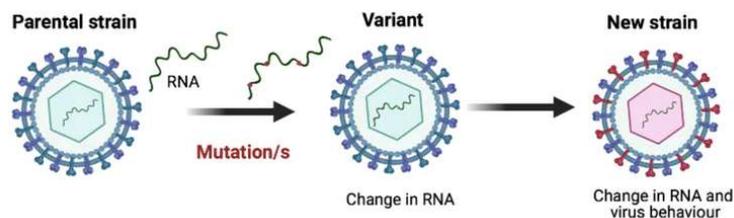


## What Are Variants?

Variants are viruses with mutations that differentiate them from the original SARS-CoV-2 strain involved in the onset and initial spread of the COVID-19 pandemic. Mutation, common among viruses, occurs when a virus replicates its genetic makeup and errors appear. This results in viruses that are similar, but not exact copies of the original virus.<sup>1</sup> Some variants are defective and do not replicate very well, thus causing little public health disturbance. However, other variants can persist, spreading faster and/or causing more severe illness.<sup>2</sup> When a variant has distinct physical properties from the original virus, it is referred to as a strain.<sup>3</sup>



## What Are the Common SARS-CoV-2 Variants?

The most common SARS-CoV-2 variants (which are also strains) have distinct physical properties compared to the parent virus. These variants include:

- B.1.1.7: The “U.K. variant,” first detected in December 2020.
- B.1.351: The “South African variant,” also detected in December 2020.
- P.1: The “Brazil variant,” first detected in Japan in January 2021.
- B.1.427 and B.1.429: The “California variants,” detected in February 2021.

The CDC has established three classifications for SARS-CoV-2 variants: Variant of Interest (VOI), Variant of Concern (VOC), and Variant of High Consequence (VOHC).<sup>4</sup> The five variants listed above are all currently considered VOCs. In the U.S., B.1.1.7 – or the U.K. variant – has become the dominant strain, according to the CDC, with over 20,000 cases reported.<sup>5</sup> Experts also believe this variant is more contagious and could be more serious for certain segments of the population.<sup>6</sup>

## Do the COVID-19 Vaccines Protect Against SARS-CoV-2 Variants?

This question is profoundly important, and there is ongoing research and monitoring both nationally and globally. Early studies and indicators suggest that the major vaccines being administered – Pfizer, Moderna, and Johnson & Johnson – are effective against the UK strain.<sup>7</sup> Researchers have found that the South African variant has a mutation called E484K that can help the virus evade some antibodies. However, even if this mutation causes the vaccine to be somewhat less effective against the South African variant compared to other variants, the vaccine still offers a significant level of protection against infection, and more importantly, serious illness and death.<sup>8</sup>

The COVID Patient Recovery Alliance is a multi-sector group of organizations whose mission is to define, develop, and assist in implementing a national strategy to characterize, diagnose, ensure care for, and sustainably fund the full recovery of individuals with long-COVID. To address the unprecedented and long-term consequences of COVID-19, the Alliance is developing national solutions that link diverse data sources, inform the development of models of care, and ensure adequate payment for the care and full recovery of these patients.

**Learn more at [COVID19PatientRecovery.org](https://COVID19PatientRecovery.org).**

<sup>1</sup> <https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant.html>

<sup>2</sup> <https://www.nytimes.com/2021/04/15/well/live/covid-variants-vaccine.html>

<sup>3</sup> <https://theconversation.com/whats-the-difference-between-mutations-variants-and-strains-a-guide-to-covid-terminology-154825#:~:text=A%20variant%20is%20referred%20to%20as%20a%20strain,These%20behavioural%20differences%20can%20be%20subtle%20or%20obvious.>

<sup>4</sup> See 1.

<sup>5</sup> <https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant-cases.html>

<sup>6</sup> <https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant-cases.html#news> <https://www.politics.uk-variant-dominant-covid-strain-us-cdc/story?id=76929773#:~:text=UK%20variant%20has%20become%20most%20dominant%20COVID%20strain,seen%20a%20surge%20in%20cases%20over%20weeks.>

<sup>7</sup> <https://www.nytimes.com/2021/04/15/well/live/covid-variants-vaccine.html>

<sup>8</sup> Id.