



**COLORADO**  
Department of Public  
Health & Environment

## COVID-19 GUIDANCE

# COVID-19 variants

### *Frequently asked questions*

Viruses constantly change through mutation, and new variants of a virus typically appear over time. Sometimes new variants emerge and then disappear. Other times, new variants emerge and continue to spread. Scientists have documented multiple variants of the virus that causes COVID-19 globally during the pandemic. Scientists are studying these variants to learn more and to control their spread.

#### **What kinds of variants are circulating?**

Multiple COVID-19 variants are circulating around the world.

The Centers for Disease Control and Prevention (CDC) describes a **variant of concern** as one that spreads more easily, causes more severe disease, reduces the effectiveness of treatments or vaccines, or is harder to detect using current tests.

Other variants, called **variants under investigation**, show different characteristics than the original virus, but they are still under investigation and are being studied to understand their significance.

More information about variants of concern, including the B.1.1.7 variant first discovered in the United Kingdom, the B.1.351 first discovered in South Africa, and the P.1 variant first discovered in Brazil, can be found on the [CDC's website](#).

#### **Are these variants circulating in Colorado?**

On Dec. 30, 2020, the first known B.1.1.7 variant case in the U.S. was detected in Colorado. Additional cases have since been detected in Colorado and other states. Currently, B.1.1.7 is the only variant of concern that has been identified in Colorado. Colorado has also detected several cases of the B.1.427/B.1.429 (also known as CAL20C or L452R ) variant under investigation. This is the variant that was initially identified in California.

Most of the cases identified with these variants so far in Colorado did not travel outside of Colorado during their exposure period. This suggests these variants are circulating in some communities.

CDPHE tracks variants under investigation and variants of concern in Colorado on the state's [COVID-19 data dashboard](#) under the case summary snapshot.

#### **How did Colorado identify the B.1.1.7 variant?**

Colorado has been closely tracking the B.1.1.7 variant of the virus since it was first announced as a variant of concern. CDPHE's State Public Health Lab detected the variant in Colorado by doing a regular COVID-19 diagnostic test -- the PCR test that many Coloradans get by having a nasal swab sample collected. While a sample of the variant will show a positive COVID-19 test result, only two of the three genes normally found in a positive sample are detectable. The third "S gene" has a mutation that makes it typically undetectable by a routine PCR test. We call this the "S dropout profile," which is the signature marker of this variant. The lab flags samples with the "S dropout profile" and investigates them further through viral genome sequencing to identify the other mutations associated with this variant of the virus.

### **How is Colorado looking for variants?**

CDPHE screens all positive COVID-19 samples submitted to the state lab for the B.1.1.7 variant, representing approximately 10-15% of total positive tests statewide. With other laboratories now able to identify the "S dropout profile" associated with this variant, approximately 30% of the state's positive cases are being screened for the B.1.1.7 variant. Screening is the first step in discovering variants as that process can pick up on signature markers, such as the "S drop out profile" of the B.1.1.7 variant.

In addition, CDPHE performs viral genome sequencing on approximately 3% of total positive tests statewide to look for variants other than B.1.1.7.

Since only a sampling of COVID-19 tests across the state are sequenced, these cases do not represent the total number of variant cases circulating in Colorado.

### **How do variants impact diagnostic tests for COVID-19?**

A PCR test is used to diagnose whether or not a person has COVID-19, while sequencing is used to learn more about the genetic makeup of the viruses circulating within a community.

Viruses can mutate over time, resulting in genetic variation in the population of circulating viruses. Molecular diagnostic PCR tests used to detect COVID-19 may be impacted by genetic variants in a patient sample. Not all PCR tests use the same targets, so PCR results from some lab tests may not be able to detect the "S gene dropout profile."

Most currently available COVID-19 tests will come back positive for patients infected with variants. The FDA has announced that false negative results may occur with some tests when patients are infected with variants and recommends negative results be considered in combination with clinical observations, patient history, and epidemiological information. The FDA recommends testing with a different molecular diagnostic test (with different genetic targets) if COVID-19 is still suspected after receiving a negative test result. For more information, see the [FDA's letter to clinical laboratory staff and health care providers](#) about COVID-19 variants.

### **Are these variants more contagious or do they cause more severe illness?**

Some variants appear to spread more easily and quickly than more common strains that cause COVID-19. Public health officials are still studying these variants to learn more.

In January 2021, experts in the UK reported that the B.1.1.7 variant may be associated with an increased risk of death compared to other variant viruses. More studies are needed to confirm this finding. There is

currently no evidence that other variants cause more severe illness or increased risk of hospitalization or death than previous circulating strains.

If a variant that spreads more easily becomes the dominant COVID-19 virus in our state, we could see cases spread within our communities at a faster rate than in the past, which could lead to an overall rise in hospitalizations and deaths.

**Should people still plan to get vaccinated despite the presence of this new variant?**

Yes. Scientists believe that the vaccines currently available will be effective in providing immunity against these new variants, especially B.1.1.7. There is some data that suggests that some of the other variants of concern that have not yet been identified in Colorado, P.1 and B.1.351, may decrease the effectiveness of some vaccines slightly but not to a level that makes them ineffective.

**Are there any different or additional symptoms associated with the new variants?**

Infections due to these new variants seem to have the same symptoms as the original COVID-19 strain. They can also cause asymptomatic infection.

**What measures are necessary to prevent the spread of these new variants?**

The most effective ways to prevent the spread of any COVID-19 virus remain the same: wearing a mask in public, maintaining at least 6 feet of physical distance from others, limiting contact with anyone outside your household, washing your hands often, and staying home when you are sick.

While in some cases of COVID-19 a shorter [quarantine](#) period might be appropriate, close contacts of cases infected with COVID-19 variant viruses are required to quarantine for a full 14 days.