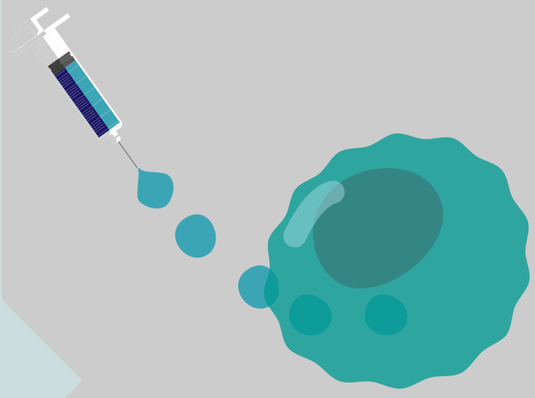
UK CIC
UK Coronavirus Immunology Consortium

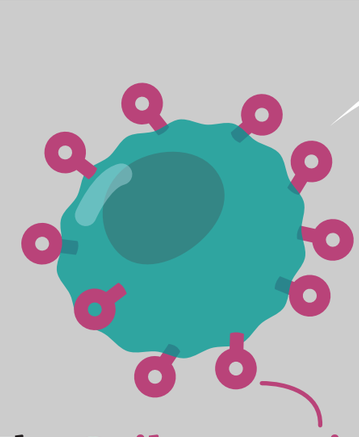
British Society for immunology

Immune response after COVID-19 vaccination

One dose of a **COVID-19 vaccine** is injected into the arm.



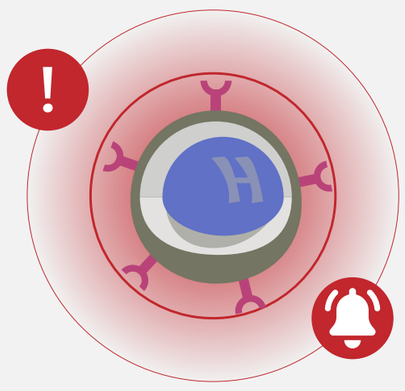
The **vaccine contents** enter our cells at the injection site with the genetic material for the **Spike protein**.



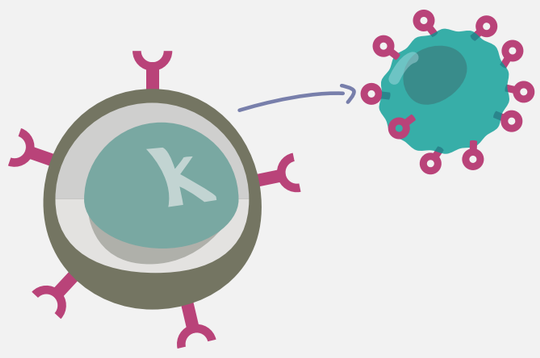
The **Spike protein** is produced by our cells and presented on their surfaces. This trains the immune response by activating...

The Spike protein is the part of the virus, SARS-CoV-2, that allows it to enter our cells.

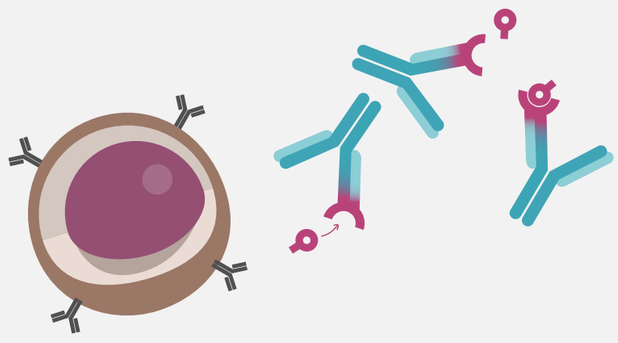
Helper T cells that detect the **Spike protein** and alert other immune cells.



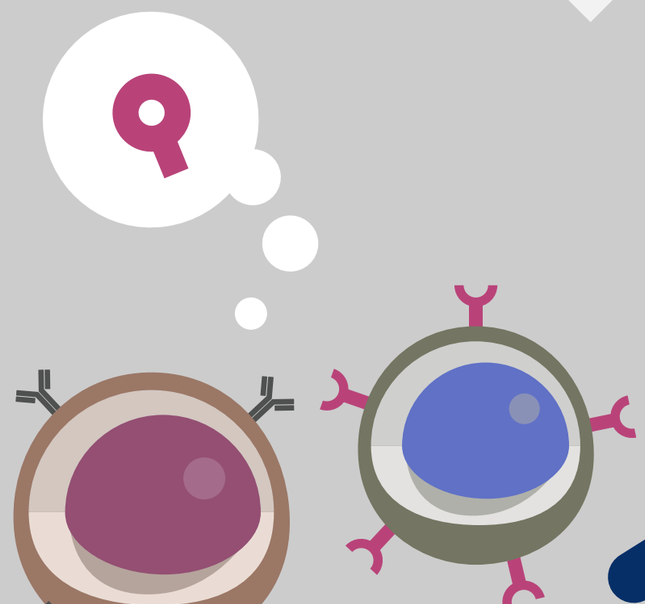
Killer T cells that seek out the **Spike protein**.



B cells that create **antibodies** to specifically recognise the **Spike protein**.



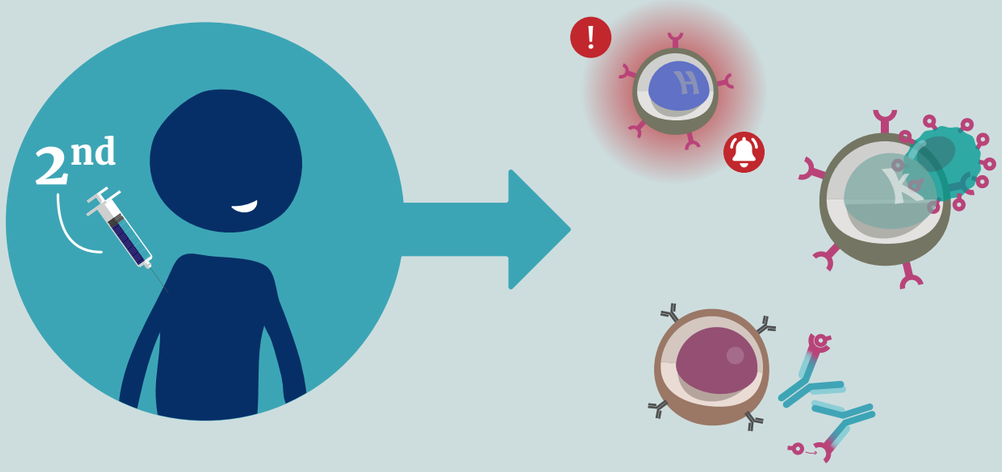
T and **B** cells develop immune memory of the **Spike protein** and will be quick to respond the next time it is encountered.



Antibodies remain in the body for some time, ready to bind to the **Spike protein** and block the virus from infecting new cells.

B cells can produce more antibodies if needed in future.

A second vaccine dose is administered weeks later. This trains the immune system further, strengthens the response, and creates an immune memory to the virus.



The immune system is now ready to launch a quick and effective response against SARS-CoV-2 if it encounters the virus in future, preventing infection and serious illness.