

COVID-19 Update

Delta Variant: What to Know

As more people are getting vaccinated and the COVID-19 pandemic improves in the US, there is growing hope for a return to pre-pandemic life. However, a delay in overall pandemic recovery can occur as new mutations of the SARS-CoV-2 virus, including the Delta variant, can emerge and raise concerns.

Here, we provide reliable information to answer questions you may have about the Delta variant.

1. What is Delta?

The Delta (B.1.617.2) variant is a SARS-CoV-2 virus strain that was first identified in India in December 2020. Since then, it has spread rapidly in India and the UK, contributing to rising numbers of infections, hospitalizations, and deaths.

The first Delta case in the US was diagnosed in March 2021, and cases have been increasing, primarily in communities with low vaccination rates. As of 7/6, Delta accounts for 41% of samples sequenced in the US in the past 4 weeks. In some areas with low vaccination rates, Delta accounts for over 70% of cases. The [WHO](#) and [CDC](#) have classified Delta as a “variant of concern,” which indicates there is evidence of increased transmissibility, more severe disease, and reduced effectiveness of treatments, vaccines, or diagnostic tests. The Alpha strain (first detected in the UK), Beta strain (first detected in South Africa), and the Gamma strain (first detected in Brazil) also fall under this classification.

2. Is Delta more transmissible?

The Delta variant is estimated to be 40-60% more transmissible than the Alpha variant, which has been shown to be 50% more contagious than the original strain of the SARS-CoV-2 virus. Due to its greater transmissibility, a person infected with Delta may go on to infect 5-8 other people, on average.

Variant Transmissibility and R0

The more transmissible, the higher the R0 number (average number of cases each infected person will go on to cause)

Original Virus in Wuhan	Virus that Caused Europe's 1st Wave	Alpha	Delta	Mumps	Measles
2.5	3	4-5	5-8	12	18

Source: <https://www.bbc.com/news/health-57431420>

3. Does Delta cause more severe illness?

Based on data on hospitalizations from the UK, the Delta variant may make people sicker than the original virus. While more research is needed, [early data from England](#) showed that the Delta variant carried 2.61 times the risk of hospitalization within 14 days compared with the Alpha variant, when variables such as age, sex, ethnicity, and vaccination status were taken into consideration.

4. Do vaccines work against Delta?

At this time, available data indicate that existing vaccines, including the Pfizer/BioNTech, Moderna, and J&J vaccines, are protective against the Delta variant, especially against severe illness and hospitalization. People who have not been vaccinated against COVID-19 are most at risk; over 99% of recent COVID-19-related deaths in the US involved unvaccinated people. New data on vaccine effectiveness is constantly emerging as researchers continue to monitor cases around the world and conduct studies.

We strongly recommend that you get both doses of your vaccine (or a single dose for J&J) in order to protect yourself, your loved ones, colleagues, and others around you from Delta.

Efficacy of FDA Authorized COVID-19 Vaccines

The data below reflects a full vaccination regimen (2 doses for Pfizer and Moderna; 1 dose for J&J).

Vaccine	Overall Infection – Phase 3 Trials	Overall Infection – Delta	Severe Illness & Hospitalization – Delta
Pfizer/BioNTech	95%	64 ¹ - 88% ^{2,3}	93 ¹ – 96% ³
Moderna	94%	n/a, but generates a strong neutralizing antibody response	
Johnson & Johnson	66% (Global) 72% (US)	n/a, but generates a strong neutralizing antibody response	

Sources:

1. Times of Israel, <https://www.timesofisrael.com/israel-confirms-vaccine-less-effective-against-delta-variant-eyes-third-dose/>

2. Bernal et. al., <https://www.medrxiv.org/content/10.1101/2021.05.22.21257658v1>

3. PHE, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/997418/Variants_of_Concern_VOC_Technical_Briefing_17.pdf

5. Should I still wear a mask and social distance if I'm fully vaccinated?

The CDC has recently stated that [fully vaccinated people](#) are safe from the current variants, including Delta, and do not need to wear masks. However, the agency also indicated that local departments of health or communities with low vaccination rates may choose to impose mask rules.

At this time, we would recommend you consider exercising additional caution and wearing a mask if you are at higher risk (e.g. if you are immunocompromised), are in close contact with unvaccinated children, or are located in areas with a high prevalence of cases and transmission of the Delta variant.