long-term complications for patients and a massive health burden for years to come.





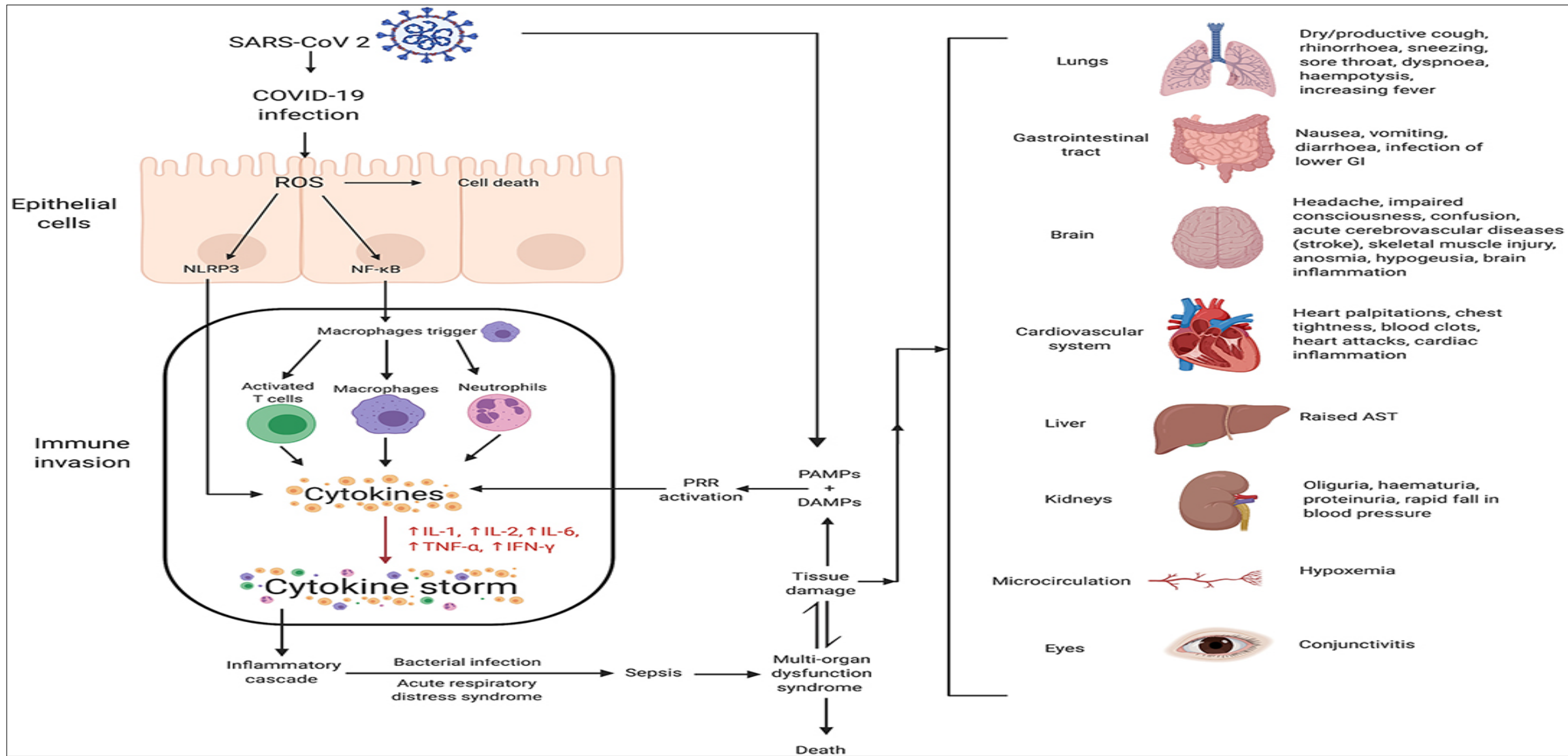
Pathogenesis of Post-COVID Syndrome – Multi-Factorial

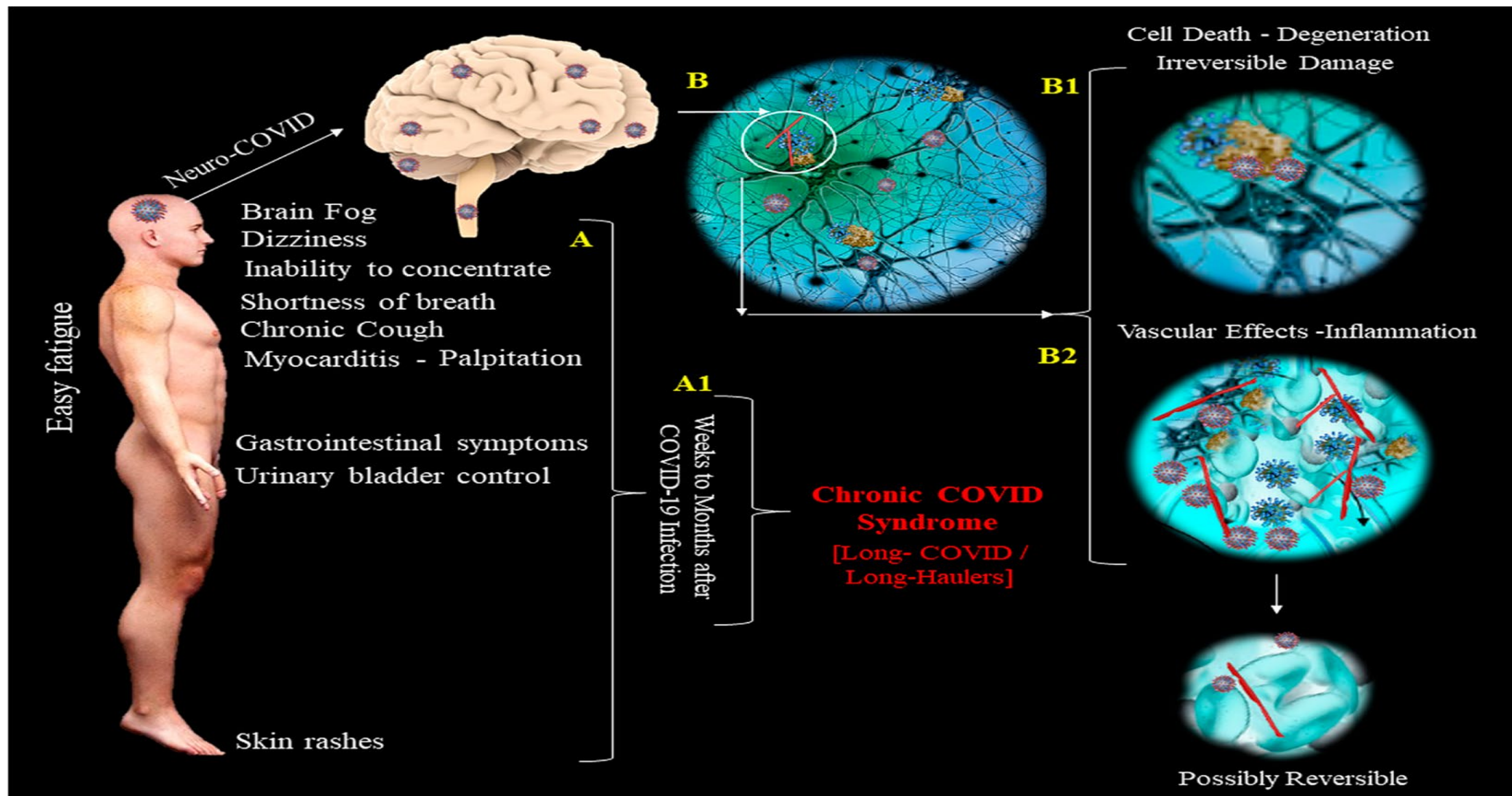
Prolonged inflammation

Immune-mediated vascular dysfunction

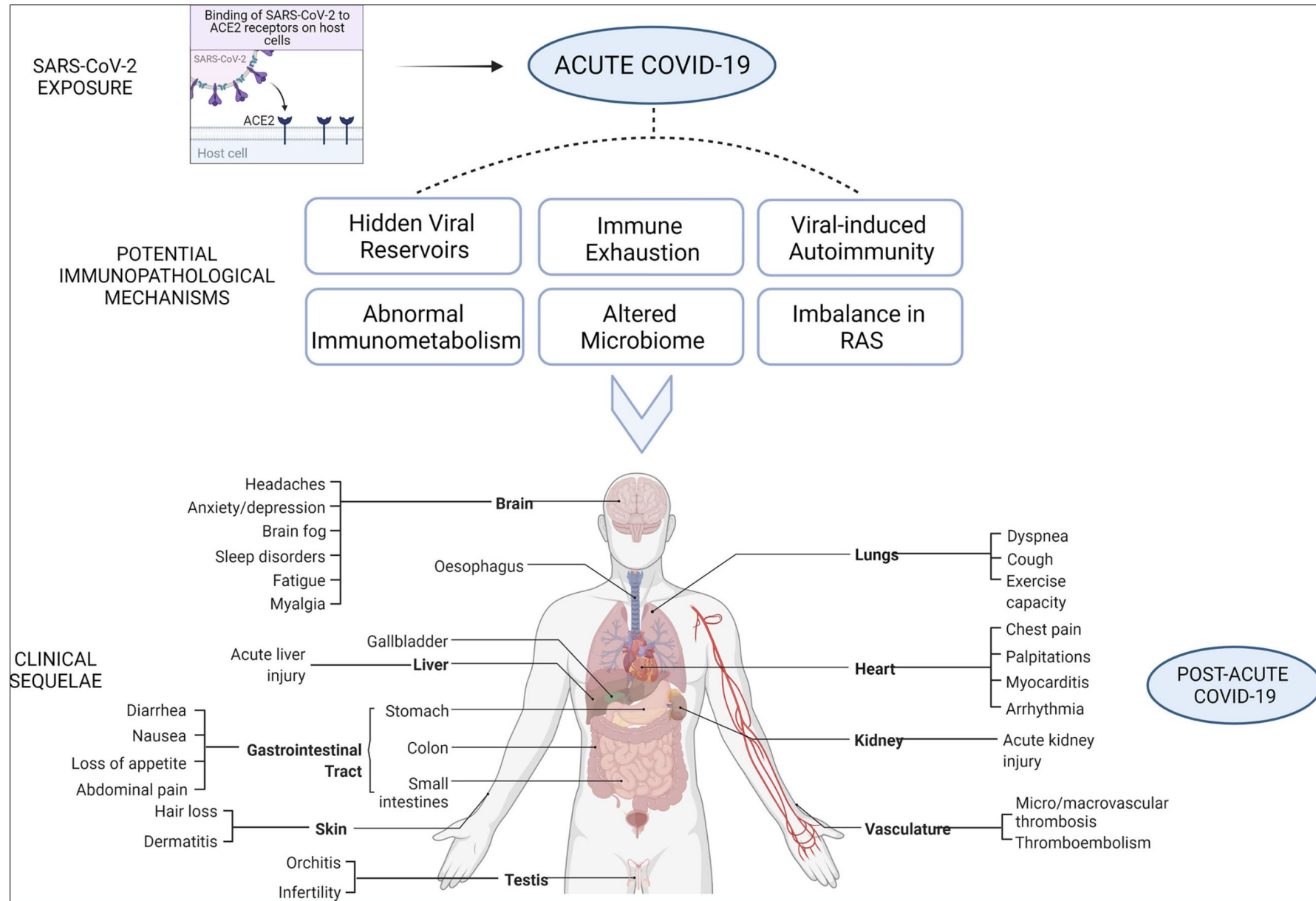
Thromboembolism

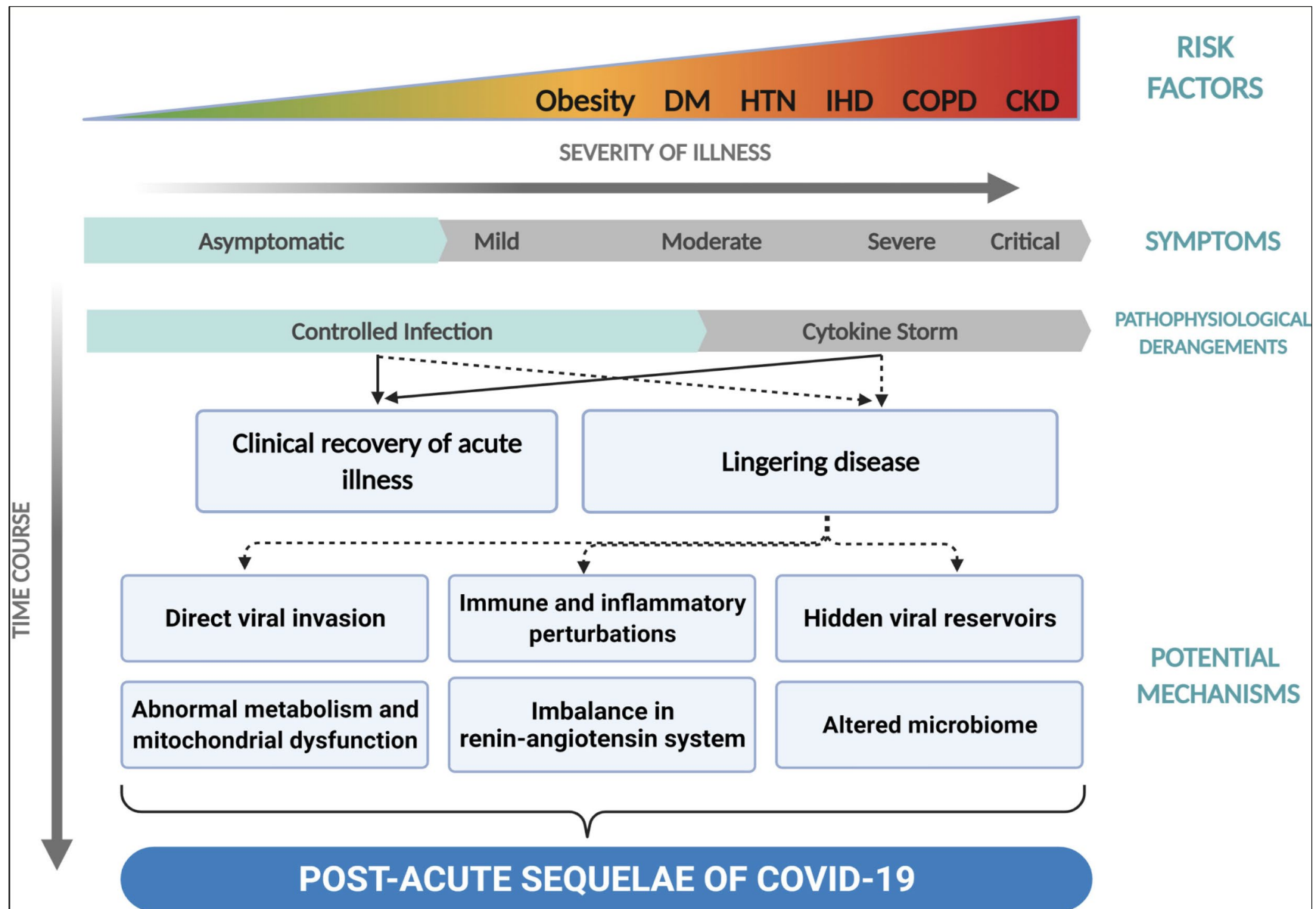
Nervous system dysfunction



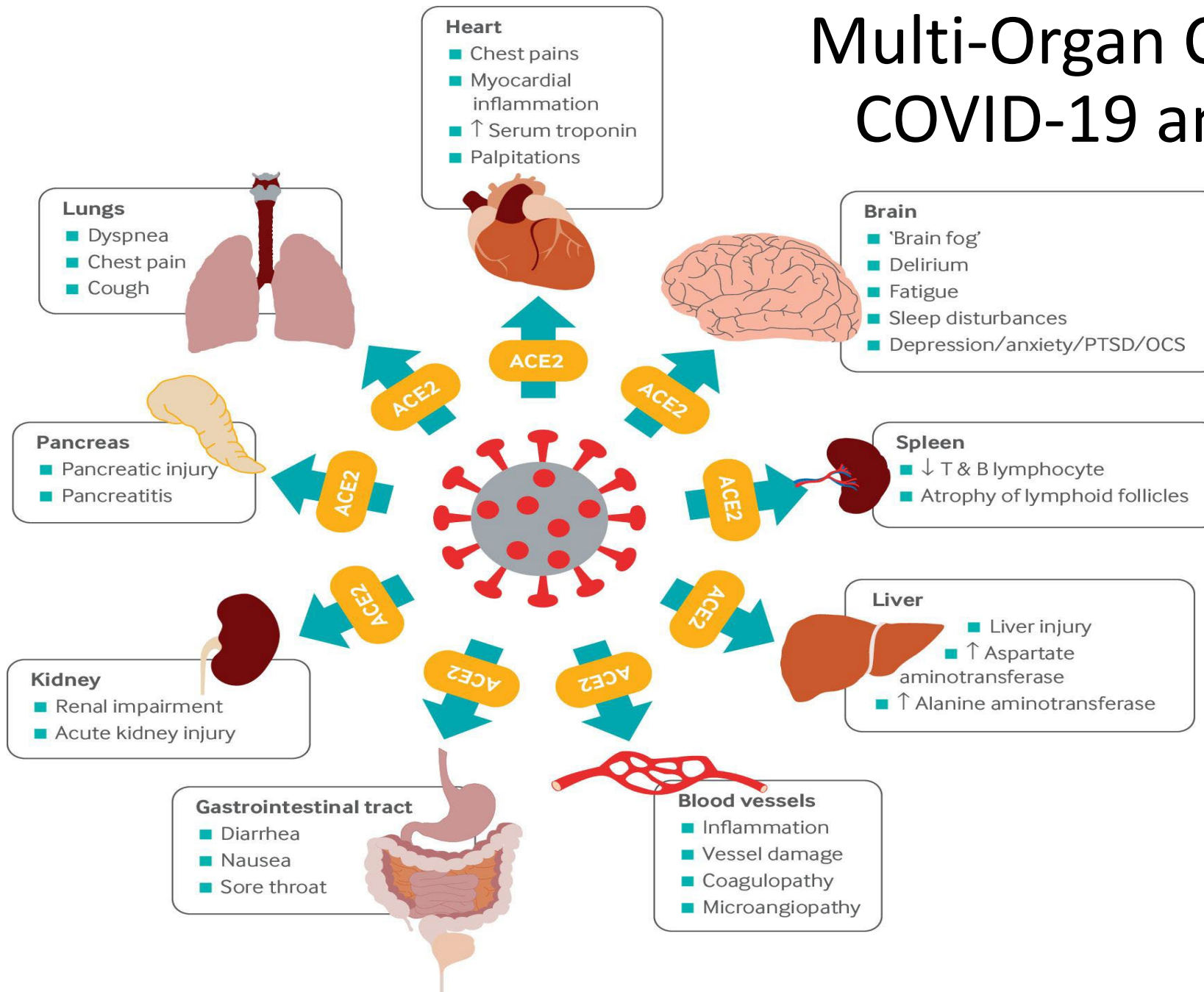


ACS Chem. Neuroscience. 2020, 11, 4017–4020





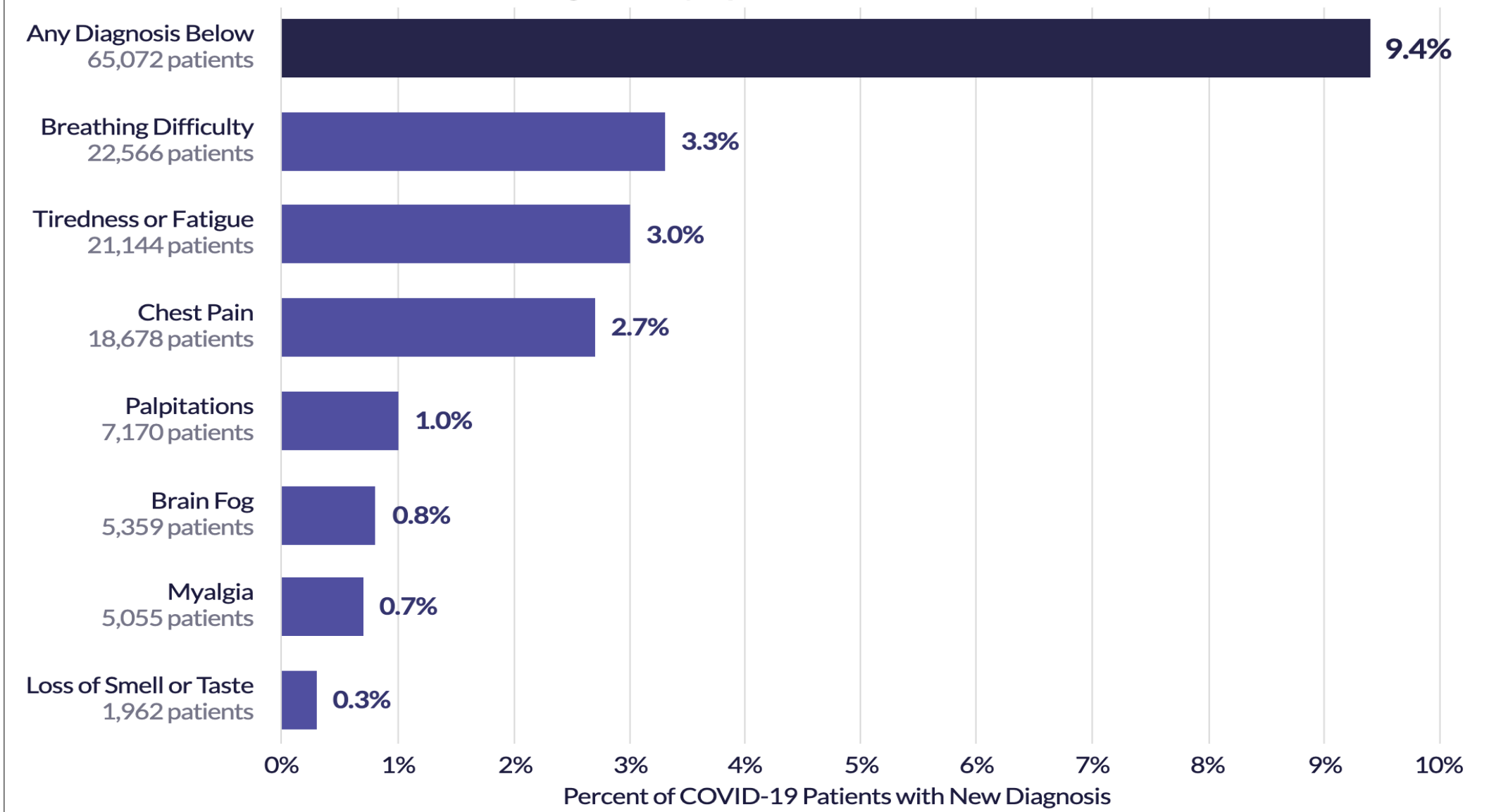
Multi-Organ Complications of COVID-19 and Long COVID



When COVID-19 Symptoms Linger

New NIH initiative seeks to understand why some people continue to have symptoms long after recovery.

Percent of COVID-19 Patients with Long-Haul Symptom



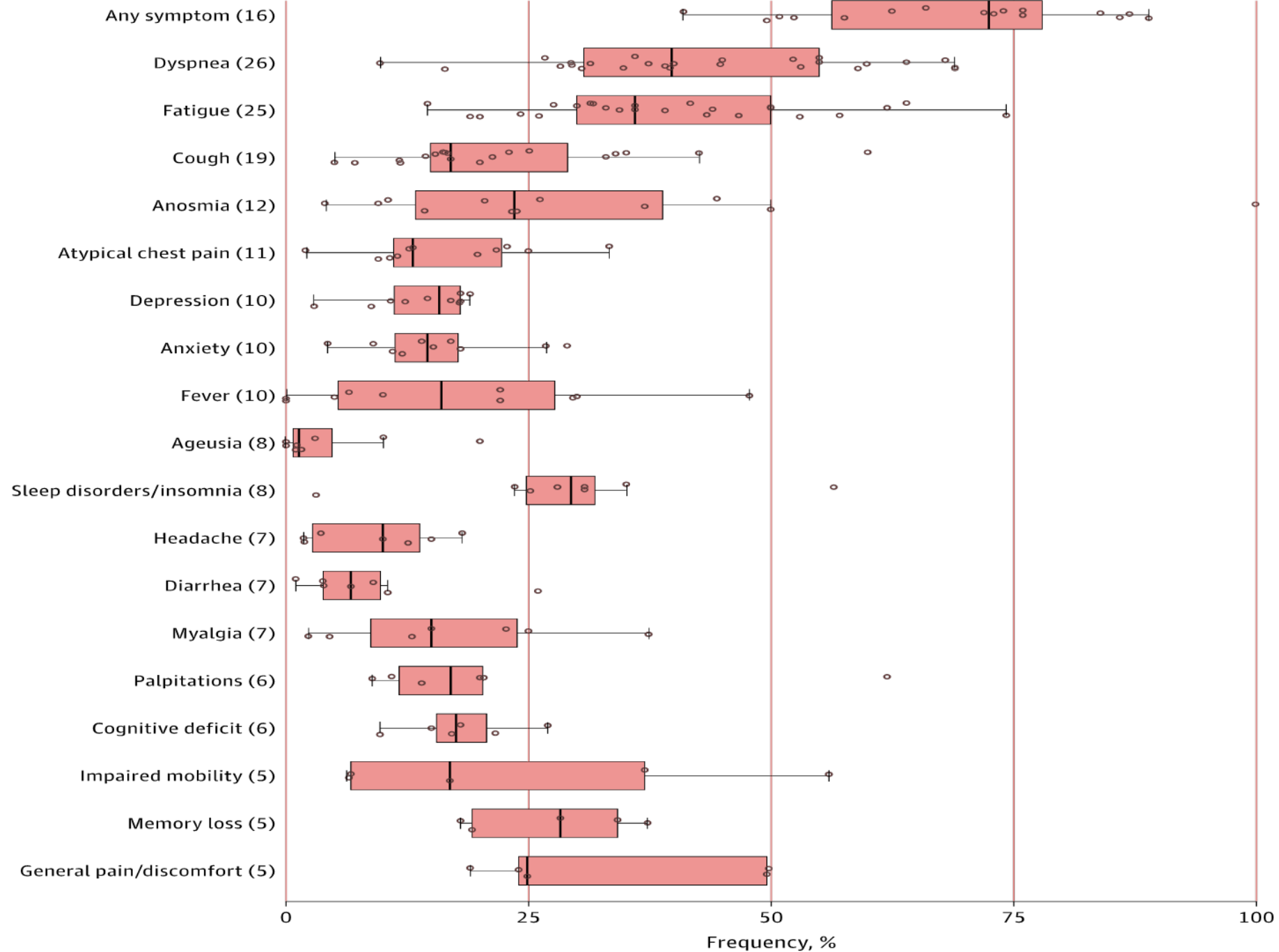
"Percent of COVID-19 Patients with Long-Haul Symptoms" 2021. Epic Health Research Network

Original Investigation | Infectious Diseases

Assessment of the Frequency and Variety of Persistent Symptoms Among Patients With COVID-19 A Systematic Review

Tahmina Nasserie, MPH; Michael Hittle, BS; Steven N. Goodman, MD, MHS, PhD

Outcome (No. of studies)



ORIGINAL STUDY - BRIEF REPORT | VOLUME 22, ISSUE 6, P1138-1141.E1, JUNE 01, 2021

Recovery from Coronavirus Disease 2019 among Older Adults in Post-Acute Skilled Nursing Facilities

Sandra Shi, MD   • On-Yee Lo, PhD • Natalie Newmeyer, MS • Innokentiy Bakaev, MD •
Dae Hyun Kim, MD, ScD

Published: April 12, 2021 • DOI: <https://doi.org/10.1016/j.jamda.2021.04.003> •



Original Investigation | Infectious Diseases

October 13, 2021

Short-term and Long-term Rates of Postacute Sequelae of SARS-CoV-2 Infection

A Systematic Review

Destin Groff, BA¹; Ashley Sun, BA¹; Anna E. Ssentongo, DrPH, MPH^{1,2}; et al

» [Author Affiliations](#) | [Article Information](#)

JAMA Netw Open. 2021;4(10):e2128568. doi:10.1001/jamanetworkopen.2021.28568

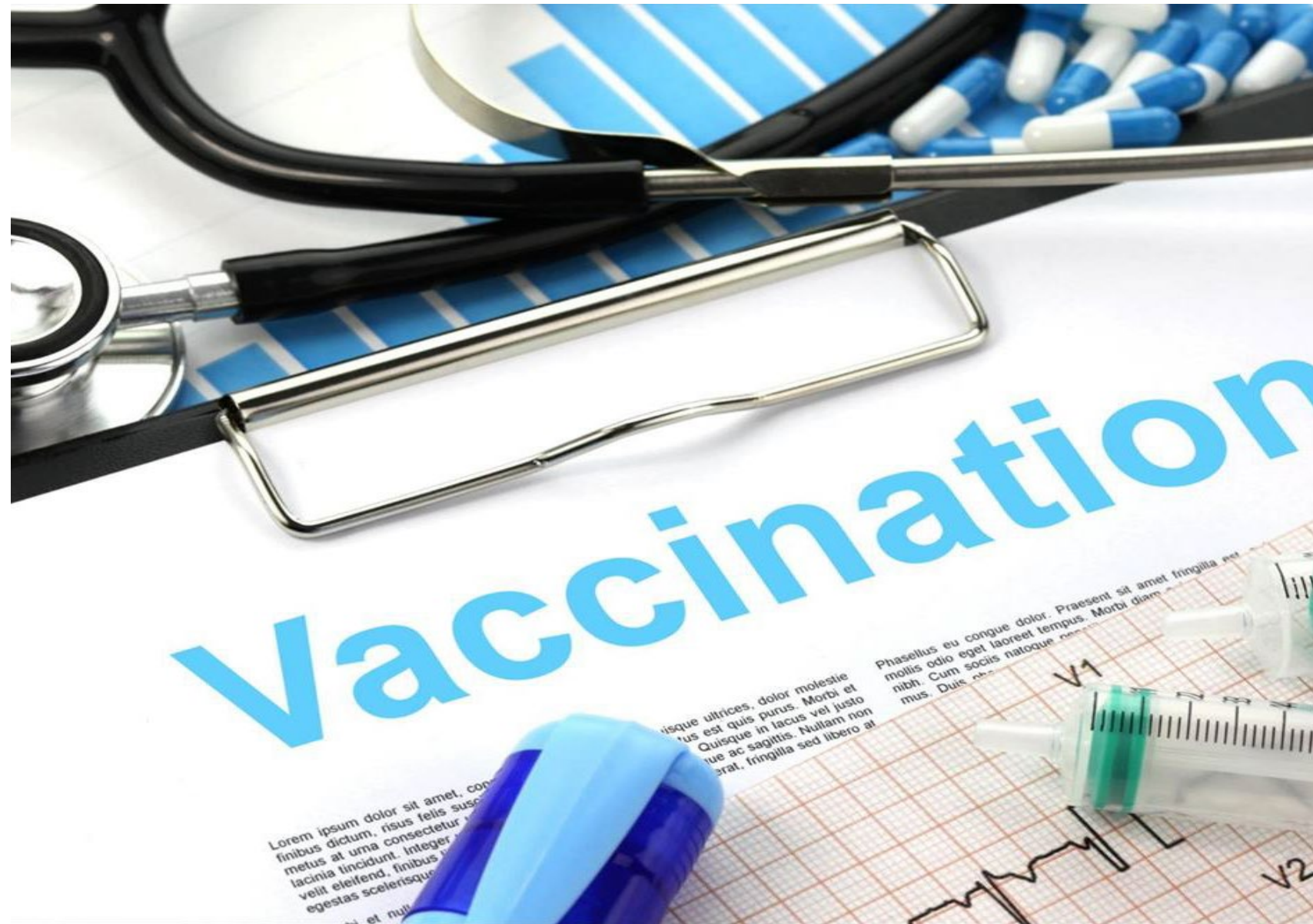


COVID-19 Resource Center

A glass of water with a pile of various colorful pills and capsules in front of it. The pills are in various shapes, sizes, and colors including white, yellow, orange, red, blue, green, and purple. The text "What About Treatment?" is overlaid in the center.

What About Treatment?

Prevention Is the Best Medicine



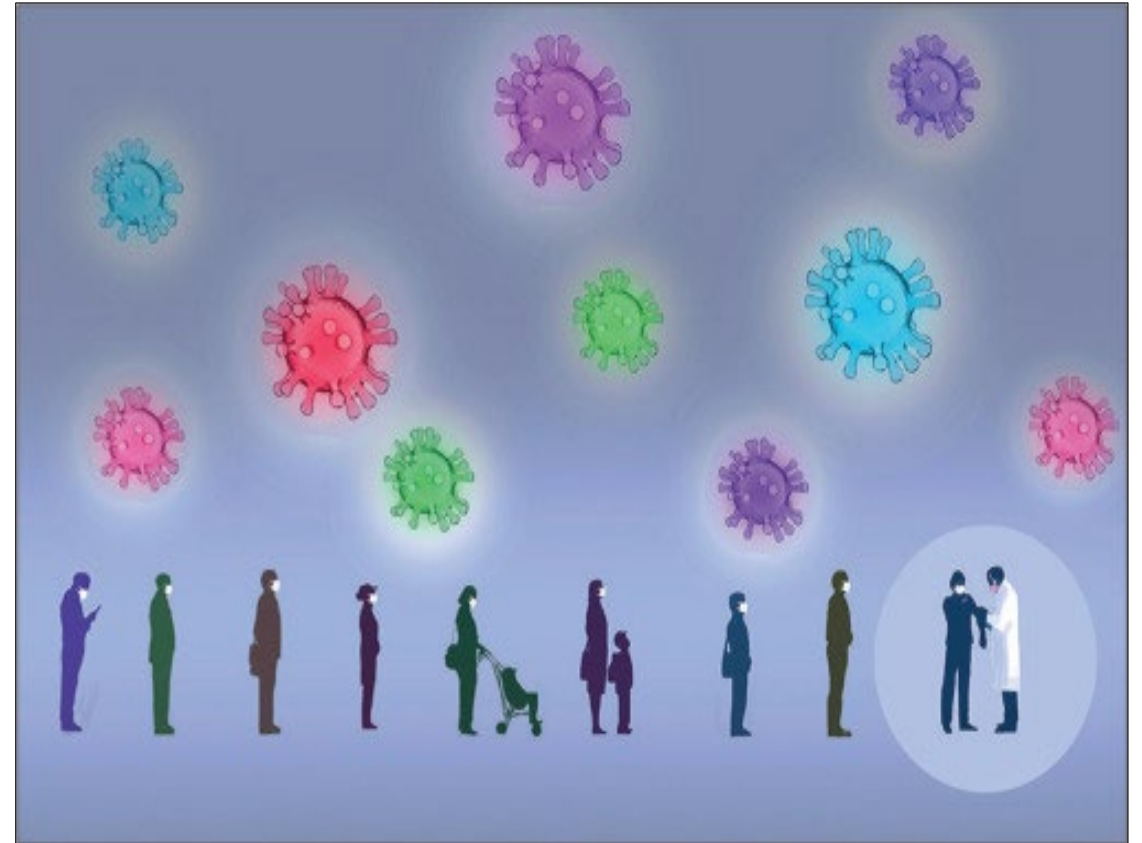
THE LANCET
Respiratory Medicine

NEWS | ONLINE FIRST

Do vaccines protect from long COVID?

Priya Venkatesan

Published: January 20, 2022 • DOI: [https://doi.org/10.1016/S2213-2600\(22\)00020-0](https://doi.org/10.1016/S2213-2600(22)00020-0)





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Reduced Incidence of Long-COVID Symptoms Related to Administration of COVID-19 Vaccines Both Before COVID-19 Diagnosis and Up to 12 Weeks After

Michael A. Simon, Ryan D. Luginbuhl, Richard Parker

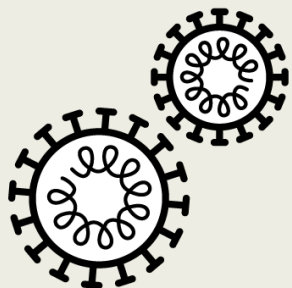


The Thing About Vitamins?

RCT: Effect of High-Dose Zinc and Ascorbic Acid Supplementation on Symptom Length Among Ambulatory Patients With SARS-CoV-2 Infection

POPULATION

82 Men, 132 Women



Adult patients with SARS-CoV-2 infection confirmed with a PCR-based assay as outpatients

Mean (SD) age, 45.2 (14.6) y

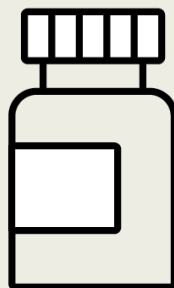
SETTINGS / LOCATIONS



Hospitals in a single health system with sites in Ohio and Florida

INTERVENTION

214 Patients randomized and analyzed



50 Standard of care

Standard outpatient prescription for viral illness

48 Ascorbic acid

8000 mg Ascorbic acid

58 Zinc gluconate

50 mg Zinc

58 Zinc and ascorbic acid

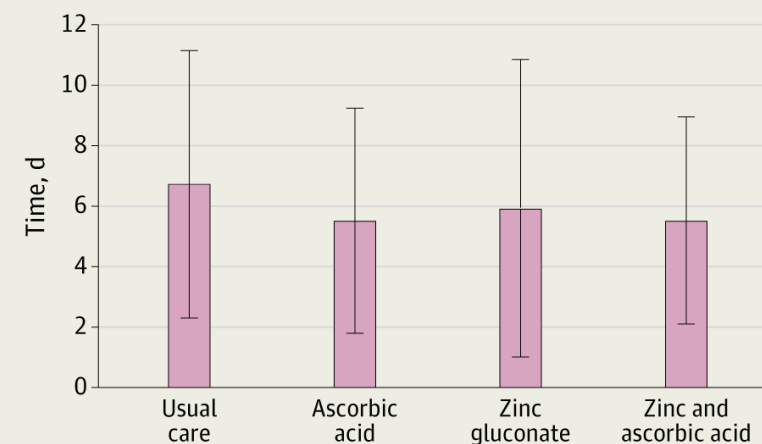
50 mg Zinc and 8000 mg of ascorbic acid

PRIMARY OUTCOME

The primary end point was the number of days required to reach a 50% reduction of symptoms, such as severity of fever, cough, shortness of breath, and fatigue

FINDINGS

The study was stopped for a low conditional power for benefit with no significant difference among the 4 groups for the primary end point, a 50% reduction in symptoms



Time to 50% symptom reduction

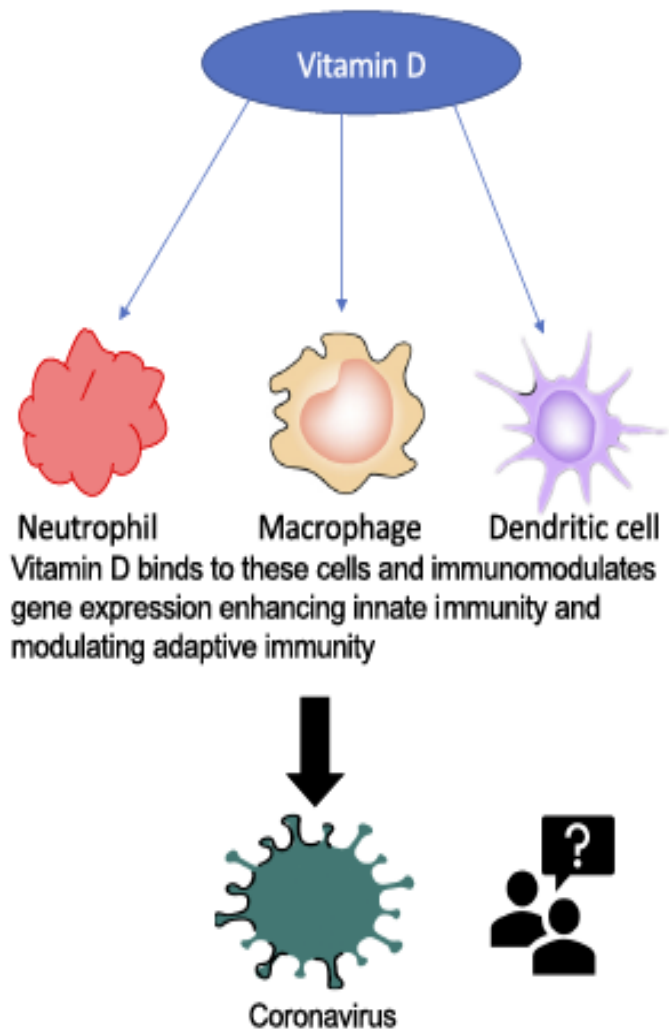
Usual care: Mean (SD), 6.7 (4.4) d

Ascorbic acid: Mean (SD), 5.5 (3.7) d

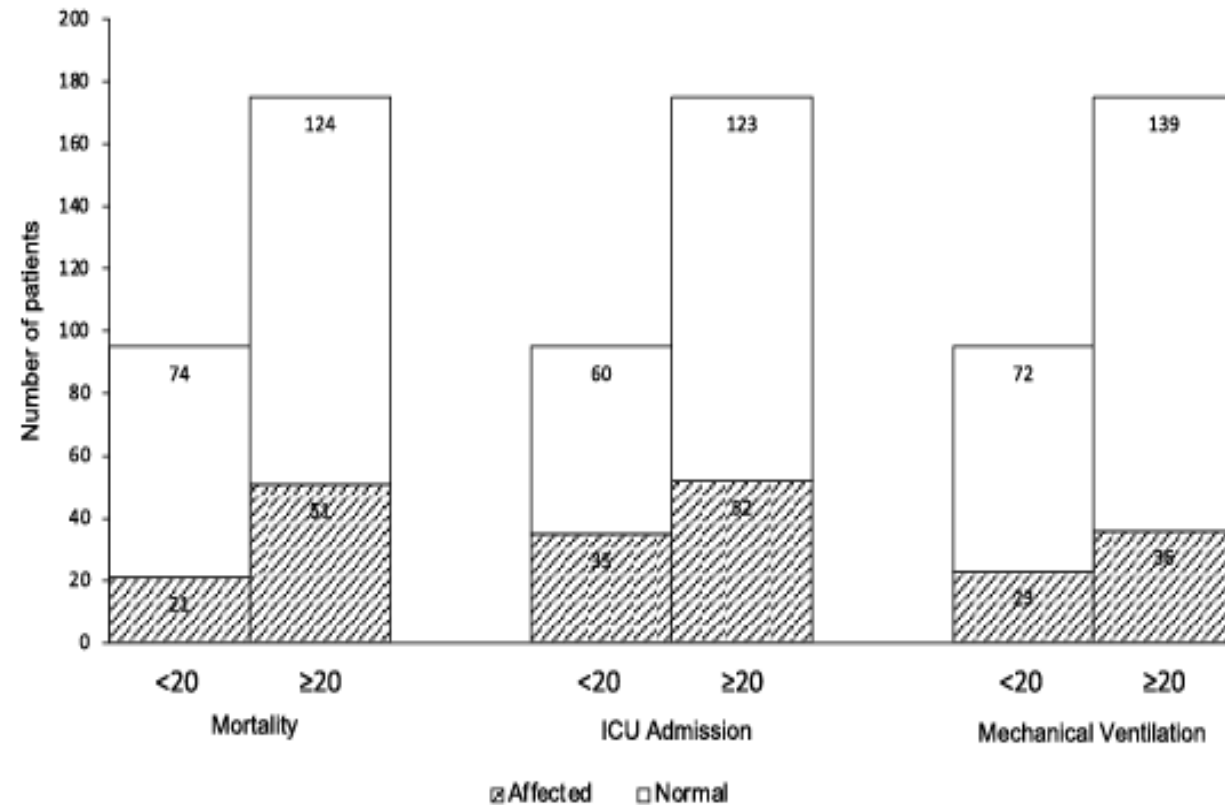
Zinc gluconate: Mean (SD), 5.9 (4.9) d

Zinc and ascorbic acid: Mean (SD), 5.5 (3.4) d

Exploring the link between Vitamin D and clinical outcomes in COVID-19



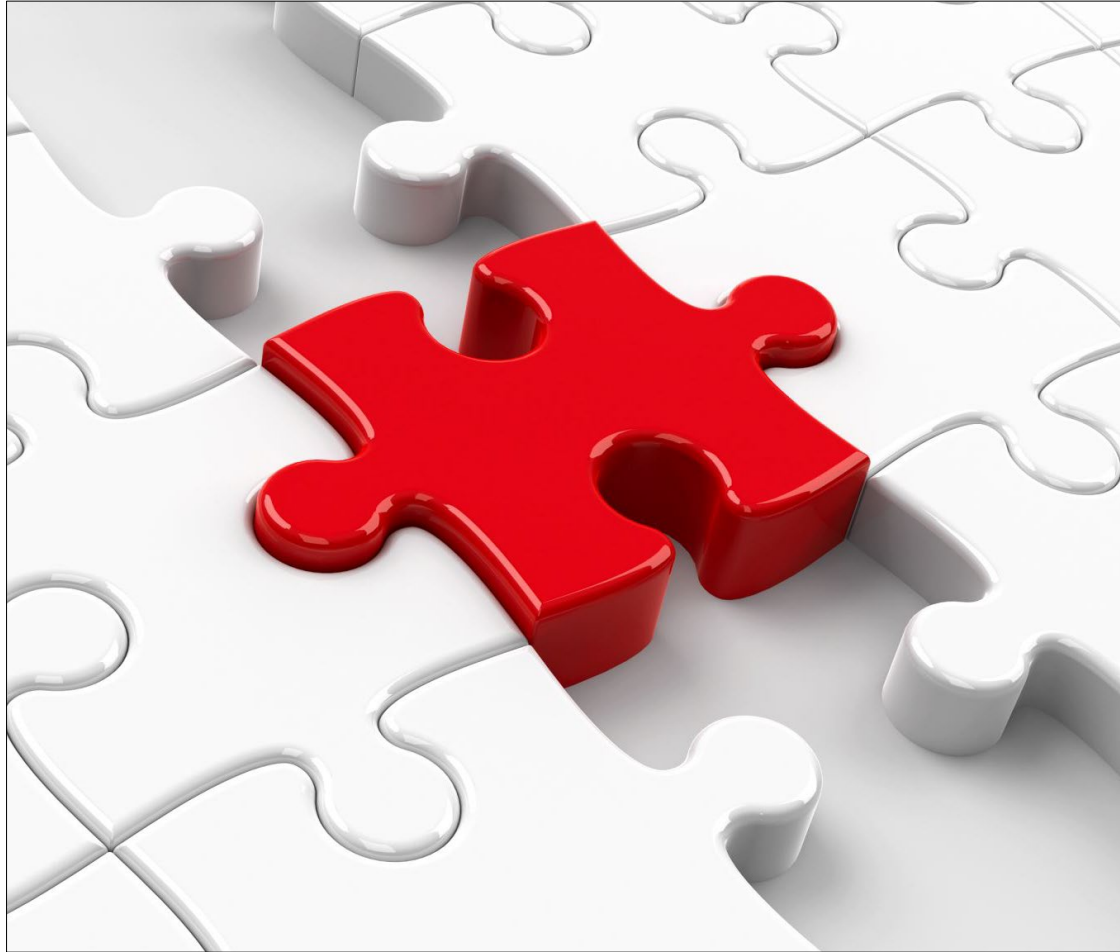
Question- Does Vitamin D help decrease the severity of clinical outcomes in COVID-19?



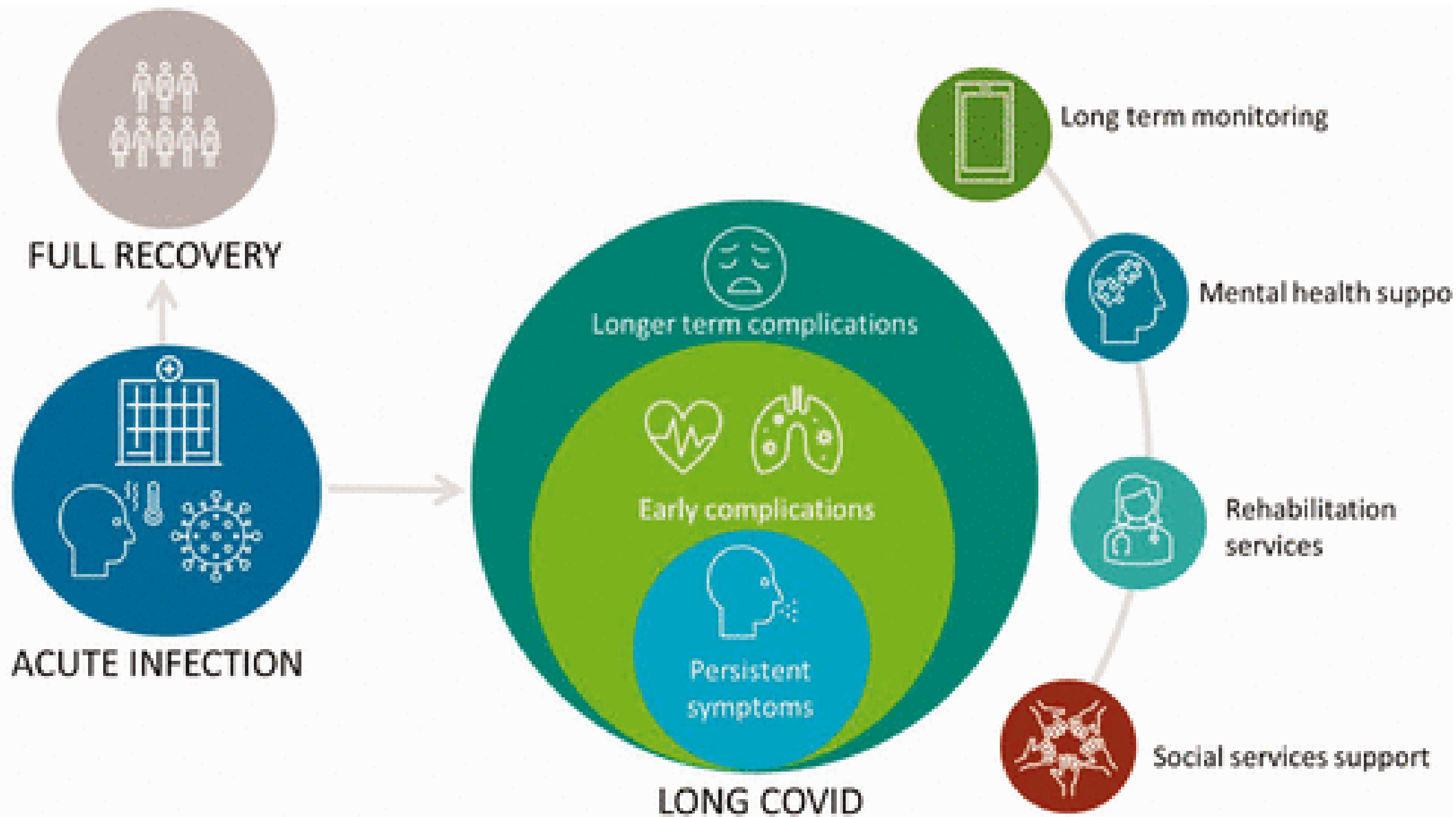
Severe disease outcomes in relation to Vitamin D Levels

Conclusion- No significant association found between Vitamin D levels and clinical outcomes in COVID-19.

Managing Post-Acute Sequelae of COVID



Multidisciplinary team approach
Individualized care plans
Ongoing support





Case Reviews in PALTC

Recognizing Post-COVID Syndrome?

62 y/o LTC Resident

African American woman with pmhx of Diabetes, CVA, CKD 3, Morbid Obesity, HTN, Heart Failure, COPD, RA

Initially, was treated on COVID unit in facility until acute respiratory failure

Upon discharge back to the facility, she continued to have SOB, worsening renal function and muscle weakness

Hospitalized multiple times in the months following her initial COVID diagnosis

81 y/o LTC Resident

Female LTC resident

COPD, CHF, AFIB, HTN, s/p Stroke, Diabetes, PAD

At baseline – mild cognitive impairments, normal PO intake

Diagnosed with COVID-19 with mild symptoms – mild SOB, no fever, no chest pain

One month later – significant mental and functional decline, worsening renal function and poor oral intake



What Is the Prevalence?



Post-Acute Sequelae of SARS-CoV-2 Infections (PASC) Estimates and Insights

American Academy of Physical Medicine and Rehabilitation

Data as of 2/21/2022

[View Dashboard Assumptions, Methodology, and Sources](#)

SUMMARY

BY STATE

FILTERS

(reset to default)

Select Est. PASC %

30%

Select a State

All

Select a County

All

MODEL ASSUMPTIONS AND SOURCES

[\(see all\)](#)

1. Model assumes 30% of COVID-19 surviving cases in the U.S. result in PASC.

2. COVID-19 surviving cases are confirmed cases less deaths.

3. U.S. case data is pulled nightly from JHU CSSE COVID-19 Data. U.S. Census data uses 2019 1-year estimates.

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**ASSOCIATION
ANALYTICS**

COVID-19 SURVIVING CASES (TOTAL)

77,521,547

PASC CASES (ESTIMATED)

23,256,464

ESTIMATED PASC CASES PER STATE

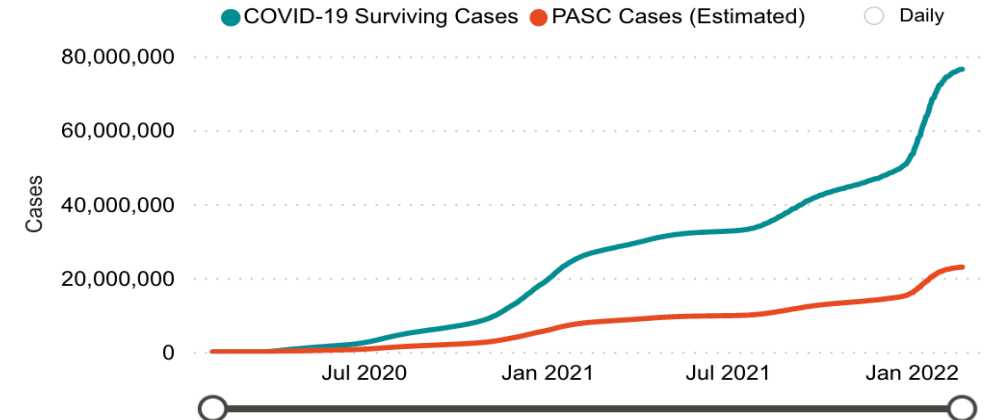
State	PASC Cases (Estimated)
California	2,640,541
Texas	1,925,590
Florida	1,724,452
New York	1,451,768
Illinois	894,384
Pennsylvania	810,020
Ohio	782,532
North Carolina	761,085
Georgia	698,753
Michigan	679,670
New Jersey	635,852
Arizona	580,622
Tennessee	559,791
Indiana	495,781
Virginia	479,895
Wisconsin	465,394
Massachusetts	449,416

CUMULATIVE AND DAILY CASES

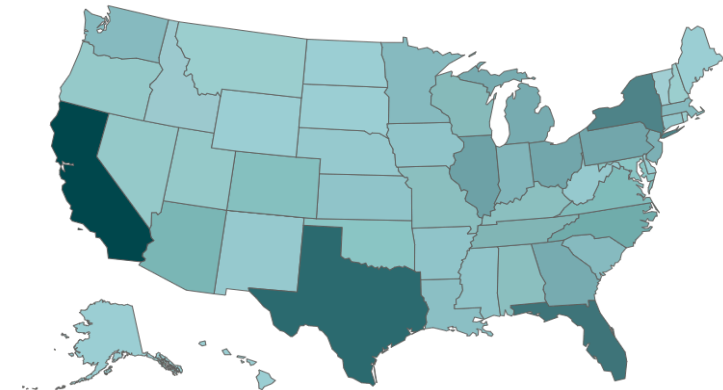
Select Display

☒ Cumulative

☐ Daily



PASC CASES (ESTIMATED)



Questions?



Thank you for your time!

Diane_sanders-cepeda@uhc.com
[linkedin.com/in/diane-sanders-cepeda-5430aa208](https://www.linkedin.com/in/diane-sanders-cepeda-5430aa208)



CMS 12th SOW Goals



Behavioral Health Outcomes & Opioid Misuse

- ✓ Promote opioid best practices
- ✓ Decrease high dose opioid prescribing and opioid adverse events in all settings
- ✓ Increase access to behavioral health services



Patient Safety

- ✓ Reduce risky medication combinations
- ✓ Reduce adverse drug events
- ✓ Reduce C. diff in all settings



Chronic Disease Self-Management

- ✓ Increase performance on ABCS clinical quality measures (i.e., aspirin use, blood pressure control, cholesterol management, cardiac rehab)
- ✓ Identify patients at high-risk for developing kidney disease & improve outcomes
- ✓ Identify patients at high risk for diabetes-related complications & improve outcomes



Quality of Care Transitions

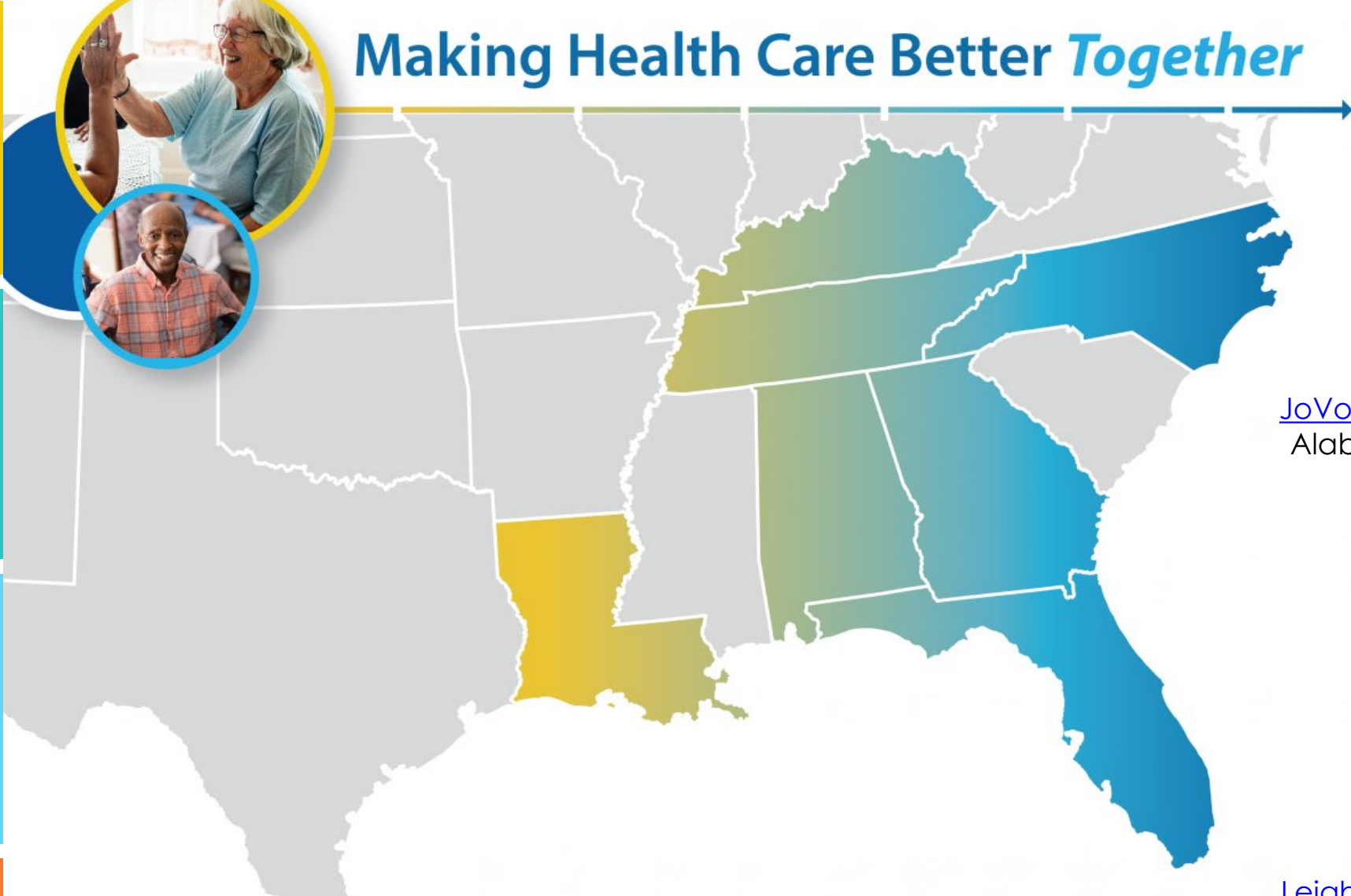
- ✓ Convene community coalitions
- ✓ Identify and promote optimal care for super utilizers
- ✓ Reduce community-based adverse drug events



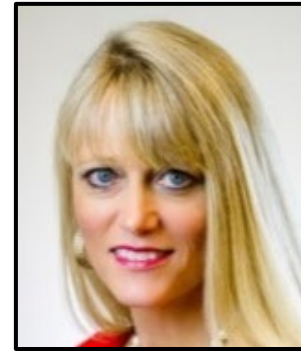
Nursing Home Quality

- ✓ Improve the mean total quality score
- ✓ Develop national baselines for healthcare related infections in nursing homes
- ✓ Reduce emergency department visits and readmissions of short stay residents

Making Health Care Better *Together*

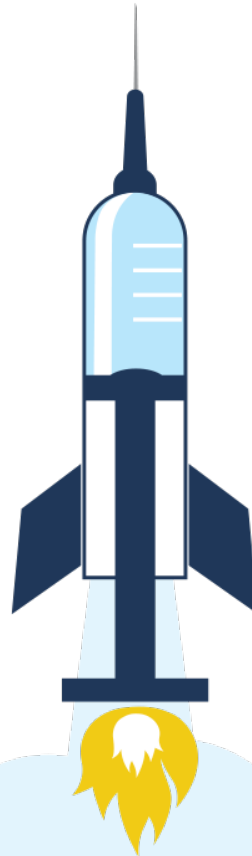


JoVonn Givens
JoVonn.Givens@AlliantHealth.org
Alabama, Florida and Louisiana



Leighann Sauls
Leighann.Sauls@AlliantHealth.org
Georgia, Kentucky, North Carolina and Tennessee

Program Directors



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