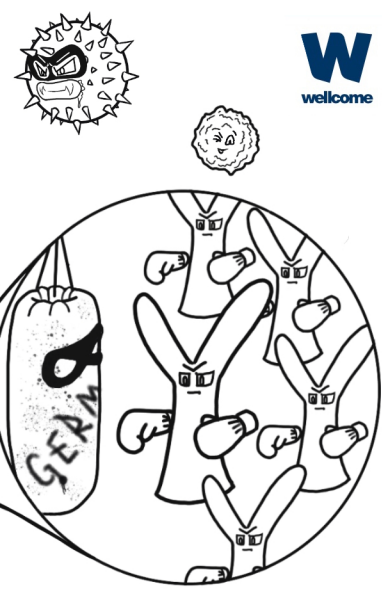
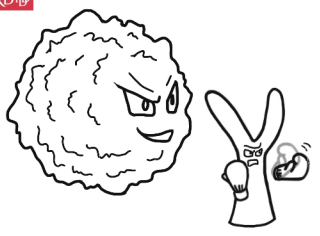


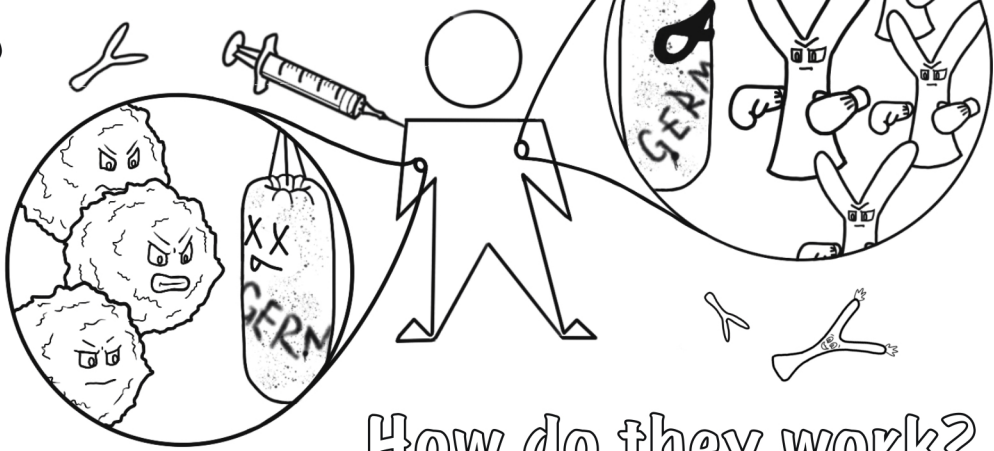
Vaccines:

an introduction



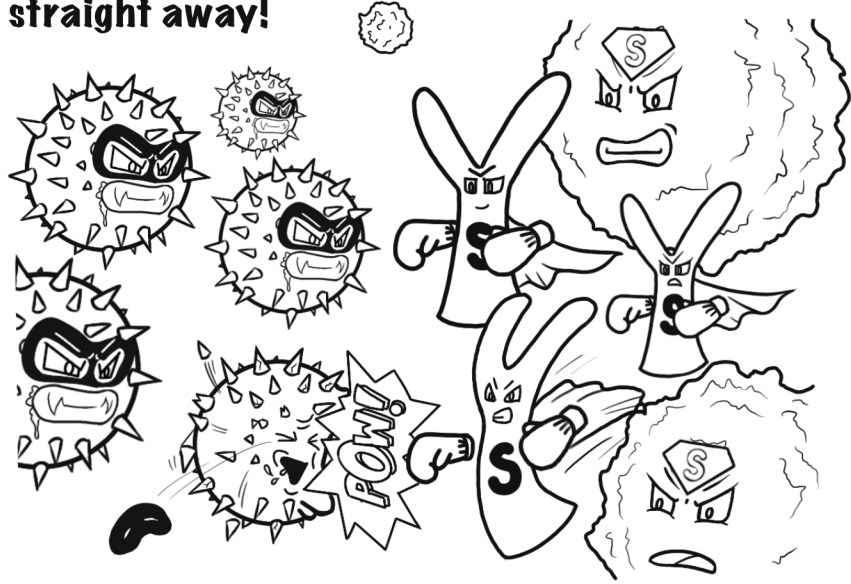
What is a vaccine?

A vaccine is a type of medicine that teaches your immune system to recognise certain germs, and is given to stop you getting sick. This way if your body sees the real germ your immune system can fight it straight away!



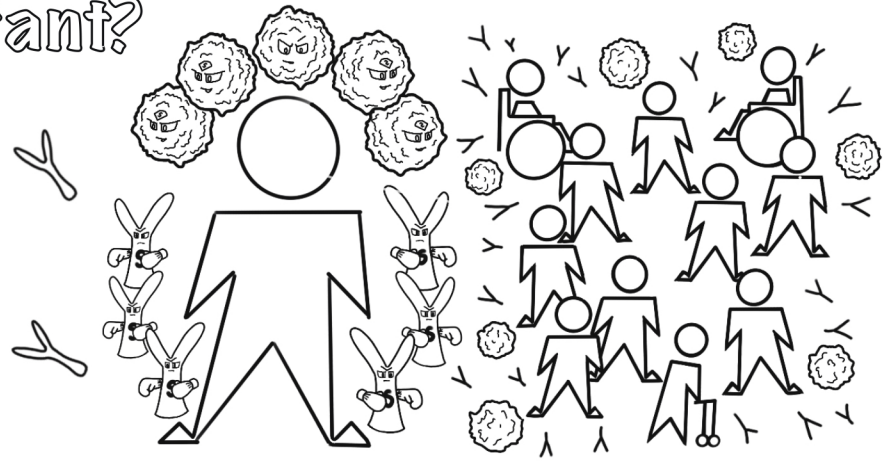
How do they work?

Vaccines contain dead or small pieces of the germ you want to be protected against. By giving you this harmless form of the germ, your immune system can prepare for the real thing! Some vaccines trigger production of antibodies, molecules that can stick to the germ and flag it to the body for destruction! Other vaccines signal for T cells, key players of the immune system that will quickly recognise the real germ and can kill infected cells!



Why are they important?

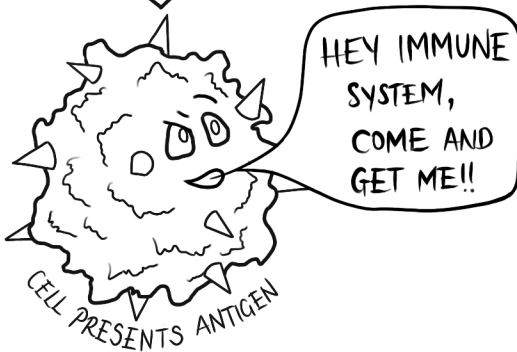
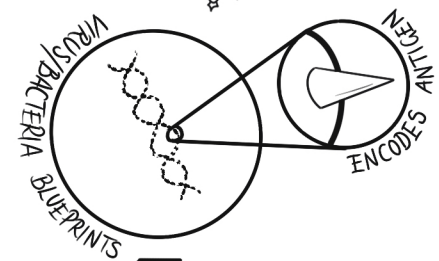
Vaccination stops you personally getting sick from nasty illnesses! Not only is this great for you, but it stops you passing it on to other people that are more vulnerable like the elderly and those that are unwell!



Do they protect me for life?

It depends on the vaccine and the disease you're protecting against. Some vaccines need to be given yearly (like the flu) because the virus changes, so that vaccine isn't effective anymore! Other vaccines are only needed once, like HPV vaccine!

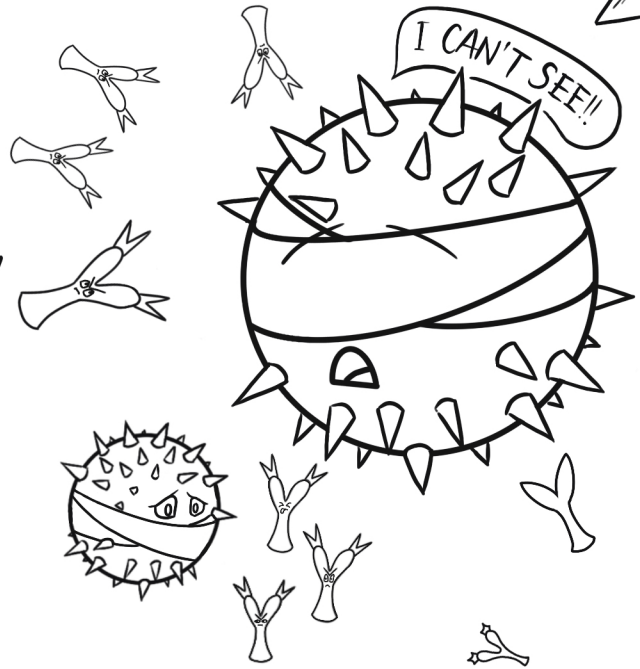
DNA/RNA VACCINES



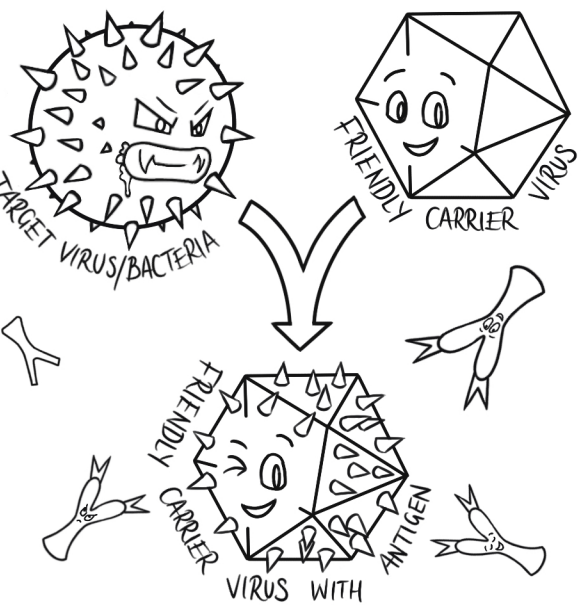
THIS VACCINE WORKS BY INSERTING PARTS OF THE CODE OR BLUEPRINTS OF VIRUSES/BACTERIA (CALLED DNA OR RNA) INTO OUR OWN CELLS! THIS TELLS OUR CELLS TO MAKE SMALL PIECES OF THE GERM CALLED ANTIGEN! OUR IMMUNE SYSTEM WILL SEE THIS ANTIGEN AND REMEMBER IT IN CASE WE GET INFECTED. DNA/RNA VACCINES CANNOT CAUSE DISEASE!

LIVE ATTENUATED VACCINES

THIS VACCINE CONTAINS WHOLE VIRUS/BACTERIA THAT CAN STILL GET INTO OUR CELLS, BUT HAS BEEN WEAKENED SO MUCH THAT IT IS NOW HARMLESS! EXAMPLES OF THIS TYPE OF VACCINE ARE THE MMR AND CHICKENPOX VACCINES!



VECTOR-BASED



VACCINES

INACTIVATED GERMS AND PROTEIN VACCINES

THIS USES A VERY SAFE, WELL-UNDERSTOOD VIRUS AS A WAY TO CARRY AROUND A PIECE OF HARMFUL VIRUS/BACTERIA CALLED ANTIGEN! THE IMMUNE SYSTEM WILL ONLY SEE THE ANTIGEN AS DANGEROUS!

THIS HAS EITHER 'WHOLE' VIRUS/BACTERIA WHICH HAVE BEEN KILLED OR SMALL PIECES OF THE GERM LIKE PROTEINS OR SUGARS! NEITHER ARE ABLE TO CAUSE DISEASE. EXAMPLES INCLUDE THE FLU, HEPATITIS A AND MENINGITIS B!

