

# COVID-19 in 2022

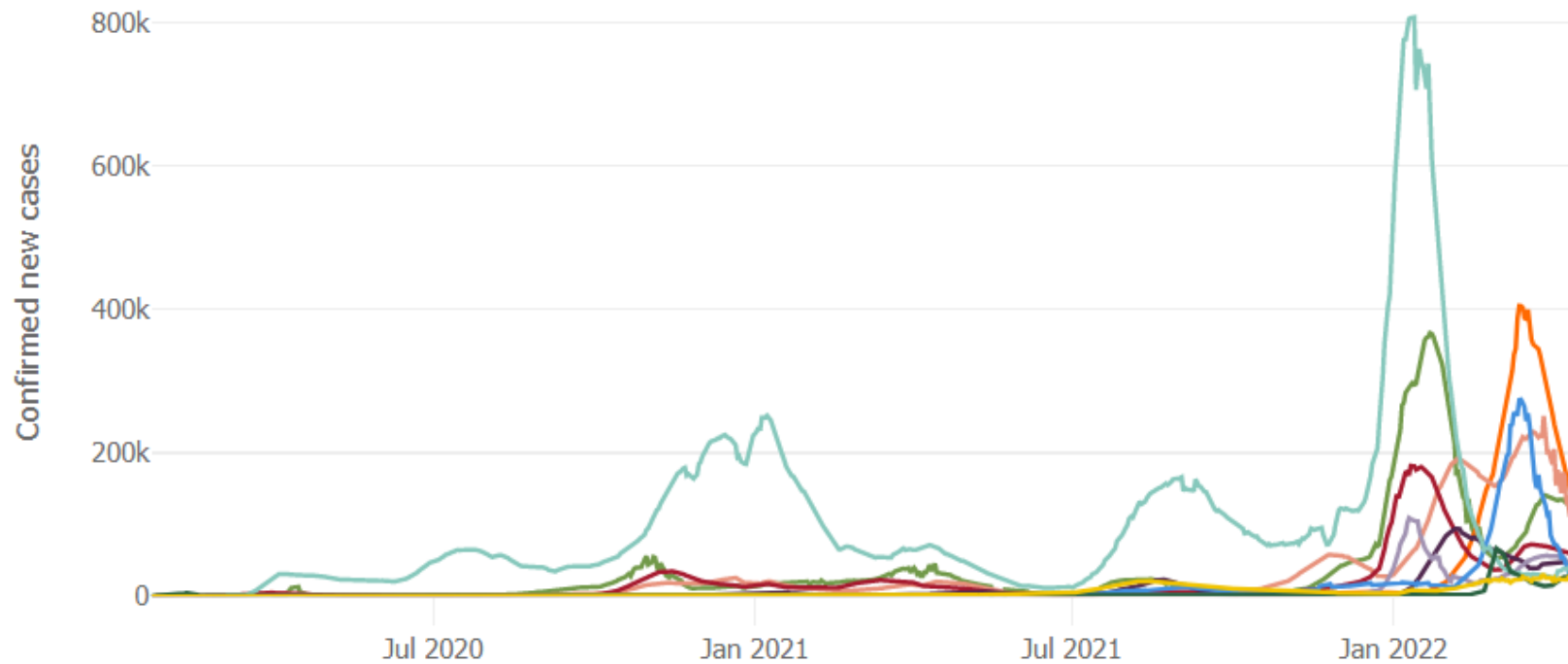
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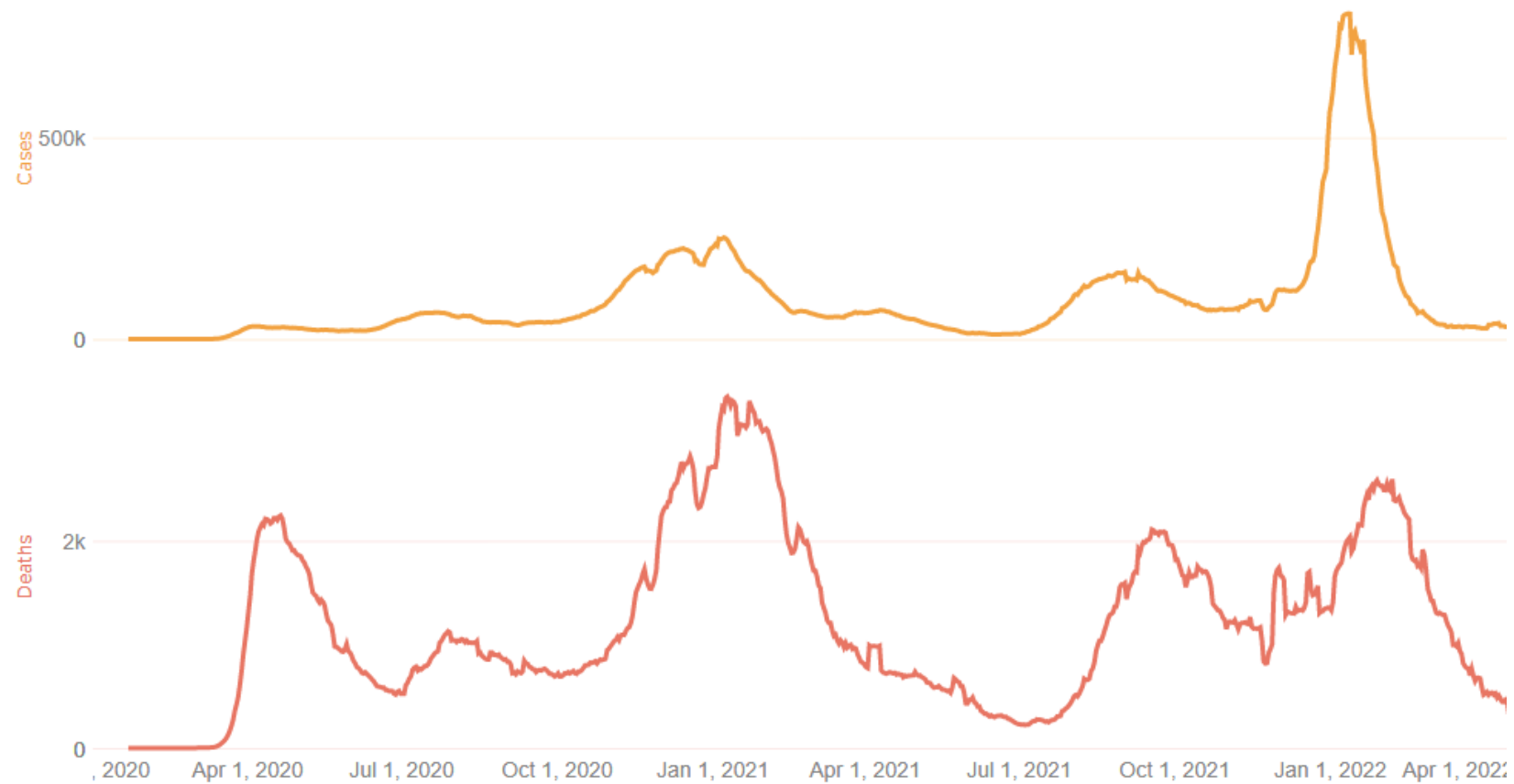
# COVID 2019 Global Data: Johns Hopkins



Click any country below to hide/show from the graph:

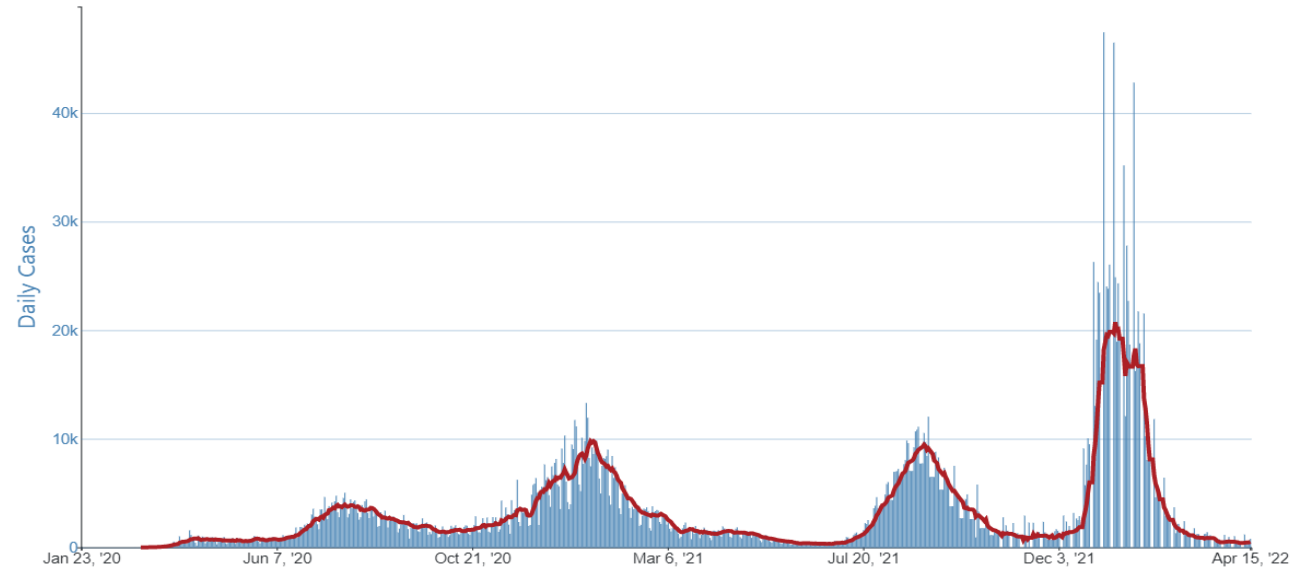
- |   |   |   |   |  |
|---|---|---|---|--|
|  France    |  South Korea |  Germany       |  Italy |  Japan    |
|  Australia |  Vietnam     |  United States |  China |  Thailand |

# US Data: Waves & Deaths

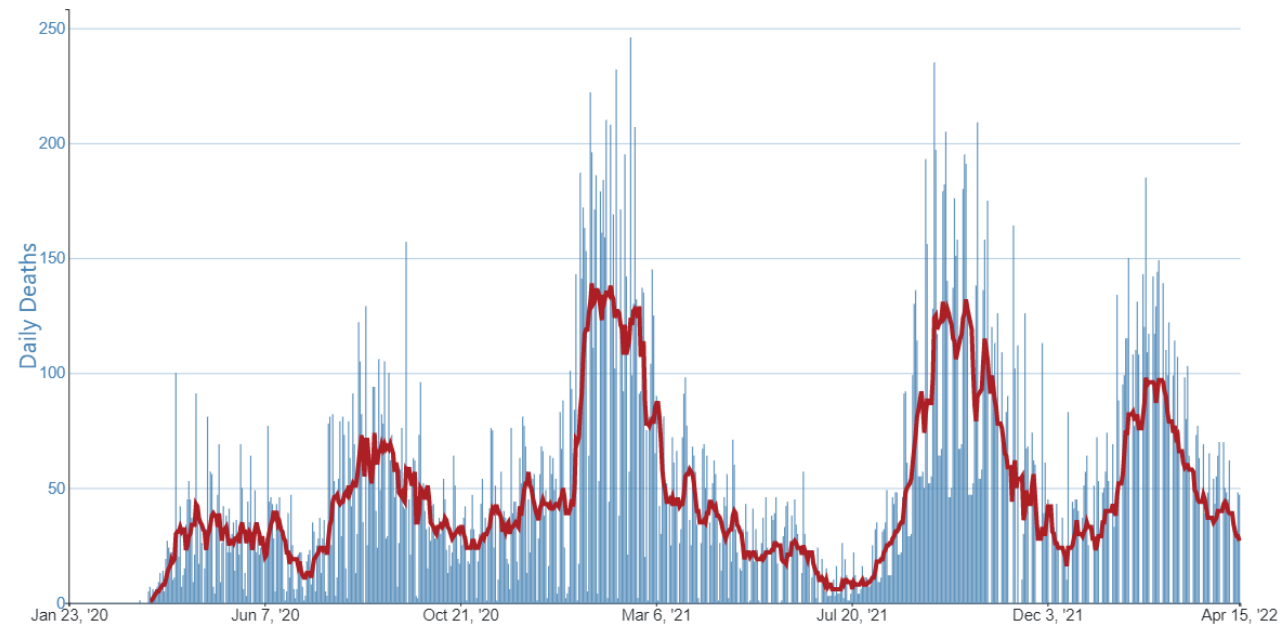


# Georgia

Daily Trends in Number of COVID-19 Cases in Georgia Reported to CDC



Daily Trends in Number of COVID-19 Deaths in Georgia Reported to CDC



# Greek to us...Greek to the virus !

## NEW NAMES FOR COVID VARIANTS

The World Health Organization has encouraged using these new names based on the Greek alphabet for new variants

GREEK NAME	FIRST FOUND	SCIENTIFIC NAME
ALPHA	Kent	B.1.1.7
BETA	South Africa	B.1.351
DELTA	India	B.1.617.2
EPSILON	California	B.1.427/B.1.429
IOTA	New York	B.1.526
GAMMA	Brazil	P.1
KAPPA	India	B.1.617.1
THETA	Philippines	P.3
ZETA	Brazil	P.1

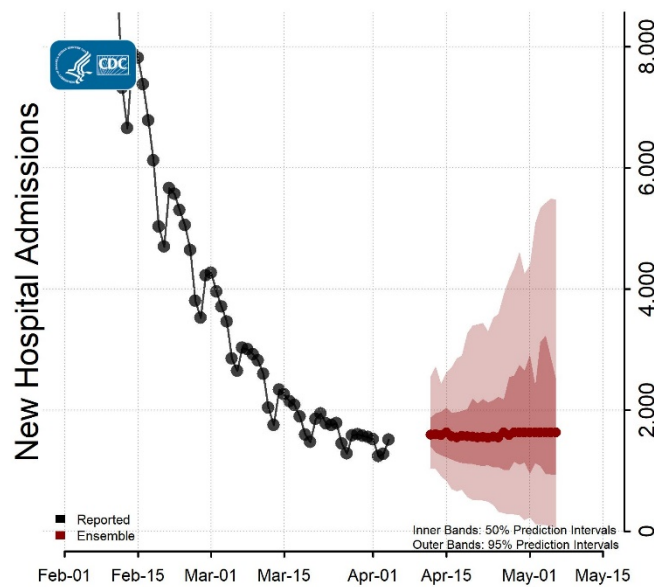


× Greek Alphabet and Symbols

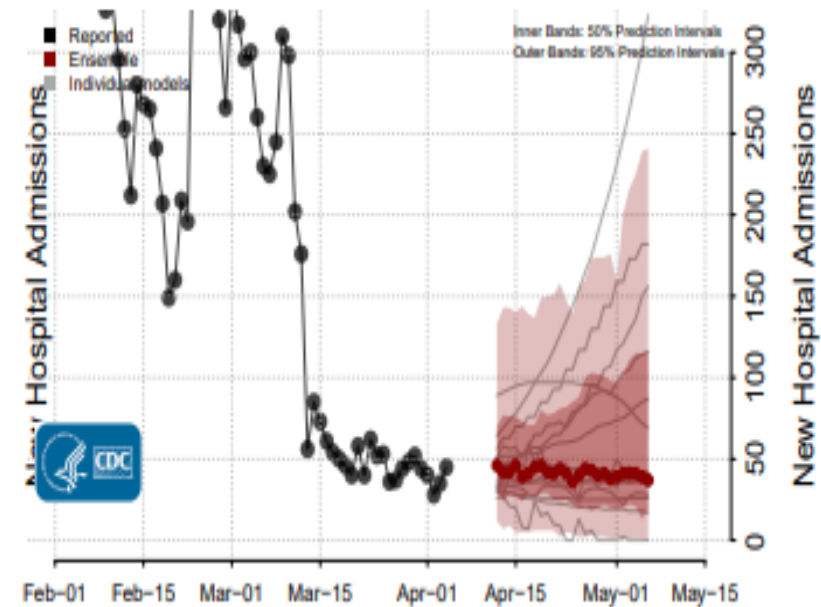
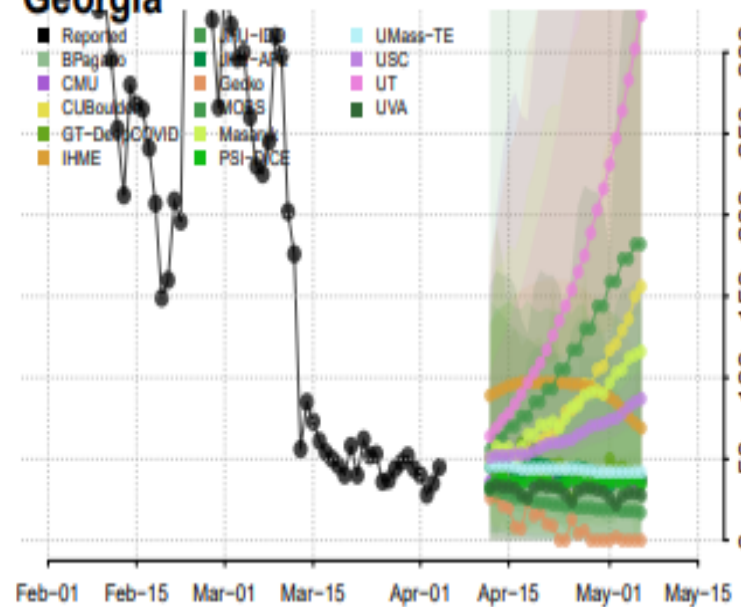
Α α	Β β	Γ γ	Δ δ	Ε ε	Ζ ζ
Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Η η	Θ θ	Ι ι	Κ κ	Λ λ	Μ μ
Eta	Theta	Iota	Kappa	Lambda	Mu
Ν ν	Ξ ξ	Ο ο	Π π	Ρ ρ	Σ σ, ς
Nu	Xi	Omicron	Pi	Rho	Sigma
Τ τ	Υ υ	Φ φ	Χ χ	Ψ ψ	Ω ω
Tau	Upsilon	Phi	Chi	Psi	Omega

# Forecasts : CDC

## National Forecast



## Georgia



## Long COVID: What is Post-COVID syndrome?

People with certain risk factors (including high blood pressure, smoking, diabetes, obesity and other conditions) are more likely to have a serious bout of COVID-19.

**BUT there isn't a clear link between these risk factors and long-term problems. In fact, long COVID can happen in people who have mild symptoms.**

# COVID 'Long Haulers': Long-Term Effects of COVID-19

- **Breathing issues after COVID-19**

A bad case of COVID-19 can produce scarring (Pulmonary Fibrosis), but even mild infections can cause persistent shortness of breath — getting winded easily after even light exertion.

Breathing exercises and respiratory therapy can help.

- **Heart problems after COVID-19**

Persistent inflammation of the heart muscle. 60% of people who recovered from COVID-19 had signs of ongoing heart inflammation, which could lead to the common symptoms of shortness of breath, palpitations and rapid heartbeat. This inflammation appeared even in those who had had a mild case of COVID-19 and who had no medical issues before they got sick.

- **Kidney damage from COVID-19**

Can raise the risk of long-term kidney disease and the need for dialysis.

- **Lost or distorted senses of smell and taste after COVID-19**

For about 25% of people with COVID-19 who have one or both of these symptoms, the problem resolves in a couple of weeks. But for most, these symptoms persist. Lead to lack of appetite, anxiety and depression. Some studies suggest that there's a 60% to 80% chance that these people will see improvement in their sense of smell within a year.

- **Neurologic Problems in Long COVID**

Brain fog, fatigue, headaches and dizziness.

- **Autonomic nervous system symptoms after COVID-19**

Postural orthostatic tachycardia syndrome (POTS).

“COVID-somnia” is an increasingly common complaint among COVID-19 survivors.

- **Mental health issues after COVID-19**

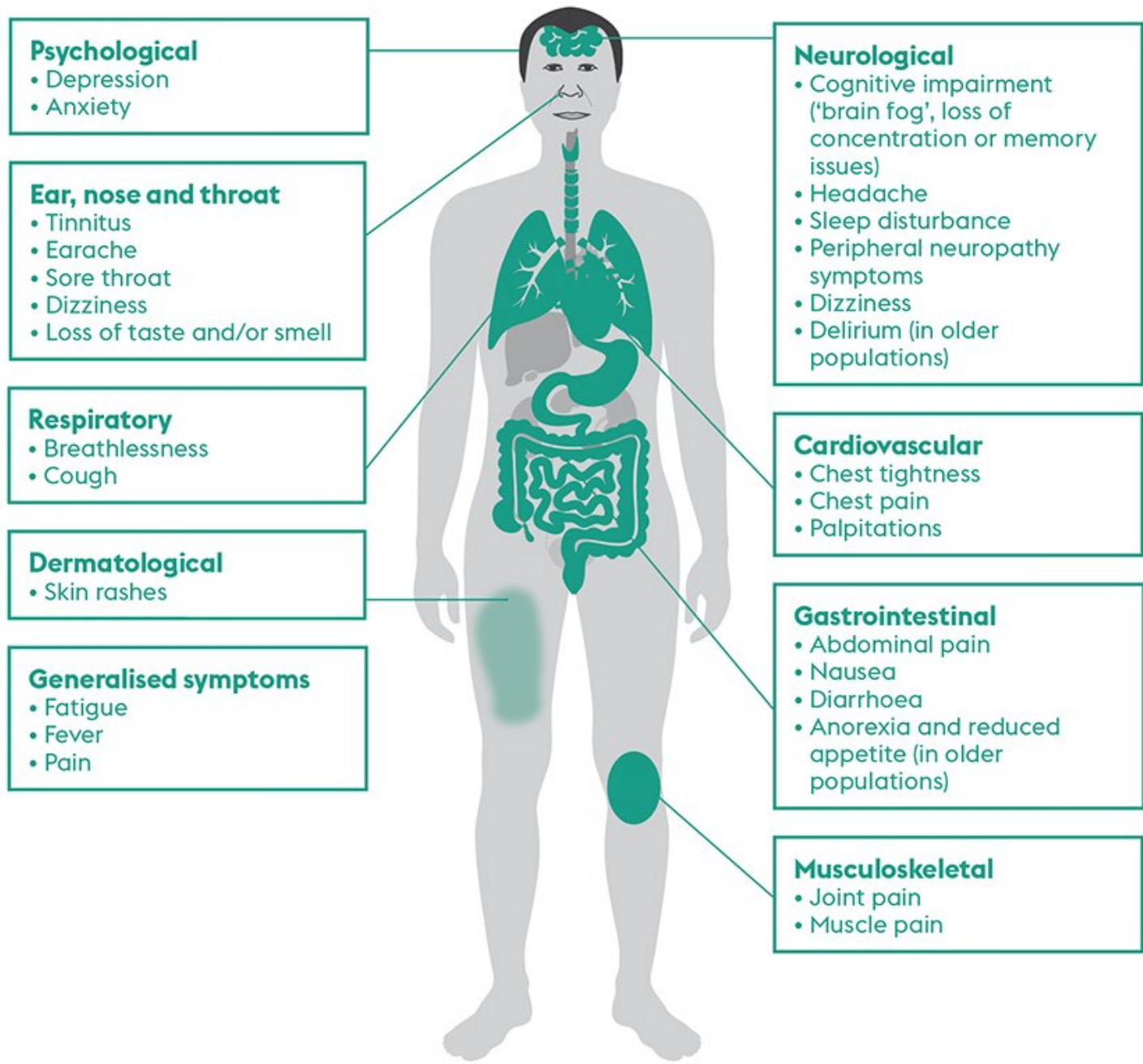
Anxiety, Depression, Post-traumatic stress disorder (PTSD).

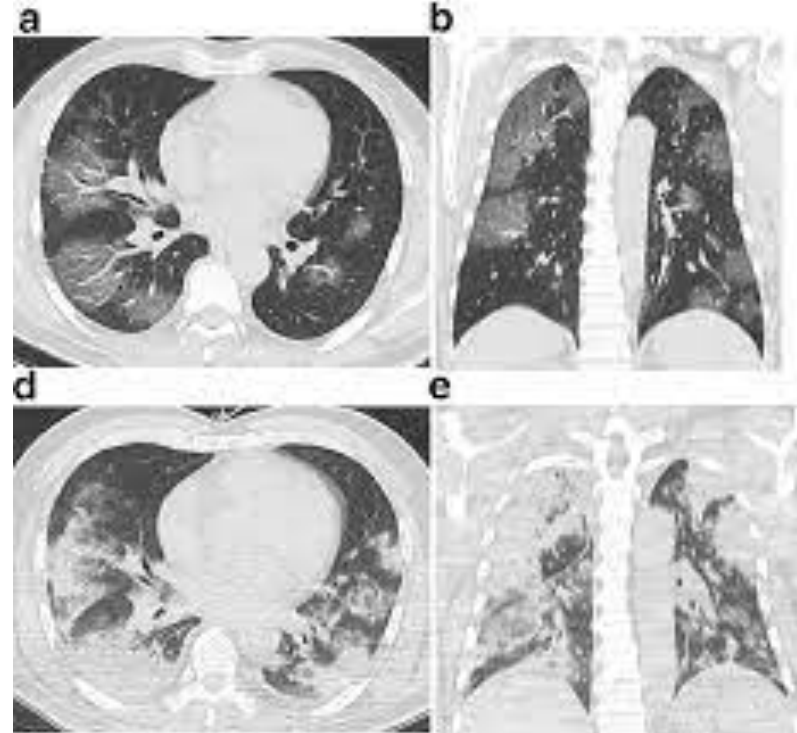
- **Diabetes after COVID-19**

Some survivors of the illness seem to be developing type 2 diabetes signs after they recover from COVID-19.



# Symptoms of long-COVID





# NIH COVID-19 Rx GUIDELINES

- **Remdesivir is the only drug that is approved by the Food and Drug Administration (FDA) for the treatment of COVID-19.**
- Ritonavir-boosted nirmatrelvir (**Paxlovid**), molnupiravir, and certain anti-SARS-CoV-2 **monoclonal antibodies** (mAbs) have received Emergency Use Authorizations from the FDA for the treatment of COVID-19.
- Panel **recommends against** the use of **Chloroquine** or **Hydroxychloroquine** and/or **Azithromycin** for hospitalized and non-hospitalized patients.

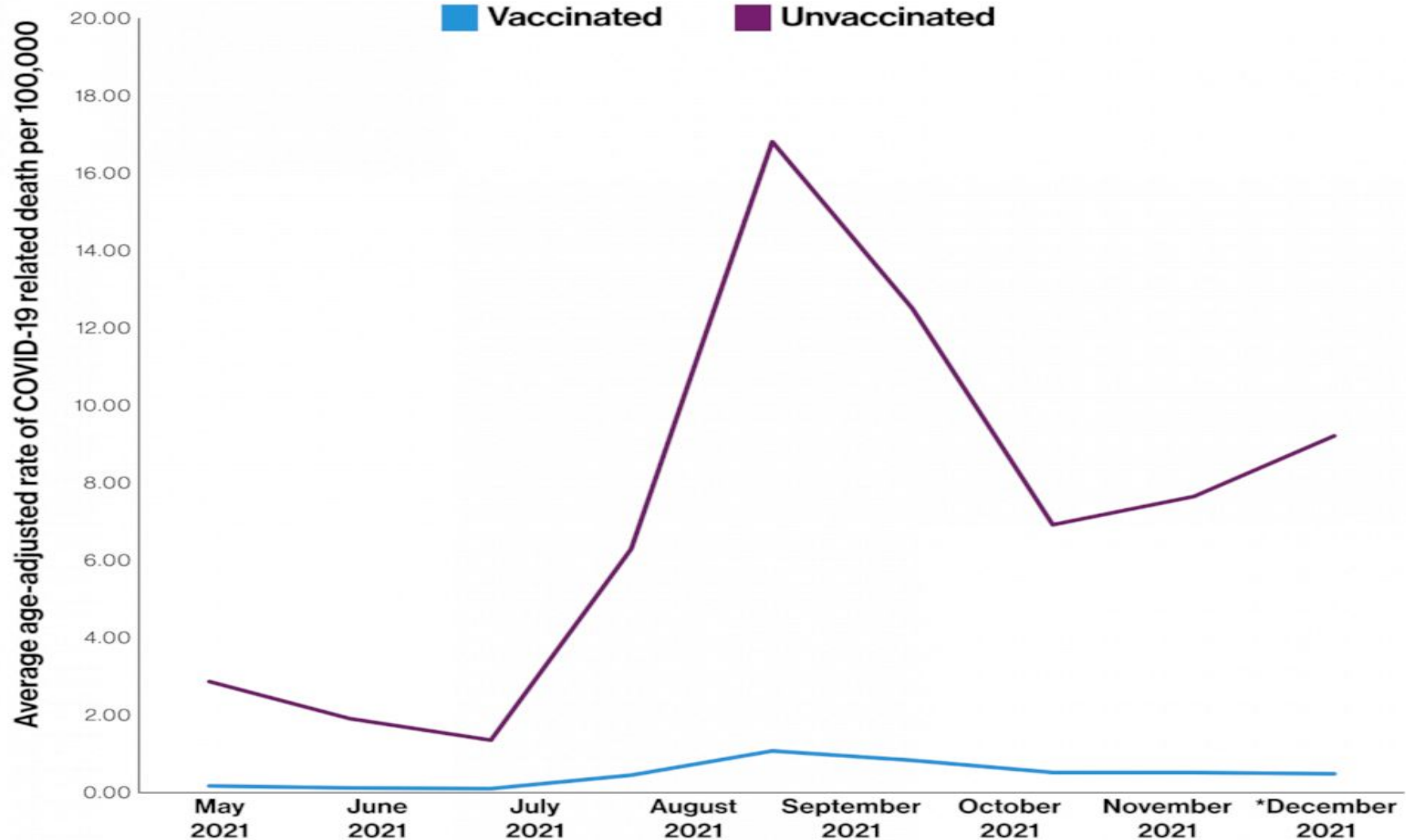
March 30, 2022; DOI: 10.1056/NEJMoa2115869

Treatment with IVERMECTIN (20-30 mg/day) did not result in a lower incidence of medical admission to a hospital due to progression of Covid-19 or of prolonged emergency department observation among outpatients with an early diagnosis of Covid-19.

ClinicalTrials.gov number - [NCT04727424](https://clinicaltrials.gov/ct2/show/study/NCT04727424).

# Rate of COVID-19 Deaths in Vaccinated vs. Unvaccinated Americans

IN 2021



\* First week of the month

SOURCE: CDC

April 5, 2022; DOI: 10.1056/NEJMoa2201570

- A second booster shot of the Pfizer-BioNTech Covid vaccine provides additional short-term protection against Omicron infections and severe illness among older adults.
- But the booster's effectiveness against infection in particular wanes after just four weeks and almost disappears after eight weeks. Protection against severe illness did not ebb in the six weeks after the extra dose, but the follow-up period was too short to determine whether a second booster provided better long-term protection against severe disease than a single booster.

# Future Predictions...



# Assumptions:

- There's this assumption that something more transmissible becomes less virulent.
  - Virus must balance its ability to replicate to high levels in people's airways with the need to keep them healthy enough to infect new hosts.
- “The virus doesn't want to put someone in bed and make them sick enough that they're not encountering a number of other people,”
- By lying low, SARS-CoV-2 could ensure its continued spread.



# Observations:

- Omicron's rise may be largely due to its ability to infect people who are immune to Delta through vaccination or previous infection.
- Evolutionary path, towards immune evasion and away from gains in infectivity, is common among established respiratory viruses such as influenza.
- The easiest way for the virus to cause new epidemics is to evade immunity over time. That's similar to what we see with the seasonal coronaviruses.

# Expert Opinion: Measles Theory

Future for SARS-CoV-2 would be to follow the path of measles. Infection or vaccination provides lifetime protection, and the virus circulates largely on the basis of new births.

Even a virus like measles, which has essentially no ability to evolve to evade immunity, is still around.

# Expert Opinion: RSV Theory

RSV is a leading cause of hospitalization of infants, but most childhood cases are mild. Waning immunity and viral evolution together allow new strains of RSV to sweep across the planet each year, infecting adults in large numbers, but with mild symptoms thanks to childhood exposure.

If SARS-CoV-2 follows this path — aided by vaccines that provide strong protection against severe disease — “it becomes essentially a virus of kids”

# Expert Opinion: Flu Theory

- Virus is likely to cause outbreaks and epidemics of varying size, like influenza and most other common respiratory infections do.
- The influenza A virus, which drives global seasonal influenza epidemics each year, is characterized by the rapid evolution and spread of new variants able to escape the immunity elicited by past strains. The result is seasonal epidemics, propelled largely by spread in adults, who can still develop severe symptoms. Flu jabs reduce disease severity and slow transmission, but influenza A's fast evolution means the vaccines aren't always well matched to circulating strains.
- SARS-CoV-2 evolves to evade immunity more sluggishly, it might come to resemble influenza B. That virus's slower rate of change, compared with influenza A, means that its transmission is driven largely by infections in children, who have less immunity than adults.

## Antigenic SHIFT Vs DRIFT: UK Govt. Advisory-July 2021

SARS-CoV-2 could become more severe or evade current vaccines by recombining with other coronaviruses. Continued circulation in animal reservoirs, such as mink or white-tailed deer, brings more potential for surprising changes, such as immune escape or heightened severity.

# Thank You !!

Akhil Vallabhaneni – Northside Hospital Cherokee

