

Update on **SARS-CoV-2 variant nomenclature**

THE LATEST ON THE COVID-19 GLOBAL SITUATION
& THE MAIN DRIVERS OF TRANSMISSION



World Health
Organization

EPI•WiN

infodemic
MANAGEMENT

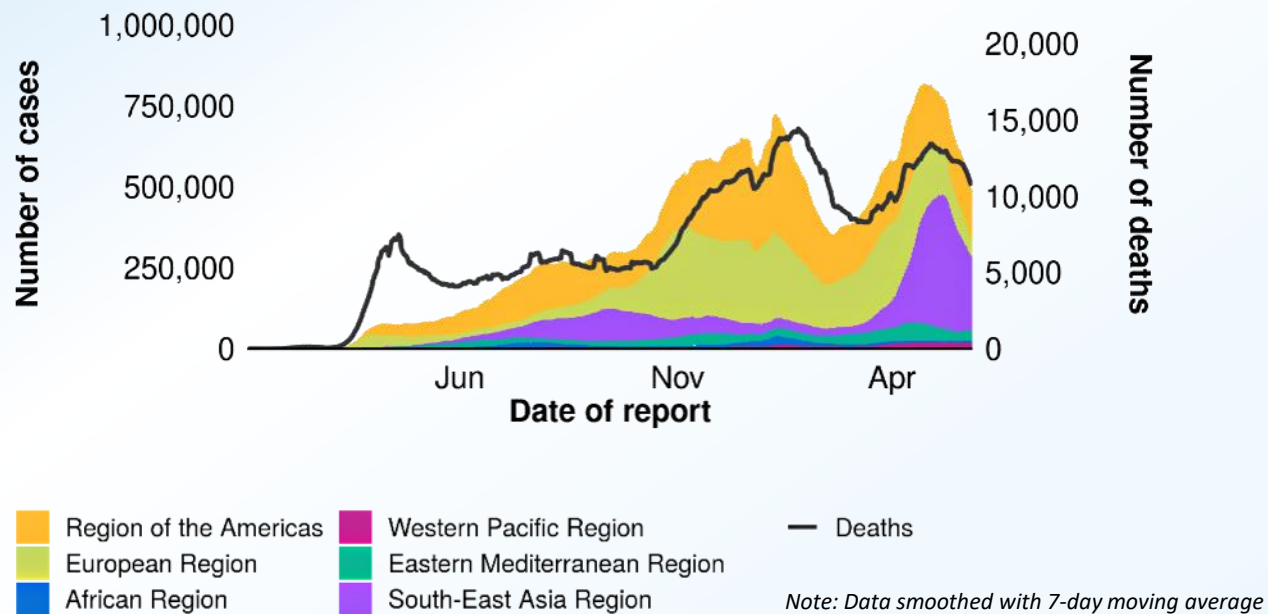
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Current global situation

CASES REPORTED TO WHO AS OF 9 JUNE 2021

- Cases: > 173 million
- Deaths: > 3.7 million



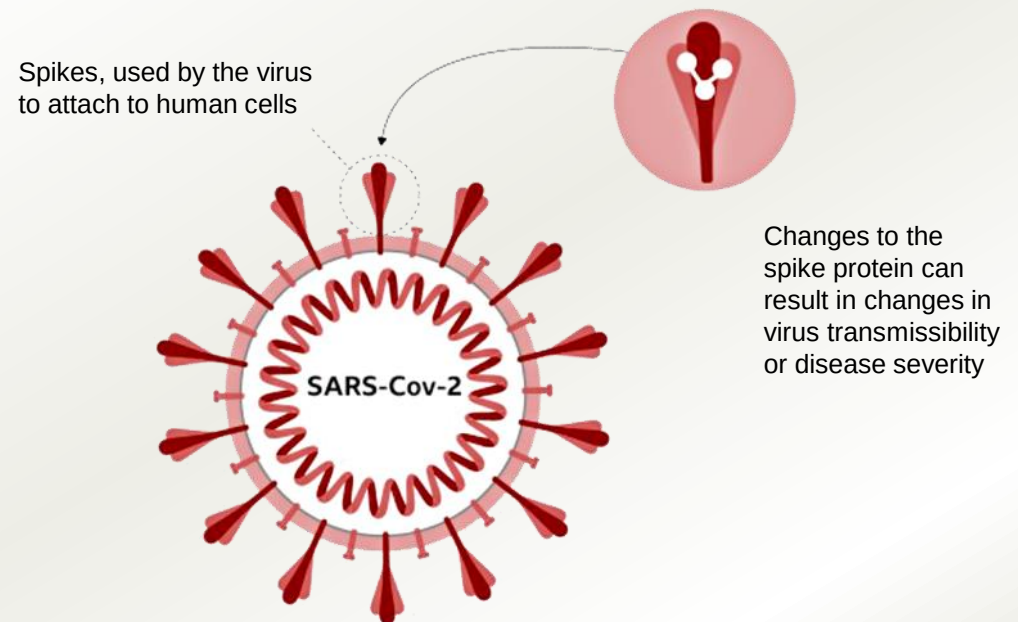
CHECK OUT THE LATEST
GLOBAL SITUATION

[WHO](#)
[Coronavirus](#)
[Disease \(COVID-19\)](#)
[Dashboard](#)

* Data are incomplete for the current week. Cases depicted by bars; deaths depicted by line

All viruses evolve over time

- Most changes have little to no impact on the virus' properties
- However, some changes to SARS-CoV-2 lead to variants of the virus that may affect:
 - **virus transmissibility**
 - **disease severity**
 - **efficacy of vaccines**, therapeutics or diagnostic tools



WHO has been monitoring the evolution of SARS-CoV-2 since January 2020

A SARS-CoV-2 variant of concern (VOC)



- Increases transmissibility or
- Changes the clinical disease presentation; or
- Decreases the effectiveness of public health and social measures, available diagnostics, vaccines or therapeutics.

A SARS-CoV-2 variant of interest (VOI)



- Causes community transmission or multiple COVID-19 cases/clusters or has been detected in multiple countries; or
- Is assessed to be a VOI by WHO in consultation with the WHO SARS-CoV-2 Virus Evolution Working Group

- The **WHO Virus Evolution Working Group (VEWG)** monitors changes to SARS-CoV-2 to detect potential variants of concern (VOC) and variants of interest (VOI) that pose an increased risk to global public health
- Most changes to the virus are insignificant
- However, if significant changes are identified, **variants are given scientific names** and the public is informed

Nomenclature systems for virus variants are directed at scientists

- GISAID, NEXTstrain and Pango are established systems that name and track virus variants of concern and variants of interest
- These systems are designed to give scientists a common language in which they can discuss and investigate the evolution of SARS-CoV-2
- **To assist with public discussions of variants**, the WHO VEWG and additional scientists **established easy-to-pronounce and non-stigmatising labels** for SARS-CoV-2 variants
- **The labels used by GISAID, NEXTstrain and Pango will remain in use by scientists**



Photo: WHO

<https://www.gisaid.org/>

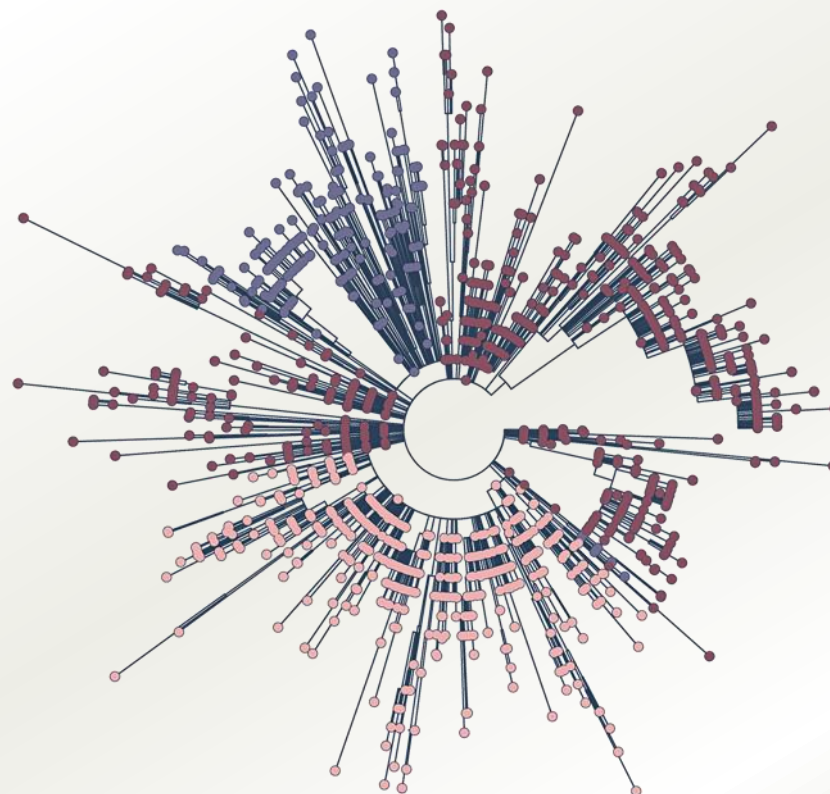
<https://nextstrain.org/>

<https://cov-lineages.org/>

Nomenclature systems used by scientists

An example of how SARS-CoV-2 variants are labelled*:

- The SARS-CoV-2 variants that first circulated were denoted as lineages A or B. As they evolved, their descendants were marked by a series of numbers
- For example, *B.1* includes the outbreak in Europe in early 2020
- The variant named *B.1.351*, is its 351st descendant
- If these names become too long, a new lineage begins under a different letter of the alphabet
- For example, the variant that was first identified in Brazil is called *P.1*



*Labelling used by Pango; NEXTstrain and GISAID use a different nomenclature system based on the virus sequence

Image: Visualization of current circulating global lineages by Pango
<https://cov-lineages.org/index.html>

A new WHO SARS-CoV-2 variant nomenclature aimed at the general public uses letters of the Greek alphabet

- The complex and different SARS-CoV-2 variant naming systems have created confusion among the public. Alternative SARS-CoV-2 variant names have been used that include country names
- However, this can be **stigmatizing** to the countries or communities from which the virus variants derive their names
- Hence, a **new WHO system assigns SARS-CoV-2 variant names** that are **easy to pronounce** and **minimizes negative effects** on countries and their citizens
- **WHO recommends** labels using **letters of the Greek alphabet**, *i.e., Alpha, Beta, Gamma*
- Once all 24 letters have been assigned, other lists of names will be considered

Α	Β	Γ	Δ	Ε	Ζ
Alpha (al-fah)	Beta (bay-tah)	Gamma (gam-mah)	Delta (del-tah)	Epsilon (ep-si-lon)	Zeta (zay-tah)
Η	Θ	Ι	Κ	Λ	Μ
Eta (ay-tay)	Theta (thay-tay)	Iota (eye-o-tah)	Kappa (cap-ah)	Lambda (lam-dah)	Mu (mew)
Ν	Ξ	Ο	Π	Ρ	Σ
Nu (new)	Xi (z-eye)	Omicron (ome-cron)	Pi (pie)	Rho (roe)	Sigma (sig-mah)
Τ	Υ	Φ	Χ	Ψ	Ω
Tau (taw)	op-silon (op-silon)	Fie (fie)	Chi (k-eye)	Psi (sigh)	Omega (o-me-gah)

Image: <https://medium.com/@greekalphabet>

WHO labels for SARS-CoV-2 variants of concern (VOC)

As of 31 May 2021

WHO label	Pango lineage	GISAID clade/lineage	Nextstrain clade	Earliest documented samples	Date of designation
Alpha	B.1.1.7	GRY (formerly GR/501Y.V1)	20I/S:501Y.V1	United Kingdom, Sep-2020	18-Dec-2020
Beta	B.1.351	GH/501Y.V2	20H/S:501Y.V2	South Africa, May-2020	18-Dec-2020
Gamma	P.1	GR/501Y.V3	20J/S:501Y.V3	Brazil, Nov-2020	11-Jan-2021
Delta	B.1.617.2	G/452R.V3	21A/S:478K	India, Oct-2020	VOI: 4-Apr-2021 VOC: 11-May-2021

<https://www.who.int/activities/tracking-SARS-CoV-2-variants>

<https://www.nature.com/articles/s41564-021-00932-w>

WHO labels for SARS-CoV-2 variants of interest (VOI)

As of 31 May 2021

WHO label	Pango lineage	GISAID clade/lineage	Nextstrain clade	Earliest documented samples	Date of designation
Epsilon	B.1.427/B.1.429	GH/452R.V1	20C/S.452R	USA, Mar-2020	5-Mar-2021
Zeta	P.2	GR	20B/S.484K	Brazil, Apr-2020	17-Mar-2021
Eta	B.1.525	G/484K.V3	20A/S484K	Multiple countries, Dec-2020	17-Mar-2021
Theta	P.3	GR	20B/S:265C	Philippines, Jan-2021	24-Mar-2021
Iota	B.1.526	GH	20C/S:484K	USA Nov-2020	24-Mar-2021
Kappa	B.1.617.1	G/452R.V3	21A/S:154K	India, Oct-2020	4-Apr-2021

<https://www.who.int/activities/tracking-SARS-CoV-2-variants>

Communicate using the new WHO labels for SARS-CoV-2 variants

All WHO representatives are encouraged to:

- **Introduce the new labels** when publicly speaking about VOCs and VOIs
- Share the information with and **encourage national counterparts to adopt these new labels** in all public communications



Additional resources



- [Tracking SARS-CoV-2 variants](https://www.who.int/activities/tracking-SARS-CoV-2-variants)

<https://www.who.int/activities/tracking-SARS-CoV-2-variants>



- www.gisaid.org

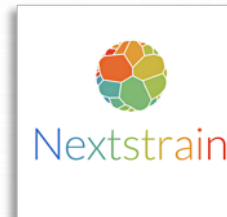
The GISAID Initiative promotes the rapid sharing of data from all influenza viruses and the coronavirus causing COVID-19

<https://www.gisaid.org/>



- [WHO issues best practices for naming new human infectious diseases](https://www.who.int/news/item/08-05-2015-who-issues-best-practices-for-naming-new-human-infectious-diseases)

<https://www.who.int/news/item/08-05-2015-who-issues-best-practices-for-naming-new-human-infectious-diseases>



- www.nextstrain.org

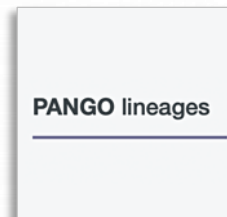
Nextstrain is an open-source project to harness the scientific and public health potential of pathogen genome data

<https://nextstrain.org>



- [COVID-19 weekly epidemiological update & weekly operational update](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports)

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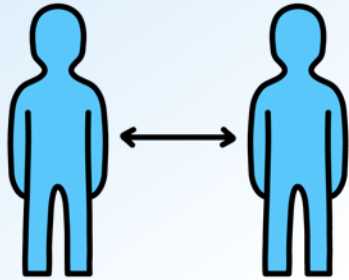
- [www.cov-lineages.org](https://cov-lineages.org)

The latest Pango lineages: daily updated information about currently circulating global lineages

<https://cov-lineages.org/>

COVID-19 protective measures

Protect yourself & others



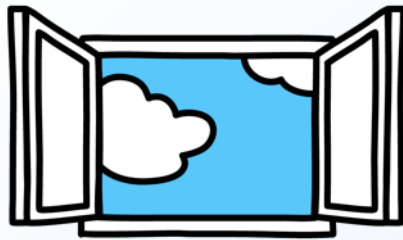
Keep your distance



Wash your hands frequently



Cough & sneeze into your elbow



Ventilate or open windows



Wear a mask



EPI•WiN

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MANAGEMENT

www.who.int/epi-win