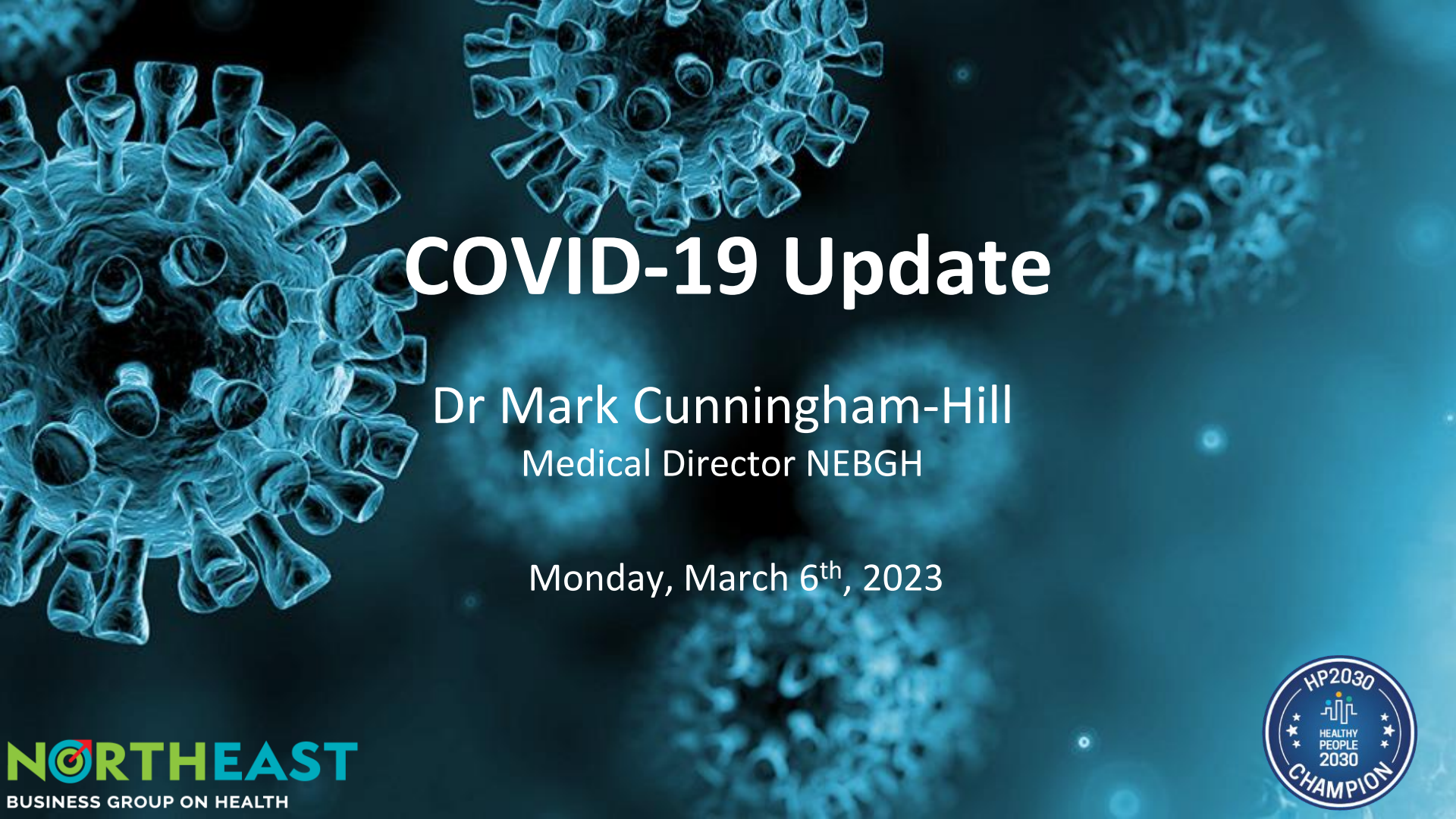

COVID-19 Update

Dr Mark Cunningham-Hill

Medical Director NEBGH

Monday, March 6th, 2023

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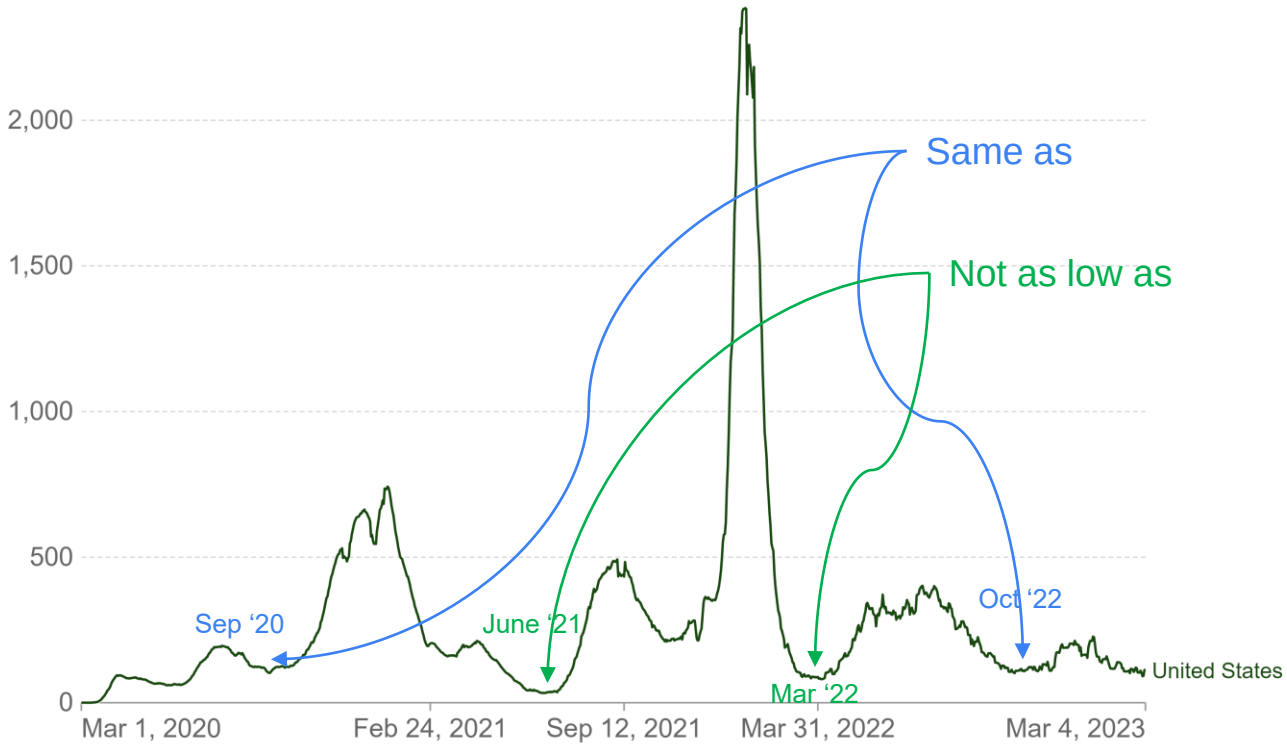
HP2030 HEALTHY PEOPLE 2030 CHAMPION

Daily new confirmed COVID-19 cases per million people

7-day rolling average. Due to limited testing, the number of confirmed cases is lower than the true number of infections.

Our World in Data



Source: Johns Hopkins University CSSE COVID-19 Data

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COVID Deaths

	DAILY AVG. ON MAR. 4	PER 100,000	14-DAY CHANGE
Cases	33,997	10	-9%
Test positivity	8.5%	—	-12%
Hospitalized	26,311	8	-9%
In I.C.U.s	3,431	1	-9%
Deaths	538 *	<1	+41%

* Delays in CDC reporting last month – actual daily rate around 380 deaths per day

- 25,000 deaths so far this year
- One COVID death every 3.7 minutes
- 40% of the world's daily COVID deaths!

Rates of COVID-19 Deaths by Vaccination Status in Ages 18 and Older

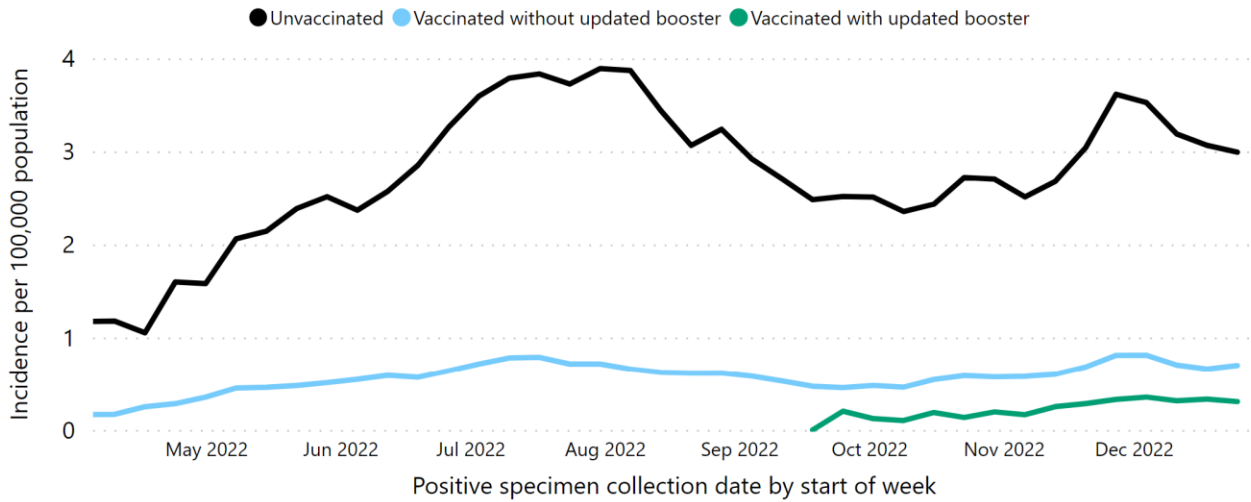
April 03, 2022–December 31, 2022 (24 U.S. jurisdictions)

Select Outcome

- (●) Deaths
- ( ) Cases

Date

4/3/2022 — 12/25/2022



In December 2022, people ages 18 years and older and vaccinated with an updated (bivalent) booster had:

9.8X
lower risk of dying from COVID-19

compared to unvaccinated people, and

2.4X
lower risk of dying from COVID-19

compared to people vaccinated without the updated (bivalent) booster.

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Heart attacks and strokes late after Covid

- Ziyad Al-Aly et al published a paper[1] about major adverse cardiovascular outcomes at one year following Covid infections. It was based upon nearly 154,000 patients with Covid (median age 60, 90% male) from the US Department of Veteran Affairs with 2 control groups each with over 5 million people.
- These were events after 30 days from infection.
- There was a 1.7-fold risk of heart attack and 1.6-fold increased risk of stroke

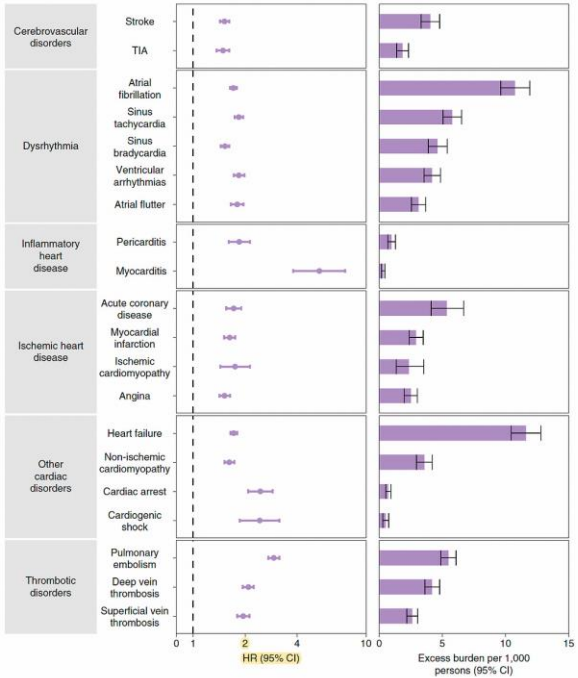


Fig. 2 | Risks and 12-month burdens of incident post-acute COVID-19 cardiovascular outcomes compared with the contemporary control cohort. Outcomes were ascertained 30 d after the COVID-19-positive test until the end of follow-up. COVID-19 cohort ($n = 153,760$) and contemporary control cohort ($n = 5,637,647$). Adjusted HRs and 95% CIs are presented. The length of the bar represents the excess burden per 1,000 persons at 12 months, and associated 95% CIs are also shown.

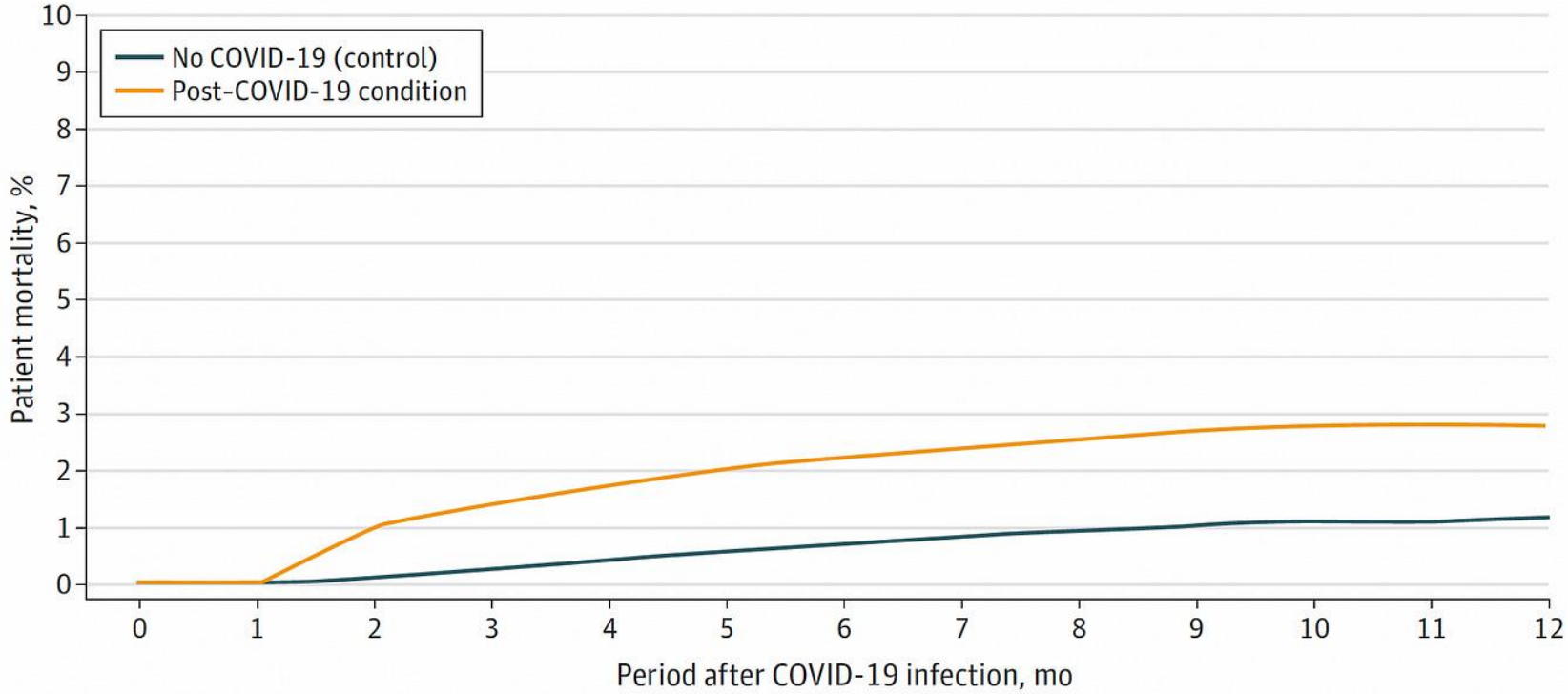
1. https://www.nature.com/articles/s41591-022-01689-3#Sec31

Heart attacks and strokes late after Covid

- Wang et al published a peper[1]:
  - Nearly 700,000 people with Covid compared with a control group of 2.25 million people without Covid
  - The results were remarkably similar to the Al-Aly study with a 1.6-fold increased risk of stroke, a 2-fold higher risk of acute coronary disease
  - Compared to the Veterans Affairs cohort, this population was much younger, mean age of 44, and 57% were female.
  - Again, the differences were after 30 days, post-infection.
- Latest study published by DeVries and colleagues[2]:
  - Compared 13,345 people with Covid matched with 26,870 control without Covid.
  - The individuals were a mean age of 50 and 58% were women.
  - Accounting for differences in risk factors pre-Covid, there was yet another independent replication of a 2-fold increase in stroke risk, >2-fold increase in all-cause mortality, and other major cardiovascular outcomes including pulmonary embolism, deep vein thrombosis, and other outcomes

1. https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(22)00349-2/fulltext
2. https://jamanetwork.com/journals/jama-health-forum/fullarticle/2802095

Figure 2. Twelve-Month Mortality Among Individuals With Post–COVID-19 Condition vs Those Without COVID-19



Study	Characteristics	CV outcomes at follow-up	Citation
Veterans Administration	90% males, mean age 61	1.7-fold risk of heart attack; 1.6-fold risk of stroke	Xie et al, Nature Medicine 2022
TriNetX Network	Unvaccinated, mean age 44	2-fold risk of heart attack; 1.6-fold risk of stroke	Wang et al, E Clinical Medicine, 2022
US Insurance Claims Database	Unvaccinated, mean age 50	2-fold risk of stroke, PE, DVT, all-cause death	Devries et al, JAMA Health Forum, 2023
US pandemic through March 2022	US population across 5 Covid waves	4.9% more cardiovascular deaths than expected (2 years)	Han, Nature Cardiovascular Research, 2023
Korea National Database	>62,000 unvaccinated >168,000 vaccinated Mean age ~50	>2-fold risk of heart attack and stroke for unvaccinated vs vaccinated	Kim Y-E, JAMA, 2022
NCATS (US Consortium, NIH)	Mean age 45 >1.9 million patients	2-fold risk of heart attack and stroke for unvaccinated vs vaccinated	Jiang, JACC, 2023

Korea and NCATS studies compare vaccinated vs unvaccinated

Covid is associated with an excess of heart attacks and strokes beyond the first month of infection

- Likely Mechanism

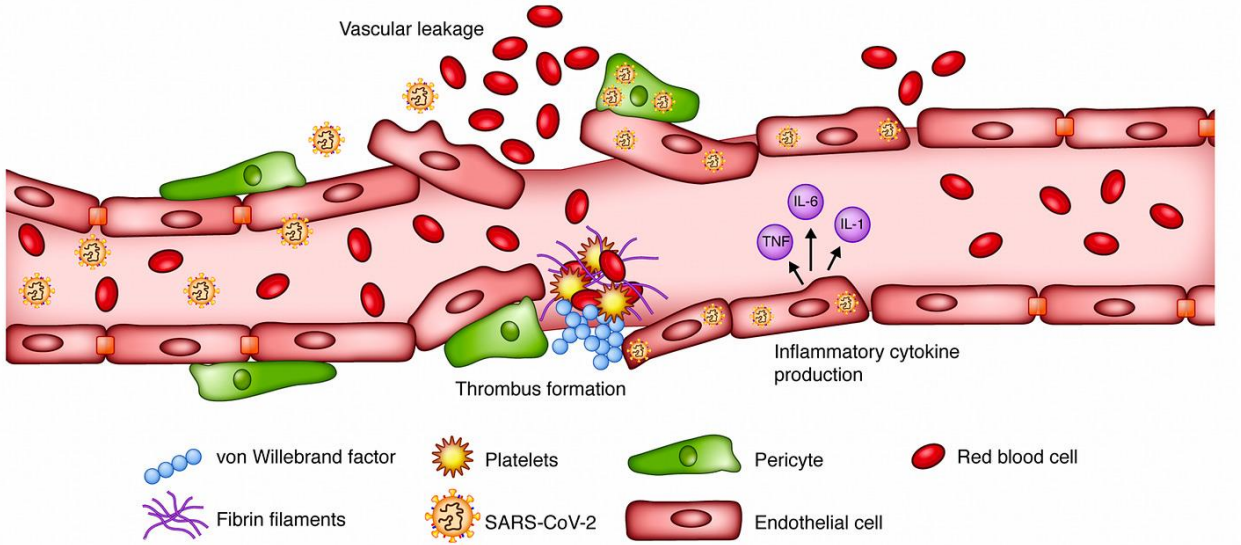


Figure 2. SARS-CoV-2 and endothelial cell dysfunction. Direct damage to endothelial cells (ECs) caused by SARS-CoV-2 disrupts cell integrity, resulting in EC activation and vascular leakage. Consequent exposure of vWF, which is involved in platelet aggregation and fibrin formation, leads to thrombus formation. Cytokines secreted by activated ECs can further augment the vascular inflammation, permeability, and leakage. Illustrated by Rachel Davidowitz.

Where we are now!

- XBB.1.5 now 90+% of cases and no sign of any new variants on the horizon
  - No significant increase in hospitalizations and deaths
  - May mean the US is in an endemic state now
- BUT this doesn't mean COVID has gone away - Its still circulating and will do for many years to come. There is also the risk of long-COVID cardiovascular and risks to other organ systems coupled with currently no treatment for long-COVID
- Therefore, a need to protect yourself:
  - Vaccination – but note even bivalent protection significantly reduced at 6 months (likely better with hybrid-immunity) – No recommendations yet on a second bivalent booster
  - Special care if higher risk and especially if elderly or immunocompromised
  - Care in high-risk situations
  - Consider masking in high-risk situations

Masks

Cochrane Library

Cochrane Database of Systematic Reviews

Physical interventions to interrupt or reduce the spread of respiratory viruses (Review)

Jefferson T, Dooley L, Ferroni E, Al-Ansary LA, van Driel ML, Bawazeer GA, Jones MA, Hoffmann TC, Clark J, Beller EM, Glasziou PP, Conly JM

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Physical interventions to interrupt or reduce the spread of respiratory viruses.
Cochrane Database of Systematic Reviews 2023, Issue 1. Art. No.: CD006207.
DOI: 10.1002/14651858.CD006207.pub6.

www.cochranelibrary.com

Physical interventions to interrupt or reduce the spread of respiratory viruses (Review)
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WILEY

https://rdcu.be/c6Wth

Cochrane Review Conclusions

- Medical/surgical masks compared to no masks:
  - Wearing masks in the community probably makes little or no difference to the outcome of influenza-like illness (ILI)/COVID-19 like illness compared to not wearing masks
- N95/P2 respirators compared to medical/surgical masks:
  - The use of a N95/P2 respirators compared to medical/surgical masks probably makes little or no difference for the objective and more precise outcome of laboratory-confirmed influenza infection
- Hand hygiene compared to control:
  - Pooled data showed that hand hygiene may be beneficial with an 11% relative reduction of respiratory illness
- Authors Conclusions:
  - The high risk of bias in the trials, variation in outcome measurement, and relatively low adherence with the interventions during the studies hampers drawing firm conclusions.

Limitations of the Cochrane Review

- Studies did not:
  - Have much, if any, data on mask adherence or correct use of masks
  - Most studies were not specifically looking at masking but general controls – mask use wasn't separated from other controls e.g., social distancing
  - The infectivity rate R0 wasn't considered – studies mostly pre-COVID and COVID studies were early on versus our current Omicron situation
- Expert Reviews:
  - Raised concerns about conclusions and extrapolation of studies not intended to assess mask effectiveness
  - Questioned the Cochrane conclusions as studies they used were more positive on masks than Cochrane concluded
  - Several studies that showed mask effectiveness were not included in the review
  - Undermines confidence in the Cochrane collaborative

Masks

The Mask Mandates Did Nothing. Will Any Lessons Be Learned?

Feb. 21, 2023 4 MIN READ

Benjamin Lowy

Give this article 3.8K

By Bret Stephens
Opinion Columnist

Released to media before expert review – resulting in media articles trashing masks, which further reinforces the public undercurrent of not believing in science with potentially serious future implications:

- not fearing a bird flu outbreak with a really high mortality,
- Not getting the array of important vaccinations (e.g., against measles)
- Dismissing climate change or the importance of biological diversity,
- etc...

Summary

- Higher quality masks (respirators) eg N95/KN95 when worn correctly do protect against viral aerosols – but they are not 100%
- Surgical masks – help protect against droplets but likely much less effective against aerosolized virus particles
- Cloth masks mostly ineffective
- Good summary here: https://www.cidrap.umn.edu/covid-19/commentary-wear-respirator-not-cloth-or-surgical-mask-protect-against-respiratory-viruses

When to Take an At-Home COVID-19 Test

At-home COVID-19 testing is one of our best tools to prevent the spread of the virus—alongside getting vaccinated and boosted. COVID-19 vaccines are highly effective at preventing infection, hospitalization, and serious illness, but no vaccine prevents 100% of infections. As the virus continues to evolve and cases are projected to spike seasonally, at-home testing helps you to determine if you have COVID-19 so you can prevent spreading it to others. Here are key scenarios and considerations to help you determine when you should take an at-home COVID-19 test and what to do when you get your results.

You have symptoms of COVID-19.
Refer to the CDC site for more information on COVID-19 symptoms.

You had close contact with someone who has COVID-19.
Wear a high-quality mask after you find out you've been exposed, and get tested 5 days after exposure.

You will be with someone who is immunocompromised or at high risk for severe COVID-19.
Wear a high-quality mask as an additional precaution.

You plan to attend an event or gathering.
Consider testing right before you go to an indoor gathering as a precautionary measure.

Take an At-Home Covid-19 Test

If your at-home COVID-19 test is *positive*:

You should stay home and isolate away from others for at least 5 days after testing positive.

When to end isolation:

- After **5 days** if you have been fever-free for 24 hours and you had *mild or asymptomatic* COVID-19.
- After **10 days** if you had *moderate or severe illness* and/or you are *immunocompromised.* Consult your healthcare provider for further guidance.
- If you ended isolation but your COVID-19 symptoms **recur or worsen**, you should restart your isolation from **day 0** and consider re-testing.
- Consider taking an at-home COVID-19 test to ensure you're **no longer infected.**

Continued precautions:

- After you have ended isolation and no longer experience symptoms, **wear a high-quality mask through day 10** when around others.

Treatment and care:

- If you experience **severe symptoms**, such as difficulty breathing or chest pain, seek medical care *immediately*.
- If you are at **high risk** for severe COVID-19, consult your health care provider *right away* to discuss whether you need antiviral medication.

If your at-home COVID-19 test is *negative*:

Re-test 24–48 hours after your first test, especially if you are continuing to experience symptoms. *A negative test doesn't rule out infection.*

Continued precautions:

- **If you were exposed** to COVID-19, take precautions to protect yourself and others (i.e. retesting, wearing a high-quality mask) for 10 days after exposure, even if you test negative. Follow the CDC guidelines on COVID-19 exposure.
- **Knowing your COVID-19 Community Level** can help you decide if you should take additional precautions, especially if you tested as a precaution before attending a gathering or spending time with someone at high risk.

Treatment and care:

- If you continue to receive negative test results but symptoms persist, contact your healthcare provider.

Recommendations are from the CDC and current as of February 2023. For the latest COVID-19 information and testing guidelines, visit CDC.gov/coronavirus.

Public Health Communications COLLABORATIVE

https://publichealthcollaborative.org/resources/toolkit-when-to-take-an-at-home-covid-19-test/?utm_source=PHCC+Email&utm_medium=email+&utm_campaign=Newsletter

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Questions

Upcoming NEBGH virtual events

- **March 20** – Monday Bi-Weekly COVID-19 Update w/Dr. Mark
- **March 21** – Hot Flash! Trending Topics in Women's Workplace Health
- **June 15** – 12th Annual Health & Wellness Benefits Conference

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