Vaccines and Herd Immunity – Descriptive Transcript

Time	Audio	Visual
0:00-0:04	Memory response	"Memory response"
0:04-0:14	A few of the B cells are stimulated by the T cells to remain as memory cells, and to retain the memory of the antigen-antibody encounter	B cells travel through the body, and one attaches to a grey virus, labelled a "vaccine antigen"
0:16-0:32	When the memory cells meet the antigen again, either as a natural infection, or in a booster dose of vaccine, antibodies of the right specificity are produced much more quickly and in greater numbers than during the first response	
0:34-0:45	In contrast to the first response, when short-lasting IgM is made, the antibody produced is mainly IgG, which persists for longer	
0:47-0:54	Each time the memory cells encounter the same antigen, the immune response is boosted	
0:56-1:07	Because a pathogen or a vaccine may contain many different antigens, many different B cells are stimulated at once and many different antibodies may be produced	Two more B cells attach to the vaccine antigen
1:08-1:13	The capacity of our immune system is enormous, and can make billions of different antibodies	
1:14-1:19	If different vaccines are given at the same time, different antibodies are produced at the same time	
1:20-1:28	In a similar way to B cells, there are also T memory cells made as a result of the first encounter with the antigen	T cell secreting cytokines
1:28-1:35	When these T memory cells meet the antigen again, they are able to respond more quickly and effectively	
1:37-1:46	The specific humoral, cell-mediated and memory responses are known as acquired, or adaptive, immunity	Three sections, one with a B cell attaching to a virus, one with a T cell attaching to a MHC-antigen complex, and one with B cells attaching to a vaccine antigen
1:48-1:51	Vaccination	"Vaccination"
1:51-2:00	Vaccination stimulates the immune response that has just been described, but importantly, it does so without the risks of the disease itself	T cells, B cells, and antibodies move through the body

2:02-2:17	It works by stimulating a pool of B and T memory cells to be made, which, if and when the antigen is subsequently encountered, produce antigen-specific responses fast enough to prevent disease developing	B cell and T cell are highlighted
2:18-2:29	It also stimulates the production of antigen-specific antibody, including IgG, which persists after vaccination and provides early defence against infection	Antibody appears next to the B and T cells
2:31-2:39	Knowledge of how vaccines interact with the immune system allows us to understand the vaccine schedule more clearly	
2:42-2:48	What is herd immunity and why is it important?	"What is herd immunity and why is it important?"
2:48-2:56	A small proportion of people in every population do not respond to vaccines and remain unprotected, despite vaccination	Group of people mostly in blue, but some in white to represent being immunocompromised
2:57-3:03	In addition, people who are severely immunocompromised are unable to receive live vaccines	
3:04-3:10	Therefore, these people are dependent on not being exposed to infection in the first place	
3:11-3:21	If a sufficient number of people are vaccination in the population, vaccine preventable infections are not able to transmit successfully because most people are immune	
3:22-3:32	Therefore, people who are susceptible are indirectly protected by the presence of these immune individuals. This is known as "herd immunity"	
3:32-3:42	High levels of vaccine coverage must be maintained in the population to achieve and preserve herd immunity, and to protect those who cannot be immunised	