

# Blood Disorder

by Sophia



## WHAT'S COVERED

In this lesson, you will learn to identify various types of blood disorders and their characteristics. Specifically, this lesson will cover:

## 1. Anemia

**Anemia** is a type of blood disorder in which red blood cells do not deliver enough oxygen to the body. One of the main problems of anemia is that it results in fatigue because the tissues and organs of the body are not getting the oxygen that they need. There are various forms of anemias.



### TERM TO KNOW

#### **Anemia**

A group of disorders that affect a red blood cell's ability to transport gases.

### 1a. Sickle Cell Anemia

**Sickle cell anemia** is a type of inherited anemia. With this type of disorder, red blood cells are sickle-shaped or crescent-shaped and are also stiff and tend to be sticky. The result is that often they will block blood flow in vessels, causing fatigue and pain.



### TERM TO KNOW

#### **Sickle Cell Anemia**

Classified as hemolytic anemia, sickle cell anemia is caused by a genetic mutation that causes an abnormality in hemoglobin structure; the abnormal hemoglobin crystallizes and changes the shape of red blood cells from a short biconcave disk into a long sickle-shaped cell.

### 1b. Malaria

**Malaria** is another type of blood disorder associated with anemia. With this type of disorder, protozoan parasites will be transmitted by mosquitoes and will then multiply inside of the red blood cells. Eventually, this will cause red blood cells to burst and die. Because the red blood cells die, there are not enough red blood cells bringing oxygen throughout your body.

Symptoms of this type of disorder include:

- Fever

- Chills
- Death

This disorder is more common in places that are very warm, moist, and have a lot of mosquitoes.



#### TERM TO KNOW

##### **Malaria**

Malaria is caused by a parasite that is transmitted via mosquitoes; the parasite first infects the liver; from there, the infection spreads to red blood cells.

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## 2. Leukemia

**Leukemia** is a type of cancer caused by a DNA mutation. This disorder causes an overactive growth of immature white blood cells that will destroy bone marrow. There are several different forms of leukemia, but all of them start in the bone marrow and then can spread throughout the body.



#### TERM TO KNOW

##### **Leukemia**

A cancer of red bone marrow that causes a significant increase in circulating white blood cells (leukocytes).

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## 3. Toxemia

**Toxemia** is the spreading of toxins in the bloodstream and is also sometimes known as blood poisoning. In this disorder, metabolic wastes are not properly removed. Different organs and structures in your body usually take care of metabolic waste and dispose of it properly, but, when this does not happen, that metabolic waste will build up in your blood.

This can lead to:

- Anemia
- Improper clotting
- Possibly death



#### TERM TO KNOW

##### **Toxemia**

A general term to describe blood poisoning.

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## 4. Septicemia

**Septicemia** is when organisms such as bacteria enter the bloodstream and release toxins. These toxins can damage or destroy red blood cells, and the organisms can infect the rest of the body.

➔ **EXAMPLE** Staph A is a type of bacterial infection. MRSA is a type of Staph A that is antibiotic-resistant.



#### TERM TO KNOW

##### **Septicemia**

When organisms, such as bacteria, get into the circulating blood and cause a system-wide infection.



#### SUMMARY

Several different blood disorders can occur. **Anemia** is the term for a group of disorders that affect red blood cells and their ability to bring oxygen to the body. One such type is **sickle cell anemia**, an inherited disease. **Malaria** is also associated with anemia. **Leukemia** is cancer that causes an overproduction of immature white blood cells. Eventually, this will lead to the destruction of bone marrow. **Toxemia** is the spreading of toxins in the bloodstream and is also referred to as blood poisoning. **Septicemia** is when bacteria release toxins into the blood which damage or destroy red blood cells.

Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND



#### TERMS TO KNOW

##### **Anemia**

A group of disorders that affect a red blood cell's ability to transport gases.

##### **Leukemia**

A cancer of red bone marrow that causes a significant increase in circulating white blood cells (leukocytes).

##### **Malaria**

Malaria is caused by a parasite that is transmitted via mosquitoes. The parasite first infects the liver; from there, the infection spreads to red blood cells.

##### **Septicemia**

When organisms, such as bacteria, get into the circulating blood and cause a system-wide infection.

##### **Sickle Cell Anemia**

Classified as hemolytic anemia, sickle cell anemia is caused by a genetic mutation that causes an abnormality in hemoglobin structure. The abnormal hemoglobin crystallizes and changes the shape of red blood cells from a short biconcave disk into a long sickle-shaped cell.

##### **Toxemia**

A general term to describe blood poisoning.

