



# Vaccine Knowledge Project

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## Herd immunity (Herd protection)



## What is herd immunity?

When a high percentage of the population is vaccinated, it is difficult for infectious diseases to spread, because there are not many people who can be infected. For example, if someone with measles is surrounded by people who are vaccinated against measles, the disease cannot easily be passed on to anyone, and it will quickly disappear again. This is called 'herd immunity', 'community immunity' or 'herd protection', and it gives protection to vulnerable people such as newborn babies, elderly people and those who are too sick to be vaccinated.

Herd immunity does not protect against all vaccine-preventable diseases. The best example of this is tetanus, which is caught from bacteria in the environment, not from other people who have the disease. No matter how many people around you are vaccinated against tetanus, it will not protect you from tetanus.

## How does herd immunity work?

Herd immunity only works if most people in the population are vaccinated (for example, 19 out of every 20 people need to be vaccinated against measles to protect people who are not vaccinated). If people are not vaccinated, herd immunity is not guaranteed to protect them. Vaccination rates are high in the UK as a whole, but this hides the fact that rates are much lower in some parts of the UK and in some communities.

(To find out the rate in your area, look at Public Health England's local coverage data tables [🔗](https://www.gov.uk/government/collections/vaccine-uptake#cover-of-vaccination-evaluated-rapidly-programme) (<https://www.gov.uk/government/collections/vaccine-uptake#cover-of-vaccination-evaluated-rapidly-programme>).

If you live in an area where vaccine coverage is low, and your child is not vaccinated, it's quite likely that many of the people they come into contact with will not be vaccinated either. If one of these people gets an infectious disease like measles, they can easily pass it on to the other unvaccinated people around them, and in some cases the disease can then spread very quickly through the population. This is what happened during the 2013 measles outbreak in Wales.

Unlike vaccination, herd immunity does not give a high level of individual protection, and so it is not a good alternative to getting vaccinated.

Have a look at the animation below which explains how herd immunity works. See also our page on why disease occurs in vaccinated populations (</disease-vaccinated-populations>). Click here to download the script of the animation (</sites/default/files/HerdimmunityanimationPDFforwebsite.pdf>).



## People who depend on herd immunity

Some people in the community rely on herd immunity to protect them. These groups are particularly vulnerable to disease, but often cannot safely receive vaccines:

- People without a fully-working immune system, including those without a working spleen
- People on chemotherapy treatment whose immune system is weakened
- People with HIV
- Newborn babies who are too young to be vaccinated
- Elderly people
- Many of those who are very ill in hospital

For these people, herd immunity is a vital way of protecting them against life-threatening disease. See this article about herd immunity written by a parent of four boys who have primary immune disease [🔗](http://www.voicesforvaccines.org/please-help-me-keep-my-children-healthy/) (<http://www.voicesforvaccines.org/please-help-me-keep-my-children-healthy/>), which begins: “Herd immunity” or, as I much prefer, “community immunity” is not just a vague idea for my family: it is literally what keeps my kids from getting sick...”

## Links to more information on herd immunity

Whooping cough and herd immunity [🔗](http://www.youtube.com/watch?v=55wOg9fe_Ms) ([http://www.youtube.com/watch?v=55wOg9fe\\_Ms](http://www.youtube.com/watch?v=55wOg9fe_Ms)), a short talk by Professor Adam Finn of the University of Bristol

The power of herd immunity [🔗](http://www.ted.com/talks/romina_libster_the_power_of_herd_immunity?utm_source=newsletter_daily&utm_campaign=daily&utm_medium=email&utm_content=image_2015-02-25) ([http://www.ted.com/talks/romina\\_libster\\_the\\_power\\_of\\_herd\\_immunity?utm\\_source=newsletter\\_daily&utm\\_campaign=daily&utm\\_medium=email&utm\\_content=image\\_2015-02-25](http://www.ted.com/talks/romina_libster_the_power_of_herd_immunity?utm_source=newsletter_daily&utm_campaign=daily&utm_medium=email&utm_content=image_2015-02-25)), a TED talk by Romina Libster

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**Please click here to contact us** (<http://vk.ovg.ox.ac.uk/contact>) if you have comments about the Vaccine Knowledge website. We can't answer all the individual queries we get, but we will use your suggestions and questions to improve the website. You should consult your doctor or other healthcare provider if you need specific advice on vaccines for you or your child.

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