

# **The Delta Variant, Explained**

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This document was prepared on August 6, 2021 by Natalie Garrison. Natalie works for North Yorkers for Disabled Persons as an Outreach Communication Facilitator, Information Referral and Resources Support. She can be reached at [natalie.nydp@gmail.com](mailto:natalie.nydp@gmail.com).

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## **What we know about the Delta variant:**

### **1- Its genetic structure is different from other variants**

This variant was named Delta by the World Health Organization (WHO) on May 31, 2021.\* It has a double mutation on the spike protein gene, which is the gene that our COVID-19 vaccines target.\*

According to the COVID-19 Technical Lead of the WHO, Dr. Maria Van Kerkhove, this new variant is distinct from others because it contains two distinct mutations.\* The fact that there are two mutations in one variant means that the disease is more transmissible and stronger against our antibodies.\*

The Delta variant has mutated again to become the Delta plus variant, which has another distinct mutation called “K417N.”\*

### **2- It spreads more easily than other variants and the original COVID-19 virus.**

The Delta variant is now dominant worldwide.\*,\* The WHO reports that it has been found in more than 130 countries globally.\* Compared to the rest of the variants, the Delta is the most contagious coronavirus mutant so far, says Dr. Kerkhove.\* Health experts say that “it spreads more easily because of mutations that make it better at latching onto cells in our bodies.”\*

According to Dr. Michelle Barron, who is the senior medical director of infection prevention and control at Colorado’s UHealth, “Research from China suggest[s] that the Delta variant replicates much faster and generates 1,000 times more virus in the body compared to the original strain” and this information “highlights the biggest danger of this new wave”.\*

Although COVID-19 symptoms are very similar to flu symptoms, the Delta variant is “far more contagious than the common cold or flu”, according to a recently-released report from the United States Centers for Disease Control and Prevention (the CDC).\* This report clarified that this variant is “as contagious as chickenpox.”\* Earlier this week, experts in British Columbia said that “the number of COVID-19 cases caused by the Delta variant is doubling every seven to 10 days.”\*

A way to think about it is this: if the Alpha variant infects two people on an average, the Delta infects three, remarks Paul Tupper, a mathematics professor from Simon Fraser University.”\*

Dr. Gregory Poland, infectious disease expert at the Mayo Clinic, says that fully-vaccinated people without any health complications will probably only experience mild disease or not feel any symptoms at all, “[b]ut they can pass it on to family members and others who may not be so lucky. We have to be vaccinated and masked or we will, for the fourth time now, endure another surge and out of that will come worse variants.”\*

### **3- It’s likely more severe than other variants and the original COVID-19 virus.**

The CDC says that the Delta variant is “likely more severe” than earlier versions of the virus.\* The organization cited research from Canada, Singapore and Scotland, which found that people who were infected with the Delta variant were more likely to be hospitalized than patients earlier in the pandemic.\* However, it’s important to note that these studies have “not yet been reviewed by outside experts.”\*

Shane Crotty, who is a virologist at the La Jolla Institute for Immunology, said that the most significant proof that this variant may cause more severe disease comes from the study done in Scotland, which found that the Delta variant roughly doubled the risk of hospitalization compared to an earlier version of the virus.\*

Doctors from the United States, who have treated patients with the Delta variant, have said that COVID-19 symptoms appeared more quickly than usual.\* For example, “We are seeing more patients requiring oxygen sooner,” said Dr. Benjamin Barlow, who is the chief medical officer at American Family Care, a 28-state chain of urgent care clinics.\*

In many regions with the Delta variant in the United States, there have been “an overall increase [in] serious cases.”\* On top of that, health experts say that “the extraordinary rate of Delta transmission” also contributes to the correlation between this variant and more severe cases of COVID-19.\*

“Frankly there’s a severity that comes from this variant that is a little more severe. It’s not just easier to transmit, it makes you sicker,” said vaccine specialist David Montefiori.”\* He also stated that people who are unvaccinated are especially at risk for catching the disease and getting sicker, quicker.\*

The CDC confirms this statement, saying that the majority of hospitalizations and deaths from coronavirus in the United States are occurring in people who have not been vaccinated.\*

### **4- Two doses of a COVID-19 vaccine offer strong protection against it**

Canadian and international health experts agree that “getting just one dose of the two-dose vaccines isn’t as protective against the Delta” variant, and two doses provide the most protection.\*

COVID-19 vaccines most likely don't protect against the Delta or Delta plus variant as much as they protect against the original strain of COVID-19.\* However, real-world data shows that regions with higher vaccination rates have fewer infections, even when the Delta variant is in the area.\*

In early June, Canada's chief public health officer Dr. Theresa Tam said, "[I]t is very important to get that second dose when variants such as the Delta variant [are] in our community."\*

[A study by Public Health England](#) mentioned that the results from "very preliminary" studies on vaccine efficiency against the Delta plus variant is "reassuring, however further testing is required."\* The study also notes that "further investigations of K417N genomes are being undertaken,"\* meaning that there is still limited information on the Delta plus variant.

According to [this update](#) from Canada's National Advisory Committee on Immunization (NACI), "emerging research" suggests that two doses of the Pfizer vaccine is 87.9% effective against symptomatic illness (for the original Delta variant, not the Delta plus variant) ([page 51](#)). Meanwhile, two doses of the AstraZeneca vaccine is 59.8% effective against symptomatic illness ([page 51](#)).

"Emerging research" means that these studies haven't been confirmed yet, so keep in mind that these numbers might change later. The document didn't mention anything about the effectiveness of the Moderna or Janssen/Johnson & Johnson vaccines against the Delta variant.

## **5- You can still get sick from the Delta variant after being fully vaccinated**

The CDC report said that there is evidence that the vaccines are less effective in people with compromised immune systems, including the elderly.\*

The people who are most likely to be infected with the Delta variant after being fully vaccinated are the same people who are in the "high risk" category of getting COVID-19. Click [here](#) to see the federal government's list of "high risk" people.

Getting both doses of the vaccine does not guarantee that you will not get COVID-19 or any of its variants. However, according to the CDC, studies are showing that having both doses of a COVID-19 vaccine seems to make symptoms less severe than without both doses.\*

## **Final Thoughts**

The Delta variant is believed to account for more than 90% of all new COVID-19 cases in Ontario.\* Chief Medical Officer of Health Dr. Kieran Moore is concerned that there will be outbreaks in communities with low vaccination rates like what we're seeing in the United States.\* Currently, Ontario has 5,137 confirmed cases of the Delta variant.

If you think you may be experiencing symptoms of COVID-19, take the self-assessment at [www.ontario.ca/coronavirus](http://www.ontario.ca/coronavirus). Follow all directions from your medical provider or your local health unit at the following phone numbers:

Telehealth Ontario: 1-866-797-0000

Toronto Public Health: 416-338-7600

Peel Public Health: 905-799-7700

Durham Region Health Department: 905-668-7711

York Region Public Health: 1-877-464-9675