

## Reading Lesson

## B2 Science: What Are the Chances?

## Reading

What do you think the rewards and risks are with clinical trials? Read the article.

### What Are the Chances?

<sup>(1)</sup> Drug manufacturing companies and medical research companies around the world carry out what are called "clinical trials." There are different types of research studies which, in most cases, require volunteers to take part in them. These volunteers may be ordinary members of the public or people who have a particular health issue—heart disease, for example. Often the volunteers receive money to take part, but sometimes they do so because it may benefit other people in some way. People with a particular health condition may take part in the hope that it will eventually improve their chances of recovery.



<sup>(2)</sup> Clinical research to date has led to important medical discoveries that have improved the health and quality of life of millions of people. These include vaccines, new treatments for diabetes and heart disease, improvements in guidelines on exercise, developments in diagnostic testing such as MRI scans and X-ray machines, and improvements in diagnostic procedures, such as looking for signs and symptoms in the body that can indicate the presence of disease. There are a wide range of different types of clinical research which individuals or groups can become involved in.

**Clinical trials** are designed to see if there are better ways to treat a disease or condition than what is currently available. These types of studies may help uncover new treatments or ways to provide care, or they may involve testing new medications, procedures, devices, or ways of collecting information.

**Prevention studies** test ways to prevent people from getting a certain condition or disease.

**Diagnostic studies** look for better and more efficient ways of diagnosing diseases through testing and screening.

**Behavioral research** investigates how human behaviors and habits such as diet, drinking, and smoking are related to different diseases or conditions and how these behaviors can be changed.

**Quality of life studies** try to find better ways to improve the quality of life for people who have a disease or condition.

<sup>(3)</sup> **Observational studies** follow individuals over weeks, months, or years to see how their health improves or worsens and what causes these changes to happen.

<sup>(4)</sup> As with most things, there are positives and negatives to taking part in clinical trials which all participants must, by law, be made aware of. The pros of taking part in a trial are that a volunteer may receive a new treatment that is only available in this method and which may actually work better than the treatment they receive to date (although no one can know this for sure beforehand, which is why the trial is being done). Volunteers may also help to improve treatment for particular patients in the future and may have more tests, scans, and health checks which could benefit their health in the long term. They will usually also have access to highly qualified medical professionals as part of the trial.

<sup>(5)</sup> One notable success story with clinical trials includes those carried out by DBV Technologies. They announced outstanding results for their "Viaskin" peanut-allergy patch. The patch, worn on the skin, exposes wearers to different amounts of the peanut allergen which causes the immune system to activate. The idea is that this develops resistance to peanuts over time. Results from 2020 show that after three years of using the skin patch, 52% of peanut-allergic children aged between 4 and 11 who are taking part in the trial can be exposed to, via the patch, 1,000 milligrams of peanut protein before having an allergic reaction.

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There are also potential serious disadvantages which can, and do, put many people off involvement in clinical trials. The treatment or medications could have serious side effects impossible for medical professionals to predict. The treatments may also have little or no effect, and some patients may even receive a “placebo,” meaning that they won’t know until the trial is over if they have received the active new treatment or not. From a practical point of view, patients may find that having to visit hospitals or clinics frequently can be demanding. They may also feel more anxious or stressed by the whole process. It’s also important for volunteers to remember that researchers often find at the end of a clinical trial that what doctors are already doing is what is best.

One of the most tragic clinical trial failures took place in London in 2006. The trial, which was testing a new cancer treatment called TGN1412, seemed harmless to the six men who took part in it. Medical professionals had assured them that the worst symptoms would include a headache and nausea. But the results were much more significant than that. Shortly after they were given the treatment, all of the patients began experiencing extreme pain, and very quickly their condition became critical. One of the participants went on to lose parts of his fingers and toes. Fortunately, the men recovered, but the process took many months. So while it is true that clinical trials can lead to important medical discoveries, they can come at some significant cost.

**allergen** (n): something that causes an allergic reaction in a person, e.g., peanuts

**clinical trials** (n, pl): the process of testing a new medicine by giving it to people before it can be used on the general population

**critical** (adj): seriously sick or injured

**diabetes** (n): a serious medical condition where the body doesn’t produce enough insulin to regulate the level of sugar in one’s blood

**MRI scans** (n, pl): medical tests where a large machine takes images of the organs in the body

**nausea** (n): a feeling that you may vomit or be sick

### Vocabulary

Match the definitions (1–5) to the words (a–e).

- |  |                     |
|--|---------------------|
| 1. tests done to check for a particular disease  | a allergic reaction |
| 2. a substance that is not real medicine but is used to test the effectiveness of another medicine | b screening         |
| 3. when the body responds to an allergen, e.g., pet hair   | c side effects      |
| 4. the negative responses to a medicine  | d immune system     |
| 5. the parts of the body that protect you from disease   | e placebo           |

## Reading Lesson

### Comprehension

Choose the correct option.

1. According to the text, why might someone with a specific condition take part in a clinical trial?
  - a Because they could make a lot of money from it.
  - b Because it may help them recover in the long term.
  - c Because they are aware of what the health benefits will be.
2. Which of the following statements is true about “observational research?”
  - a It checks that an individual’s health is improving.
  - b It looks for the causes of a particular condition.
  - c It monitors developments over a specific period of time.
3. Which phrase in paragraph 4 means the same as “up to this point”?
  - a to date
  - b by law
  - c the long term
4. What has the “Viaskin” patch been shown to do for young peanut-allergy sufferers?
  - a prevent them from having any allergic reactions
  - b allow them to enjoy eating peanut products again
  - c help them build up some level of immunity to peanuts
5. What is the main point of the article?
  - a to emphasize that clinical trials are not always successful
  - b to outline the pros and cons of being involved in different clinical trials
  - c to show the positive impact that clinical trials have had on medicine

### Thinking

College students are often targeted by pharmaceutical companies to take part in clinical research for financial reward. Do you think this is ethical? Why or why not?