



VACCINOLOGY WITH DR REBECCA MCLEAN AND PROFESSOR SIMON GRAHAM

TALKING POINTS

KNOWLEDGE

1. What are the symptoms of Nipah virus (NiV) in humans?
2. What were the impacts of the 1998 NiV outbreak?

COMPREHENSION

3. What mechanisms does the immune system use to fight viruses?
4. What are the three vaccines Becca and Simon are testing? How do they compare in their effectiveness at preventing NiV?

APPLICATION

5. How could a successful vaccine be used to contain the spread of a future NiV outbreak?
6. How could researchers assess whether or not a vaccination campaign has been successful?

ANALYSIS

7. What evidence proves that Becca and Simon's three vaccine candidates are effective?
8. If their vaccines were not effective, how would their results differ?

SYNTHESIS

9. What steps might vaccinologists consider when working to contain a newly discovered zoonotic virus?

EVALUATION

10. What are the ethical arguments for and against testing vaccines on animals? To what extent do you agree that vaccines must be tested on animals before human trials begin?

ACTIVITY

Create a presentation for your class on how Becca and Simon's vaccines could be used to contain future outbreaks of NiV in Southeast Asia. Remember to consider:

- The scientific background to viruses and vaccines
- The evidence for the effectiveness of their vaccines
- The campaigns that could be used to vaccinate pigs
- The benefits and challenges that pig vaccination will have for local communities

If you are working in a group, each of you could outline the different stages of the vaccine process. Refer back to Becca and Simon's article to remind yourself of the different stages of developing a vaccine.

MORE RESOURCES

- The Pirbright Institute offers many outreach activities, including school visits and science festivals: www.pirbright.ac.uk/science-society
- This article provides more information about Nipah virus: www.understandinganimalresearch.org.uk/news/research-medical-benefits/the-nipah-virus-a-rare-but-deadly-disease
- The Vaccine Makers Project has lesson plans for schools about vaccines and the immune system: www.vaccinemakers.org/lessons

HEAD TO BECCA AND SIMON'S FUTURUM WEBPAGE FOR CHINESE AND BENGALI VERSIONS OF THEIR ARTICLE AND ACTIVITY SHEET:

www.futurumcareers.com/how-can-vaccinating-pigs-protect-people