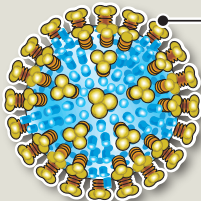


Mutation lowers potency of flu vaccine

Genetic changes during vaccine production in chicken eggs resulted in flu shots that failed to protect against the H3N2 virus strain



Surface proteins: Dozens of possible flu types arise from combining proteins on outside of virus

Flu vaccine: Works on surface proteins to stimulate body's immune system to produce disease-fighting antibodies



Influenza Type A virus

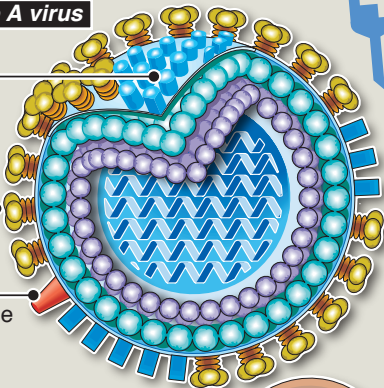
Haemagglutinin – H of H3N2

Rod-shaped spikes of glycoprotein (GP) enable virus to penetrate into host cell

Neuraminidase – N of H3N2

Mushroom-shaped spikes of GP penetrate mucous membrane of respiratory tract

Antigenic drift: Researchers detect mutation to H protein – sugar molecule becomes chemically attached to GP molecule



VACCINE PRODUCTION

1 New sugar-adorned H3N2 virus is used to produce flu vaccine

2 Fertilised chicken eggs are injected with H3N2 vaccine strain

3 Sugar molecule stops virus's ability to replicate in eggs. **Virus mutates, ditching sugar molecule**

4 Egg-induced mutation, now present in flu vaccine, decreases ability of immune system to destroy virus

