Name: _____ Date: _____

How Vaccines Work

Circle group

Your body has a defense team called the immune system. When germs such as viruses and bacteria get inside, it goes to work. White blood cells find the germs. The body makes proteins called antibodies. Antibodies stick to the germs and help destroy them.

The first time your body meets a germ, it needs time to fight back. You may feel sick for days before the immune system wins. But the body keeps a memory. Some cells remember the germ. If it ever comes back, the body can fight it much faster, often before you feel sick.

A vaccine lets the body learn this lesson without the illness. It carries a harmless piece of a germ. Or it carries a germ that has been killed or made weak, so it cannot make you sick. Some newer vaccines carry instructions. They tell your cells how to make a harmless piece of the germ. The immune system sees the piece and treats it like an invader. It makes antibodies. Then it keeps the memory.

Most vaccines are shots. Some are taken by mouth or sprayed in the nose. Some need more than one dose so the memory stays strong.

Vaccines protect the person who gets them. They protect others too. When most people in a community are protected, a germ has a hard time spreading. That shields people who cannot get a vaccine, like very young babies. Doctors call this community immunity.

Questions

1. What is the immune system?

_____

_____

2. What do antibodies do?

_____

_____

3. Why does the body fight a germ faster the second time?

_____

_____

4. How does a vaccine teach the body without making you sick?

_____

_____

5. Why do some vaccines need more than one dose?

_____

_____

6. How can a vaccine help someone who did not get it?

_____

_____

7. What does it mean to learn the lesson "without the illness"?

_____

_____

Words to know

immune system: the parts of the body that fight germs
germs: tiny living things, such as viruses and bacteria, that can cause illness
antibodies: proteins the body makes that stick to germs and help destroy them
vaccine: a medicine that teaches the immune system to recognize a germ
dose: a measured amount of a medicine
community immunity: protection of a whole group when most of its members are protected

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

How Vaccines Work

Triangle group

Your body has a defense system called the immune system. When germs such as viruses and bacteria get inside, the immune system goes to work. White blood cells find the germs. The body makes proteins called antibodies that stick to the germs and help destroy them.

The first time your body meets a germ, the response takes time. You may feel sick for days before the immune system wins. But the body keeps a memory. Some of the cells remember the germ, so if it ever comes back, the body can respond much faster, often before you feel ill.

A vaccine lets the body learn this lesson without the illness. It carries a harmless piece of a germ, or a germ that has been killed or weakened so that it cannot make you sick. Some newer vaccines carry instructions that tell your cells how to make a harmless piece of the germ. The immune system sees the piece, treats it as an invader, and makes antibodies. Then it keeps the memory.

Most vaccines are given as shots, though some are taken by mouth or as a spray in the nose. Some need more than one dose so that the memory stays strong.

Vaccines protect the person who gets them. They also protect others. When most people in a community are protected, a germ has trouble spreading, which shields people who cannot be vaccinated, such as very young babies. Doctors call this community immunity.

Questions

1. What is the immune system?

_____

_____

2. What do antibodies do?

_____

_____

3. Why does meeting a germ a second time usually go better than the first time?

_____

_____

4. How does a vaccine teach the immune system without making a person sick?

_____

_____

5. Why do some vaccines need more than one dose?

_____

_____

6. How can a vaccine protect someone who has not had it?

_____

_____

7. What does the author mean by a lesson "without the illness"?

_____

_____

Words to know

immune system: the parts of the body that fight germs
germs: tiny living things, such as viruses and bacteria, that can cause illness
antibodies: proteins the body makes that stick to germs and help destroy them
vaccine: a medicine that teaches the immune system to recognize a germ
dose: a measured amount of a medicine
community immunity: protection of a whole group when most of its members are protected

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

How Vaccines Work

Square group

Your body possesses a sophisticated defense network known as the immune system. Whenever germs such as viruses and bacteria manage to enter the body, the immune system mobilizes: white blood cells locate the invaders, and the body manufactures specialized proteins called antibodies, which attach to the germs and help destroy them.

The first time your body encounters a particular germ, mounting a response requires time, and you may feel sick for several days before the immune system prevails. Afterward, however, the body retains a memory. Certain cells remember the germ, so if it ever returns, the body can respond far more rapidly, frequently before you feel ill at all.

A vaccine allows the body to acquire this protective memory without enduring the illness. It contains a harmless fragment of a germ, or a germ that has been killed or weakened so that it cannot make you sick. Some newer vaccines instead deliver instructions that direct your cells to produce a harmless piece of the germ themselves. The immune system detects the piece, treats it as an invader, and generates antibodies, and then it preserves the memory.

Most vaccines are administered as injections, although some are swallowed or delivered as a spray in the nose. Certain vaccines require more than one dose so that the memory remains strong.

Vaccines protect the individuals who receive them, and they protect others as well. When most members of a community are protected, a germ struggles to spread, which shields people who cannot be vaccinated, such as very young infants. Physicians refer to this phenomenon as community immunity.

Questions

1. What role does the immune system play in the body?

_____

_____

2. What is the function of antibodies?

_____

_____

3. Why is a second encounter with a germ typically less severe than the first?

_____

_____

4. Describe how a vaccine trains the immune system without causing illness.

_____

_____

5. Why do certain vaccines require multiple doses?

_____

_____

6. Explain how vaccination can protect people who have not been vaccinated themselves.

_____

_____

7. What does the author mean by acquiring protective memory "without enduring the illness"?

_____

_____

Words to know

immune system: the parts of the body that fight germs
germs: tiny living things, such as viruses and bacteria, that can cause illness
antibodies: proteins the body makes that stick to germs and help destroy them
vaccine: a medicine that teaches the immune system to recognize a germ
dose: a measured amount of a medicine
community immunity: protection of a whole group when most of its members are protected

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: How Vaccines Work

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: How Vaccines Work

Easier · 240 words · Flesch-Kincaid grade 4.1

1. The body's defense team against germs.
2. They stick to germs and help destroy them.
3. The body keeps a memory. Some cells remember the germ, so the body can fight it much faster.
4. It carries a harmless piece of a germ, a killed or weak germ, or instructions for making a harmless piece. The body makes antibodies and keeps the memory.
5. So the memory stays strong.
6. When most people in a community are protected, a germ has a hard time spreading, so people who cannot get a vaccine are shielded too.
7. The body gets the same practice and memory it would get from catching the germ, but the person does not get sick.

Triangle: How Vaccines Work

This passage · 243 words · Flesch-Kincaid grade 5.8

1. The body's defense system against germs.
2. They stick to germs and help destroy them.
3. The body keeps a memory. Some cells remember the germ, so the body can respond much faster.
4. It carries a harmless piece of a germ, or a killed or weakened germ, or instructions for making a harmless piece. The body makes antibodies and keeps the memory.
5. So that the memory stays strong.
6. When most people in a community are protected, a germ has trouble spreading, so people who cannot be vaccinated are shielded too.
7. A vaccine gives the body the same practice and memory that catching the disease would, without making the person sick.

Square: How Vaccines Work

Harder · 263 words · Flesch-Kincaid grade 11.2

1. It is the body's defense network against germs such as viruses and bacteria.
2. They attach to germs and help destroy them.
3. The body retains a memory. Certain cells remember the germ, so the body can respond far more rapidly.
4. It contains a harmless fragment of a germ, a killed or weakened germ, or instructions for cells to make a harmless piece. The immune system generates antibodies and preserves the memory.

5. So that the memory remains strong.
6. When most members of a community are protected, a germ struggles to spread, which shields those who cannot be vaccinated, such as very young infants.
7. A vaccine gives the body the same practice and memory that catching the disease would, without making the person sick.