

Medical research

with Dr Vanessa
Meier-Stephenson

Talking points

Knowledge & Comprehension

1. What are the two stages of Vanessa's clinical trial?
2. How many participants are involved in each stage?
3. What are vaccines made of?
4. What do the team have to prove about the vaccine in order to start testing it on trial participants?
5. What two steps do the team take to make sure the trials are 'double-blind'?

Analysis

6. Why is a 'double-binding' approach important for a clinical trial?
7. If a version of the vaccine that Vanessa is studying has been tested before, why does the team need to put the product through such rigorous testing again?

Creativity

8. Vanessa mentions how AI might lead to new developments in medical research. How do you think AI might be able to improve this field?

Activities

1. Teamwork

Vanessa and Kelly emphasise how medical research relies on the efforts of lots of people working together. "Depending on your study, you might work in a team alongside physicians, nurses, coordinators, pharmacy personnel, lab personnel, regulatory personnel, data management personnel, statisticians, etc. Although it is a cliché, teamwork makes the dream work!" says Kelly.

Research a few different roles available within medical research and create a careers leaflet about your favourite role. Include:

- The day-to-day responsibilities of the role
- The education requirements and skills the role requires
- The challenges and rewards of the role
- Salaries and working hours
- Related websites for an interested reader to explore more.

Share your leaflet with a classmate. To what extent are they interested in this role, and why? How has researching and preparing this information made you feel about how fulfilling you would find this role, and why?

2. Planning

"My primary strategy for handling challenges is meticulous planning," says Vanessa. "For a clinical trial, we develop contingency plans for every scenario we can think of: What if a participant faints during a blood draw? What if someone trips and breaks a vial on the way to a participant and we have to thaw another one?"

Imagine you are planning one of the following events for you and your friends:

- A) a hiking trip
- B) a day out in a nearby city
- C) a celebratory event

For your chosen event, list possible issues you might come up against. For example, what if it rains on your hiking trip, or what if transport is delayed during your day trip?

Once you have listed all the possible elements that could change or go wrong on the day, devise as many back up, contingency plans as you can.

Vanessa says, "If you've considered possibilities in advance, you don't have to scramble or panic when they happen." With that in mind, how has considering these contingencies helped with your planning? How confident would you now be in organising such an event in real life and coping with any problems that could arise, and why?

More resources

- Read this great article for more information about Vanessa's study as well as a clinical trial about long COVID: ualberta.ca/en/folio/2024/08/u-of-a-to-run-clinical-trials-for-patients-with-hepatitis-c-long-covid.html
- Our World in Data has an interesting resource about the average length of clinical trials, depending on which phase of research the medical team are in: ourworldindata.org/grapher/average-study-length-by-phase
- The World Health Organization's Vaccines Explained is a series of illustrated articles explaining what vaccines are made of and why they are important: who.int/teams/immunization-vaccines-and-biologicals/diseases/explainers