

Topic	Vaccines	Level	GCSE (or any other course for students aged 11-16)
Outcomes	<ol style="list-style-type: none"> 1. To describe and explain how a vaccine works 2. To read a piece of text for meaning 		

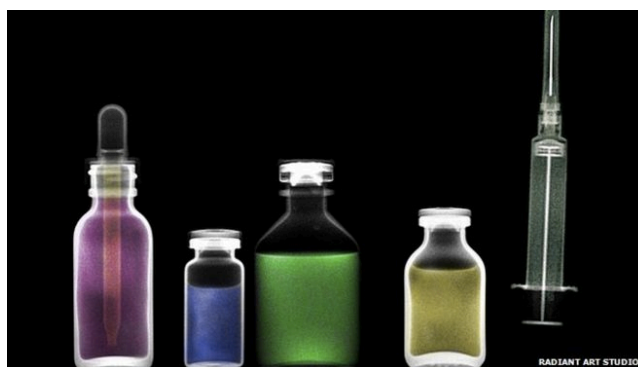


Ebola: the race for a vaccine is on

The race is on to find ways to prevent and cure the Ebola virus - a disease that has killed more than 10,000 people in Sierra Leone, Guinea and Liberia.

There are currently no vaccines that prevent people from becoming infected with Ebola.

However, progress is now being made at an unprecedented speed to find a vaccine.



Scientists from GlaxoSmithKline (GSK) in the UK are developing an Ebola vaccine. The vaccine involves injecting a small amount of an inactive part of the Ebola virus into the body. A part of this virus, called the antigen, then stimulates the white blood cells inside the body to make specific antibodies.

Antibodies are small chemicals that bind to the pathogen and destroy it. If Ebola infects the person later, the white blood cells recognise the virus quickly, producing lots of antibodies that destroy the virus before the person gets sick. We say that the person is immune to the virus.

Because the vaccine contains only an inactive form of the pathogen, the vaccinated person is not in danger of developing the disease - although some people may suffer a mild reaction. Scientists are now testing this vaccine to see if it does offer protection against Ebola.

Instructions:

1. Take turns to read the paragraphs on the previous page with your partner.
2. Using the tables below, circle the correct letter (a,b,c or d) next to the word that **best** describes its correct meaning.

unprecedented	inactive	stimulates	specific
a. expensive	a. small	a. triggers	a. only one type
b. small	b. slow	b. excites	b. small
c. large	c. harmless	c. tells	c. many
d. never before seen	d. idle	d. helps	d. short

antibodies	bind	pathogen	recognise
a. chemicals that destroy pathogens	a. stick	a. virus	a. see
b. chemicals made by pathogens	b. bother	b. bacterium	b. identify
c. white blood cells	c. attach	c. disease causing organism	c. find
d. none of the above	d. fasten	d. microbe	d. stop

3. Using the key words above to summarise each paragraph in the table

Paragraph	Summary of key points
1	
2	
3	
4	
5	

4. Viruses change at a very fast rate. Can you use this information to explain why vaccines against a specific virus don't last forever?
5. Why would an Ebola vaccine be ineffective as a cure for people who already have Ebola?

Progress: further resources on biology are available here:
<http://www.thescienceteacher.co.uk/biology>