



KidsHealth.org/classroom

Teacher's Guide

This guide includes:

- Standards
- Related Links
- Discussion Questions
- Activities for Students
- Reproducible Materials

Standards

This guide correlates with the following National Health Education Standards:

Students will:

- Comprehend concepts related to health promotion and disease prevention to enhance health.
- Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
- Demonstrate the ability to access valid information and products and services to enhance health.
- Demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.
- Demonstrate the ability to use decision-making skills to enhance health.
- Demonstrate the ability to use goal-setting skills to enhance health.
- Demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.
- Demonstrate the ability to advocate for personal, family, and community health.

National Health Education Standards:
<http://www.cdc.gov/healthyschools/sher/standards/index.htm>

Germ is everywhere: in school, at home, at the gym, at the mall, even on your computer! You're constantly exposed to germs. Fortunately for most of us, our immune systems defend us against germs and microorganisms daily to keep us healthy and prevent infection. These activities will help your students learn all about the immune system.

Related KidsHealth Links

Articles for Teens:

Immune System

TeensHealth.org/en/teens/immune.html

Why Should I Care About Germs?

TeensHealth.org/en/teens/care-about-germs.html

Hand Washing

TeensHealth.org/en/teens/handwashing.html

Spleen and Lymphatic System

TeensHealth.org/en/teens/spleen.html

Article for Teachers:

Tips From School Nurses on Keeping Students Healthy

KidsHealth.org/en/parents/healthy-nurse-tips.html

Discussion Questions

Note: The following questions are written in language appropriate for sharing with your students.

1. How does the immune system work to protect us from disease and infection?
2. What are leukocytes and where are they produced and stored in the body? How do leukocytes travel around the body during the immune system's response to the invasion of a foreign substance?
3. Why are some people more immune than others to disease and infection? How do people develop immunity?
4. What can teens do to keep their immune systems strong and healthy?
5. What happens when your immune system fails? Is it possible to recover from this failure?



Activities for Students

Note: The following activities are written in language appropriate for sharing with your students.

Immune System Vocabulary

Objectives:

Students will:

- Learn terminology related to the immune system

Materials:

- Computer with Internet access
- Pens or pencils
- “Immune System Vocabulary” handout and “Immune System” quiz and answer key

Class Time:

- 1 hour

Activity:

Phagocyte, lymphocyte, immunity – what do these words mean? Read about the immune system at TeensHealth.org to find out how your body fights off sickness. After reading the articles, complete the word search puzzle, and then I’ll pass out a quiz so you can show what you know about your body’s defense system for attacking germs and diseases.

Extension:

It seems like advances in knowledge or cures for diseases are being reported in the news all the time. For the next two months, keep track and record any news about issues related to the immune system.



Immunity Breakdown

Objectives:

Students will:

- Identify and explore disorders related to the immune system

Materials:

- Computer with Internet access
- Index cards
- “Immunity Breakdown” handout

Class Time:

- Two 1-hour sessions

Activity:

You’re part of a team of doctors who focus on dealing with immune system disorders. You and your colleague were invited to speak to high school students about an immune system disorder. Read the TeensHealth.org article titled “Immune System” and choose an immune system disorder to report on. Use this handout to gather facts from the article and other sources (you can search for each disorder at TeensHealth.org). Then give a brief report to the students.

Extension:

Washing your hands often (1) is the best way to avoid infections and help keep your immune system healthy. You can also keep your immune system strong by (2) eating a nutritious diet, (3) exercising and being active every day, (4) getting enough sleep each night, and (5) visiting a doctor regularly. Create a brief public address to be read during the morning announcements, highlighting these five ways to help the immune system fight germs and illnesses.

Reproducible Materials

Handout: Immune System Vocabulary

KidsHealth.org/classroom/9to12/body/systems/immune_handout1.pdf

Handout for Teachers: Immune System Vocabulary Answers

KidsHealth.org/classroom/9to12/body/systems/immune_handout2.pdf

Handout: Immunity Breakdown

KidsHealth.org/classroom/9to12/body/systems/immune_handout3.pdf

Quiz: Immune System

KidsHealth.org/classroom/9to12/body/systems/immune_quiz.pdf

Answer Key: Immune System

KidsHealth.org/classroom/9to12/body/systems/immune_quiz_answers.pdf



Name: _____

Date: _____

Immune System Vocabulary

Instructions: Circle the immune system vocabulary words from the word bank. They could be arranged vertically, horizontally, diagonally, and backward.

J K K T O Q N L A I M E K U E L N P
 V I F T A H V R I E T Y C O G A H P
 H U G U N S E D O N H P M Y L B R L
 I N L E U K O C Y T E S J N L E F Q
 B M P D Z V I F E N U M M I R S S N
 E H O W W J K G N Y A L L E R G I C
 A U T O I M M U N E A K O N J A S R
 S E I C N E I C I F E D O N U M M I
 E A E A C C Z C C R L U M E I N Q J
 X N T I L R Z G N I H S A W D N A H
 A T A U F N N L C M J Q L B U I Y B
 G I N C O Z O P A V A V Q L X O U V
 E B N Q S R S L E S S E V G W A Y N
 L O I A L X Y N B B X J O Z G A G V
 F D X N E V L B V W C D P G T C F X
 A I K V J L Y M P H O C Y T E S P A
 Z E Y A N T I G E N O Z L I O P R D
 F S N C I V R Y Z V O D I S E A S E

WORD BANK

ALLERGIC	AUTOIMMUNE	IMMUNE	LEUKEMIA	LYMPHOCYTES
ANTIBODIES	DISEASE	IMMUNODEFICIENCIES	LEUKOCYTES	PHAGOCYTE
ANTIGEN	HAND WASHING	INNATE	LYMPH NODES	VESSELS



Immune System Vocabulary Answers

J K K T O Q N L **A I M E K U E L** N P
 V I F T A H V R I **E T Y C O G A H P**
 H U G U N **S E D O N H P M Y L** B R L
 I N **L E U K O C Y T E S** J N L E F Q
 B M P D Z V I F **E N U M M I** R S S N
 E H O W W J K G N Y **A L L E R G I C**
A U T O I M M U N E A K O N J A S R
S E I C N E I C I F E D O N U M M I
 E **A E** A C C Z C C R L U M E I N Q J
 X N T I L R Z **G N I H S A W D N A H**
 A T A U F N N L C M J Q L B U I Y B
 G I N C O Z O P A V A V Q L X O U V
 E B N Q S R **S L E S S E V** G W A Y N
 L O **I** A L X Y N B B X J O Z G A G V
 F D X N E V L B V W C D P G T C F X
 A I K V J **L Y M P H O C Y T E S** P A
 Z E Y **A N T I G E N** O Z L I O P R D
 F S N C I V R Y Z V O **D I S E A S E**

WORD BANK

ALLERGIC	AUTOIMMUNE	IMMUNE	LEUKEMIA	LYMPHOCYTES
ANTIBODIES	DISEASE	IMMUNODEFICIENCIES	LEUKOCYTES	PHAGOCYTE
ANTIGEN	HAND WASHING	INNATE	LYMPH NODES	VESSELS



Dr: _____ and Dr: _____
(your name) (your name)

Date: _____

Immunity Breakdown

Instructions: You and your medical colleague need to prepare a brief speech to high school students about what happens when a person has a problem with the immune system. Read the TeensHealth.org article titled “Immune System” and choose an immune system disorder to report on. Use this handout to gather facts from the article and other sources (you can search for each disorder at TeensHealth.org). Then give a brief report to the students.

Immune disorder: _____

Common age of onset: _____

Occurrence in population: _____



Cause: _____

Description: _____

Treatment: _____



Name: _____

Date: _____

Quiz

Instructions: Fill in the blanks with the words from the word bank.

1. The _____ system protects your body from sickness and germs.
2. _____ are white blood cells that seek out and destroy organisms or substances that can cause disease.
3. _____ are glands that work like filters to remove germs. They're found in your neck, armpit, and other areas.
4. Cells that chew up invading germs are called _____.
5. _____ are the cells that recognize invaders like germs.
6. Leukocytes travel through the body via lymphatic _____.
7. A foreign substance that invades your body is called an _____.
8. When your body detects an antigen, _____ are made and lock onto it. Once an antigen is recognized, your immune system can remember it the next time and protect you from getting sick again.
9. Humans are born with _____ immunity.
10. _____ is one of the best ways to avoid infections and help keep your immune system healthy.
11. _____ occur when a part of the immune system is not present or is not working properly.
12. When the immune system attacks healthy organs and tissues, it's called an _____ disorder.
13. An _____ reaction occurs when the immune system overreacts to exposure to antigens in the environment.
14. Acquired immunodeficiencies can develop as a result of burns, malnutrition, or other medical problems; or if a person takes certain medicines or has a _____.
15. An abnormal overgrowth of leukocytes results in _____, a form of cancer.

WORD BANK

allergic	disease	innate	lymphocytes
antibodies	hand washing	leukemia	phagocytes
antigen	immune	leukocytes	vessels
autoimmune	immunodeficiencies	lymph nodes	



Quiz Answer Key

1. The immune system protects your body from sickness and germs.
2. Leukocytes are white blood cells that seek out and destroy organisms or substances that can cause disease.
3. Lymph nodes are glands that work like filters to remove germs. They're found in your neck, armpit, and other areas.
4. Cells that chew up invading germs are called phagocytes.
5. Lymphocytes are the cells that recognize invaders like germs.
6. Leukocytes travel through the body via lymphatic vessels.
7. A foreign substance that invades your body is called an antigen.
8. When your body detects an antigen, antibodies are made and lock onto it. Once an antigen is recognized, your immune system can remember it the next time and protect you from getting sick again.
9. Humans are born with innate immunity.
10. Hand washing is one of the best ways to avoid infections and help keep your immune system healthy.
11. Immunodeficiencies occur when a part of the immune system is not present or is not working properly.
12. When the immune system attacks healthy organs and tissues, it's called an autoimmune disorder.
13. An allergic reaction occurs when the immune system overreacts to exposure to antigens in the environment.
14. Acquired immunodeficiencies can develop as a result of burns, malnutrition, or other medical problems; or if a person takes certain medicines or has a disease.
15. An abnormal overgrowth of leukocytes results in leukemia, a form of cancer.

WORD BANK

allergic	disease	innate	lymphocytes
antibodies	hand washing	leukemia	phagocytes
antigen	immune	leukocytes	vessels
autoimmune	immunodeficiencies	lymph nodes	