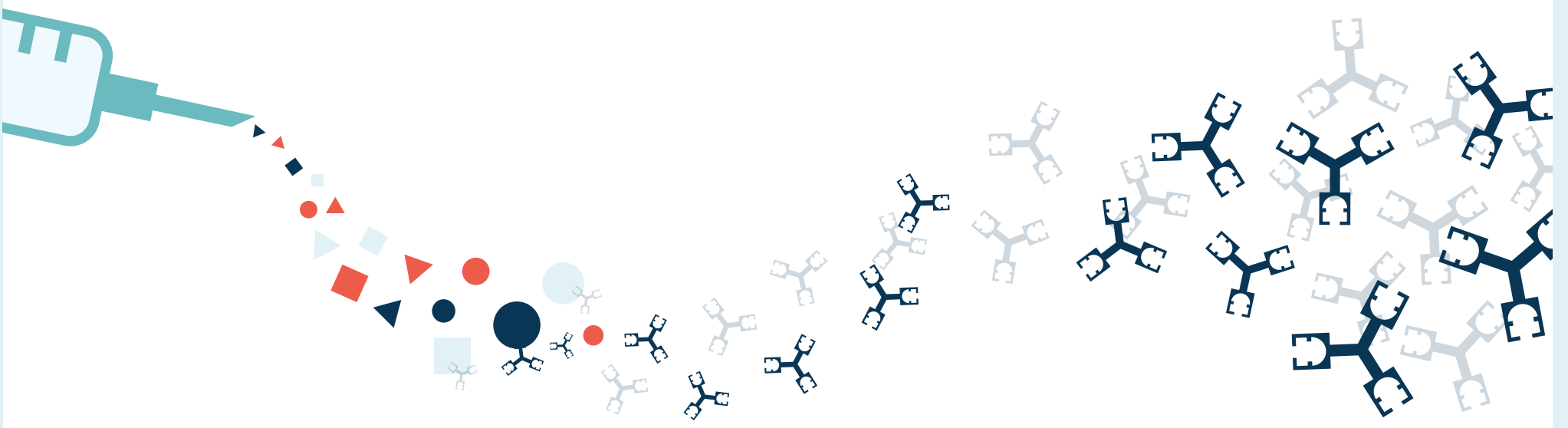


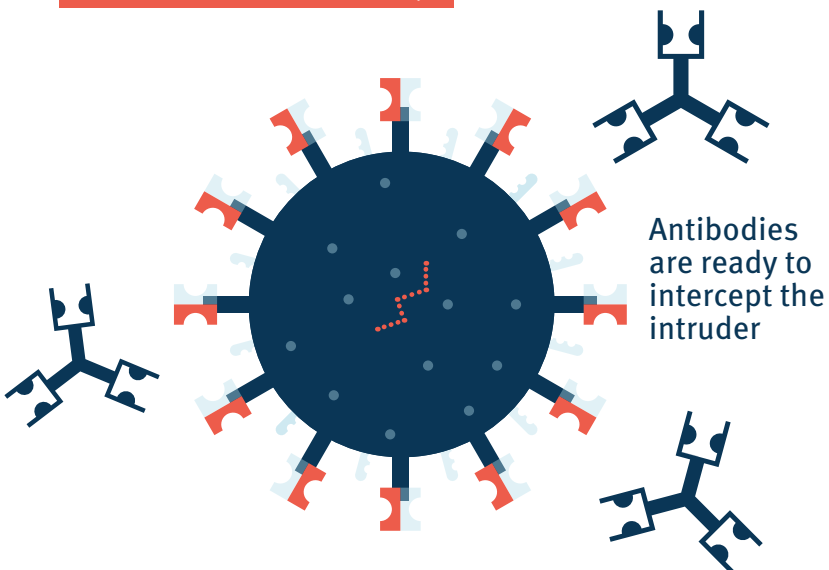
Why do I need a flu vaccine every year?

Vaccination. After being vaccinated, the body responds by producing antibodies. Protection starts about two weeks after vaccination.



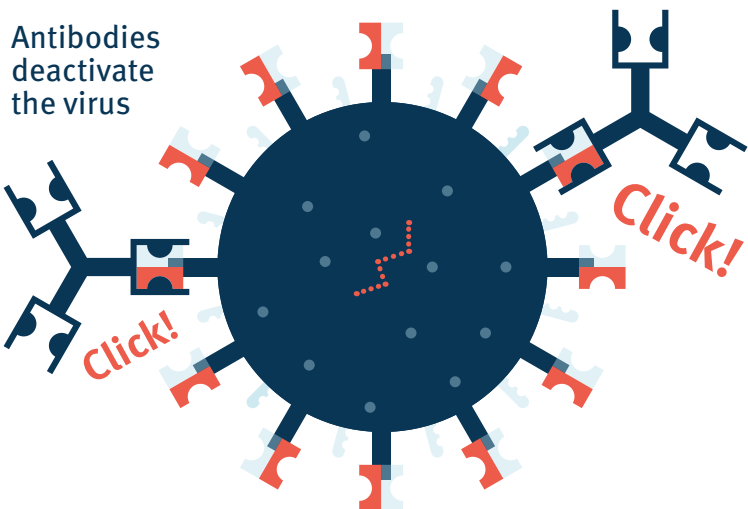
A1 Flu attacks. When a flu virus tries to attack, antibodies rush in to block the intruder.

A flu virus enters the body



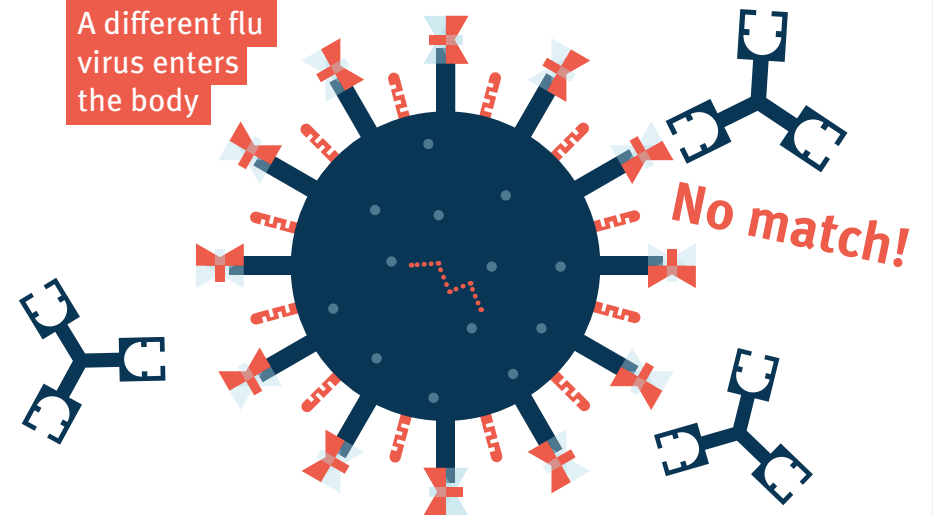
A2 Protection. Antibodies latch on to the virus's antigens and block the flu virus from attaching to a healthy cell.

The immune system responds



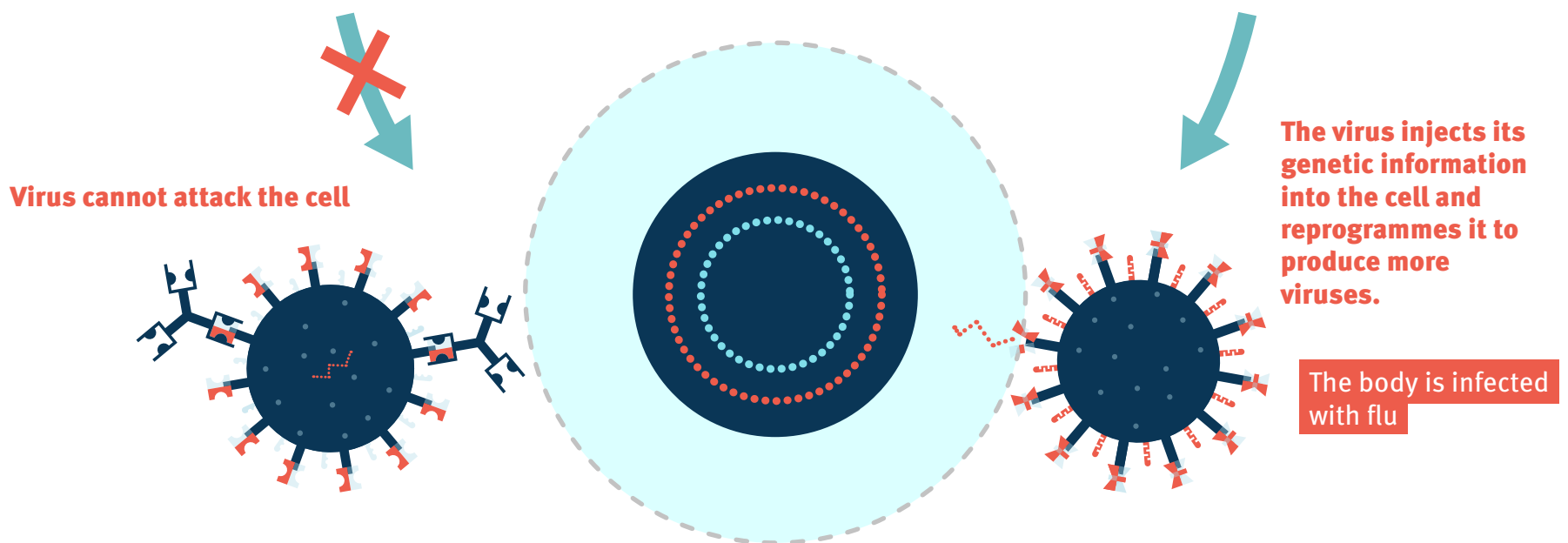
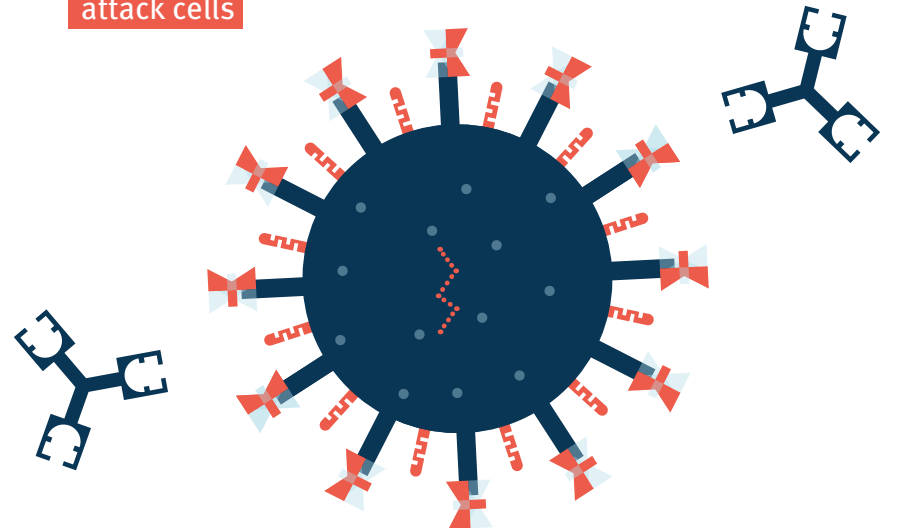
B1 Vaccine/virus mismatch. Every flu season there are different flu viruses circulating. Viruses can also mutate. If the antibodies meet a virus whose surface structure they don't recognise, the receptors don't match and they cannot block it.

A different flu virus enters the body



B2 Defenceless immune system. With no matching antibodies to block the virus, the virus can launch its attack.

The virus is ready to attack cells



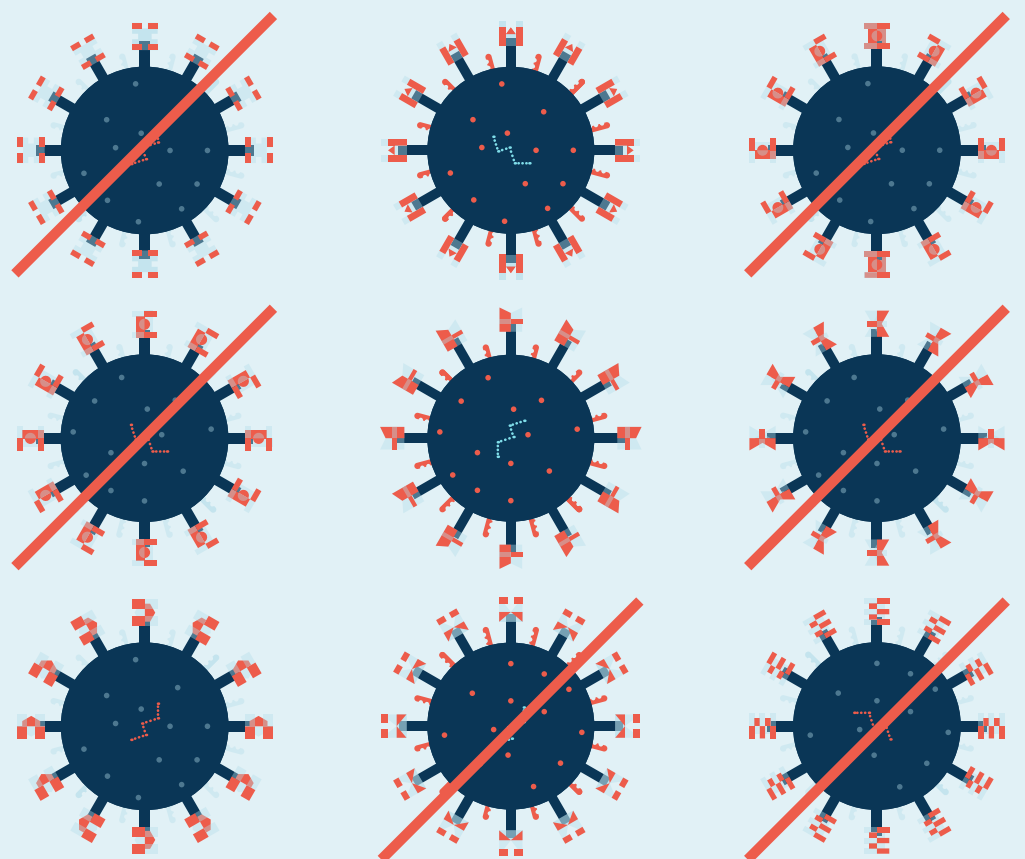
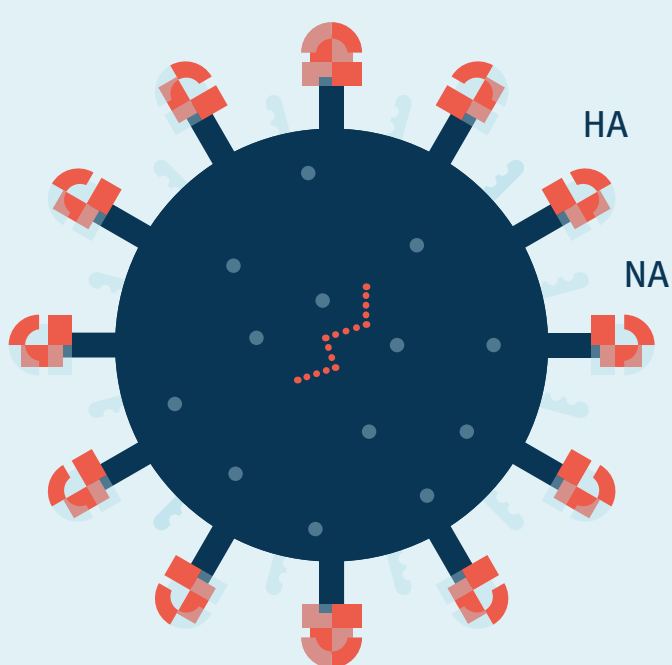
Every year **flu is different**, so every year you need an **updated vaccine**.

Reducing the risk. Usually, a flu vaccination reduces the risk by 60%. In a bad year, the seasonal flu vaccine reduces the risk of flu illness by only 20% to 30% in the overall population.

Finding the vaccine viruses. Based on continuous surveillance of influenza viruses, vaccine experts determine which viruses are most likely to circulate in the upcoming season. If their forecast is right, flu vaccines offer good protection because they will match the circulating viruses.

Surface matters. The surface of a virus consists of surface proteins called antigens. A flu virus has two types of antigens, haemagglutinin (HA) and neuraminidase (NA).

Vaccine production. Only three or four strains are selected to be included in the vaccine.



At least **18 haemagglutinins** (H1 to H18) and **9 neuraminidases** (N1 to N9) have been found in viruses. Virologists name all flu viruses after these surface proteins, for example H1N1 or H3N2. Only some of these viruses have caused human disease.

Different strains of a virus can combine to form a new subtype, which then has a mixture of the surface antigens. Viruses also mutate, which can result in changes to the surface proteins. These changes make it even more difficult to forecast the three to four flu viruses to be included in the vaccine for the upcoming season.

N1 .. Neuraminidases .. N9 H1 Haemagglutinins H18

