

Understanding the PREVALENCE OF COVID-19

PREVALENCE

Prevalence is the percentage of a population that has an infection at one specific time.

Q: HOW DO WE KNOW THE PREVALENCE OF COVID-19?

If it isn't possible to test every person in a population, we can estimate prevalence from a sample taken at one specific time.

An example

Population

Suppose in this population of 200 people, 10 people have COVID-19.



$$\text{PREVALENCE} = \frac{10}{200} = 5\%$$

Sample

Now suppose we randomly choose 50 people from the population, and 1 person tests positive for COVID-19.



Percent positivity is the percent of tests that are positive.

In this example, $\text{percent positivity} = \frac{1}{50} = 2\%$

$$\text{ESTIMATED PREVALENCE} = 3\%$$

The estimated prevalence is usually close to the true prevalence, but not exactly the same.

(See the "Sampling" and "Sources of Uncertainty" infographics to learn more.)

Estimated prevalence differs from *percent positivity* because it adjusts for factors such as the sampling design and reliability of the test.

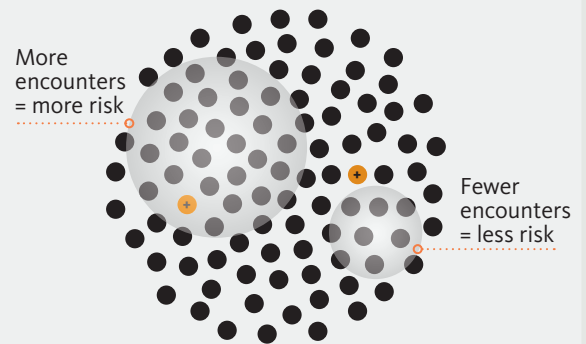
Q: WHAT DOES PREVALENCE MEAN FOR ME AND MY LOVED ONES?

Great question! The short answer is that by continuing to take safety precautions like physical distancing, wearing masks, and washing your hands, you will reduce the risk to you and your loved ones, regardless of the number of cases in our community.



An example

Suppose you have a social network of 100 people and 2 of them have COVID-19.



You reduce your risk by limiting encounters with other people.

In this example, if you have:

20 random encounters each day, you would expect to meet someone with COVID-19 **once every 3 days**

6 random encounters each day, you would expect to meet someone with COVID-19 **once every 11 days**

Q: CAN YOU CALCULATE THE PREVALENCE OF COVID-19 USING CASE COUNTS OR THE TEST PERCENT POSITIVITY FROM THE OREGON HEALTH AUTHORITY (OHA) WEBSITE?

No. The case counts only include cases we know about, and the test percent positivity only includes people who are tested. There are likely other people with COVID-19 that we don't know about.

There are people who:

have mild cases of COVID-19 or are not showing symptoms (are asymptomatic) that **are not reported to OHA**

This could lead to **underestimating** the prevalence of COVID-19 using case counts.

Most people who get tested are:

tested and diagnosed at a hospital or by their doctor because they are symptomatic

or

tested at a drive-up testing site because they have chosen to be tested

This could lead to **overestimating** the prevalence of COVID-19 using percent positivity.

However, these people could be sampled by TRACE and included in the prevalence estimate.