

Test 1

Part 1.

What is your gender?

- ☐ Female
- ☐ Male

Have you ever had any training in scientific research (statistics, epidemiology, randomised controlled trials)?

- ☐ Yes
- ☐ No

Have you ever been a participant in a scientific research study?

- ☐ Yes
- ☐ No

What level of education have you completed?

- ☐ No education
- ☐ Primary education
- ☐ Secondary education
- ☐ Tertiary education/ university

Part 2.

1. Annette sees an advert on TV for a new soap which the makers say protects people from getting skin rashes. Annette thinks that this soap must be better than other soaps for protecting her skin.

Question: **Is Annette right?**

Options:

- A)** No, the soap may be newer, but that does not mean that it is better than other soaps
- A)** Yes, the new soap is probably better than most other soaps because it is newer
- B)** Yes, the new soap is probably better than most other soaps because a well-known company makes it

Answer:

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2. Regina has an illness that makes it difficult for her to breathe. She hears on the radio about a medicine that has helped many people for their breathing problems.

Question: How sure can Regina be that the medicine does not have any harms?

Options:

- A) It is not possible to say. However, medicines are rarely harmful
- B) Not very sure, because all medicines may harm people as well as help them
- C) Very sure, since the medicine has helped many people, it is unlikely that it also harms people

Answer:

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3. John has a skin rash on his leg. A shop sells several creams to treat skin rashes. John chooses a cream from a well-known company, even though it is more expensive than the other creams. John thinks the cream is more likely to heal his rash than the other creams because it is more expensive.

Question: **Is John right?**

Options:

- A)** No, just because the cream is expensive does not mean that it will work better than other creams
- B)** It is not possible to say. However, expensive creams are likely to be better because the companies spend more time making them
- C)** No, the cream is probably not as good as the other creams. Well-known companies are usually better at advertising
- D)** Yes, the company is well-known for a reason, so it is more likely to be better than creams sold by lesser-known companies

Answer:

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4. Two companies make two different medicines for treating stomach pain. Each of them says that their medicine is the better one.

Question: How can you know which of the two medicines is better for stomach pain?

Options:

- A)** It is not possible to say. The companies may just say their medicine is best because they want to make money
- B)** I would rely on the best known company; it is more likely to have the best medicine
- C)** I cannot trust either of the companies. They are probably both wrong

Answer:

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5. Dr. Kato and Dr. Semakula disagree about which medicine for stomach pain is best. Dr. Kato says his opinion is right because he has worked as a doctor for a longer time than Dr. Semakula.

Question: Is Dr. Kato right?

Options:

- A)** Yes, because Dr. Kato has worked for a long time, he has more experience than Dr. Semakula
- B)** Yes, because Dr. Kato has worked for a long time, he must be basing what he says on studies comparing the medicines
- C)** No, just because Dr. Kato has worked as a doctor for a longer time does not mean that he is basing what he says on studies that compare medicines for stomach pain

Answer:

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6. Habibah has pain in her ear, and she asks her brother Hassan what to do about it. He says that once, when he had a pain like that, he rinsed his ear with hot water. The next day, his ear pain was gone. Based on his experience, he says rinsing with hot water is helpful for ear pain.

Question: **Do you agree with Hassan?**

Options:

- A)** Yes. Because this is Hassan's experience, it is likely to be true
- B)** No, Hassan's experience is not enough to be sure
- C)** Yes, Hassan rinsed his ear with hot water and the next day his ear pain was gone

Answer:

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7. Sarah has an illness. There is a medicine for it, but she is unsure if she should try it. A research study comparing the medicine with no medicine found that the medicine was helpful but also that it could be harmful. Three of Sarah's friends are giving her advice about what to do.

Question: Which advice below given to her by her friends is the best advice?

Options:

- A)** She should only take the medicine if many people have tried the medicine before
- B)** She should only take the medicine if she thinks it will help her more than it will harm her
- C)** If Sarah has enough money to buy the medicine, it could not hurt to try it

Answer:

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8. Dr. Acheng is an expert on treating headaches. A news reporter interviews Dr. Acheng about a new medicine. Dr. Acheng says that, in her personal experience, the new medicine is good for treating headaches.

Question: **How sure can we be that Dr. Acheng is right?**

Options:

- A)** It is not possible to say. It depends on how long Dr. Acheng has been an expert on treating headaches
- B)** Not very sure. Even though Dr. Acheng is an expert, the new medicine still needs to be compared in studies with other treatments
- C)** Very sure. Dr. Acheng is an expert, so she knows if the new medicine is good or not based on her experience
- D)** Very sure. Dr. Acheng would not be interviewed by a news reporter if her advice was not good

Answer:

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9. Edith has a stomach pain. Edith's mother says that fruit juice is a good treatment for stomach pain. She learnt about this treatment from Edith's grandmother. Over many years, other families she knows have also used fruit juice to treat stomach pain.

Question: Based on this, how sure can we be that fruit juice is a good treatment for stomach pain?

Options:

- A)** Not very sure. Even though people have used fruit juice over many years, that does not mean that it helps stomach pain
- B)** Very sure. If it has worked for Edith's mother and other people who have tried it, it will probably work for her too
- C)** Not very sure. Edith should ask more families if they use fruit juice to treat stomach pain

Answer:

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10. Peter often has a headache. A friend advises him to exercise. He says that people who exercise have fewer headaches than people who do not exercise. Based on this link between exercise and headaches, Peter's friend says that exercise will give him fewer headaches.

Question: **Is Peter's friend right?**

Options:

- A) It is not possible to say. There might be other differences between people who exercise and people who do not
- B) It is not possible to say without knowing how much people exercised
- C) Yes, because exercise must help if people who exercise have fewer headaches than people who do not

Answer:

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11. In a research study done by John, four people were told to do exercises every day for a month, and four people were told to eat bananas every day. At the end of the month, the people who ate bananas had more strength than those who did exercises. Based on his study, John advises his friend Mildred to eat bananas.

Question: Mildred says that we cannot be sure about the results of John's study. Why?

Options:

- A)** Because the study included so few people, the differences in strength could have happened by chance, and not because of the bananas
- B)** Because John should have included fewer people in his study so that he could have followed them more closely
- C)** Because four people is not enough, all people taking part in the study should have been told to eat the bananas

Answer:

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12. A new fruit drink is said to make people feel strong. Fred wanted to know if this is true, and decided to do a research study comparing people who got the new fruit drink and people who drank just water.

People in the study knew if they got the new drink or water, and Fred told them that the new fruit drink was likely to make people stronger. At the end of the study, Fred was right and those who drank the new fruit drink said they felt stronger.

Question: **Why can't we be sure about the results of Fred's study?**

Options:

- A)** Because all people taking part in the study should have been given the new fruit drink
- B)** Because people knew if they got the new fruit drink, and knowing this may have influenced how they felt
- C)** Because Fred should have told both groups that they could expect to feel stronger

Answer:

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13. Harriet is worried about getting sick. She hears about a new research study on the radio that compared a new medicine to an old medicine. Fewer people who took the old medicine got sick compared to the people who took the new medicine.

Question: How sure can Harriet be that the old medicine is better than the new medicine?

Options:

- A)** Not so sure, because Harriet needs to know the results of all other studies comparing the new medicine with the old medicine
- B)** Very sure, because she heard about the study on the radio
- C)** Not so sure, unless she finds another study with the same results
- D)** Very sure, because this is a new study

Answer:

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14. Doctors studied people with stomach pain before and after they took a new medicine. After taking the new medicine, many people felt less pain.

Question: Can we be sure that the new medicine is good for treating stomach pain?

Options:

- A)** No, taking the new medicine should have been compared either with not taking the medicine, or with taking an older medicine
- B)** Yes, people were asked how much pain they felt before and after they took the new medicine
- C)** Yes, the study was done by doctors

Answer:

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15. In a research study, doctors compared two treatments for knee pain, a new treatment and an old treatment. People were able to choose which treatment they got. Most young people chose the new treatment. At the end of the study, people who chose the new treatment had less pain.

Question: How sure can you be that the new treatment is better for treating pain than the old treatment?

Options:

- A)** Not very sure, because people taking the new treatment and the old treatment were not similar
- B)** Not very sure, because all people taking part in the study should have got both treatments
- C)** Not very sure, because older people did not like the new treatment

Answer:

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16. Judith wants smoother skin. The younger girls in her school have smoother skin than the older girls. Judith thinks this is because the younger girls use cream on their skin to make the skin smoother.

Question: Based on this link between using cream and smooth skin, is Judith correct?

Options:

- A)** It is not possible to say. It depends on how many younger and older girls there are
- B)** It is not possible to say. There might be other differences between the younger and older girls
- C)** Yes, because the younger girls use cream on their skin and they have smoother skin
- D)** No, Judith should try using the cream herself to see if it works for her

Answer:

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17. Dr. Wasswa has done a research study giving a new medicine to people who were vomiting. Some of the people stopped vomiting after they got the new medicine. Dr. Wasswa says that this means that the medicine works.

Question: Is Dr. Wasswa right?

Options:

- A)** No. The people who used the medicine were not compared with similar people who did not use the medicine
- B)** Yes, some of the people stopped vomiting
- C)** No, since not all of the people stopped vomiting

Answer:

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Instructions: Read the text at the top of the box. Then read the text in each row and choose what you think is the best answer by making a tick ✓ in one of the two boxes. There should be only one tick in each row.

<p>18. When you are sick, sometimes people say that something - a <u>treatment</u> - is good for you. Below you will find different things people say about such treatments.</p> <p>Do you agree or disagree with each of the following things being said?</p>		
<p><i>For each thing being said below, use a tick ✓ to mark whether you “agree” or “disagree”.</i></p>		
Things being said:	I agree	I disagree
18.1 Peter says that if a treatment works for one person, the treatment will help others too	<input type="checkbox"/>	<input type="checkbox"/>
18.2 Alice says that if some people try the treatment and feel better, this means that the treatment helps	<input type="checkbox"/>	<input type="checkbox"/>
18.3 Habibah says that, just because many people are using the treatment, this does not mean that it helps	<input type="checkbox"/>	<input type="checkbox"/>
18.4 Julie says that companies sometimes say that the treatment they make is best just to make money	<input type="checkbox"/>	<input type="checkbox"/>

19. A doctor wanted to know if a new medicine for treating headaches is better than an older medicine. The doctor did a research study, comparing the two medicines.

Would the actions below make you more sure or less sure about the results of the study?

For each action below, use a tick ✓ to mark whether you think the action would help you become “more sure” or “less sure”.

Actions:	More sure	Less sure
19.1 The doctor should use chance (like tossing a coin) to decide which people should be given the new medicine and which should be given the old medicine	<input type="checkbox"/>	<input type="checkbox"/>
19.2 People should not know which medicine they get (the new medicine or the old medicine) until the end of the study	<input type="checkbox"/>	<input type="checkbox"/>
19.3 The doctor should include only a small number of people in the study	<input type="checkbox"/>	<input type="checkbox"/>

20. To know if a treatment helps you, the treatment should be compared in research studies to other treatments (fair comparisons). Below you will find different things people say about such studies.

Do you agree or disagree with each of the following things being said?

For each thing being said below, use a tick ✓ to mark whether you “agree” or “disagree”.

Things being said:	I agree	I disagree
20.1 Julie says that, if a treatment has been compared in a study to another treatment, you don't have to look for more studies	<input type="checkbox"/>	<input type="checkbox"/>
20.2 Margaret says that the results of a study should be used to decide if a treatment is more helpful than harmful	<input type="checkbox"/>	<input type="checkbox"/>

Part 3.

21. Think about an illness that you might get. **How likely are you to say “yes” if you are asked to participate in a research study comparing two treatments for your illness (a fair comparison)?**

(Mark with a tick ✓ in one box)

Very unlikely	Unlikely	Likely	Very likely	I don't know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Test 2

Part 1.

What is your gender?

- ☐ Female
- ☐ Male

Have you ever had any training in scientific research (statistics, epidemiology, randomised controlled trials)?

- ☐ Yes
- ☐ No

Have you ever been a participant in a scientific research study?

- ☐ Yes
- ☐ No

What level of education have you completed?

- ☐ No education
- ☐ Primary education
- ☐ Secondary education
- ☐ Tertiary education/ university

Part 2.

1. Edith has a stomach pain. Edith's mother says that fruit juice is a good treatment for stomach pain. She learnt about this treatment from Edith's grandmother. Over many years, other families she knows have also used fruit juice to treat stomach pain.

Question: Based on this, how sure can we be that fruit juice is a good treatment for stomach pain?

Options:

- A)** Not very sure. Even though people have used fruit juice over many years, that does not mean that it helps stomach pain
- B)** Very sure. If it has worked for Edith's mother and other people who have tried it, it will probably work for her too
- C)** Not very sure. Edith should ask more families if they use fruit juice to treat stomach pain

Answer:

☐

2. Peter often has a headache. A friend advises him to exercise. He says that people who exercise have fewer headaches than people who do not exercise. Based on this link between exercise and headaches, Peter's friend says that exercise will give him fewer headaches.

Question: **Is Peter's friend right?**

Options:

- A) It is not possible to say. There might be other differences between people who exercise and people who do not
- B) It is not possible to say without knowing how much people exercised
- C) Yes, because exercise must help if people who exercise have fewer headaches than people who do not

Answer:



3. Harriet is worried about getting sick. She hears about a new research study on the radio that compared a new medicine to an old medicine. Fewer people who took the old medicine got sick compared to the people who took the new medicine.

Question: How sure can Harriet be that the old medicine is better than the new medicine?

Options:

- A) Less sure, because Harriet needs to know the results of all other studies comparing the new medicine with the old medicine
- B) More sure, because she heard about the study on the radio
- C) Less sure, unless she finds another study with the same results
- D) More sure, because this is a new study

Answer:

4. In a research study, doctors compared two treatments for knee pain, a new and an old treatment. People were able to choose which treatment they got. Most young people chose the new treatment. At the end of the study, people who chose the new treatment had less pain.

Question: How sure can you be that the new treatment is better for treating pain than the old treatment?

Options:

- A) Less sure, because people taking the new and old treatment were not similar
- B) Less sure, because all people taking part in the study should have got both treatments
- C) Less sure, because older people did not like the new treatment

Answer:

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5. Judith wants smoother skin. The younger girls in her school have smoother skin than the older girls. Judith thinks this is because the younger girls use cream on their skin to make the skin smoother.

Question: Based on this link between using cream and smooth skin, is Judith correct?

Options:

- A) It is not possible to say. It depends on how many younger and older girls there are
- B) It is not possible to say. There might be other differences between the younger and older girls
- C) Yes, because the younger girls use cream on their skin and they have smoother skin
- D) No, Judith should try using the cream herself to see if it works for her

Answer:

☐

6. Do you agree or disagree with the following statement?

Just because many people are using the treatment, this does not mean that it helps

☒ I agree

☐ I disagree

7. To know if a treatment helps you, the treatment should be compared in research studies to other treatments (fair comparisons). Below you will find different things people say about such studies.

Do you agree or disagree with each of the following things being said?

For each thing being said below, use a tick ✓ to mark whether you “agree” or “disagree”.

Things being said:	I agree	I disagree
7.1 In research studies, researchers should use chance (like tossing a coin) to decide which people should be given the new medicine and which should be given the old medicine	<input type="checkbox"/>	<input type="checkbox"/>
7.2 If you find a study that has compared the treatment you are interested in with another treatment, and this concludes with positive findings, you don't have to look for more studies.	<input type="checkbox"/>	<input type="checkbox"/>

8. Wamala has a very bad cough and is preparing for his final exams. He starts using a drink, a cough medicine, to get better. Instead of taking one drink, as he normally does, he takes two. He thinks that this will help him get rid of his cough more quickly.

Question: Is Wamala right that taking two drinks of cough medicine is better than taking one?

Options:

- A)** No, taking two drinks of cough medicine will not necessarily make him get better more quickly and it may be harmful
- B)** It is not possible to say. He may need three drinks to get better
- C)** Yes, it cannot do any harm, and it is important for him to get better more quickly for his final exams
- D)** Yes, if one drink of cough medicine usually works for him, taking two drinks will make him get rid of his cough more quickly

Answer:

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9. Mr Mukasa is very sick. The doctors say that there is no cure for his illness, but he still hopes there is something that can help him. He hears about a new medicine that other people with his sickness have used. He believes it will help him, but it is very expensive.

Question: Is Mr Mukasa right to believe the new medicine will help him?

Options:

- A)** It is not possible to say. It depends on how much hope Mr Mukasa has in the new medicine
- B)** Yes, since Mr Mukasa is very sick, trying out the new medicine cannot do any harm
- C)** No, hoping the new medicine will help does not mean that it will help, and it may harm him
- D)** Yes, hoping the new medicine will help is very important, and means that it will help

Answer:

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10. Imagine you read a story in the newspaper saying that using a cream on your skin can keep you from getting sick by improving how your blood moves. The story also says that the cream is harmless because it is made of natural oils.

Question: Based on this, how sure can you be that the cream will keep you from getting sick?

Options:

- A) Not very sure. This explanation of how the cream might work seems unlikely, I would ask somebody who has tried it
- B) Just because there is an explanation of how the cream might work, this does not mean that it actually does work, or that it is harmless
- C) It is not possible to decide. The only way to know is to test this cream myself
- D) Very sure. Since there is an explanation of how the cream works, this is probably based on studies of the cream

Answer:

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11. Esther recommends a new treatment – a medicine - for pain. She says that everyone who has tried it felt better.

Question: How sure can you be that what Esther says about the new medicine is true?

Options:

- A)** Not very sure. Very large benefits, where everyone or nearly everyone gets better because of a treatment are very rare
- B)** It is not possible to say. To be sure I would have to try the medicine for myself
- C)** Very sure. The medicine must be very good since everyone who has tried it got better

Answer:

☐

12. A doctor did a research study to find out if a new medicine for people having problems with breathing was better than an older medicine. In the study, people were given the new medicine or an older medicine. The doctor asked people who were given the new medicine to visit her during the following weeks. The people who got the old medicine sent messages to the doctor about how they felt.

Question: We cannot be sure about the results of this study. Why?

Options:

- A)** Because all people in the study should have been given the old medicine
- B)** Because all people in the study should have been given the new medicine
- C)** Because how people in the two study groups felt was not measured in the same way

Answer:

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13. Alice has made a new drink to cure stomach pain. She decided to do a research study to compare people drinking her new drink with people drinking water. At the end of the study, she asked people how much stomach pain they had.

Question: Why can't we be sure about the results of this study?

Options:

- A)** Because Alice probably thinks her new drink is better than water, so there was no need to do a study comparing it with water
- B)** Because Alice probably had opinions about her drink and she was aware of who got which drink when she asked people how much pain they had
- C)** Because Alice probably had opinions about her drink, both groups should have got her drink

Answer:

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14. A doctor compared two treatments in a research study of people with back pain. However, the doctor was not able to stay in touch with many of the people who started the study.

Question: **How sure can we be about the results of this study?**

Options:

- A) More sure, because it does not matter that the doctor was not able to stay in touch with people. Some people taking part in studies just lose interest
- B) It depends on the reasons why the doctor was not able to stay in touch with people, and how the doctor counted their results
- C) More sure, because the results of the people with whom the doctor was not able to stay in touch with cannot be trusted anyway

Answer:



15. Dr Miiro is an expert on back pain. He has reviewed (summarized) all studies comparing a particular medicine for back pain with other treatments. He said that the medicine is better than other treatments for back pain.

Question: Do you agree with what Dr Miiro said?

Options:

- A) It is not possible to say without knowing the opinion of other experts on back pain
- B) Yes, because what Dr Miiro said was based on a review
- C) It is not possible to know without knowing more about the studies he reviewed and how he reviewed them
- D) Yes, because Dr Miiro is an expert on back pain

Answer:

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16	When you are sick, sometimes people say that something - a treatment - will help you get better. Many reasons are given for what people say about treatments - claims. Which of these are good reasons for believing claims about a treatment?		
	For each reason below, use ✓ to mark whether you think it is “a good reason” or “a bad reason”.		
	Reasons:	Good reasons	Bad reasons
16.1	If you hope the medicine will make you better		
16.2	If there is a good explanation of how the medicine works		
16.3	If it is being said that the medicine works for everyone who have tried it		

17. John is going to travel and wonders how he can protect himself from getting stomach pains. He reads a newspaper and finds a story based on a review (summary) of studies comparing a new medicine with other medicines for keeping people from getting stomach pains. John is disappointed since he does not know how sure he can be about what this story says the review found.

Question: What is the main reason for John's doubts?

Options:

- A) John needs to know more about what other people who have travelled have done to protect themselves from getting stomach pains
- B) John needs to know more about the authors of the review and where they work
- C) John needs to know more about whether experts agree with what is in the news story
- D) John needs to know more about the studies that were included in the review and how the review was done

Answer:

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18	<p>Imagine you are doing a <u>research study</u> to find out if drinking fruit juice helps people with stomach pain get better more quickly.</p> <p>Which of the following things should you do to be more sure about the results of the study?</p>		
	<p><i>For each action below, use ✓ to mark if you think you should do this action (yes) or not (no).</i></p>		
	Actions:	Yes	No
18.1	You should pay extra attention to the people who drink fruit juice		
18.2	Someone else than you should measure how fast they got better		
18.3	At the end of the study, you should also count the results of the people who may have stopped drinking fruit juice		

Part 3.

19. Think about an illness that you might get. **How likely are you to say “yes” if you are asked to participate in a research study comparing two treatments for your illness (a fair comparison)?**

(Mark with a tick ✓ in one box)

Very unlikely	Unlikely	Likely	Very likely	I don't know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Test 3

Part 1.

What is your gender?

- ☐ Female
- ☐ Male

Have you ever had any training in scientific research (statistics, epidemiology, randomised controlled trials)?

- ☐ Yes
- ☐ No

Have you ever been a participant in a scientific research study?

- ☐ Yes
- ☐ No

What level of education have you completed?

- ☐ No education
- ☐ Primary education
- ☐ Secondary education
- ☐ Tertiary education/ university

Part 2.

1. Edith has a stomach pain. Edith's mother says that fruit juice is a good treatment for stomach pain. She learnt about this treatment from Edith's grandmother. Over many years, other families she knows have also used fruit juice to treat stomach pain.

Question: Based on this, how sure can we be that fruit juice is a good treatment for stomach pain?

Options:

- A)** Not very sure. Even though people have used fruit juice over many years, that does not mean that it helps stomach pain
- B)** Very sure. If it has worked for Edith's mother and other people who have tried it, it will probably work for her too
- C)** Not very sure. Edith should ask more families if they use fruit juice to treat stomach pain

Answer:

☐

2. Peter often has a headache. A friend advises him to exercise. He says that people who exercise have fewer headaches than people who do not exercise. Based on this link between exercise and headaches, Peter's friend says that exercise will give him fewer headaches.

Question: Is Peter's friend right?

Options:

- A) It is not possible to say. There might be other differences between people who exercise and people who do not
- B) It is not possible to say without knowing how much people exercised
- C) Yes, because exercise must help if people who exercise have fewer headaches than people who do not

Answer:



3. Harriet is worried about getting sick. She hears about a new research study on the radio that compared a new medicine to an old medicine. Fewer people who took the old medicine got sick compared to the people who took the new medicine.

Question: How sure can Harriet be that the old medicine is better than the new medicine?

Options:

- A) Less sure, because Harriet needs to know the results of all other studies comparing the new medicine with the old medicine
- B) More sure, because she heard about the study on the radio
- C) Less sure, unless she finds another study with the same results
- D) More sure, because this is a new study

Answer:

☐

4. In a research study, doctors compared two treatments for knee pain, a new and an old treatment. People were able to choose which treatment they got. Most young people chose the new treatment. At the end of the study, people who chose the new treatment had less pain.

Question: How sure can you be that the new treatment is better for treating pain than the old treatment?

Options:

- A)** Less sure, because people taking the new and old treatment were not similar
- B)** Less sure, because all people taking part in the study should have got both treatments
- C)** Less sure, because older people did not like the new treatment

Answer:

☐

5. Judith wants smoother skin. The younger girls in her school have smoother skin than the older girls. Judith thinks this is because the younger girls use cream on their skin to make the skin smoother.

Question: Based on this link between using cream and smooth skin, is Judith correct?

Options:

- A) It is not possible to say. It depends on how many younger and older girls there are
- B) It is not possible to say. There might be other differences between the younger and older girls
- C) Yes, because the younger girls use cream on their skin and they have smoother skin
- D) No, Judith should try using the cream herself to see if it works for her

Answer:

☐

6. Do you agree or disagree with the following statement?

Just because many people are using the treatment, this does not mean that it helps

☒ I agree

☐ I disagree

7. To know if a treatment helps you, the treatment should be compared in research studies to other treatments (fair comparisons). Below you will find different things people say about such studies.

Do you agree or disagree with each of the following things being said?

For each thing being said below, use a tick ✓ to mark whether you “agree” or “disagree”.

Things being said:	I agree	I disagree
7.1 In research studies, researchers should use chance (like tossing a coin) to decide which people should be given the new medicine and which should be given the old medicine	<input type="checkbox"/>	<input type="checkbox"/>
7.2 If you find a study that has compared the treatment you are interested in with another treatment, and this concludes with positive findings, you don't have to look for more studies.	<input type="checkbox"/>	<input type="checkbox"/>

8. Doctors did a research study in mice comparing a new medicine for pain with an old medicine. The mice that got the new medicine had less pain compared with mice given the old medicine. The doctors doing the study said that the new medicine was promising and could improve the lives of people in pain.

Question: Which of the following answers is the most correct about whether this new medicine will work the same way in people?

Options:

- A) Just because the new medicine worked in mice does not mean that it will work in people
- B) Whether the new medicine will work in people depends on whether another study with mice has the same results
- C) If the new medicine works in mice it probably works in people too, otherwise the doctors would not have done the study in mice to begin with

Answer:

☐

9. A study was done of a new exercise program to keep children from getting sports injuries. Children in a school were divided by chance into two groups. One group of children got the new programme and the other group had the school's usual physical education. The new programme was led by trained teachers who followed all of the children closely. The study showed that the children who got the new programme had fewer injuries compared to those who had the school's usual physical education.

Question: Can we expect similar results in other schools?

Options:

- A)** Yes, it is the content of the new programme that is important, not how it is delivered
- B)** It is not possible to say. It depends on how many sports injuries children in other schools normally have
- C)** No, every school is different
- D)** It is not possible to say. The new training programme may work differently when delivered by other teachers

Answer:



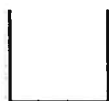
10. Gilbert did a systematic review (summary) of studies together with a friend. They wanted to find out whether people who eat breakfast run faster compared to those who do not eat breakfast? After summarizing all the relevant studies, he found that the evidence is very uncertain.

Question: **What does this mean?**

Options:

- A) Many experts disagree with the results of the included studies
- B) That we are very unsure about the effect of eating breakfast on running fast
- C) The people in the studies probably ran equally fast with or without breakfast
- D) Gilbert and his friend did a poor job summarizing the studies in the review

Answer:



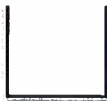
11. Andrew has an illness that makes it difficult to breathe. He uses a medicine to help him breathe. He is always looking for new and better medicines. Andrew hears about a research study evaluating the effects of a new medicine with no medicine. The doctors doing the study found that patients who got the new medicine had less breathing problems than patients who did not get medicine.

Question: Can Andrew expect that the new medicine will make it easier for him to breathe?

Options:

- A) It is not possible to know from this study how good this medicine is compared to the one he is using
- B) It is not possible to say. All of the people taking part in the study should have been given the new medicine
- C) Yes, it is very likely that the new medicine is better than Andrew's medicine since it is new
- D) Yes, because the doctors who did the study found that the new medicine can help people breathe better

Answer:



12. Two people did a systematic review (summary) of studies comparing a new treatment with an older treatment for back pain. They said that the new treatment was better than the older treatment, and that the evidence was very certain.

Question: Which factor(s) should the review authors have considered when judging the certainty of the evidence?

Options:

- A) Whether there are experts who disagree with the results of the review and how the new treatment works
- B) The p-value of the results in each of the studies included in the review
- C) The number of studies included, and whether other experts agree with the results
- D) Whether the studies were fair comparisons, the risk of being misled by the play of chance, and how directly relevant the evidence is

Answer:



13. A school teacher did a study to find out if eating bananas for breakfast could help children avoid getting sick. Normally, the children in this school did not eat anything for breakfast. In the study, some children ate bananas for breakfast and others did not. The study found that children who ate bananas were less likely to get sick.

Question: How sure can we be that eating bananas will reduce sickness among children in other schools?

Options:

- A)** Less sure, not all children like bananas
- B)** Not possible to say, the study should be repeated in the same school to be more sure
- C)** Less sure, because the study was done in a school where the children did not usually eat breakfast

Answer:

☐

Part 3.

14. Think about an illness that you might get. Imagine someone claiming (saying) that a particular treatment might help you get better.

How likely are you to do each of the following actions?

(Mark with a tick ✓ in the box; one check for each row.)

Actions:	Very unlikely	Unlikely	Likely	Very likely	I don't know
14.1 Find out what the claim was based on (for example by asking the person making the claim)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.2 Find out if the claim was based on a research study comparing the treatment to no treatment (a fair comparison)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. Below are some actions. Please read each one carefully and give the answer that comes closest to **how difficult or easy you find each of the actions to be:**

(Mark with a tick ✓ in the box; one check for each row.)

Actions:	Very difficult	Difficult	Easy	Very easy	I don't know
15.1 Assessing whether a claim about a treatment is based on a research study comparing treatments (a fair comparison)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2 Assessing where I can find information about treatments that is based on research studies comparing treatments (fair comparisons)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.3 Assessing how sure I can be about the results of a research study comparing treatments (the trustworthiness of the results)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15.4 Assessing if the results of a research study comparing treatments are likely to be relevant to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. Think about an illness that you might get. How likely are you to say “yes” if you are asked to participate in a research study comparing two treatments for your illness (a fair comparison)?				
<i>(Mark with a tick ✓ in one box)</i>				
Very unlikely	Unlikely	Likely	Very likely	I don't know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Test 4

Part 1.

What is your gender?

- ☐ Female
- ☐ Male

Have you ever had any training in scientific research (statistics, epidemiology, randomised controlled trials)?

- ☐ Yes
- ☐ No

Have you ever been a participant in a scientific research study?

- ☐ Yes
- ☐ No

What level of education have you completed?

- ☐ No education
- ☐ Primary education
- ☐ Secondary education
- ☐ Tertiary education/ university

Part 2.

1. Edith has a stomach pain. Edith's mother says that fruit juice is a good treatment for stomach pain. She learnt about this treatment from Edith's grandmother. Over many years, other families she knows have also used fruit juice to treat stomach pain.

Question: Based on this, how sure can we be that fruit juice is a good treatment for stomach pain?

Options:

- A) Not very sure. Even though people have used fruit juice over many years, that does not mean that it helps stomach pain
- B) Very sure. If it has worked for Edith's mother and other people who have tried it, it will probably work for her too
- C) Not very sure. Edith should ask more families if they use fruit juice to treat stomach pain

Answer:

☐

2. Peter often has a headache. A friend advises him to exercise. He says that people who exercise have fewer headaches than people who do not exercise. Based on this link between exercise and headaches, Peter's friend says that exercise will give him fewer headaches.

Question: Is Peter's friend right?

Options:

- A) It is not possible to say. There might be other differences between people who exercise and people who do not
- B) It is not possible to say without knowing how much people exercised
- C) Yes, because exercise must help if people who exercise have fewer headaches than people who do not

Answer:

☐

3. Harriet is worried about getting sick. She hears about a new research study on the radio that compared a new medicine to an old medicine. Fewer people who took the old medicine got sick compared to the people who took the new medicine.

Question: How sure can Harriet be that the old medicine is better than the new medicine?

Options:

- A) Less sure, because Harriet needs to know the results of all other studies comparing the new medicine with the old medicine
- B) More sure, because she heard about the study on the radio
- C) Less sure, unless she finds another study with the same results
- D) More sure, because this is a new study

Answer:

4. In a research study, doctors compared two treatments for knee pain, a new and an old treatment. People were able to choose which treatment they got. Most young people chose the new treatment. At the end of the study, people who chose the new treatment had less pain.

Question: How sure can you be that the new treatment is better for treating pain than the old treatment?

Options:

- A) Less sure, because people taking the new and old treatment were not similar
- B) Less sure, because all people taking part in the study should have got both treatments
- C) Less sure, because older people did not like the new treatment

Answer:

☐

5. Judith wants smoother skin. The younger girls in her school have smoother skin than the older girls. Judith thinks this is because the younger girls use cream on their skin to make the skin smoother.

Question: Based on this link between using cream and smooth skin, is Judith correct?

Options:

- A) It is not possible to say. It depends on how many younger and older girls there are
- B) It is not possible to say. There might be other differences between the younger and older girls
- C) Yes, because the younger girls use cream on their skin and they have smoother skin
- D) No, Judith should try using the cream herself to see if it works for her

Answer:

☐

6. Do you agree or disagree with the following statement?

Just because many people are using the treatment, this does not mean that it helps

☒ I agree

☐ I disagree

7. To know if a treatment helps you, the treatment should be compared in research studies to other treatments (fair comparisons). Below you will find different things people say about such studies.

Do you agree or disagree with each of the following things being said?

For each thing being said below, use a tick ✓ to mark whether you “agree” or “disagree”.

Things being said:	I agree	I disagree
7.1 In research studies, researchers should use chance (like tossing a coin) to decide which people should be given the new medicine and which should be given the old medicine	<input type="checkbox"/>	<input type="checkbox"/>
7.2 If you find a study that has compared the treatment you are interested in with another treatment, and this concludes with positive findings, you don't have to look for more studies.	<input type="checkbox"/>	<input type="checkbox"/>

8	<p>Grace is suffering from headaches. She has heard about a new treatment - a medicine – that may help her. She reads in the newspaper about a systematic review comparing this medicine to another medicine. The newspaper says several things about the results of this systematic review.</p> <p>For each thing that was said, mark (by using an x) whether you think it is “right” or “wrong”.</p>		
		Right	Wrong
8.1	<p>The newspaper wrote: <i>“The difference between the two medicines in the number of people with pain had a p-value of 0.01.”</i></p> <p>Without knowing the size of effect, we cannot know if this difference was important</p>		
8.2	<p>The newspaper wrote: <i>“The difference between the two medicines in how long people had pain was not statistically significant.”</i></p> <p>This means that the difference was not important</p>		
8.3	<p>The newspaper wrote: <i>“Twice as many people did not have headaches with the new medicine compared to the other medicine.”</i></p> <p>This is not necessarily a very important difference</p>		
8.4	<p>The newspaper wrote: <i>“On average people who got the new medicine had three more days without headaches than those who got the other medicine.”</i></p> <p>This means that people who try the new medicine can expect three days less pain</p>		
8.5	<p>The newspaper wrote: <i>“Among those who suffered more from headaches, the new medicine was more effective.”</i></p> <p>Sometimes the results of a group of people (such as people who are more ill) appear to be different from others in the study. This is usually because they benefit more from the treatment.</p>		

9. David is scared about getting a serious illness, and wonders if he should have a test to make sure he does not have the illness. His doctor tells him that there is a treatment for this disease, but this treatment has the same effect whether the illness is detected early or late.

Question: If a treatment has the same effect, no matter when people take it during the illness, then early detection of the illness will:

Options:

- A) Save peoples' lives
- B) Decrease the number of people needing treatment
- C) Reduce the harmful effects of the treatment
- D) Have no impact on the effect of the treatment

Answer:

☐

10. Jane took part in a study comparing two types of tea to help her sleep better. The doctors doing the study tossed a coin to decide who was given the black tea and the green tea. Jane was put in the black tea group. After a week, her sleep did not improve, and she decided to drink green tea instead.

Question: At the end of the study, in which group should the doctors count Jane's results?

Options:

- A) The black tea group, since that was the group to which she was put, and the tea did not help her
- B) Both the green tea group and the black tea group, since she had both teas
- C) The green tea group, since Jane stopped drinking the black tea
- D) The black tea group, but her results should take into account that she only drank the green tea for a week

Answer:

☐

11. Atyang is 16 years old and has a serious illness. She reads in the newspaper about a study of a new medicine for her illness. Doctors had compared the new medicine to the medicine Atyang uses. The doctors found the two medicines to be equally good. However, they found that women under 20 years of age seemed to benefit more from the new medicine.

Question: can Anita have confidence in that the new medicine works for women younger than 20 years?

Options:

- A) No. The apparent benefit among women under 20 could have been due to chance
- B) Yes, it is very likely that some people may benefit more from the medicine than others. This should always be explored when doing studies
- C) No, this means that women under the age of 20 are more likely to do well than older women with or without the new medicine
- D) It is not possible to say. Atyang would have to try for herself to see if it works

Answer:

☐

12. A doctor wanted to know if a medicine protects people from getting a heart attack. She did a study and found that half as many people who used the medicine had a heart attack compared to those who did not use the medicine.

Question: What more do you need to know if this was an important difference?

Options:

- A) The relative effect of the medicine on getting a heart attack
- B) The difference in how many people had a heart attack with and without the medicine
- C) The p-value and the relative effect
- D) An expert's opinion on the effect of the medicine

Answer:



13. James often suffers from headaches. He reads in the newspaper about a new study. In the study, doctors compared a new headache medicine with the medicine James normally uses. The people in the study who got the new medicine had an average improvement in pain of one point (on a scale from 0 to 10) compared to those taking James' medicine.

Question: What does this result mean?

Options:

- A)** It is difficult to say without knowing how many people in the study felt an important improvement in pain
- B)** It means that people with headaches will experience an improvement in pain of one point if they take the new medicine
- C)** There is an important difference between the new medicine and James' medicine
- D)** The difference between the new medicine and James' medicine is small

Answer:

☐

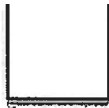
14. Steven says that if the difference between two treatments compared in a study has a p-value of 0.01, the results are very important. Jane disagrees, saying that this just means that the results are statistically significant.

Question: **Do you agree with Jane?**

Options:

- A)** Yes, to judge whether the difference between treatments is important, we need to know more about how the treatments work
- B)** No, if it is a low p-value such as 0.01, the difference between treatments is important
- C)** No, if the difference between treatments is statistically significant, it means it is important
- D)** Yes. To judge whether the difference between treatments is important, we need to know the size of the effect

Answer:



15. A teacher wanted to find out if eating oranges keeps children from getting sick. She tossed a coin and divided children into two groups. Children in one group got oranges for breakfast every day; the other group of children did not get oranges for breakfast. At the end of the study, there was no statistically significant difference in how often the children got sick.

Question: Does this mean that there was no important difference in how often the children got sick?

Options:

- A) It is not possible to say, because the P-value was not reported
- B) Yes, it means that eating oranges is not very likely to keep children from getting sick
- C) It is not possible to say, because the size of the difference and the confidence interval were not reported

Answer:

☐

16. A doctor did a research study to find out whether tea is better than warm water with honey for children with stomach pain. The doctor found that more of the children who got warm water with honey finished their drinks compared to those who got tea. Based on this study, the doctor said that warm water with honey should be given to children with stomach pain.

Question: Does this mean that warm water with honey is better than tea for stomach pain in children?

Options:

- A) Yes. If children like the drink it probably works better for pain
- B) Yes. Warm water with honey was more popular among the children, so it is a good treatment for stomach pain in children
- C) It is not possible to say, because the study did not measure children's stomach pain

Answer:

☐

17. Jane wants to keep healthy and wonders if she should be tested for a serious illness. Her doctor says using the test to detect the illness early may not be the best choice for her

Question: **What should Jane consider before taking the test?**

Options:

- A)** How good the test is and what the treatment options are for the illness, if it is detected
- B)** How many people like her believe it is a good idea to take the test
- C)** How many people have tried the test and found it to be helpful
- D)** How anxious she is about getting the serious illness

Answer:

18. Lincoln took part in a study. The purpose of the study was to find out if a new cream is good for healing bruised skin. People in one group got the cream and people in another group did not get the cream. The doctors tossed a coin to decide who should get the cream. Lincoln got the cream. However, after using the cream once, he stopped using it because of the cream's bad smell.

Question: In which group should Lincoln's results be counted?

Options:

- A) Both groups, because he got the cream first and then decided not to use the cream
- B) The cream group, because he was given the cream
- C) Neither group, since Lincoln stopped using the cream
- D) The no cream group, because Lincoln only used the cream once

Answer:

☐

19. Helen's grandfather has a serious illness that makes him cough a lot. On the radio, Helen learns about a study of a new medicine for her grandfather's illness. The study says that fewer people coughed among the people who used the new medicine rather than the old medicine.

Question: How sure can Helen be that the new medicine can cure her grandfather's illness?

Options:

- A) Less sure, because she only knows how good the medicine is for her grandfather's coughing, not the illness causing his coughing
- B) More sure, because fewer people who used the medicine coughed
- C) More sure, because Helen's grandfather coughs because he has a serious illness

Answer:

☐

Part 3.

20. Think about an illness that you might get. **How likely are you to say “yes” if you are asked to participate in a research study comparing two treatments for your illness (a fair comparison)?**

(Mark with a tick ✓ in one box)

Very unlikely	Unlikely	Likely	Very likely	I don't know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

