

Blood

How many blood types are there? Which types are rare? In this lesson, you'll learn eight fascinating facts about blood. You'll also learn about the importance of blood donation and blood transfusions. Let's begin!

Pre-Reading

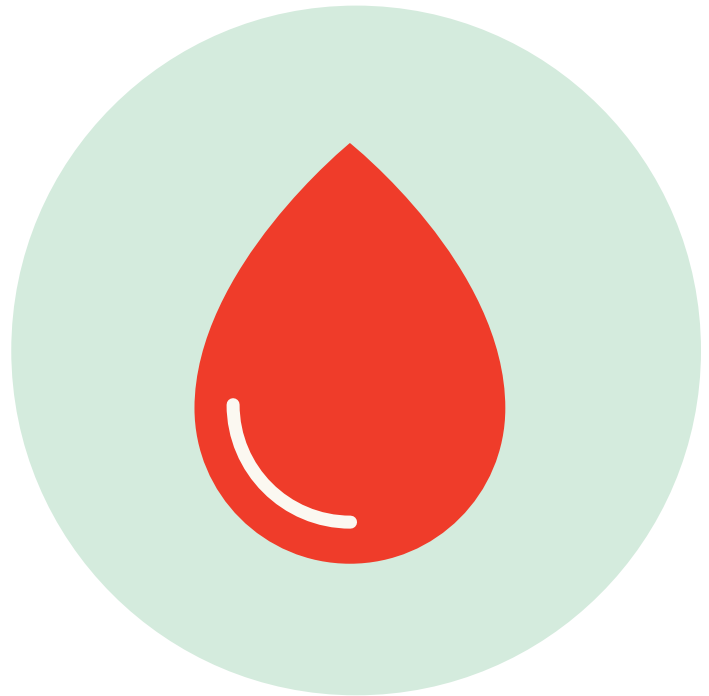
A. Warm-Up Questions

1. Do you know your blood type?
2. Have you ever donated blood?
3. Why do hospitals ask for blood donations?
4. Who can't donate blood?

B. Vocabulary Preview

Match up as many words and meanings as you can. Check this exercise again after seeing the words in context on page 2.

- | | |
|----------------------------|--|
| _____ 1. donation | a) a part of something |
| _____ 2. classification | b) the placement of something into separate categories |
| _____ 3. component | c) relating to the characteristics a person inherits |
| _____ 4. genetic | d) able to exist together without problems |
| _____ 5. eligible | e) the network in a person's body that helps protect from diseases |
| _____ 6. compatible | f) having the right or ability to do something |
| _____ 7. immune system | g) the transfer of blood from one body into another |
| _____ 8. antibody | h) the giving away of something (usually to help someone) |
| _____ 9. blood transfusion | i) a protein in a person's blood that helps protect from diseases |
| _____ 10. organ | j) a body part with a specific function |



Word Dissection

The words *antibody* and *antigen* sound similar because they have the same prefix. *Anti-* means "against" or "the opposite of something." So *antibody* literally means "against the body." Meanwhile, *-gen* means "cause" or "origin." So an *antigen* is technically something that is "against the origin of something."

Reading

8 Fascinating Facts about Blood

1. *Blood has many functions.*

Blood carries oxygen from your lungs to your cells. It also transports nutrients, proteins, hormones, and waste. In addition, it helps fight infections and prevents blood clots. Blood also helps regulate your body temperature.

2. *Blood volume depends on body size.*

The average adult has 9–12 pints (4.3 to 5.7 litres) of blood inside his or her body. A newborn has about a cup of blood. A healthy adult can safely donate about a pint of blood. After a blood **donation**, the body replaces the blood within a few weeks.

3. *Blood types are organized into blood group systems.*

The two widely used blood group systems are *ABO* and *Rh*. *ABO* blood types are A, B, AB, and O, depending on whether the blood contains A antigens (markers on the surface of red blood cells), B antigens, both A and B antigens, or neither (type O). *Rh* blood types are positive or negative, and these **classifications** show whether or not the blood contains Rh factor (a protein in red blood cells). Your blood type can be A positive, A negative, B positive, B negative, AB positive, AB negative, O positive, or O negative.

4. *Blood has four parts.*

There are eight common blood types, but all of them have the same four **components**: red blood cells, white blood cells, plasma, and platelets.

5. *There's no blood substitute.*

Because blood can't be created artificially yet, doctors rely on blood donations from healthy

people in order to save lives. Your blood type is simply a **genetic** difference, like having blue or brown eyes. No matter what blood type you have, if you are a healthy adult who meets the requirements, you can donate blood. Males can donate more frequently than females.

6. *Some blood types are rare.*

During blood shortages, there are often special callouts for specific blood types, including the rarest, AB negative, or the second rarest, B negative. Only .6% of the population has AB negative blood, and only 1.5% of the population has B negative blood. In addition to donating red blood cells to both AB types, AB negative donors can donate life-saving plasma to patients of any blood type. Many countries have a database of **eligible** rare blood donors for emergencies.

7. *Your immune system knows your blood type.*

If you received donated blood from someone whose blood was not **compatible**, it would be very dangerous. This is because **immune systems** create **antibodies**, which are proteins that protect the body against invaders. If a patient received the wrong kind of blood during a **blood transfusion**, the patient's antibodies would attack the invading blood cells. This could cause the body's **organs** to stop working.

8. *Blood transfusions save lives.*

Blood transfusions are the most common life-saving procedure performed in hospitals. Approximately one in seven hospital patients needs blood. If your blood is used in a blood transfusion, you can save up to three lives!

Comprehension

A. True or False?

Read the statements below. Write T if the statement is true. Write F if the statement is false, and correct the information in your notebook.

- _____ 1. Doctors can manufacture blood.
- _____ 2. All blood contains plasma.
- _____ 3. Antibody is one of the blood types.
- _____ 4. O positive blood contains Rh factor.
- _____ 5. AB negative is the rarest blood type.

B. Ask & Answer

Practise asking and answering the following questions with your partner. Then write your answers in complete sentences in your notebook.

- 1. What are two of blood's functions?
- 2. What could happen if you received the wrong kind of blood during a transfusion?
- 3. What are the four components of blood?
- 4. What type of ABO blood contains no A or B antigens?
- 5. According to the reading, how many lives can you potentially save if you donate blood?
- 6. What percentage of the population has B negative blood?
- 7. Why is it especially important to donate blood if your blood type is AB negative?

Vocabulary Review

A. Complete the Sentences

Complete the sentences using vocabulary from page 2.
You may need to change the word forms.

1. Did you know that having red hair is caused by a _____ mutation?
2. Kidneys are _____ that sort through the waste in human blood.
3. If you get sick often, there might be a problem with your _____.
4. Pierre donated blood because his sister needed a _____.
5. You're not _____ to donate blood yet. You have to be 17 years of age.
6. I had a lot of old clothes, so I gathered them together
and made a _____ to the homeless shelter.

B. Choose the Closest Meaning

Choose the word that is closest in meaning to each vocabulary word.

- | | | |
|--|---|---|
| 1. components a) structures b) parts c) appearances | 4. genetic a) usual b) interesting c) hereditary | 7. immune system a) rebellion b) understanding c) resistance |
| 2. classification a) category b) teaching c) grades | 5. transfusion a) creation b) replacement c) drain | 8. antibodies a) leaders b) invaders c) defenders |
| 3. compatible a) agreeable b) clever c) opposing | 6. eligible a) permitted b) formal c) illegal | 9. donate a) take b) give c) buy |

Grammar Review

PARTS OF SPEECH

A. Reference

In English, there are eight different parts of speech. These are *nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions, and interjections*. Can you remember how each of these parts of speech function?

Many of the vocabulary words in this lesson can be changed into different parts of speech. For example, if you wanted to change the adjective *genetic* into a noun, the result would be *gene*.

B. Changing the Word Forms

Change the forms of the following vocabulary words:

| # | What kind of word is... | Make it into a... |
|---|--------------------------------|------------------------|
| 1 | transfusion _____ | verb _____ |
| 2 | donation _____ | verb _____ |
| 3 | immune _____ | noun _____ |
| 4 | classification _____ | verb _____ |
| 5 | genetic _____ | adverb _____ |

Writing

A. Research

Choose a new topic related to blood and do some research about it. Here are some examples:

- 8 Reasons People Need Blood Transfusions
- 8 Requirements for Blood Donation Eligibility
- 8 Functions of the Blood
- 8 More Facts about the Blood

B. Make a List

Write your list here or type it in a blog post or document.

Title: _____

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____
