

VACCINES

Lexile 740L

Vaccines help prevent people from getting certain diseases. Vaccines can be given in different ways. They can be given through needle injections, by mouth, or by **aerosol**. An aerosol is a fine spray that is breathed in. Different types of vaccines exist. Some vaccines use a live **virus**, or a tiny organism that causes a disease. The virus is first weakened, so the person does not get the disease. Other vaccines use a dead virus. All vaccines give people **immunity** to certain diseases. Immunity is the body's ability to resist, or fight off, a disease.

Background

The Centers for Disease Control and Prevention (CDC) is part of the government. It helps protect people's health in the United States. The CDC recommends a number of different vaccines for people. People get different vaccines at certain ages. They get the most vaccines when they are children. This is because children get sick more often than adults. Vaccines give children immunity to some diseases. Older adults also receive certain vaccines. The CDC wants people who are sixty or older to get a shingles vaccine. Shingles is common among older adults. It is very painful. The CDC also recommends certain vaccines for pregnant women. People who are traveling to other countries should also have certain vaccines.

Effects on Public Health

All major health organizations in the United States say vaccines are safe and good for **public health**. Public health is the health of a whole population. Vaccines stop people from getting and passing on diseases. When many people within a group receive vaccines, fewer people get the disease. For example, diphtheria (dif-THEER-ee-uh) is a disease. It used to affect millions of Americans. In 1921, fifteen thousand Americans died from diphtheria. Then people began getting vaccinated against the disease. Only two people got the disease in the United States from 2004 to 2014.

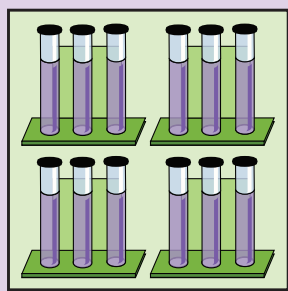
Controversies Related to Vaccines

In 1998, *The Lancet*, a medical journal, published a research paper about **autism**. Autism is a medical disorder. People with autism find it difficult to use language and communicate. The paper in the journal said autism was linked to vaccines. The journal became famous. Many people believed vaccines caused autism. But other scientists pointed out that the claims made

Manufacturing of Vaccines

The FDA licenses a vaccine only if:

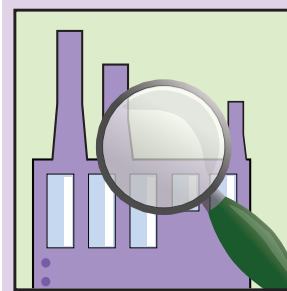
- It's safe and effective
- Benefits outweigh risks



Vaccines are made in batches called lots.



Manufacturers must test all vaccine lots. The FDA must review lots for safety and quality. If the FDA approves, the lots are released for medical providers.



The FDA inspects manufacturing facilities regularly for safety and quality.

Vaccine manufacture and the role of the Food and Drug Administration.

in the paper were flawed. The journal **retracted**, or took back, the paper in 2004. Today, most scientists and doctors believe the paper was wrong. But millions of people still believe that vaccines cause autism. Some parents do not allow their children to get vaccines. They think vaccines will cause their children to become autistic.

A **whooping (hoop-ing) cough** outbreak happened in 2010. Whooping cough is an illness that affects mostly children. It is serious and can kill children. The outbreak of whooping cough in 2010 was the largest in the United States since 1947. Some of the children who got and passed on whooping cough did not receive vaccinations. The illness spread quickly because fewer children were being vaccinated. Their parents thought vaccinations were unsafe. But most doctors strongly believe that children should be vaccinated. They believe vaccines keep children and the larger community safe.

Vaccines have changed people's lives. They have reduced childhood deaths. But vaccines are still **controversial**. If something is controversial, people disagree about it. Some people believe children receive too many vaccines. They also worry about the ingredients used in vaccines. State and local governments have become involved in the discussions about vaccines. Some governments require children to get vaccines before they go to school. This has created even more controversy about vaccines.

Bibliography

Periodicals

Carroll, Aaron E. "Not Up for Debate: The Science behind Vaccination." *The New York Times*, 17 Sept. 2015. <https://www.nytimes.com/2015/09/18/upshot/not-up-for-debate-the-science-behind-vaccination.html>. Accessed 27 Apr. 2017. This article gives scientific evidence to support the idea that vaccines are important.

Daley, Matthew F. and Jason M. Glanz. "Straight Talk about Vaccination." *Scientific American*, 1 Sept. 2011. <https://www.scientificamerican.com/article/straight-talk-about-vaccination/>. Accessed 27 Apr. 2017. This article gives information about the usefulness of vaccines and describes how doctors can convince people to vaccinate their children.

Websites

"Basics" *Vaccines.gov*. <https://www.vaccines.gov/basics/>. Accessed 27 Apr. 2017. This website gives general information about vaccines.

FE Andre, et al. *World Health Organization*, 2 Feb. 2008. "Vaccination Greatly Reduces Disease, Disability, Death and Inequity Worldwide." <http://www.who.int/bulletin/volumes/86/2/07-040089/en/>. Accessed 27 Apr. 2017. This website describes the benefits of vaccines on public health.

"Types of Vaccines." *Vaccines.gov*, 6 March 2017. <https://www.vaccines.gov/basics/types/index.html>. Accessed 27 Apr. 2017. This website gives overviews of the different types of vaccines.

"What Would Happen If We Stopped Vaccinations?" *CDC*, March 10, 2017. <https://www.cdc.gov/vaccines/vac-gen/whatifstop.htm>. Accessed 27 Apr. 2017. This article describes what might happen if people no longer received vaccines.

■ By Elizabeth Mohn

Elizabeth Mohn has more than ten years' experience as an author and editor of educational materials for all ages.

COMPREHENSION TEST

Multiple-Choice Questions

1. Which age group usually gets the most vaccines?
 - A. children
 - B. older adults
 - C. pregnant people
 - D. people who are traveling
 2. What disease mostly affects older people and can be very painful?
 - A. autism
 - B. shingles
 - C. diphtheria
 - D. whooping cough
 3. What did a paper in the *The Lancet* wrongly say about vaccines?
 - A. They stop disease.
 - B. They cause autism.
 - C. They prevent death.
 - D. They reduce disability.
-

Fill-in-the-Blank Questions

4. _____ is the body's ability to resist a disease.
5. _____ is the health of a whole population.

COMPREHENSION TEST ANSWERS

Multiple-Choice Questions

1. Which age group usually gets the most vaccines?
A. children
B. older adults
C. pregnant people
D. people who are traveling

2. What disease mostly affects older people and can be very painful?
A. autism
B. shingles
C. diphtheria
D. whooping cough

3. What did a paper in the *The Lancet* wrongly say about vaccines?
A. They stop disease.
B. They cause autism.
C. They prevent death.
D. They reduce disability.

Fill-in-the-Blank Questions

4. Immunity is the body's ability to resist a disease.
5. Public health is the health of a whole population.