



What are the benefits of vaccines? What are the risks? How do you evaluate a vaccine and decide who should get it and when?

Although 100% vaccination coverage would provide the best protection against disease, vaccines are still effective when a large percentage of the population have been vaccinated. A small number of people cannot receive all the recommended vaccines (usually due to allergies or autoimmune disorders), and some healthy people will not mount an effective immune response and thus not be protected. However, these people have some degree of protection via **herd immunity**. Read the material and watch the video on the page below to learn more about herd immunity.

Herd immunity: <http://www.ovg.ox.ac.uk/herd-immunity>

Some people experience pain or swelling at the site of vaccination, or occasionally a slight fever or sense of discomfort – these are defined as **adverse effects**, and they are recorded and monitored by the government to ensure vaccine safety. Since vaccines are given to healthy people, it is important that they have minimal or no side effects, and that they do not pose any danger to the people who take them. Vaccines are subject to very stringent testing and monitoring to ensure that they are safe. Look up the most common side effects, the relative risks, and what health professionals and the general public should do about side effects here:

<http://www.nhs.uk/Conditions/vaccinations/Pages/reporting-side-effects.aspx>

Not every person gets every vaccine: most children follow the NHS vaccination schedule, and certain at-risk groups of adults are recommended to get additional vaccines. For example, university students who will be living in close quarters typically get the meningitis vaccine, while travellers to tropical countries can get yellow fever, cholera, typhoid, and hepatitis A vaccines.

Read the following articles on the benefits and risks of vaccines. While reading, think about whether the benefits and risks apply to individuals, the population as a whole, or both. What facts and figures stand out to a private citizen? A doctor? A public health or regulatory official?

<http://www.who.int/bulletin/volumes/86/2/07-040089/en/>

<http://www.nature.com/news/2011/110525/full/473436a.html>