



COVID-19 VARIANT

WTP COVID-19 BRIEF

Addressing Occupational Exposure to SARS-CoV-2 Variants

This brief provides background information on what SARS-CoV-2 variants are, and what controls are needed to protect workers from occupational exposure to SARS-CoV-2 variants. The most common SARS-CoV-2 variant currently circulating in the U.S. is the Delta variant, but this brief can apply to future variants. This document is part of a series of COVID-19 briefs prepared by the National Institute of Environmental Health Sciences (NIEHS) Worker Training Program (WTP).

What are variants?

The SARS-CoV-2 virus continues to change so that it can survive and replicate as it passes between people. Viruses do this to continue surviving in the environment so that they can remain infectious. Just like humans, animals, and plants adapt to their environments to survive, so do viruses.

Variants do not change how the SARS-CoV-2 virus works, but they can affect how contagious the virus is, how easily it can evade the immune response, and therefore how much more easily it can cause disease or transmit from one person to another. Variants are expected and they can show up and then disappear.¹ The word variant can be used interchangeably with strain, form, or mutation. Some variants have no impact, while others – like the Delta variant – can have a drastic impact on populations of workers and the communities they live in.

Some variants cause similar symptoms to the original COVID-19 infection. However, some can cause more severe infections and result in larger numbers of hospitalizations and deaths, especially in people who are not vaccinated. Variants can result in an increased number of infections, especially among populations

of workers that serve the public and work in crowded or small spaces, like correctional facilities, meat processing plants, transportation, schools, and retail and healthcare industries.

Variants can circulate around the world as people travel. Variants of the SARS-CoV-2 virus are named according to the Greek alphabet. This naming system results in less stigma or confusion about where the variants originate.²

What about workers who have been vaccinated or had COVID-19?

The WTP COVID-19 brief, [Key Information for Workplace and Training Providers: Policies for Fully Vaccinated People](#), states that COVID-19 vaccine research is ongoing. It is important to stay informed about how long vaccine protection lasts and how effective these vaccines are, especially as new variants emerge. Fully vaccinated people can be exposed to and get infected with a variant, but they are generally infectious for a much shorter period and have less severe symptoms compared to those who are not vaccinated.³ This can also vary from person to person depending on their health status.

1 CDC What You Need to Know about Variants

2 WHO Tracking SARS-CoV-2 Variants

3 CDC Interim Public Health Recommendations for Fully Vaccinated People

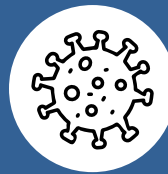
EXAMPLES OF CORONAVIRUS VARIANTS



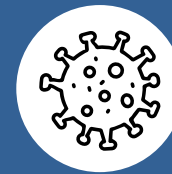
ALPHA
(B.1.1.7)



BETA
(B.1.351)



GAMMA
(P.1)



DELTA
(B.1.617.2)

Infections that occur after a person has been vaccinated or has had COVID-19 are called breakthrough infections. It is important to remember that vaccine effectiveness is measured by reductions in the likelihood of getting infected, developing severe symptoms, needing hospitalization, or dying. The vaccine does not prevent infection or passing on the virus to others, but it is still a very effective intervention that provides protection for workers.

Because vaccinated people can still pass on the virus, and variants like Delta are more contagious, it is critically important to have multiple COVID-19 preventive controls and measures in place. This includes proper ventilation and airflow, physical distancing, physical barriers that do not interrupt airflow, universal face coverings or respiratory protection (when required), frequent hand washing, and other controls. For more information about COVID-19 prevention, see the resources, tools, and references on the [WTP COVID-19 website](#).

What measures should be in place?

No matter the work or training location, it is important to remain steadfast in COVID-19 prevention and control measures. Federal agencies like the Centers for Disease Prevention and Control (CDC), the World Health Organization, the National Institutes

of Health (NIH), and the Occupational Safety and Health Administration (OSHA), and local departments of health agree that the following measures should continue and remain in place, especially in areas of substantial or high transmission.⁴

- Focus on vaccination, which is critical to reducing severe symptoms, transmission and to prevent future more serious variants.
- Focus on effective ventilation and air flow.
- Focus on physical distancing.
- Avoid large gatherings.
- Use a face covering (mask), especially indoors and when on shared or public transportation.
- Use a respirator (when warranted) based on a respiratory protection risk assessment and compliance with both the [OSHA Respiratory Protection](#) and [COVID-19 Mini-Respiratory Protection Program Standards](#).
- Focus on detection of the virus and variants through current techniques for testing, if workplaces require regular testing.
- Collaborate with local health departments and community organizations to do contact tracing for positive cases.
- Implement COVID-19 training, education, and awareness programs.

⁴ [CDC COVID Data Tracker, COVID-19 Integrated County View](#)

HOW DO I STAY INFORMED?

There are many useful and reputable resources that are updated regularly as more information is available about COVID-19 variants. These include:

CDC [Delta Variant: What We Know About the Science](#)

NIH National Library of Medicine [The Delta Variant: What Scientists Know](#)

NIEHS [WTP COVID-19 Brief: Selection and Use of Portable Air Cleaners to Protect Workers from Exposure to SARS-CoV-2](#)

OSHA [Coronavirus Disease \(COVID-19\)](#)

The White House [Path Out of the Pandemic](#)

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