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# Why Are We Talking About Herds of Humans?

Have you ever heard of a *herd*? Maybe a herd of buffalo? Or a herd of sheep? Or a herd of cattle? The word *herd* can even be used with humans. No one says a ‘“herd of humans,” but you may hear people talk about *herd immunity* or *herd protection*. The same process for large numbers of animals to become immune to a disease also needs to happen with humans. That’s why the goal for protection from diseases is called *herd immunity*.

*Sheep Herd*

*Herd of Cattle*

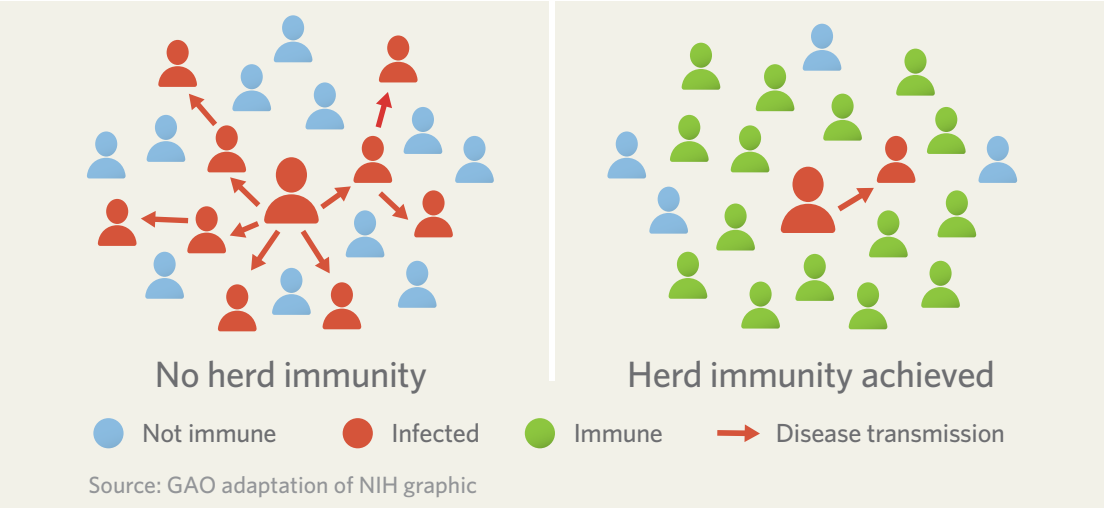
## What is Herd Immunity?

When a disease outbreak occurs for the first time, no one is immune. That is what happened around the world with COVID-19. No one was immune. And, because it was a new disease, there was no vaccine.

There are two ways that a person can become immune to a disease. One way is by having the disease before. When your body has “seen” a virus before, it knows how to fight against it. The second way to become immune is by being vaccinated for the disease. Once a person has had the disease or has been vaccinated, they usually become immune. As more people become immune, the chances of any one person getting the disease are less.

For example, imagine that 80% of the population is immune to a disease. That means that 8 out of every 10 people will not pass on the disease. They don't get the disease and they don't pass it on. Why? Because they have had it, and they are then immune. If 8 out of every 10 people cannot pass on the disease, then it's not as easy for others to get it. To get the disease, you would have to come in contact with the 2 people who aren't immune.

When a disease like COVID-19 is still new, scientists need to study whether having it once makes a person immune if they contact the virus again. For many illnesses caused by a virus, having it once means you can't get it again.




## What Does It Take to Reach Herd Immunity?

Not all diseases are equally contagious. The chance of getting a disease is not the same for every disease. A highly contagious disease passes easily from person to person. A less contagious disease does not transmit as easily from one person to the next. When a disease is highly contagious, more people need to be immune for the whole population to have herd immunity.

Measles is a highly contagious disease. To get to herd immunity, 94% of the population needs to be immune to measles. Many forms of influenza (the flu) are less contagious. For the flu, only about 40% of people need to be immune to get to herd immunity. Remember: To be immune, a person needs to have had a vaccine, or they need to have developed antibodies for the virus that causes the disease.

Scientists estimate that for COVID-19, 60%–75% of people need to be immune for herd immunity. That estimate could change as scientists continue to study COVID-19. Herd immunity is an important goal for many diseases. COVID-19 is the newest one.

## Does Immunity Last Forever?

One challenge is that viruses can change over time. You could be immune to one form of a virus, but if it changes, you might not be immune to the new one. Every year, scientists develop a vaccine for new forms of the flu. Every year, the flu virus changes! That is why people need a new flu vaccine every year.

A person can also become less immune over time if they have fewer antibodies to fight an infection. For any vaccine, you may be immune to a disease for the rest of your life, or there may come a time that you are no longer immune. The virus that causes COVID-19 has already begun to change. The scientific word for this is that the virus *mutates*. Scientists are always busy trying to meet the challenges of this new disease.

## Stop and Think

1. What are two ways that people can become immune to a disease?

2. Why might people who get the COVID-19 vaccine need to get it again in the future?