



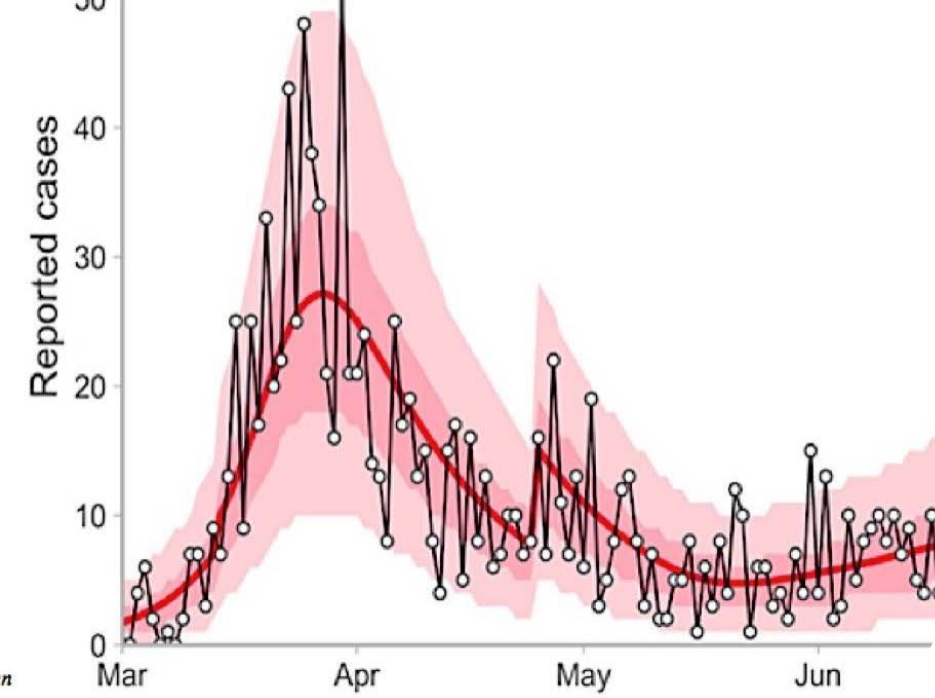
COVID-19 and COPD

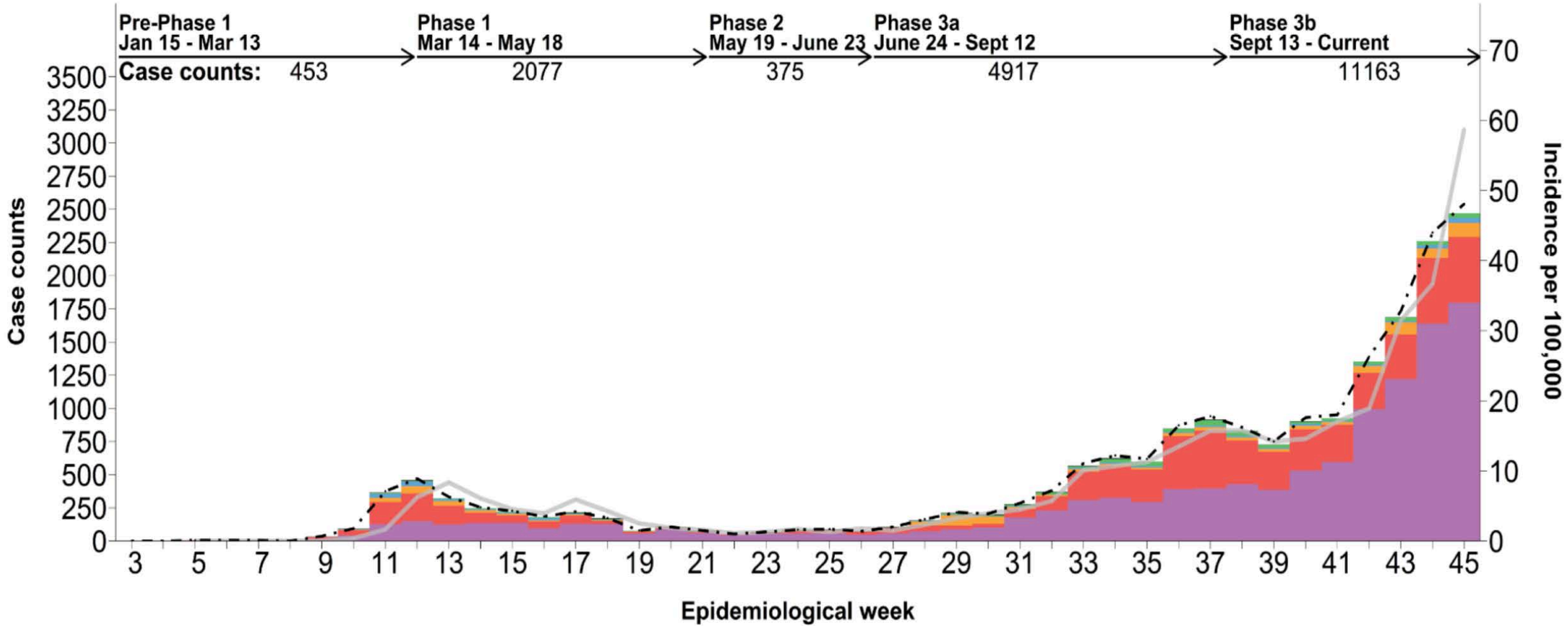
Janice Leung, MD FRCPC

Division of Respiratory Medicine

Centre for Heart Lung Innovation

University of British Columbia





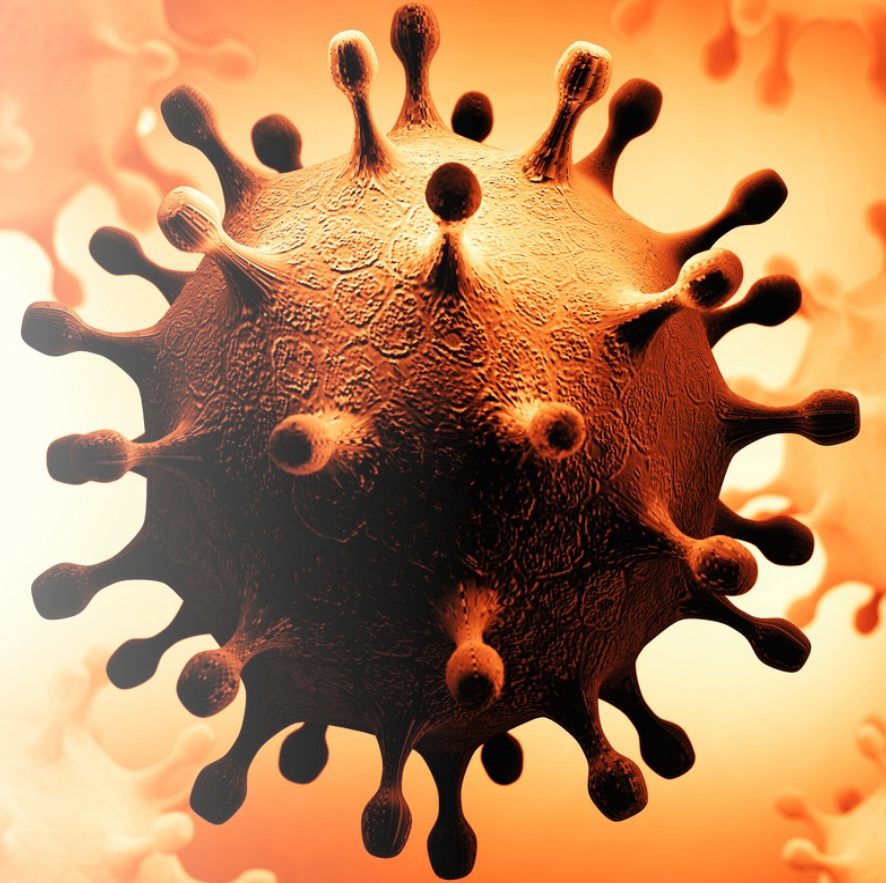
— Provincial case counts by report date
 - - - Provincial incidence per 100,000 by episode date

 FHA	 IHA	 NHA
 VCHA	 VIHA	 Out of Country



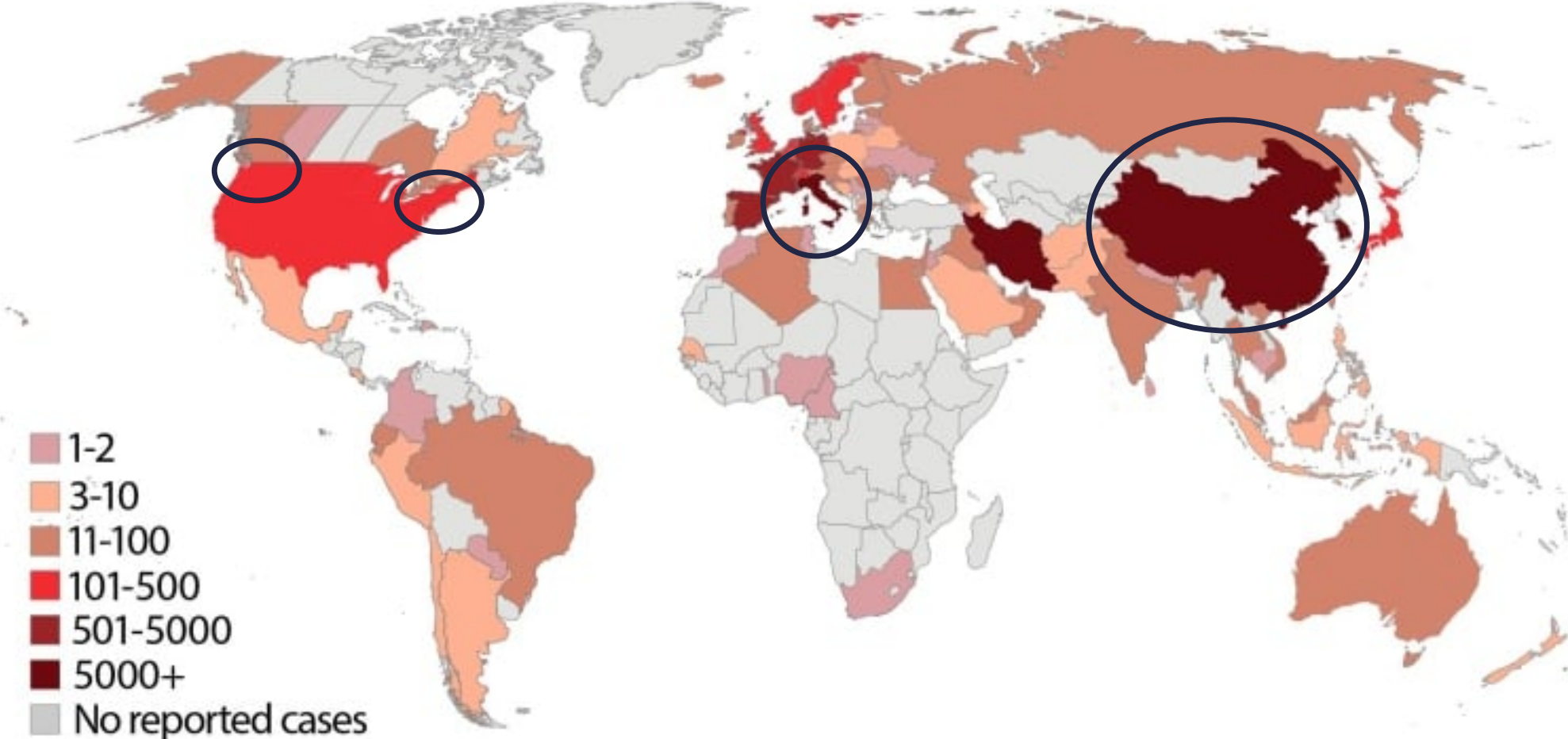


-
- Does having COPD make you more likely to get COVID-19?
 - Does having COPD make you more likely to die from COVID-19?
 - Do the inhalers we use to treat COPD improve or worsen COVID-19 outcomes?



Does having COPD make you more likely to get COVID-19?

Coronavirus disease (COVID-19) outbreak March 8



CBC NEWS

Source: China Health Ministry / Johns Hopkins University, WHO



Author	COPD Prevalence
Guan	1.1%
Wang	2.9%
Zhou	3%
Huang	2%
Guan	1.5%
Zhang	1.4%



Author	COPD Prevalence
Grasselli	4%
Cecconi	9.2%
Inciardi	9%



Author	COPD Prevalence
Richardson	5.4%
Goyal	5.1%
Kuno	2.4%
Palaiodimos	14.0%

Baseline characteristics and outcomes of patients with COVID-19 admitted to intensive care units in Vancouver, Canada: a case series

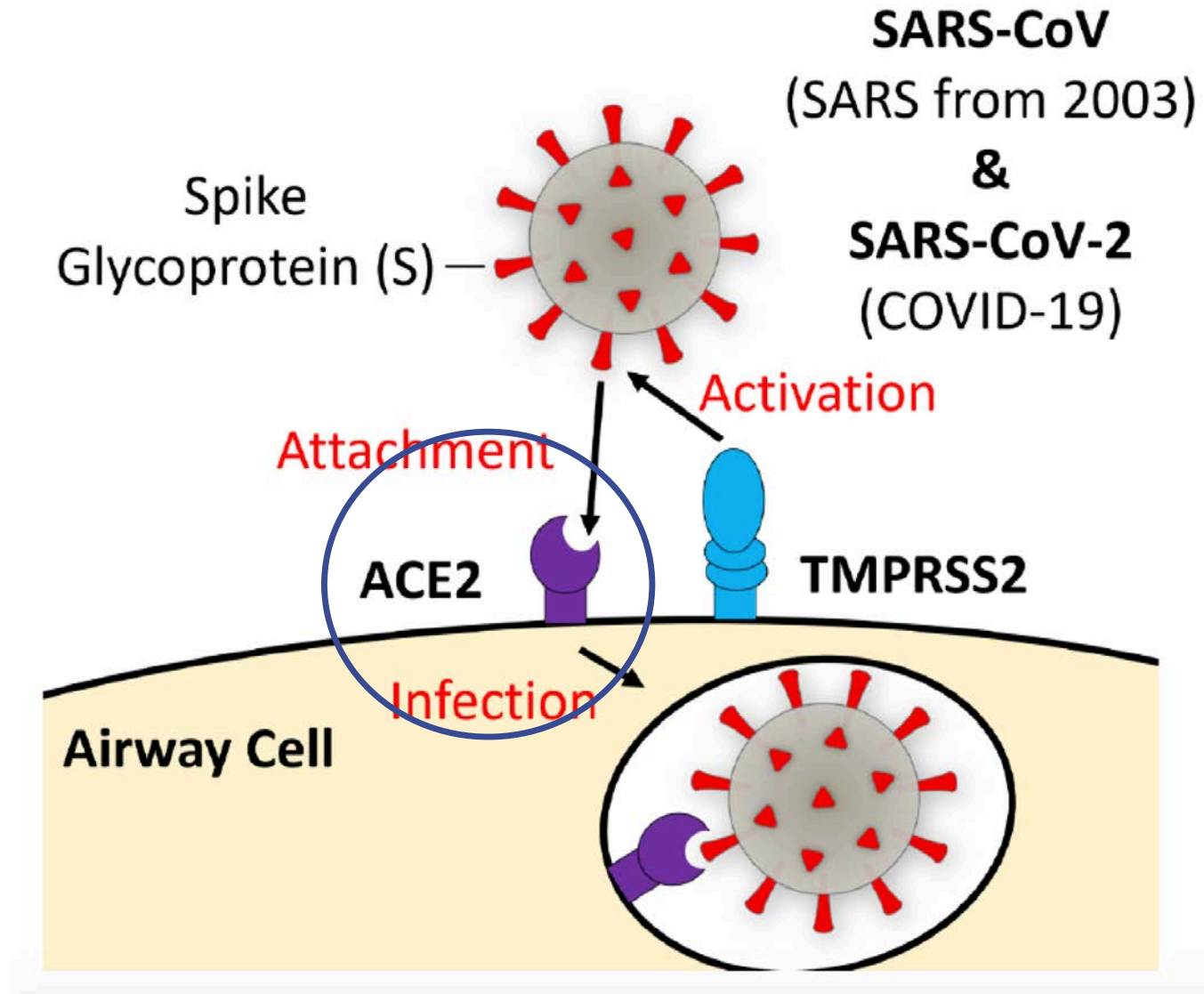
Anish R. Mitra MD MPH, Nicholas A. Fergusson MSc, Elisa Lloyd-Smith PhD, Andrew Wormsbecker MD, Denise Foster RN, Andrei Karpov MD MHSc, Sarah Crowe NP, Greg Haljan MD, Dean R. Chittock MD MS(Epi), Hussein D. Kanji MD MPH, Mypinder S. Sekhon MD, Donald E.G. Griesdale MD MPH

■ Cite as: *CMAJ* 2020 June 29;192:E694-701. doi: 10.1503/cmaj.200794; early-released May 27, 2020

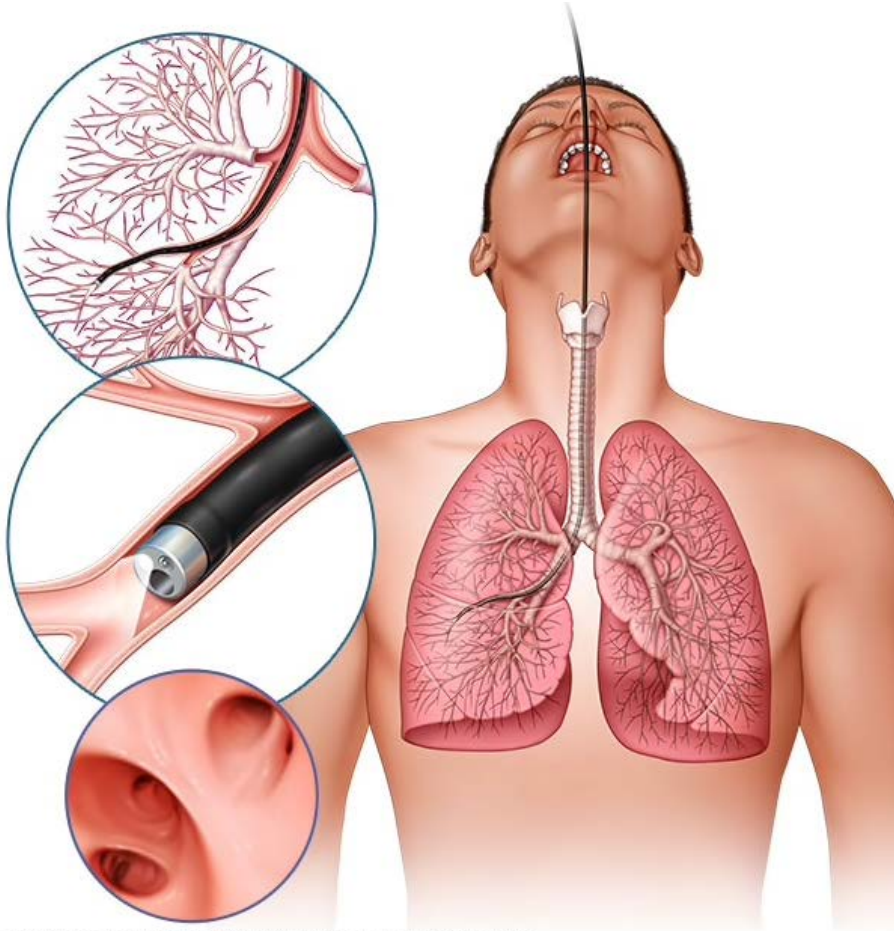
Out of 117 COVID-19 patients admitted to the ICU, 8 (6.8%) had a diagnosis of COPD.

Hypotheses

1. COPD and/or COPD medications are protective against COVID-19.
2. COPD is underdiagnosed in COVID-19 patients.
3. COPD patients isolated themselves early to protect against contracting COVID-19.



St. Paul's Hospital Bronchoscopy Biobank

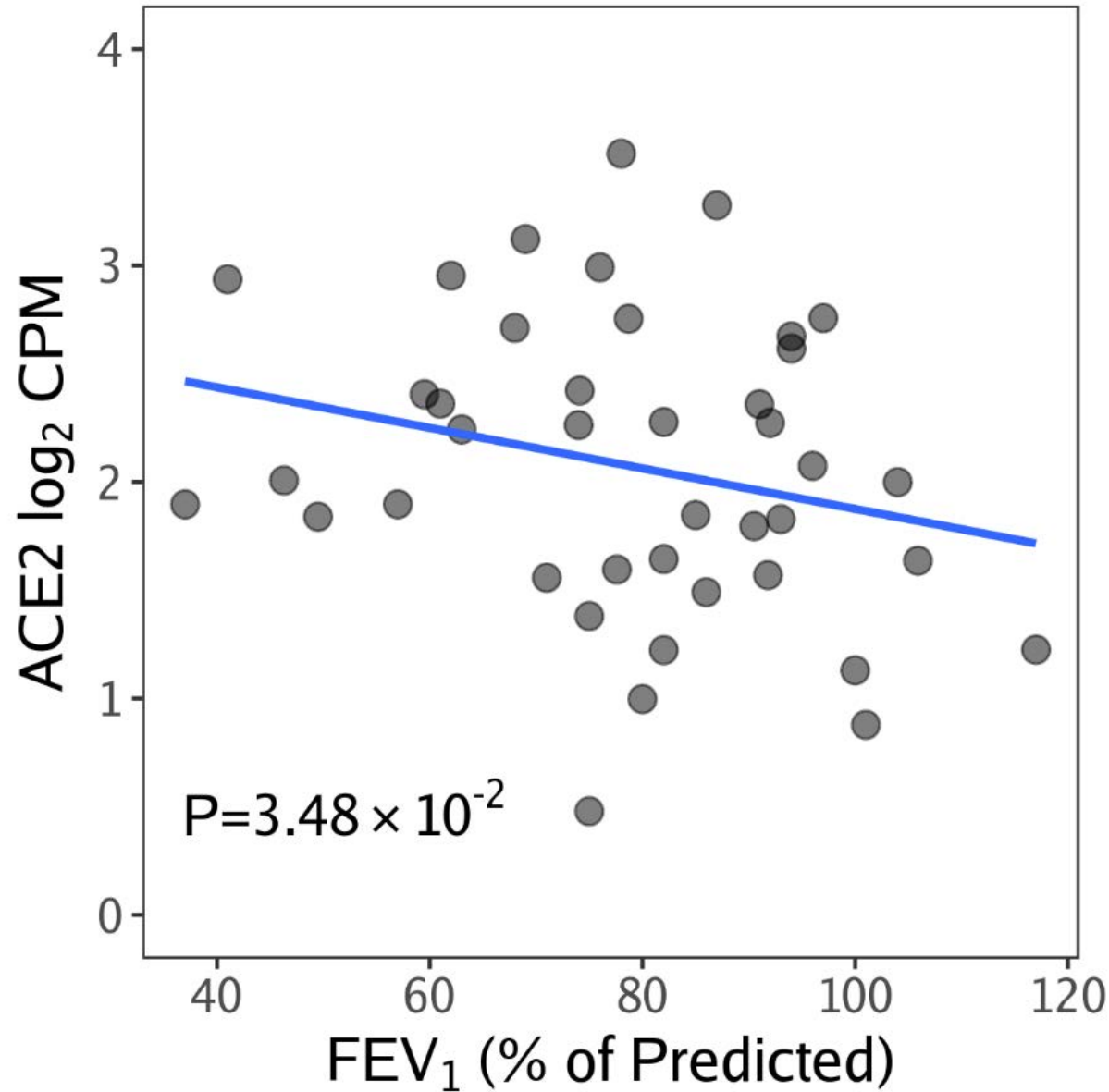
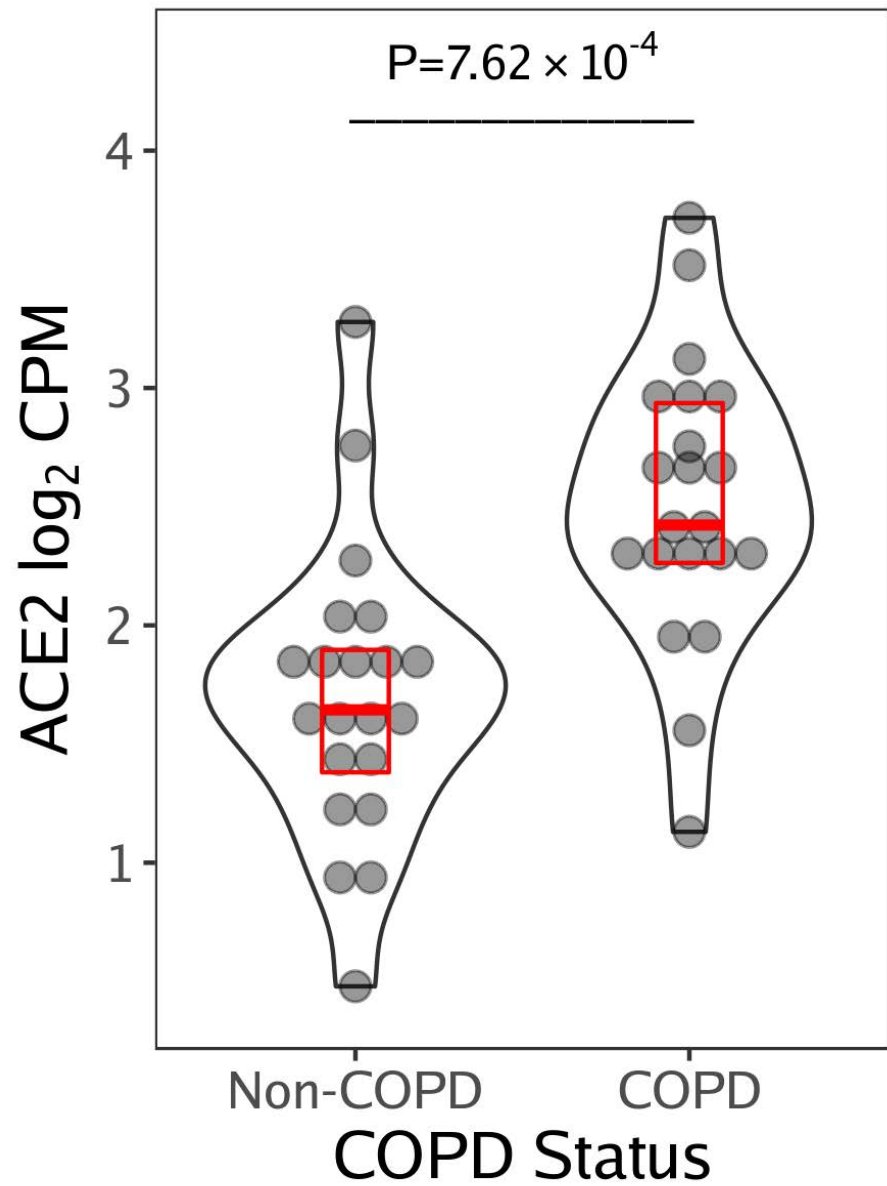


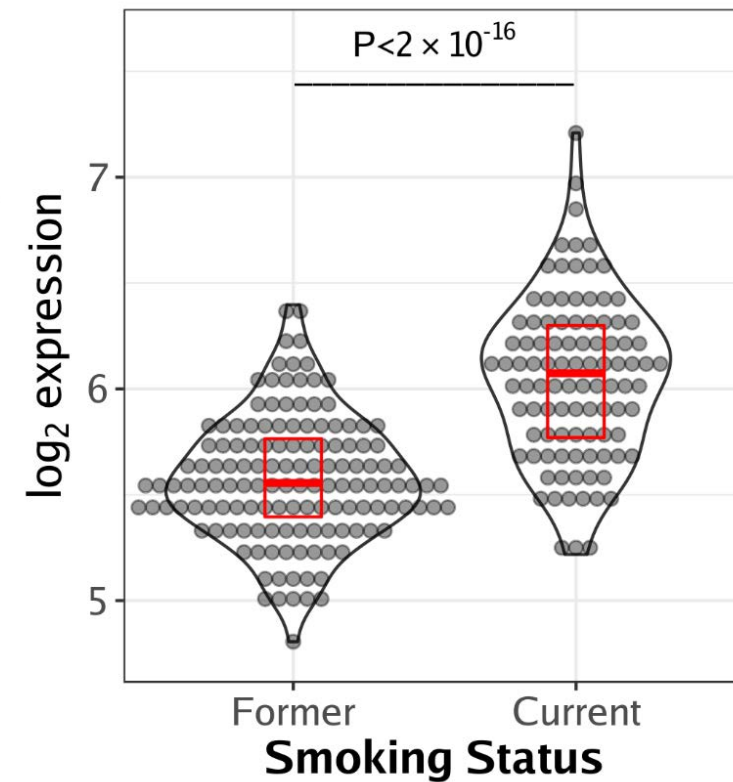
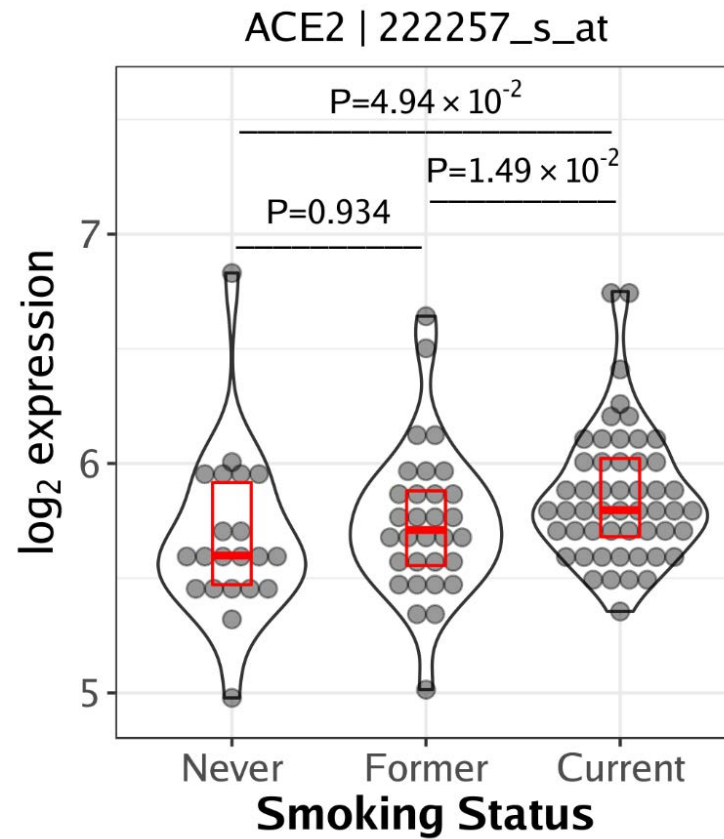
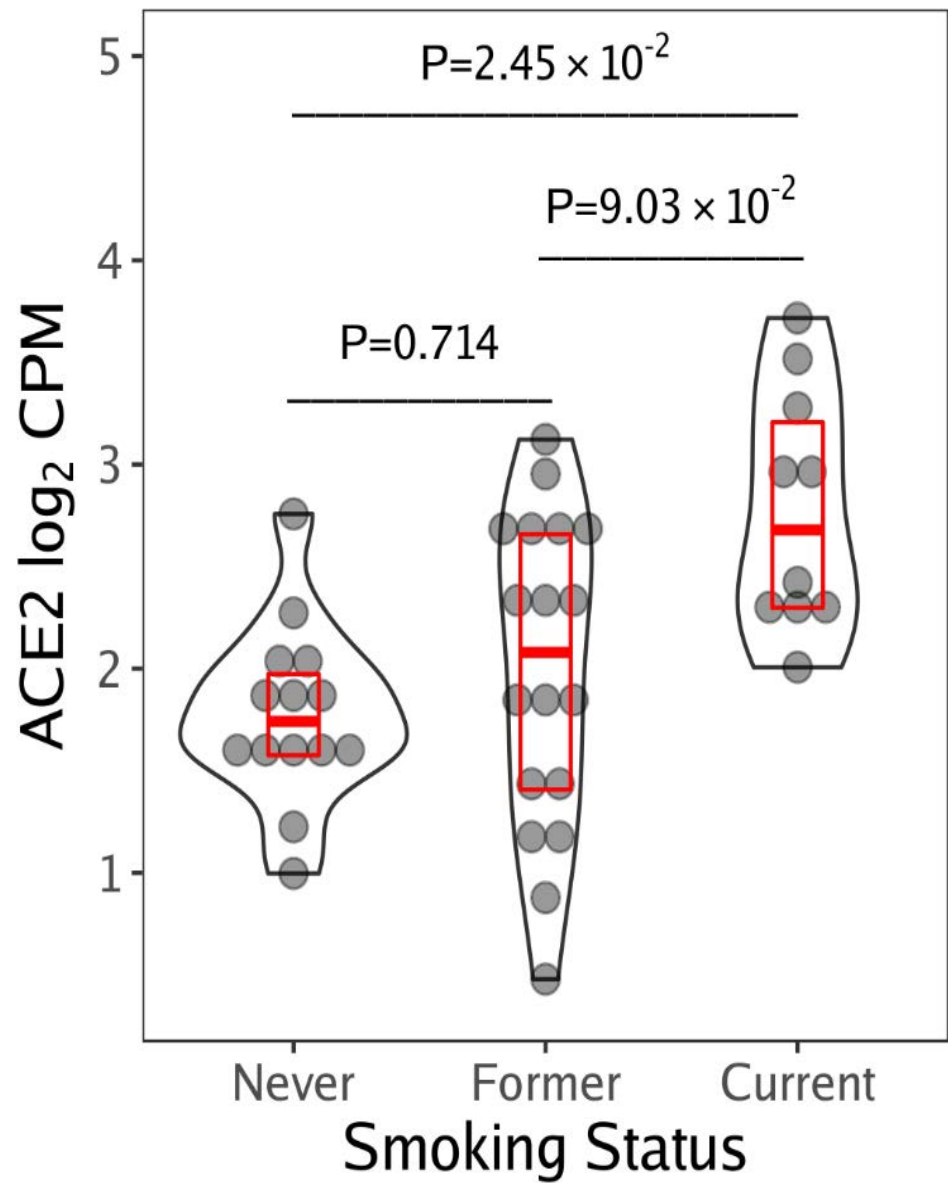
Over 700 bronchoscopies are performed each year at SPH

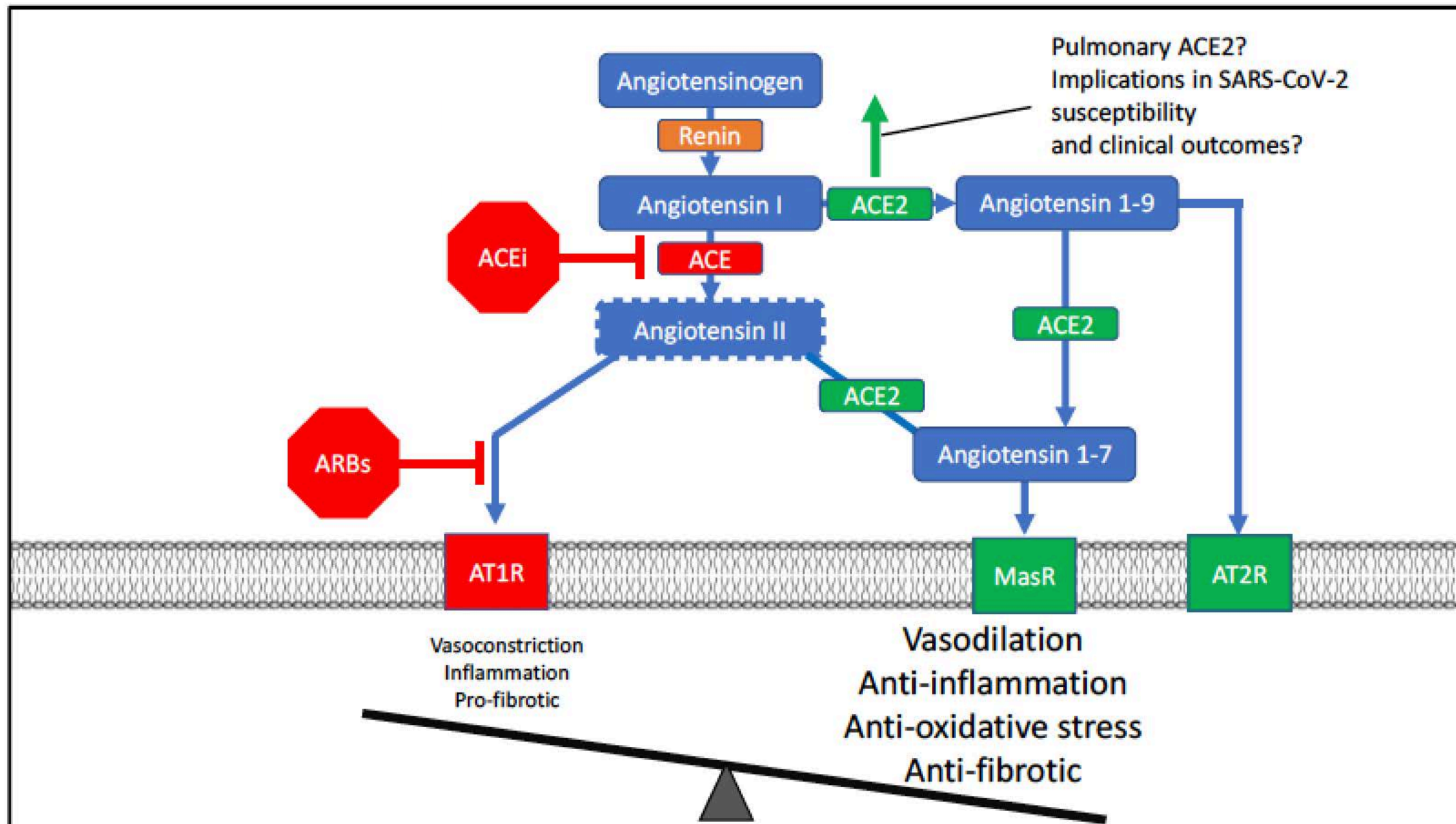
~200 patients have allowed us to collect additional research samples during their clinical procedure

~100 patients have undergone research bronchoscopies

Airway epithelial cells, bronchoalveolar lavage, oral washes, and blood have been collected

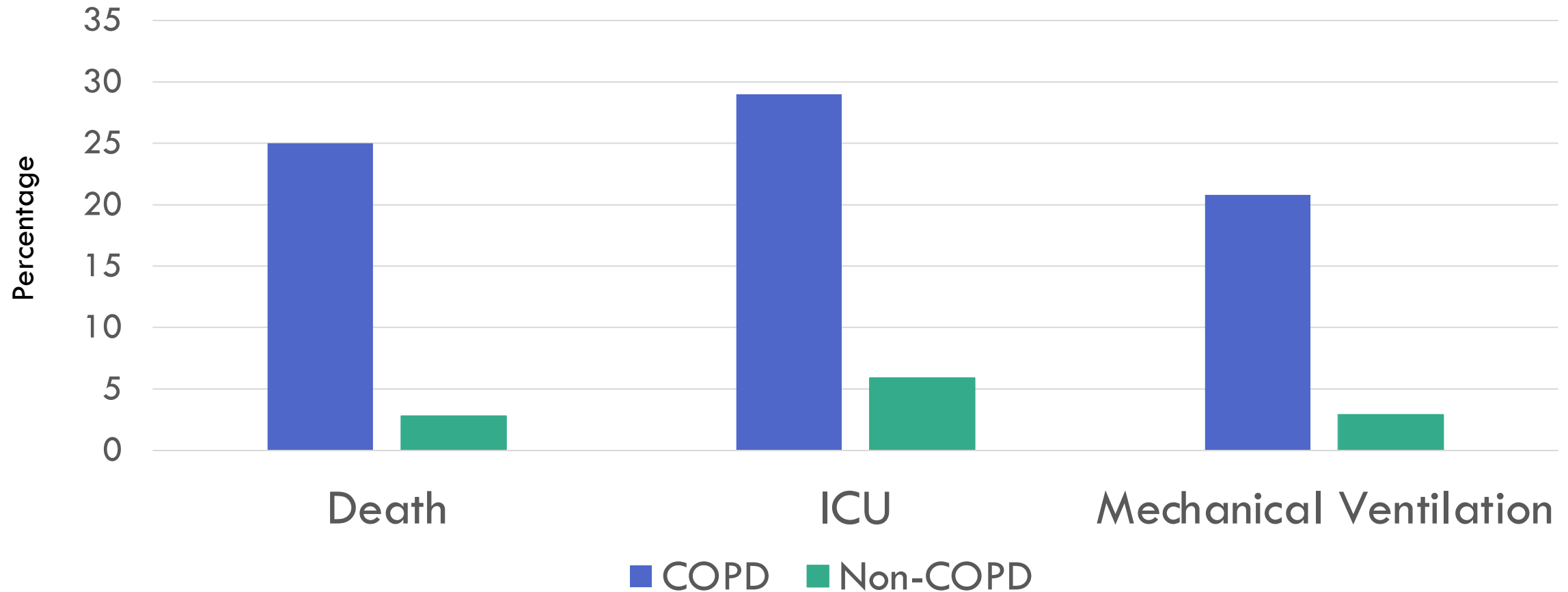


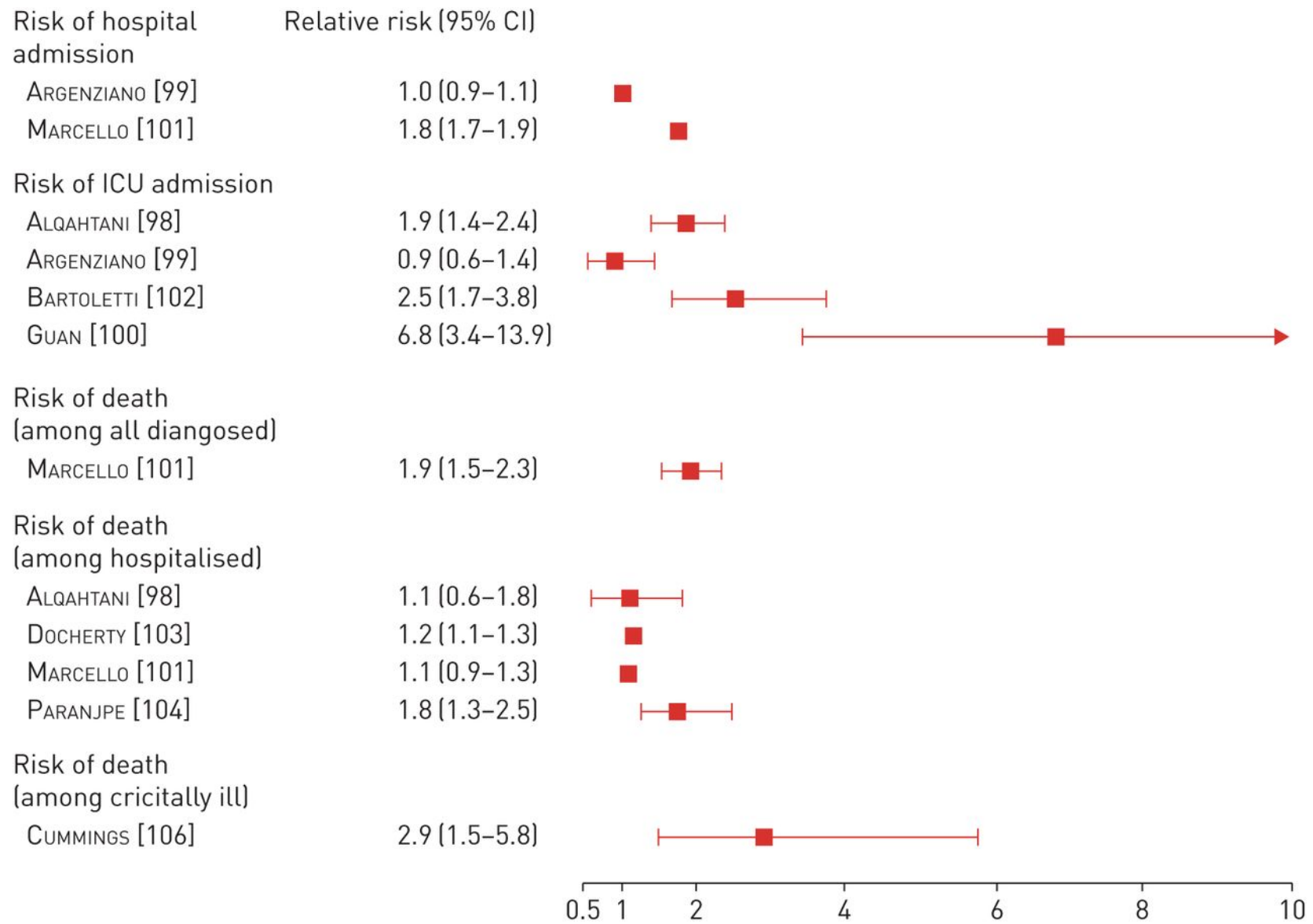




**Does having COPD make you more likely to die from
COVID-19?**

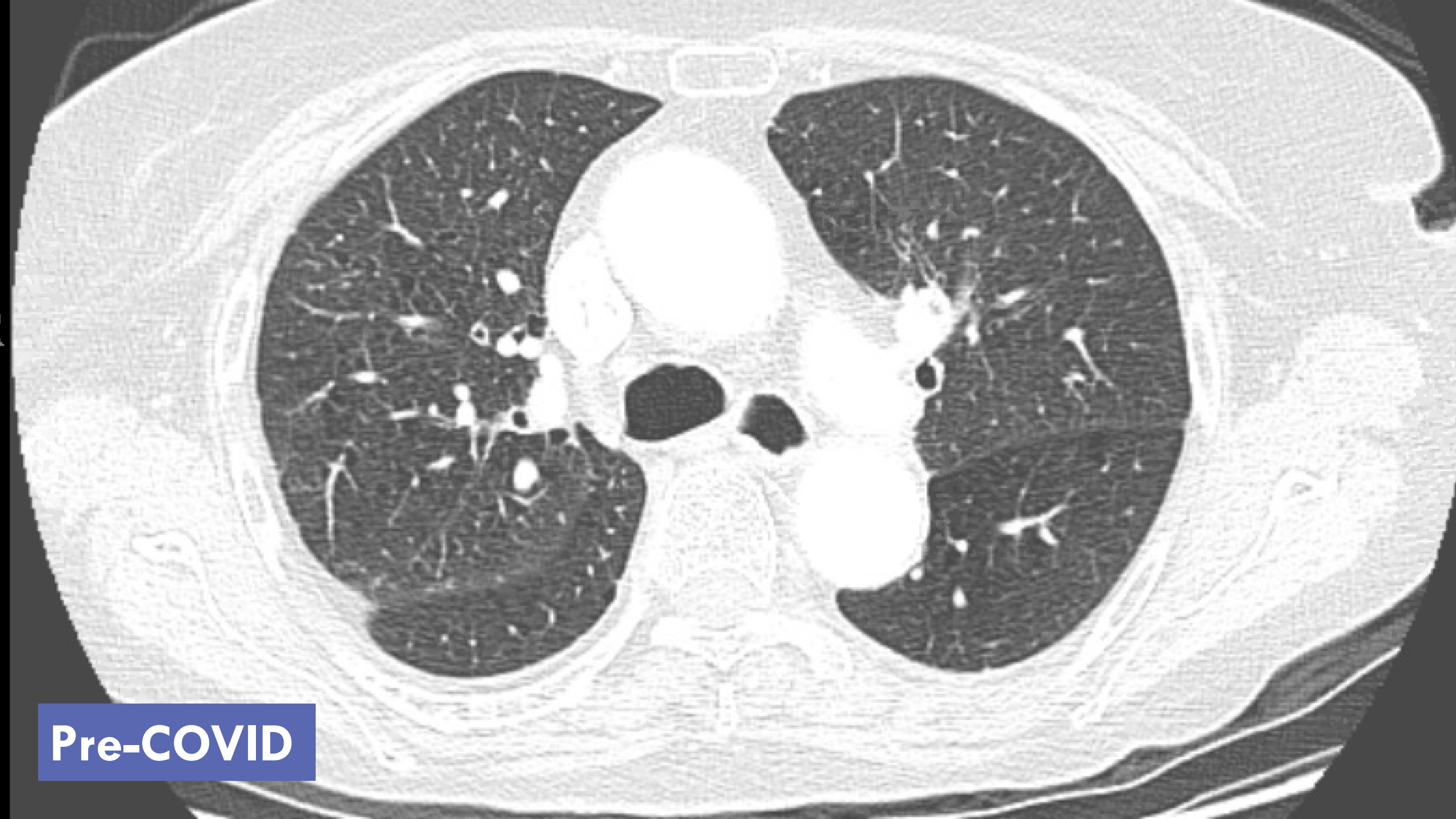
COVID-19 patients with COPD are 2.68 times more likely to die, require an ICU, or go on mechanical ventilation compared to patients without COPD.



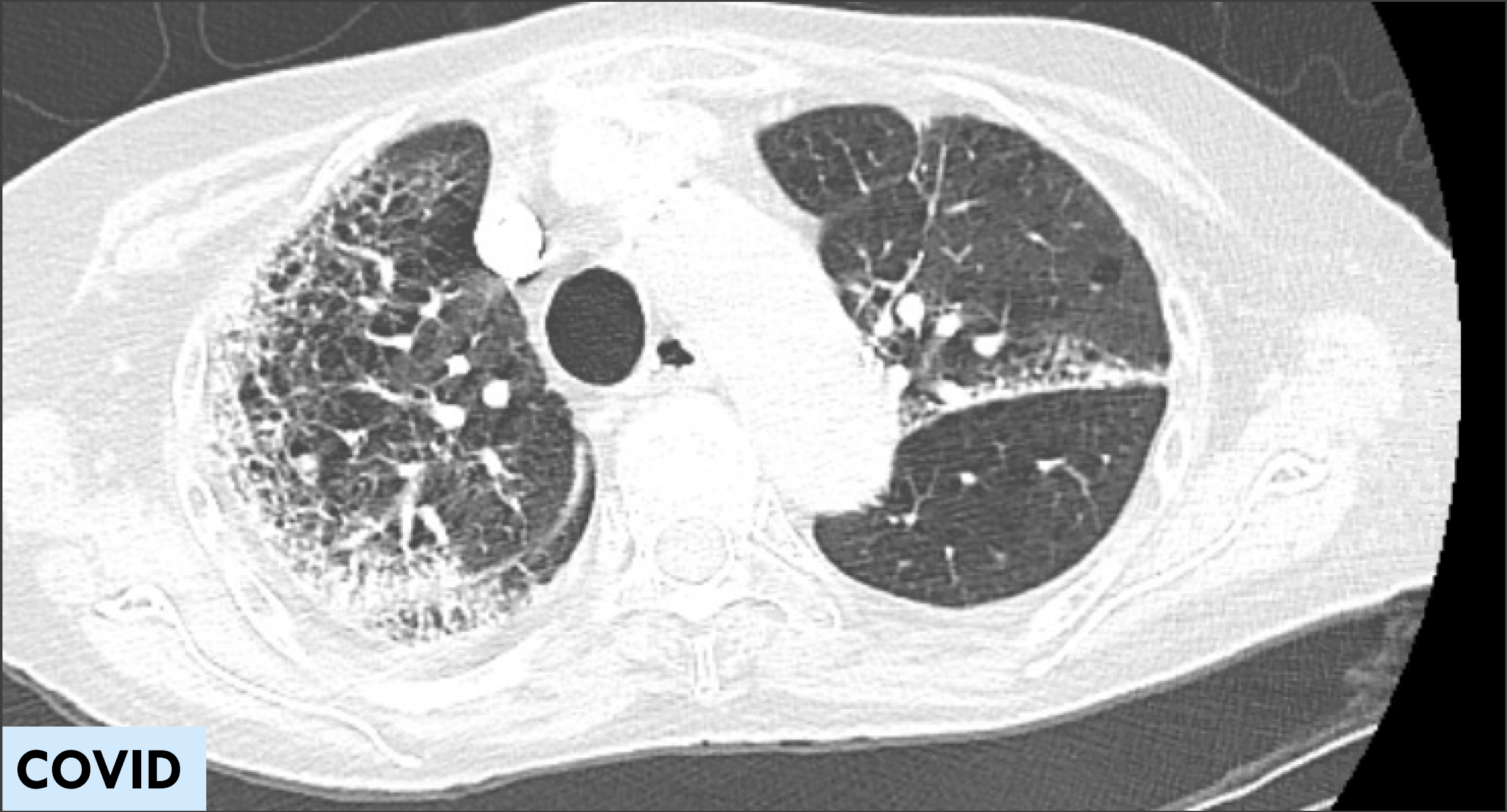




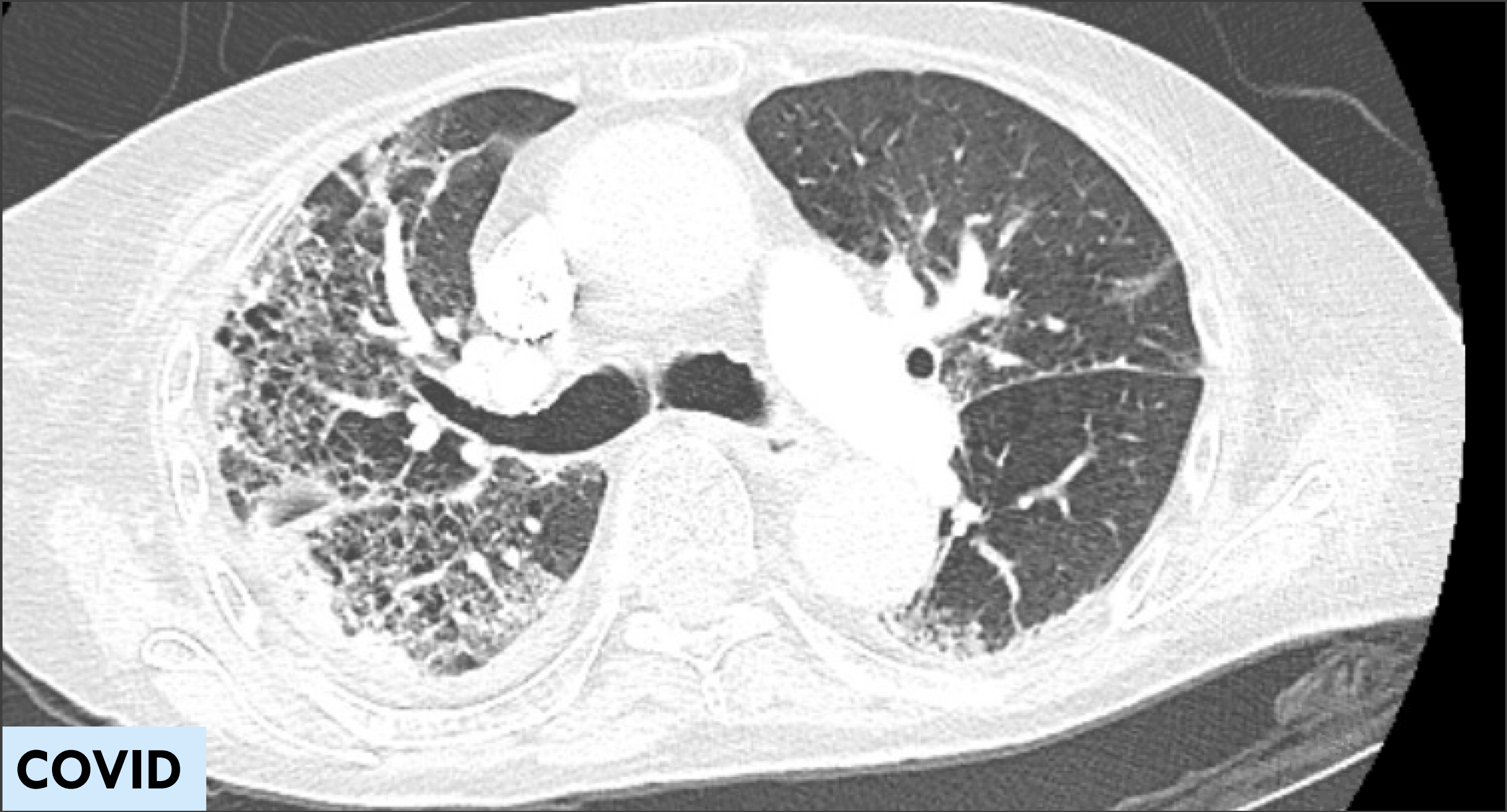
Pre-COVID



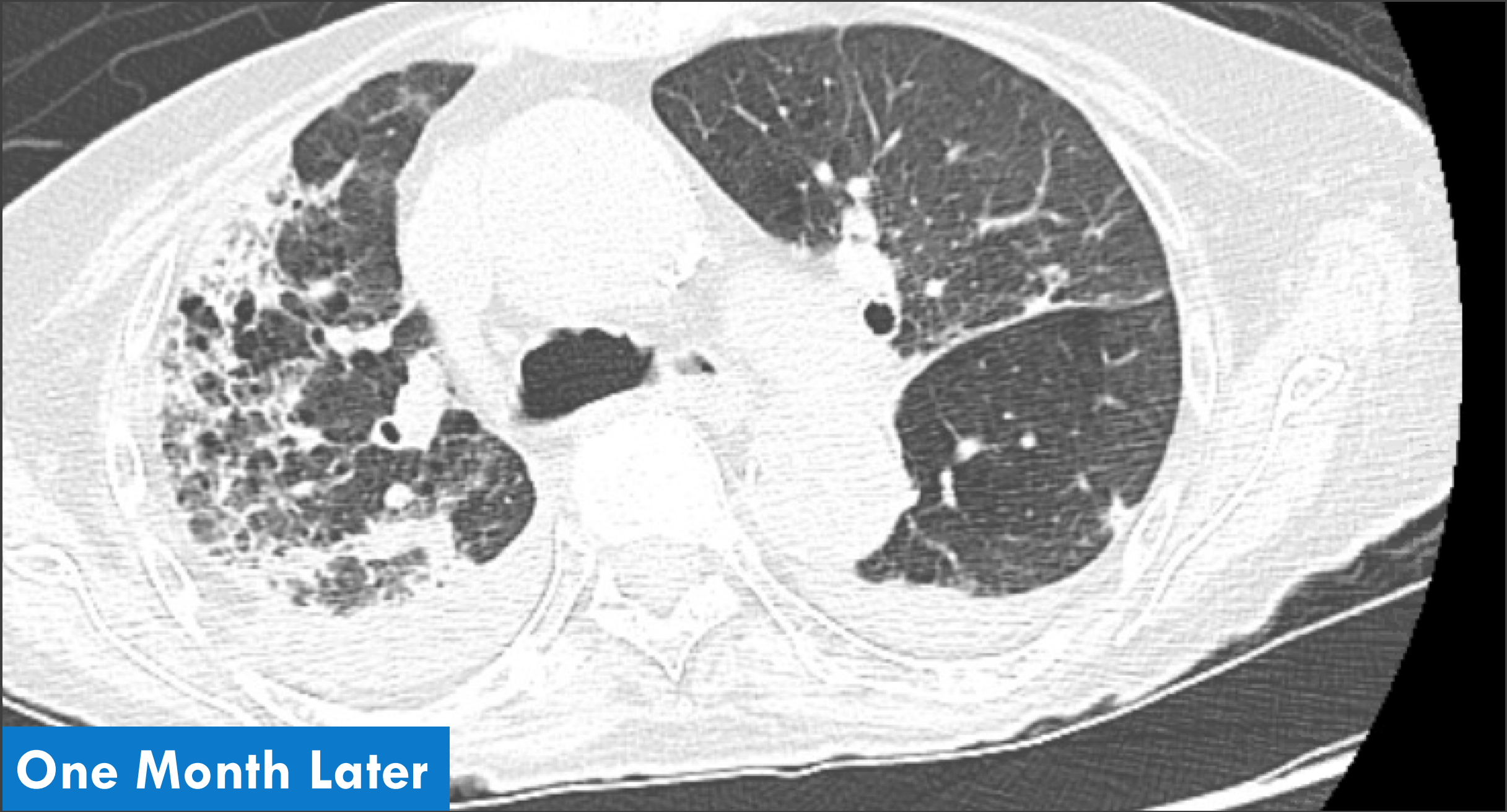
Pre-COVID



COVID



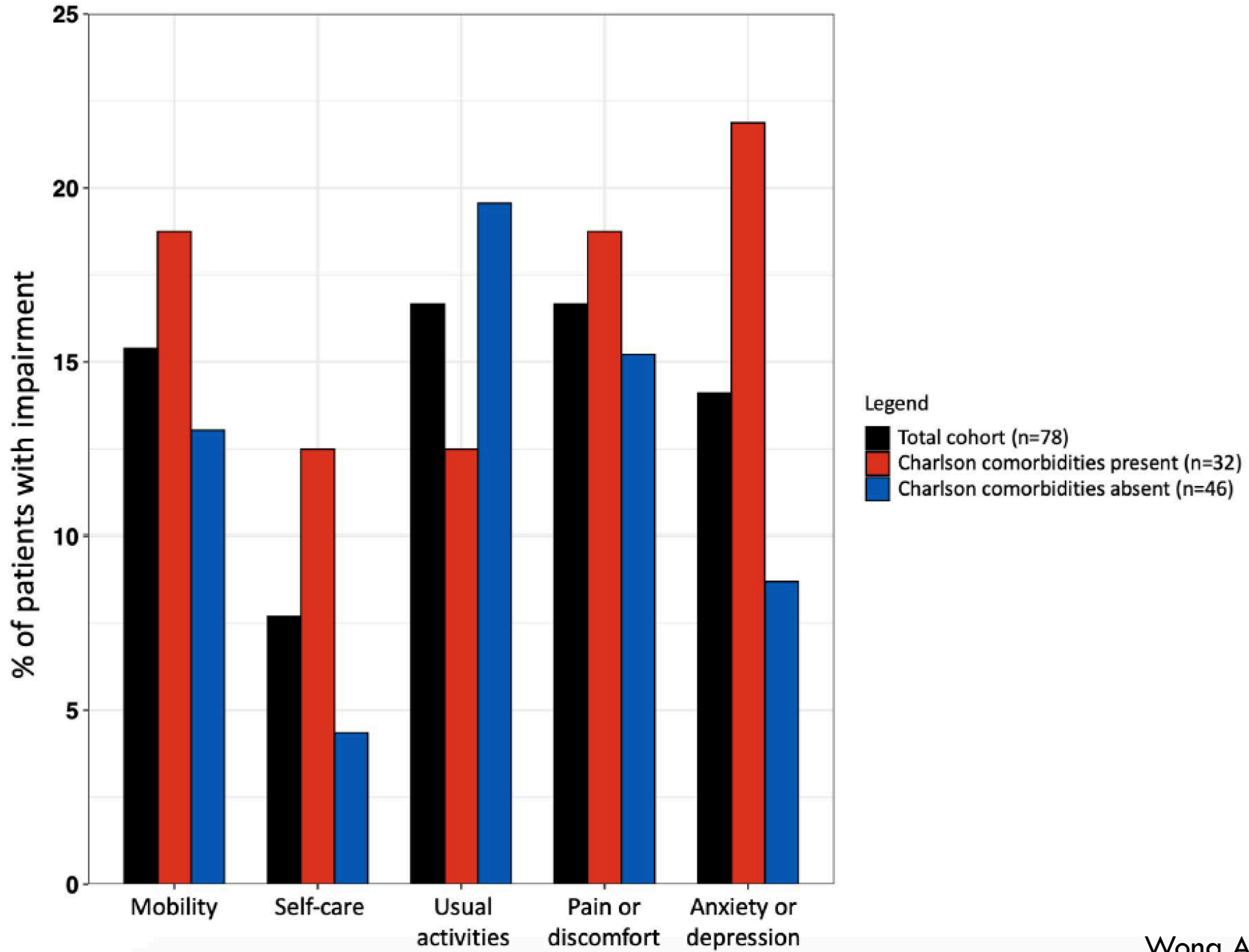
COVID



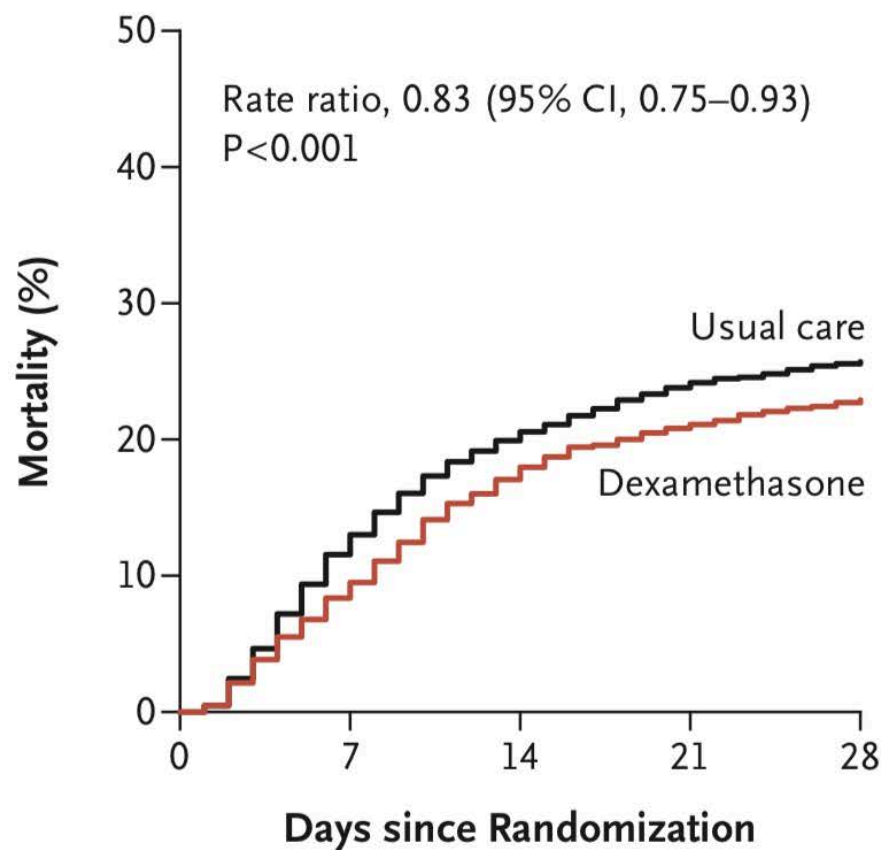
One Month Later



One Month Later



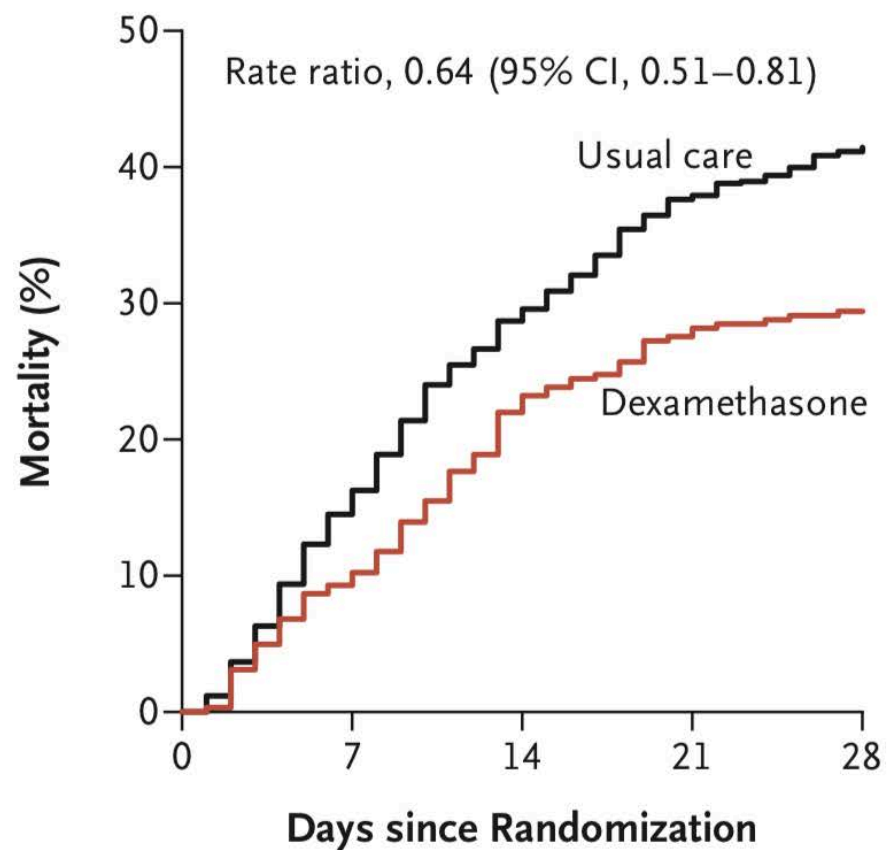
A All Participants (N=6425)



No. at Risk

	0	7	14	21	28
Usual care	4321	3754	3427	3271	3205
Dexamethasone	2104	1903	1725	1659	1621

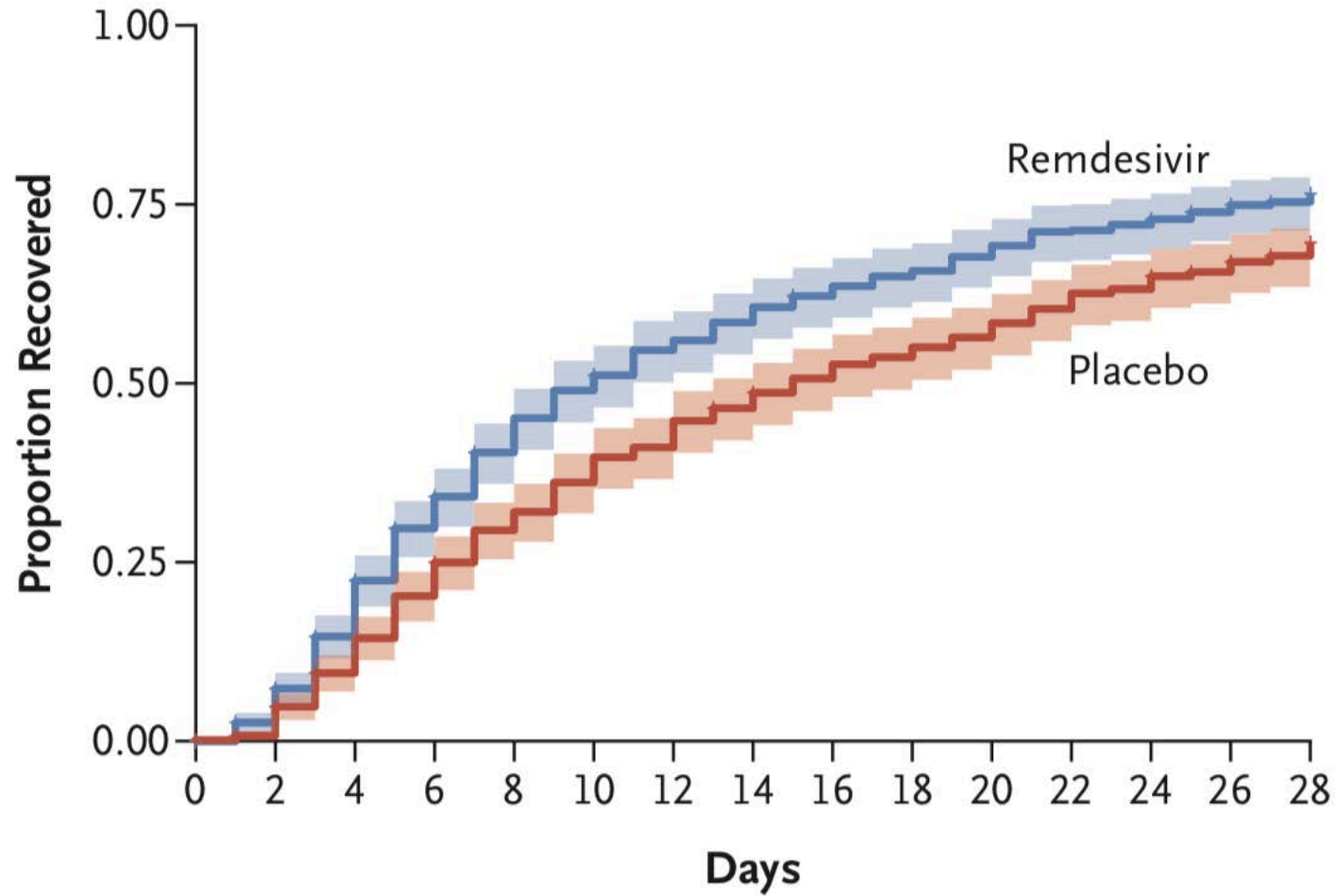
B Invasive Mechanical Ventilation (N=1007)



No. at Risk

	0	7	14	21	28
Usual care	683	572	481	424	400
Dexamethasone	324	290	248	232	228

Overall



Patients receiving Remdesivir had a shorter time to recovery (10 days vs. 15 days)

New Pfizer Results: Coronavirus Vaccine Is Safe and 95% Effective

The company said it planned to apply for emergency approval from the Food and Drug Administration “within days.”

Early Data Show Moderna’s Coronavirus Vaccine Is 94.5% Effective

Moderna is the second company to report preliminary results from a large trial testing a vaccine. But there are still months to go before it will be widely available to the public.



Supplemental oxygen

High-dose prophylactic blood thinners

Early ICU consultation

Dexamethasone

Remdesivir

Proning

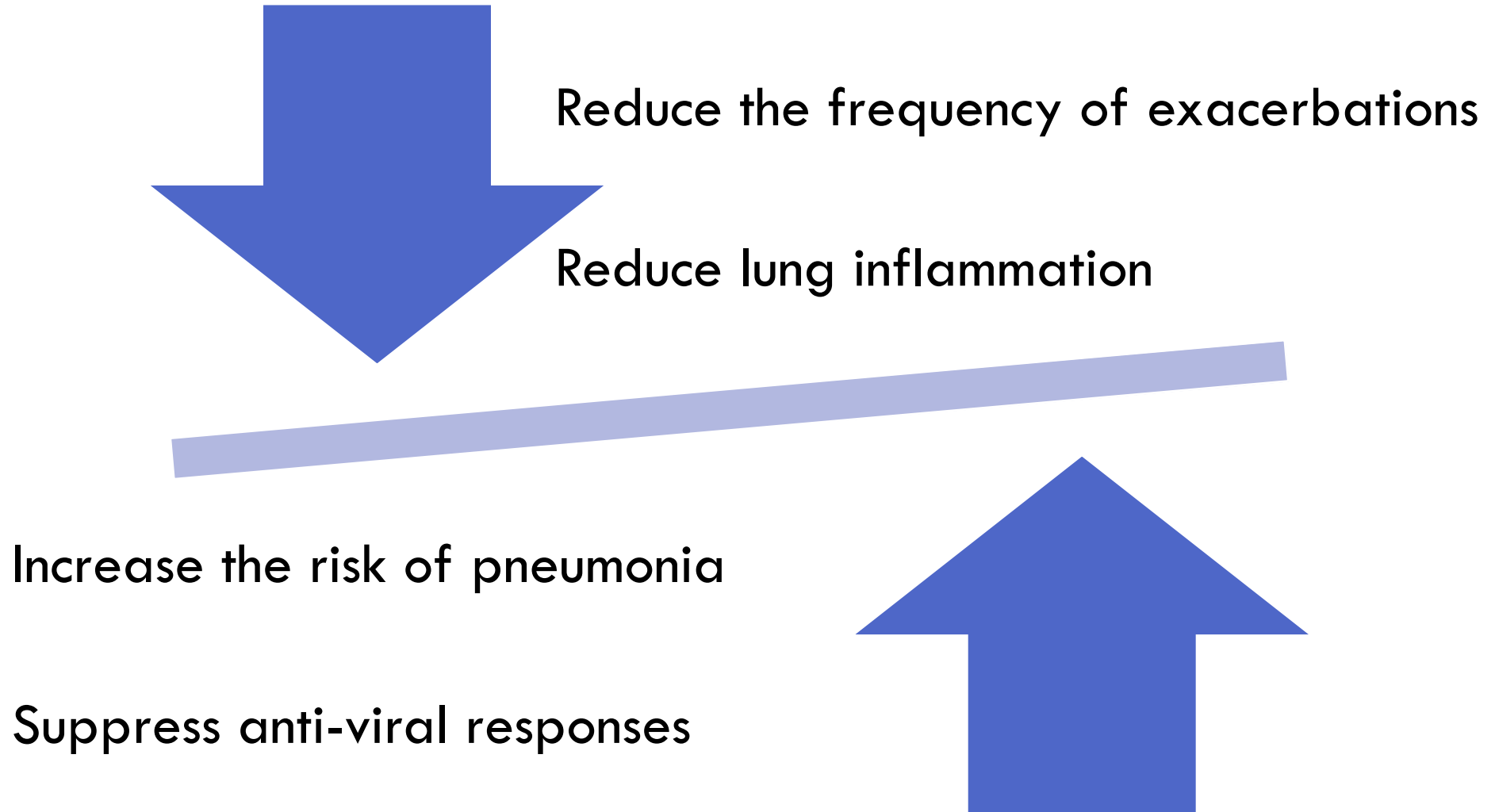
Post-COVID care

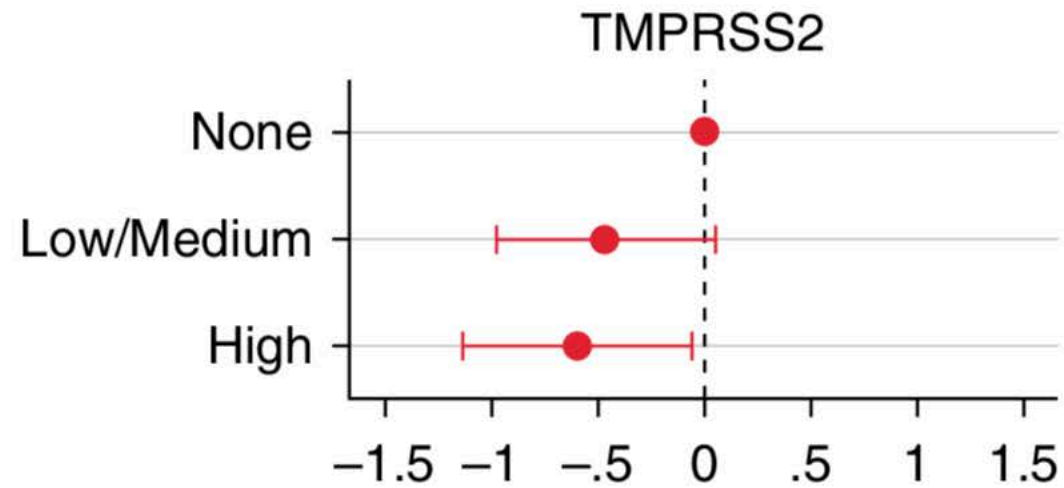
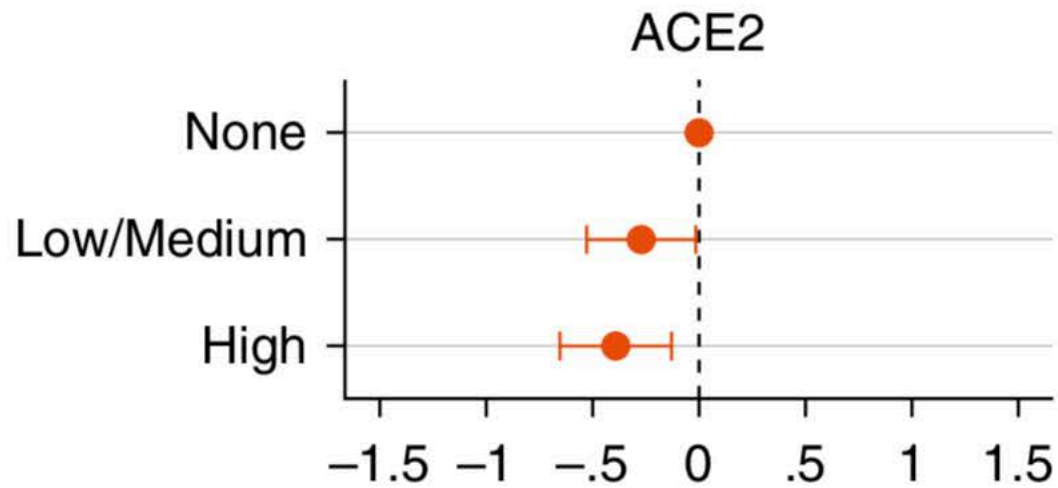
**Do the inhalers we use to treat COPD improve or worsen
COVID-19 outcomes?**

Inhaled Corticosteroids



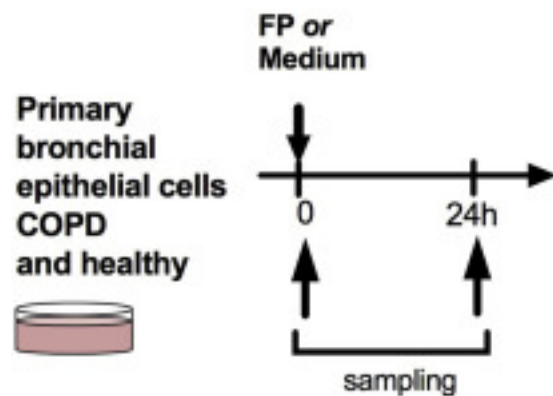
Inhaled Corticosteroids in COPD





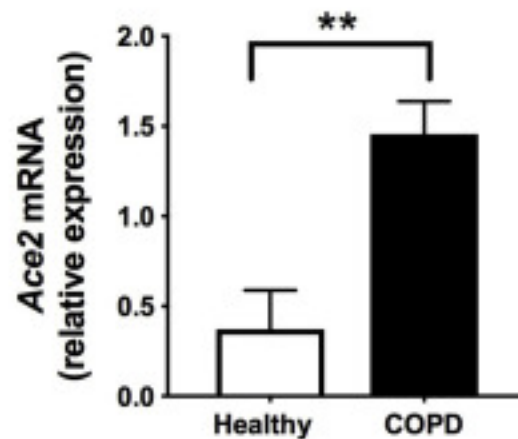
Peters MC, AJRCCM 2020

A



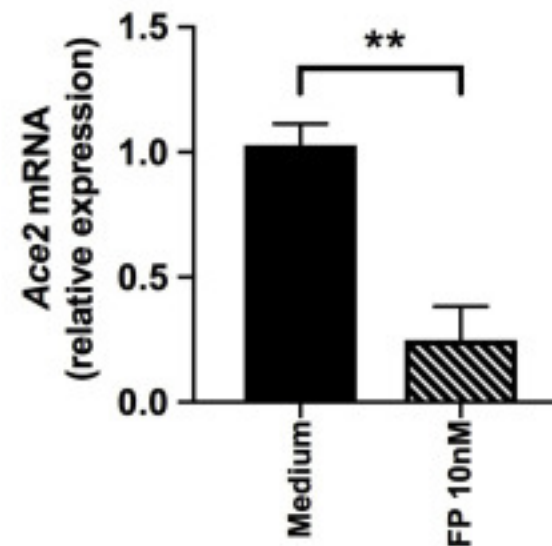
B

Baseline BEC ACE2 mRNA expression

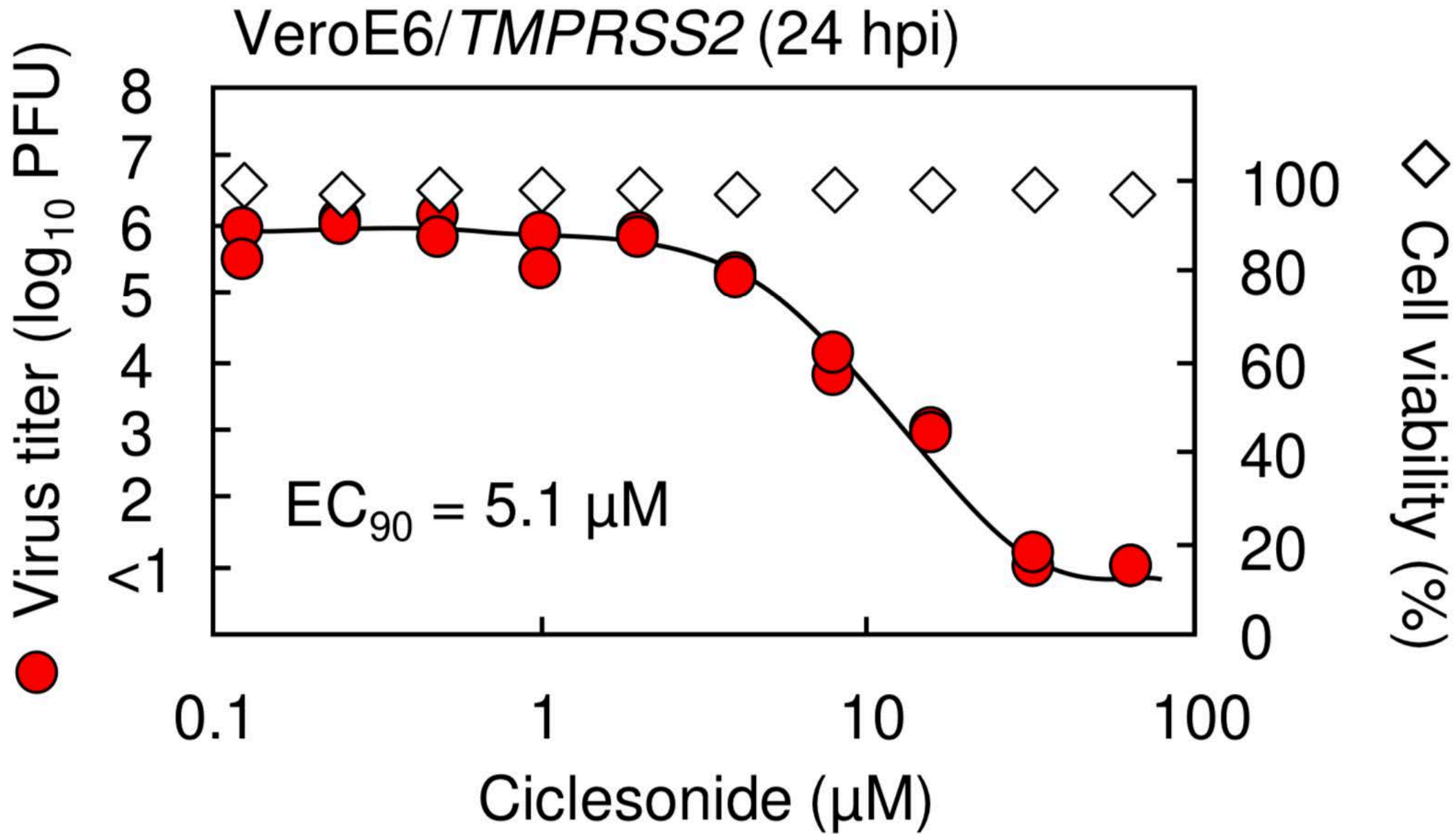


C

ACE2 mRNA expression following FP administration in COPD BECS



Finney LJ, JACI 2020



COPD Maintenance Therapy

In the absence of definitive data regarding the benefits and harms of inhalers in COPD patients during the COVID-19 pandemic, it is recommended that COPD patients maintain their current inhaler regimen.

COPD Exacerbation Therapy

Acute exacerbations should continue to be treated with prednisone +/- antibiotics regardless of whether they are triggered by COVID-19.

Nebulizer therapy is **NOT** recommended due to the potential for aerosolization of COVID-19.

Summary

- COPD has not yet been definitively shown to be a risk factor for COVID-19
- However, COPD patients who do contract COVID-19 may have a higher risk for poor outcomes
- There is no evidence to suggest changing pre-pandemic COPD management guidelines at this time

Wear a mask

Maintain social distancing

Wash your hands

Get a flu shot

Thank You

Don Sin
Del Dorscheid
Tillie Hackett
Gurpeet Singhera
Yolanda Yang
Tawimas Shaipanich
Julia Yang

St Paul's Hospital
FOUNDATION



Inspired care.



Michael Smith Foundation for
Health Research



How you want to be treated.



Janice.Leung@hli.ubc.ca