



COVID-19 Impact: Long Haulers

This meeting will be recorded and will be available at www.fmda.org/journalclub.php



FMDA Journal Club

June 23, 2021
Diane Sanders-Cepeda, DO, CMD — Host

Agenda

- State of the State
- COVID Long Haulers: Research & Clinical Insights
- Case Reviews
- Open Discussion



COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

Last Updated at (M/D/YYYY)
6/23/2021, 6:21 AM

Cases

33,566,052

Deaths

602,465

Vaccine Doses Administered

318,803,568

Cases and Deaths by Country/Region/Sovereignty

33,566,052 | **602,465**
US

30,028,709 | **390,660**
India

18,054,653 | **504,717**
Brazil

5,821,797 | **110,991**
France

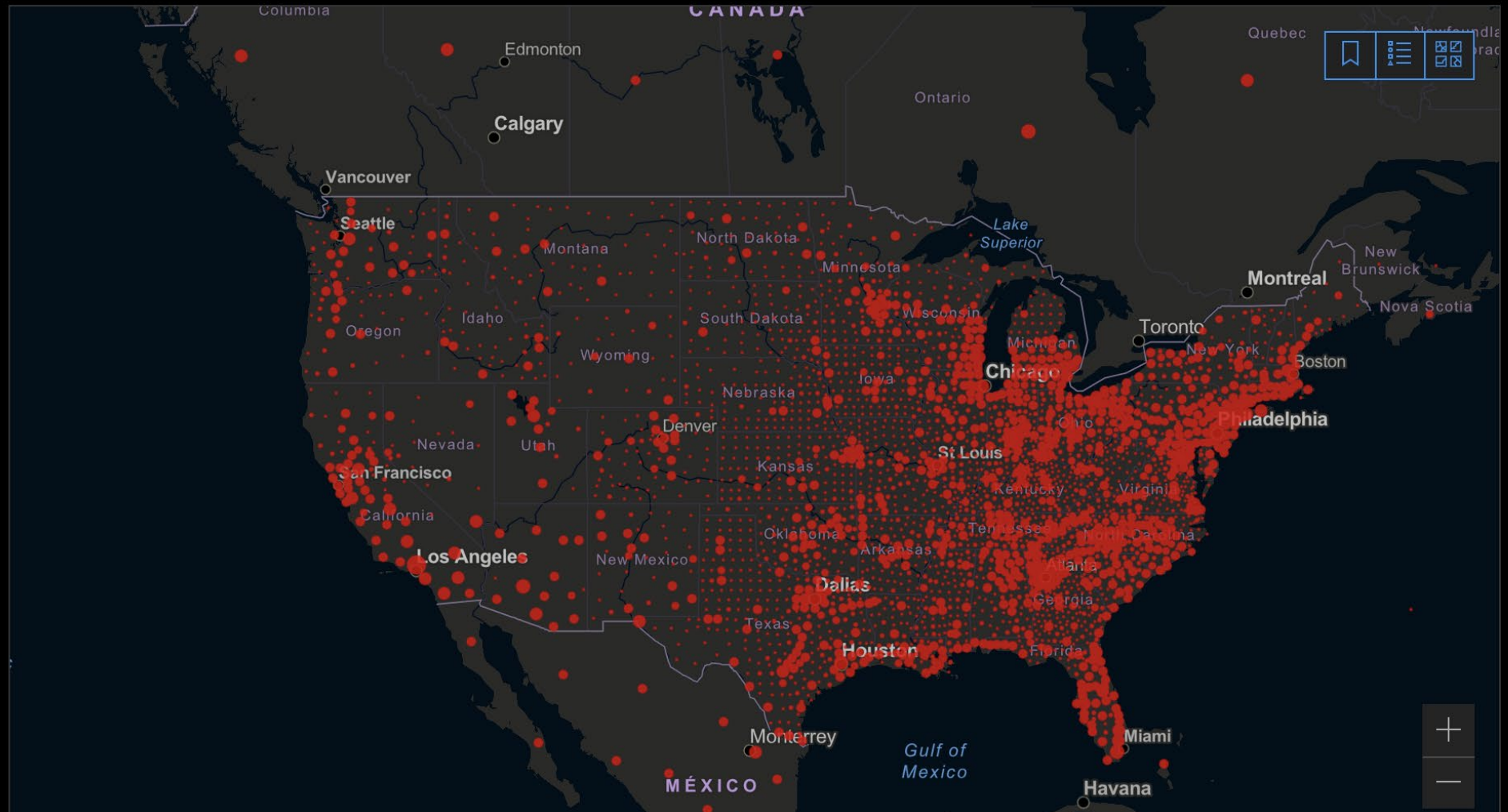
5,381,736 | **49,293**
Turkey

5,306,069 | **128,719**
Russia

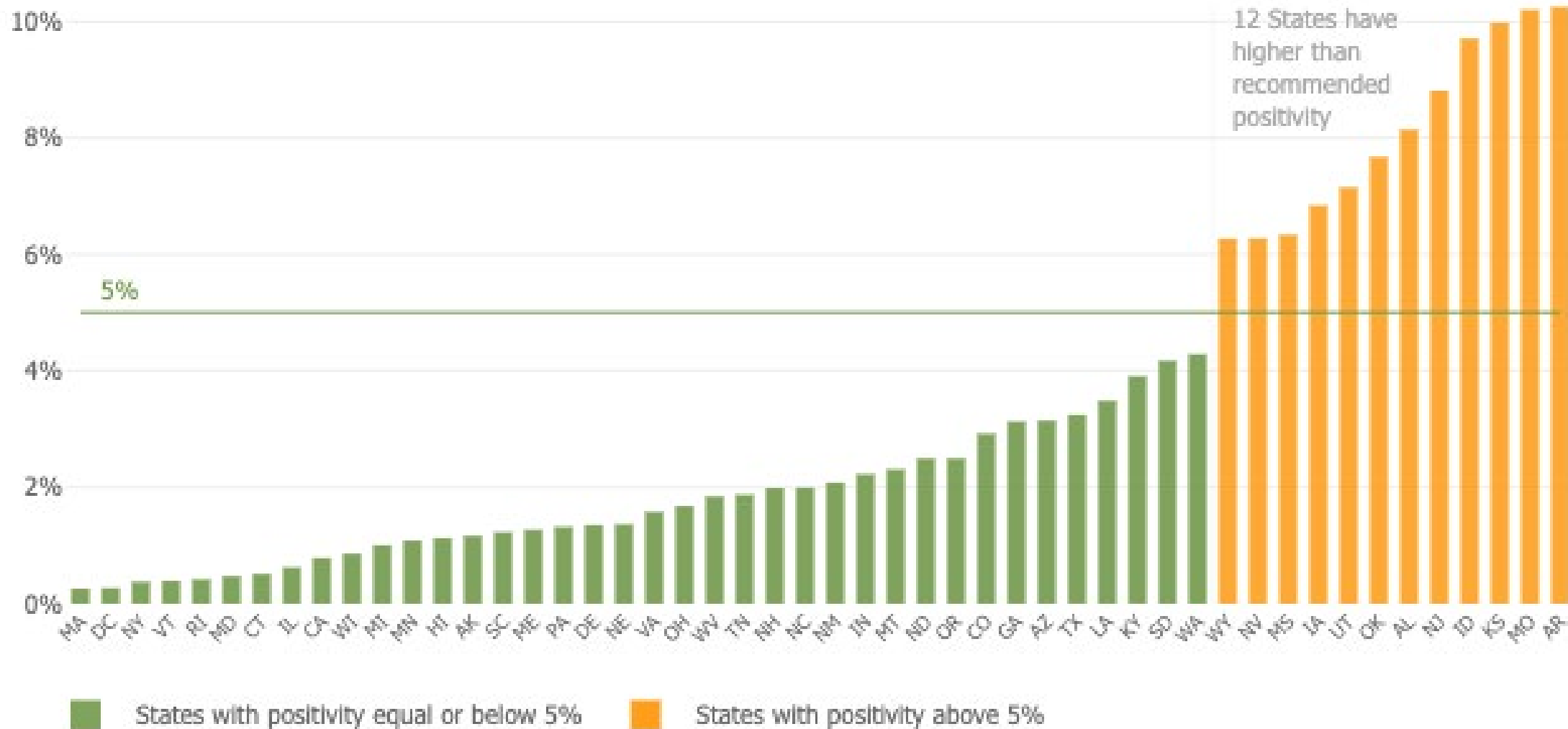
4,668,043 | **128,272**
United Kingdom

4,298,782 | **90,281**
Argentina

4,254,294 | **127,322**
Italy



Positivity Percentage
(average of the last 7 days)



COVID-19 Weekly Situation Report: State Overview

Previous week (June 11, 2021 - June 17, 2021)

Published June 18, 2021



All data are provisional and subject to change. Data include only Florida residents.

Case data	Previous week	Cumulative
Total	10,629	2,310,881
New case positivity	3.3%	16.9%
Deaths	43	37,555

Vaccine data	Previous week	Cumulative
People vaccinated	373,438	10,659,464
First dose	123,414	1,679,648
Series completed	250,024	8,979,816

See additional notes at the end of this report for information on positivity rate, deaths, and vaccination status.

Vaccine age groups	Population	Vaccinated
Total	19,119,043	56%
12-19	1,972,084	26%
20-29	2,744,987	35%
30-39	2,784,698	42%
40-49	2,669,253	52%
50-59	2,925,172	62%
60-64	1,438,783	72%
65+	4,584,066	83%

COVID-19 Vaccinations in the United States

Overall US COVID-19 Vaccine | Deliveries and Administration; Maps, charts, and data provided by CDC, updates daily by 8 pm ET[†]

Represents all vaccine partners including jurisdictional partner clinics, retail pharmacies, long-term care facilities, dialysis centers, Federal Emergency Management Agency and Health Resources and Services Administration partner sites, and federal entity facilities.

How Do I Find a COVID-19 Vaccine?

Total Vaccine Doses

Delivered 379,446,660


Administered 319,223,844

Learn more about the distribution of vaccines.

150.4M

People fully vaccinated

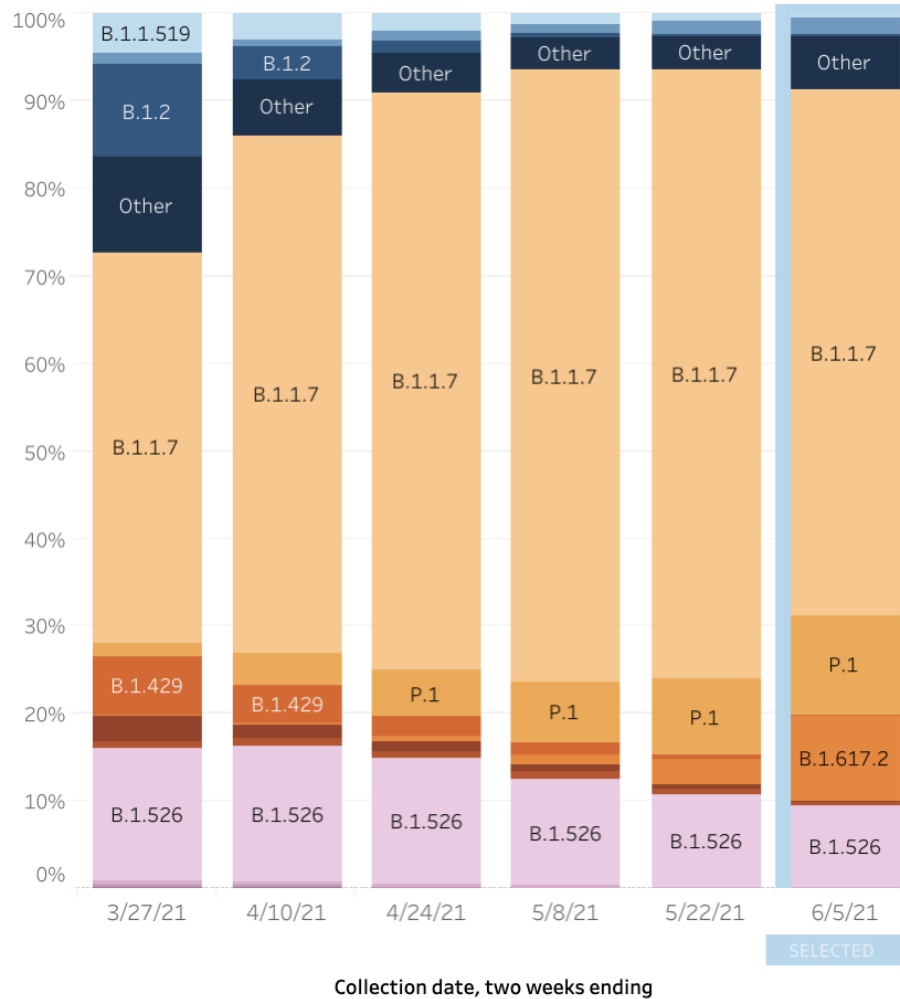
People Vaccinated	At Least One Dose	Fully Vaccinated
Total	177,635,067	150,424,675
% of Total Population	53.5%	45.3%
Population ≥ 12 Years of Age	177,440,036	150,325,847
% of Population ≥ 12 Years of Age	62.6%	53%
Population ≥ 18 Years of Age	169,225,128	144,571,644
% of Population ≥ 18 Years of Age	65.5%	56%
Population ≥ 65 Years of Age	47,761,550	42,223,409
% of Population ≥ 65 Years of Age	87.3%	77.2%

 About these data

CDC | Data as of: June 22, 2021 6:00am ET. Posted: Tuesday, June 22, 2021 6:12 PM ET

United States: 3/14/2021 – 6/5/2021

United States: 5/23/2021 – 6/5/2021



USA

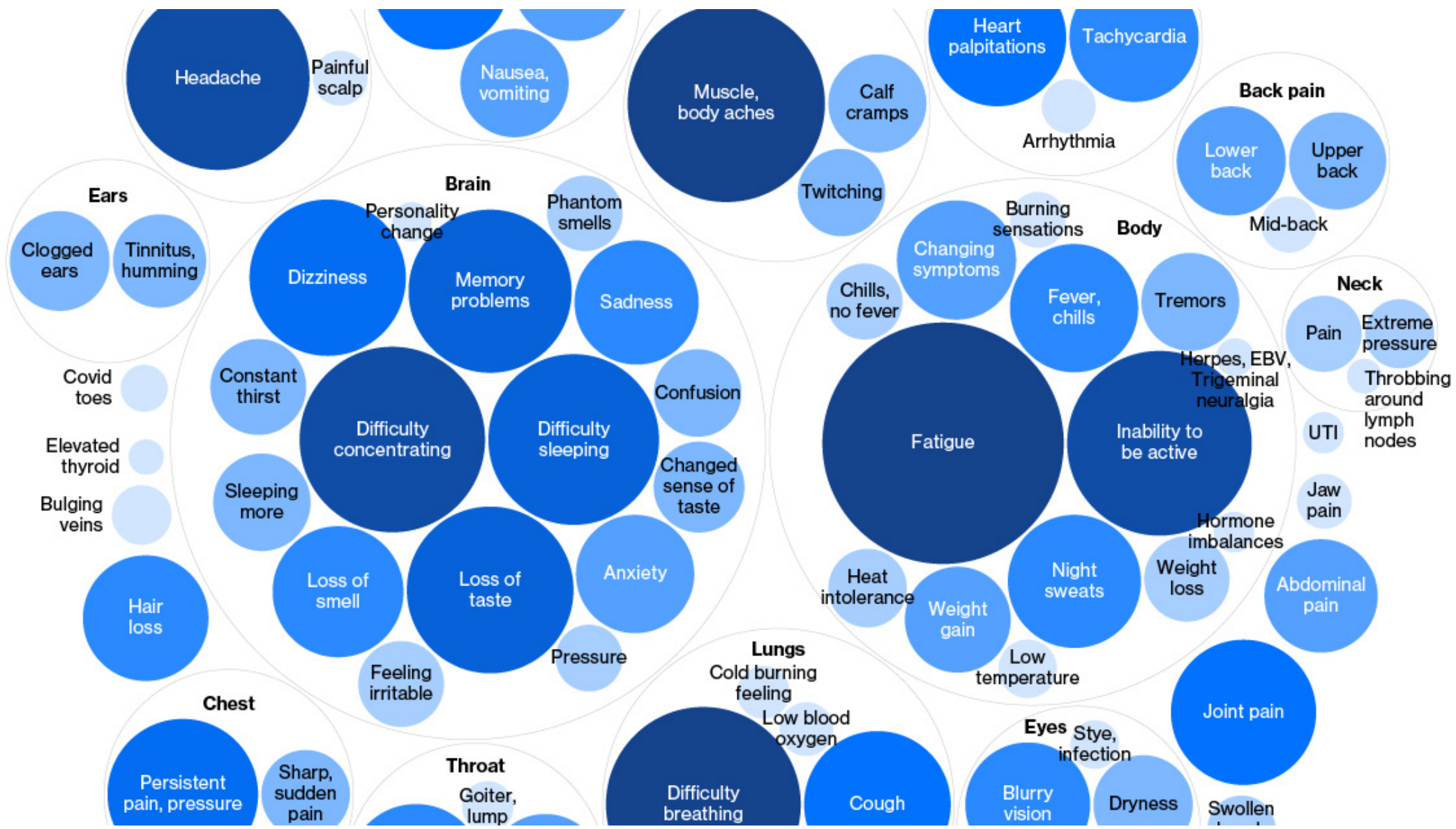
	Lineage	Type	%Total	95%CI	
Most common lineages #	B.1.1.7	VOC	60.3%	56.4-64.1%	■
	P.1	VOC	11.2%	8.7-14.4%	■
	B.1.617.2	VOC	9.5%	6.8-13.1%	■
	B.1.526	VOI	9.3%	7.4-11.8%	■
	B.1		1.9%	1.2-2.9%	■
	B.1.1.519		0.5%	0.3-0.7%	■
Additional VOI/VOC lineages #	B.1.2	†	0.1%	0.0-0.2%	■
	B.1.351	VOC	0.4%	0.2-0.7%	■
	B.1.427	VOC	0.3%	0.2-0.6%	■
	B.1.429	VOC	0.3%	0.2-0.5%	■
	B.1.525	† VOI	0.1%	0.0-0.3%	■
	B.1.617.1	† VOI	0.0%	0.0-0.1%	■
	P.2	† VOI	0.0%	0.0-0.1%	■
	B.1.617	† VOI	0.0%	NA	■
	B.1.617.3	† VOI	0.0%	NA	■
	Other*	Other		6.2%	4.8-7.9%

* Other represents >200 additional lineages, which are each circulating at <1% of viruses
 † Fewer than 10 observations of this variant during the selected time/location context
 # Sublineages of P.1 and B.1.351 (P.1.1, P.1.2, B.1.351.2, B.1.351.3) are aggregated with the parent lineage and included in parent lineage's proportion.



COVID Long-Haulers

Research, Clinical Insights...





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COVID-19 Research

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When COVID-19 Symptoms Linger

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

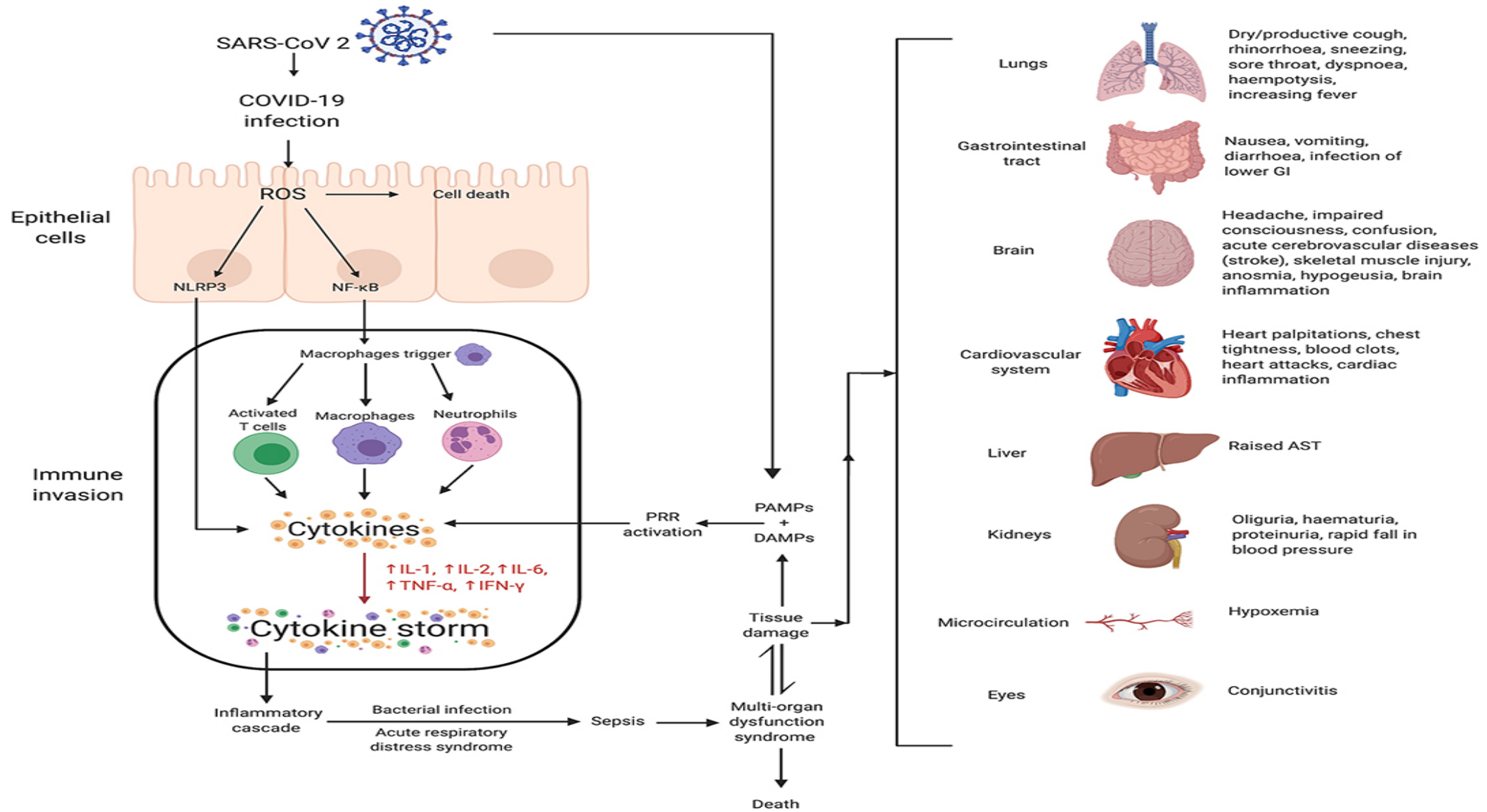
ARTICLES | [VOLUME 397, ISSUE 10270, P220-232, JANUARY 16, 2021](#)

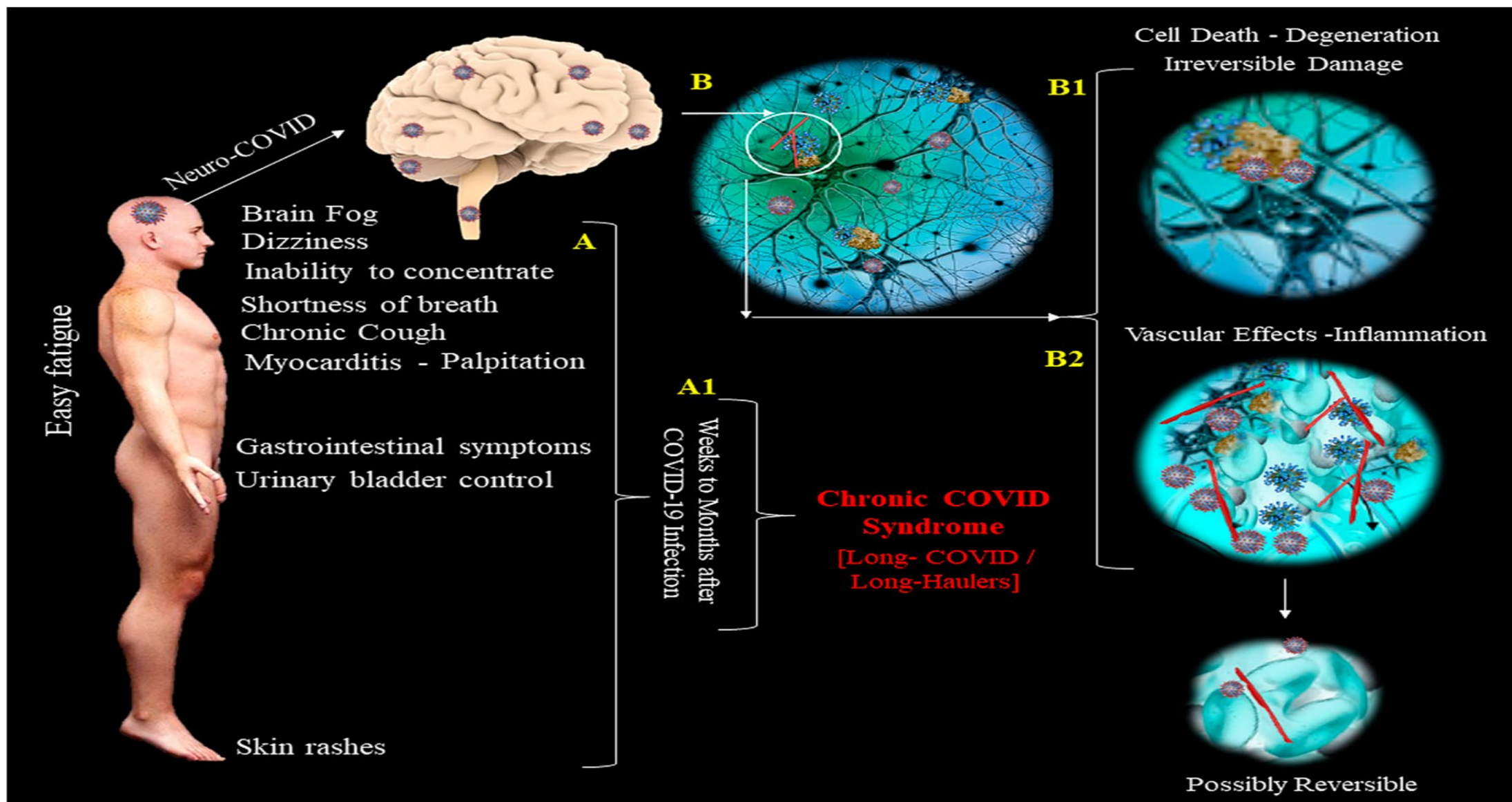
6-month consequences of COVID-19 in patients discharged from hospital: a cohort study

[Chaolin Huang, MD *](#) • [Lixue Huang, MD *](#) • [Yeming Wang, MD *](#) • [Xia Li, MD *](#) • [Lili Ren, PhD *](#) • [Xiaoying Gu, PhD *](#) • et al. [Show all authors](#) • [Show footnotes](#)

Published: January 08, 2021 • DOI: [https://doi.org/10.1016/S0140-6736\(20\)32656-8](https://doi.org/10.1016/S0140-6736(20)32656-8) •







Pathogenesis of Post COVID Syndrome – Multi-factorial

- Prolonged Inflammation
- Immune-mediated vascular dysfunction
- Thromboembolism
- Nervous system dysfunction





Research Letter | Infectious Diseases

Sequelae in Adults at 6 Months After COVID-19 Infection

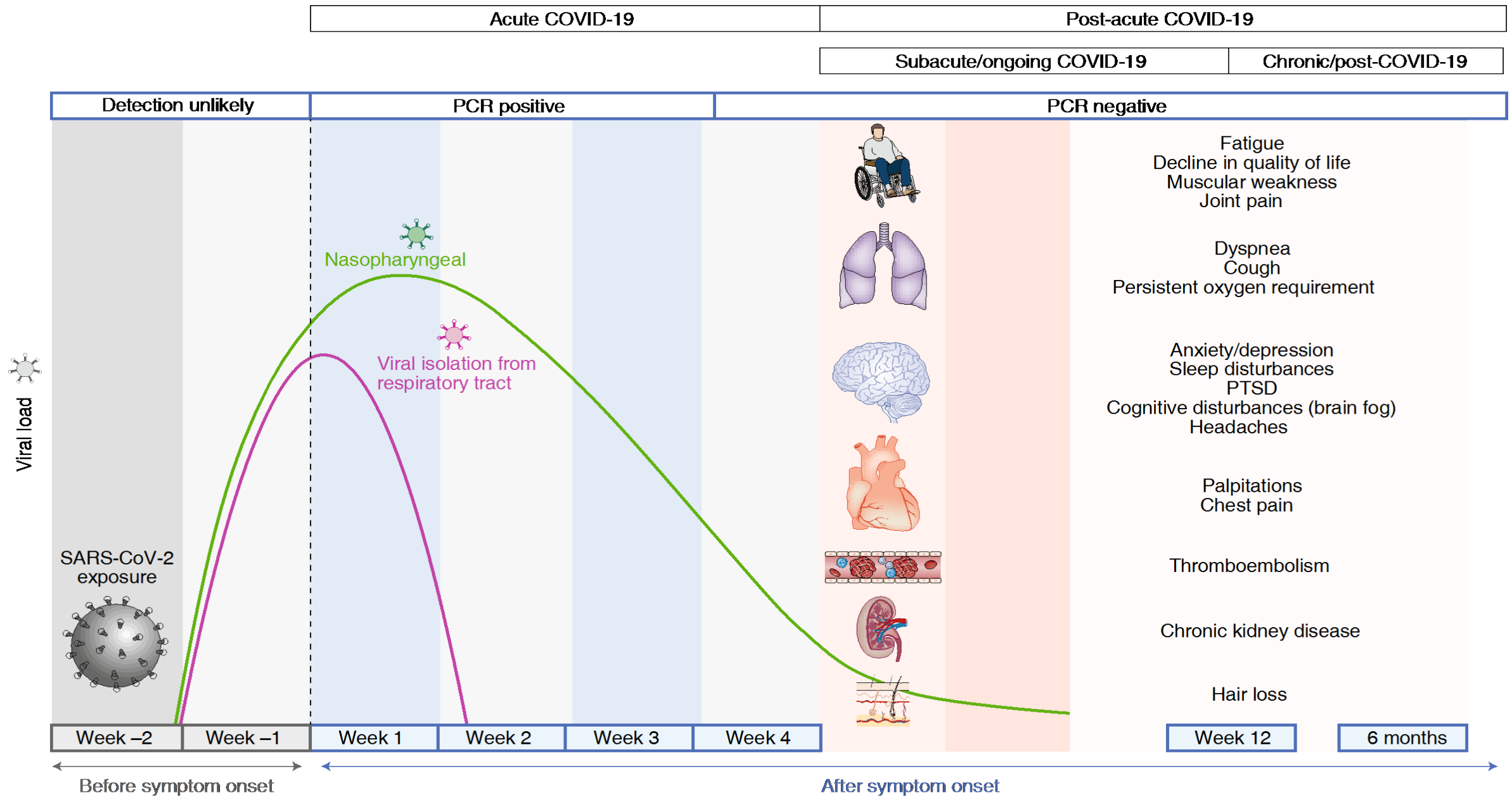
Jennifer K. Logue, BS; Nicholas M. Franko, BS; Denise J. McCulloch, MD, MPH; Dylan McDonald, BA; Ariana Magedson, BS; Caitlin R. Wolf, BS; Helen Y. Chu, MD, MPH

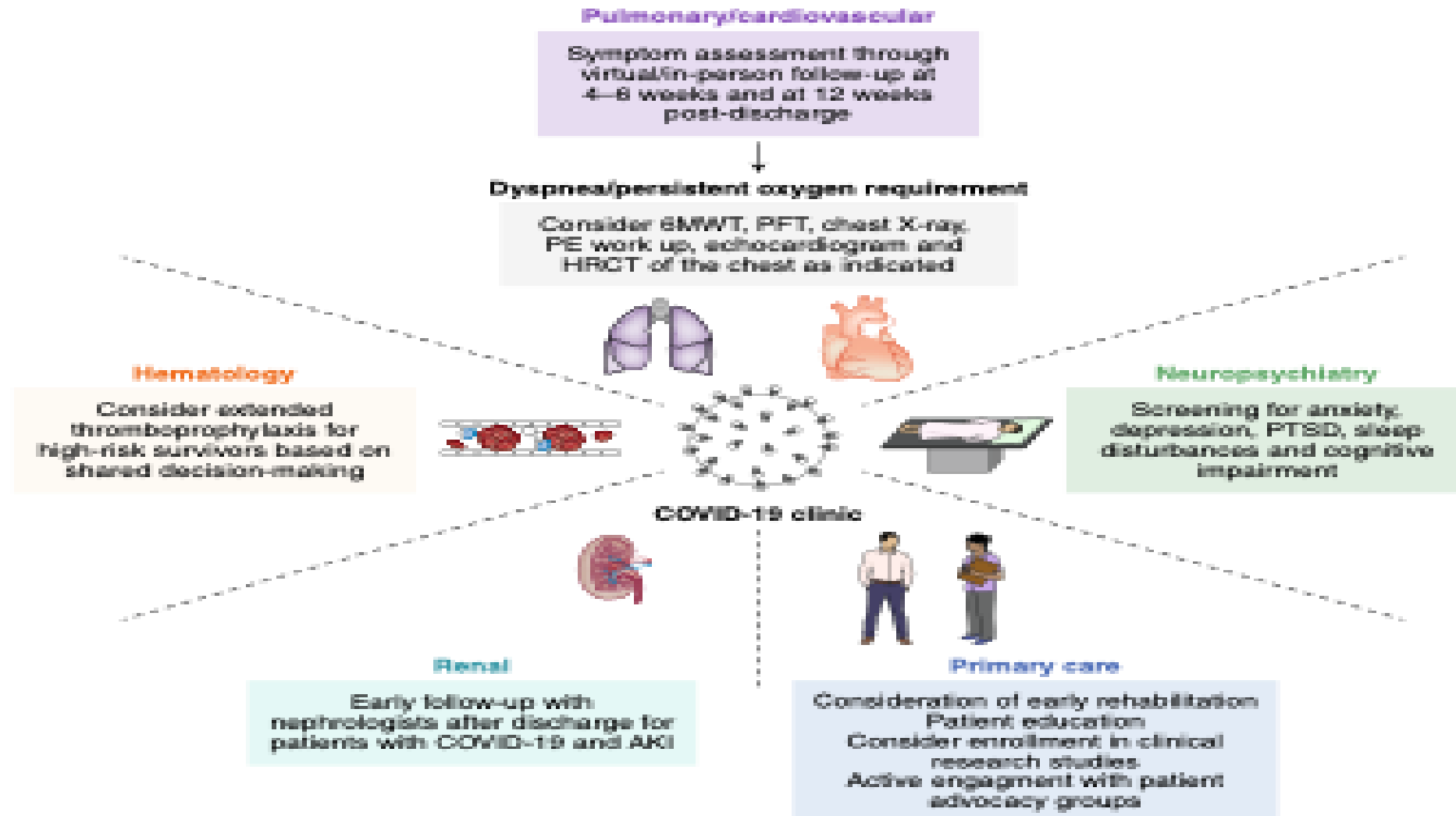
Characteristic	No. (%)				
	Total recovered individuals (n = 177)	Inpatients (n = 16)	Outpatients (n = 150)	Asymptomatic individuals (n = 11)	Healthy controls (n = 21)
Post-COVID-19 follow-up characteristics					
Time after illness onset, median (SD), d ^b	169 (39.5)	179 (44.9)	169 (37.1)	139 (47.1)	87 (31.3)
Persistent symptoms ^c					
0	119 (67.2)	10 (62.5)	98 (65.3)	11 (100.0)	20 (95.2)
1-2	29 (16.4)	2 (12.5)	28 (18.7)	0	0
≥3	24 (13.6)	3 (18.8)	21 (14.0)	0	1 (4.8)
Missing	7 (4.0)	1 (6.3)	3 (2.0)	0	0
Worsened quality of life ^d	53 (29.9)	7 (43.8)	44 (29.3)	2 (18.2)	2 (9.5)



Post-acute COVID-19 syndrome

Ani Nalbandian ^{1,24}, Kartik Sehgal ^{2,3,4,24} ✉, Aakriti Gupta ^{1,5,6}, Mahesh V. Madhavan ^{1,5},
Claire McGroder ⁷, Jacob S. Stevens⁸, Joshua R. Cook ⁹, Anna S. Nordvig ¹⁰, Daniel Shalev¹¹,
Tejasv S. Sehrawat ¹², Neha Ahluwalia¹³, Behnood Bikdeli^{4,5,6,14}, Donald Dietz¹⁵,
Caroline Der-Nigoghossian¹⁶, Nadia Liyanage-Don¹⁷, Gregg F. Rosner¹, Elana J. Bernstein ¹⁸,
Sumit Mohan ⁸, Akinpelumi A. Beckley¹⁹, David S. Seres²⁰, Toni K. Choueiri ^{2,3,4}, Nir Uriel¹,
John C. Ausiello⁹, Domenico Accili⁹, Daniel E. Freedberg²¹, Matthew Baldwin ⁷, Allan Schwartz¹,
Daniel Brodie ⁷, Christine Kim Garcia⁷, Mitchell S. V. Elkind ^{10,22}, Jean M. Connors^{4,23},
John P. Bilezikian⁹, Donald W. Landry⁸ and Elaine Y. Wan ¹ ✉





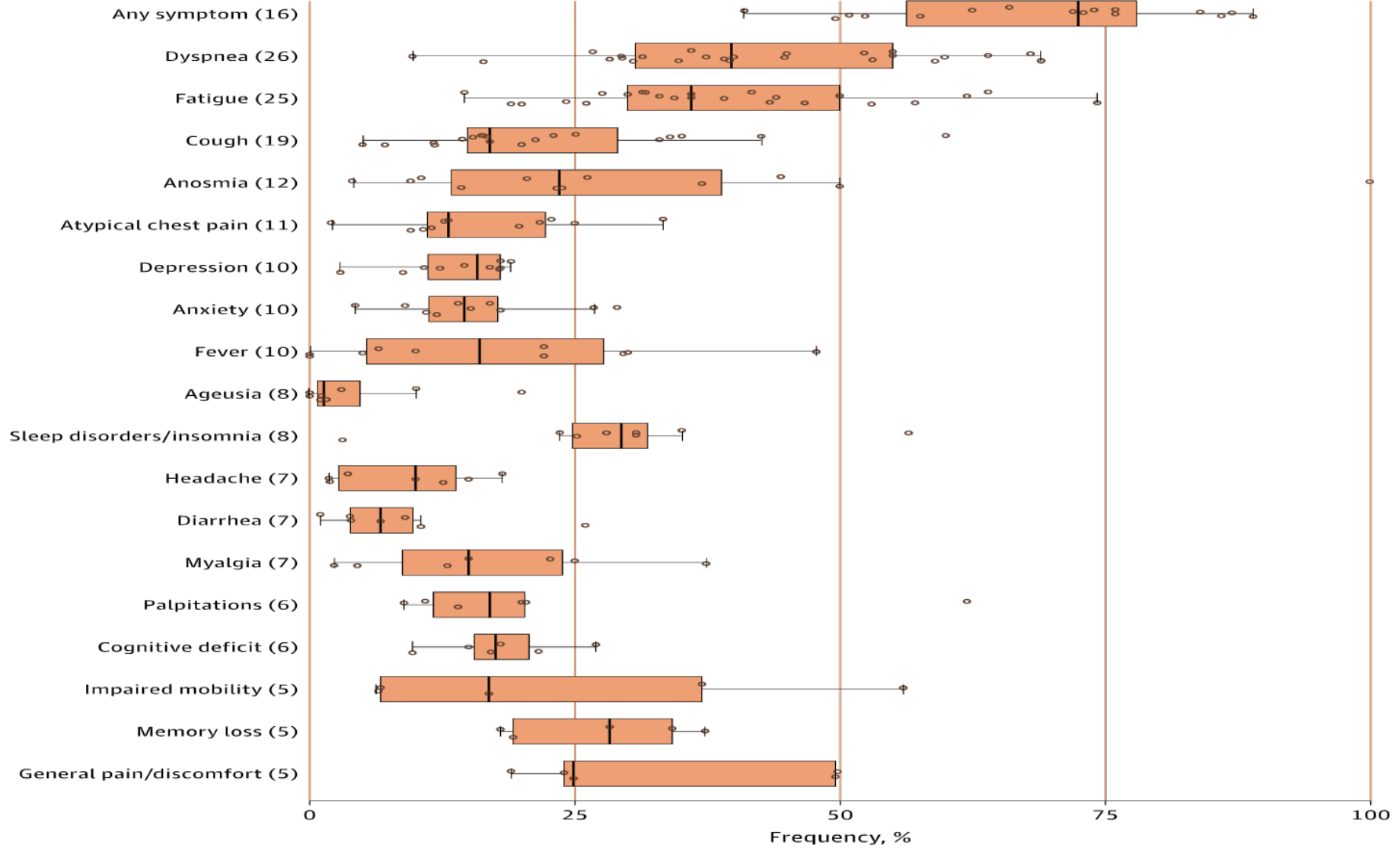


Original Investigation | Infectious Diseases

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> •



A white computer keyboard is visible in the upper right corner of the image. A black stethoscope is positioned diagonally across the center and right side of the frame. The background is a plain, light-colored surface.

Case Reviews in PALTC

Is this Post – COVID Syndrome?

52 y/o “Young Geriatric”
outpatient
with multiple
comorbidities

- AA woman with pmhx of Morbid Obesity, Polycystic Kidney disease, ESRD on dialysis, HTN, COPD – admitted to hospital with SOB, Cough + COVID test
- Discharged home with mild SOB; and 1 month later she continues to have cough, SOB, and Fatigue. Requesting assistance at home due to weakness
- Hospitalized 2 months later after “dizzy” episode resulted in a fall with ankle fracture
- Upon discharge from that hospital stay with home health care, she returned home with skin lesions and macular rash, persistent cough, confusion – she was readmitted to the hospital 16 hours later

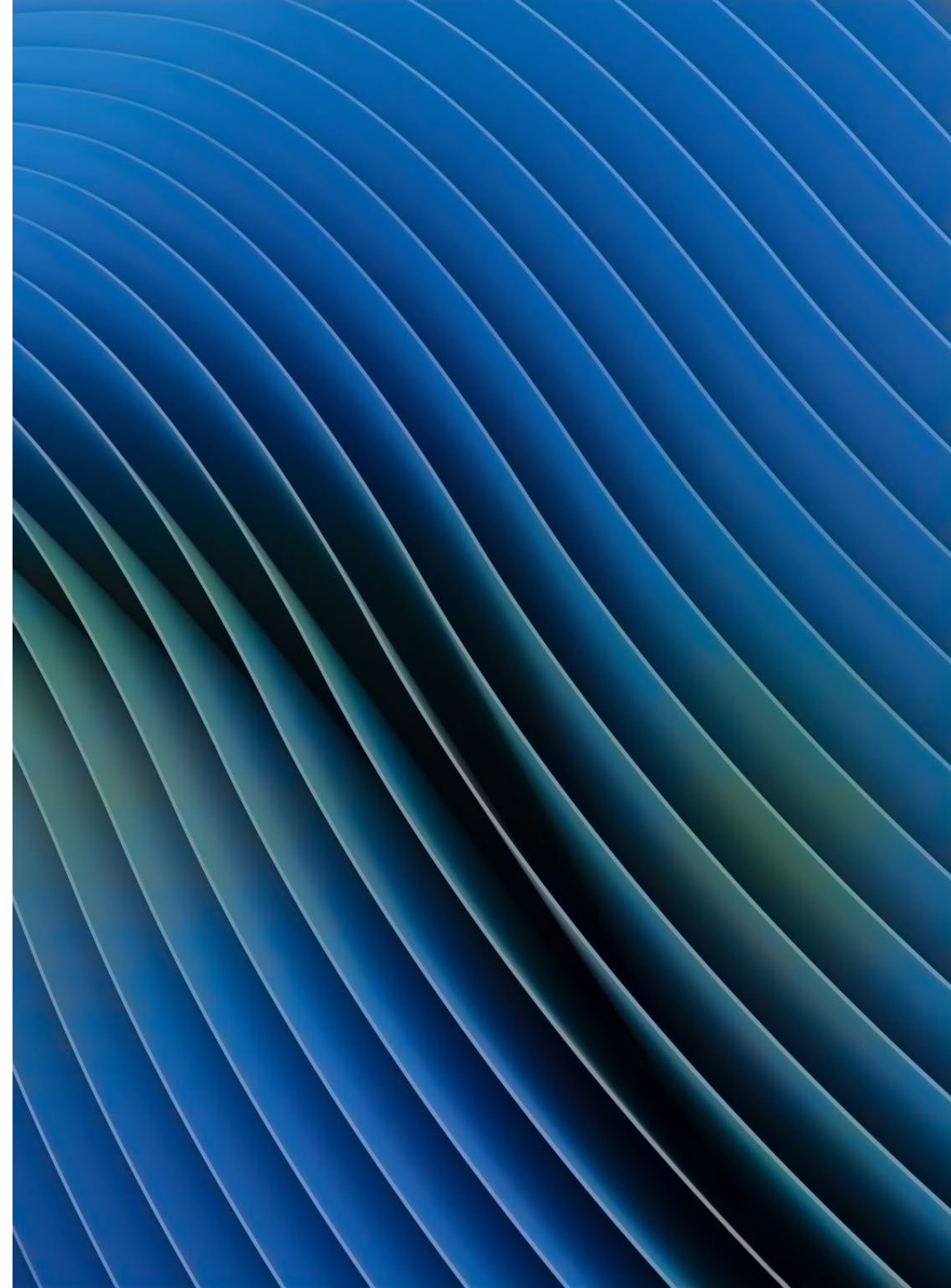
62 y/o LTC Resident

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

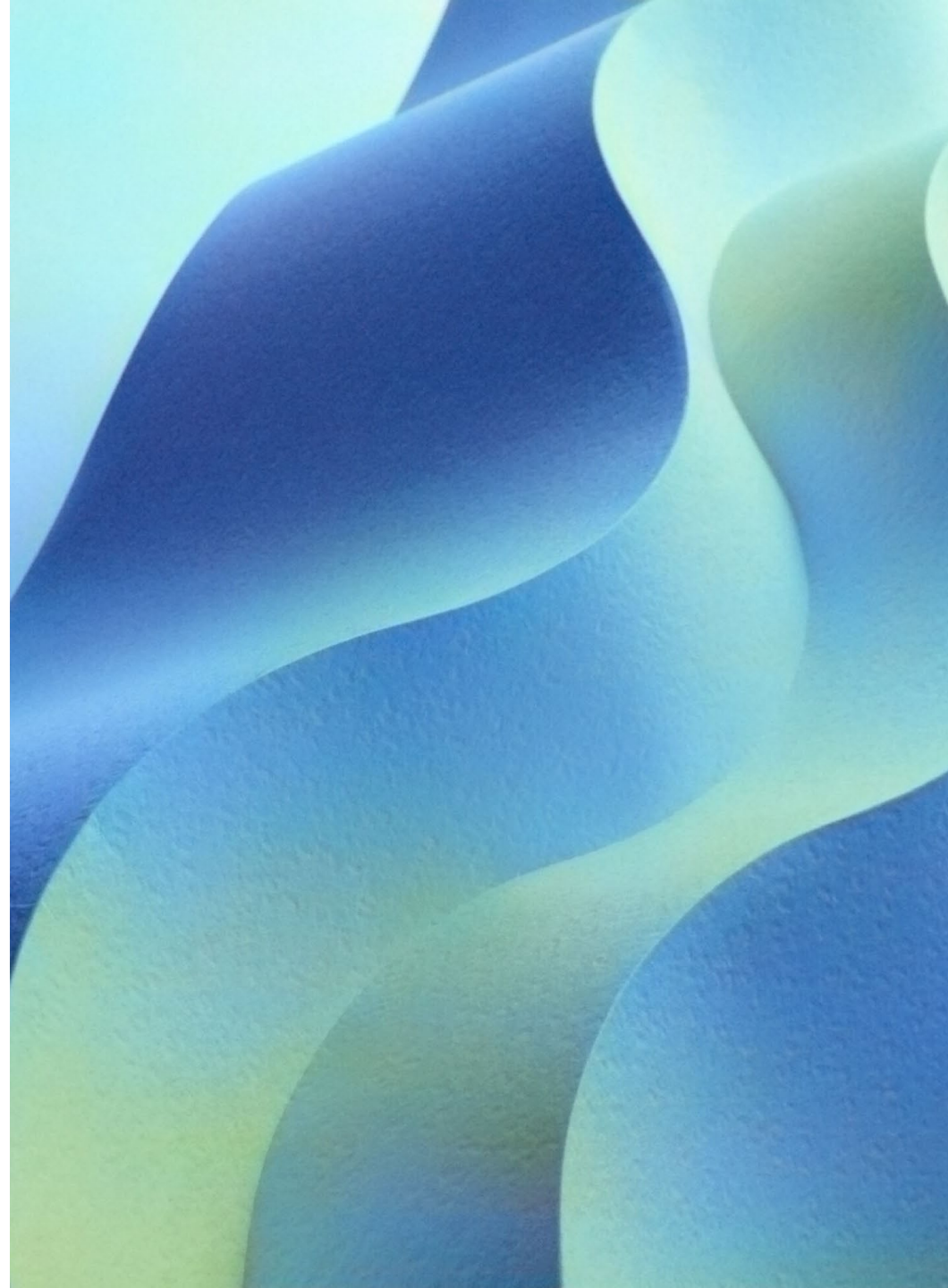
Female LTC resident

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

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



POST COVID Syndrome Symptoms

- **Fatigue**
- **Difficulty thinking or concentrating**
 - *sometimes referred to as “brain fog”*
- **Difficulty breathing**
 - *with and without abnormal imaging and pulmonary function testing*
- **Cough**
- **Painful joints or muscles**
- **Chest pain**
- **Depression or anxiety**
- **Headache**
- **Fever**
- **Palpitations**
- **Loss of smell or taste**
- **Dizziness on standing**
- *Rashes*
- *Hair Loss*
- *Lesions on Toes “ COVID TOES”*

Post COVID – 19 Condition ICD-10 U09.9

WHO added new
code to ICD-10

Proposal to add to
ICD-10 CM made
at the March 2021
Meeting

Implementation
date – October 1,
2021

A close-up, slightly blurred photograph of a desk. In the foreground, an open notebook with lined pages is visible, with a black pen resting on it. To the right, a portion of a white smartphone is visible. In the background, there are some papers and a keyboard, all out of focus. The overall lighting is soft and natural, creating a professional and focused atmosphere.

Open Discussion

Thank You!



Journal Club will return to our Monthly sessions starting July



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