

Just below your rib cage is a large curved muscle called the **diaphragm**. The diaphragm moves up and down, expanding and contracting the rib cage and causing you to exhale or inhale.

Science Alert!

The terms *breathing* and *respiration* have different meanings in biology. Breathing is the mechanical process of taking air into and out of the body. Respiration is a chemical process that involves using oxygen to get energy from food.

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079 Cell Processes

Circulatory System

Your **circulatory system** transports needed substances throughout your body and carries away wastes. This system is made up of your blood, heart, and blood vessels.

Blood cells

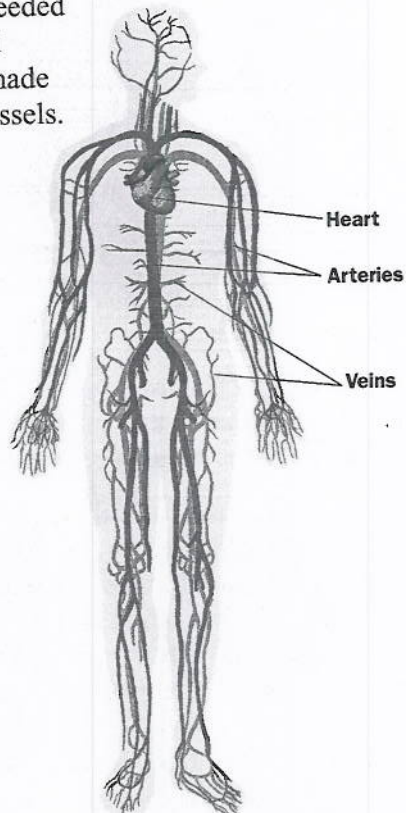
Red blood cells



White blood cells



Platelets



Circulatory system

Blood is a tissue made up of cells and cell parts that are carried in a liquid. **Red blood cells** are specialized to carry oxygen and carbon dioxide. **White blood cells** help you fight disease. Blood also contains platelets. **Platelets** are cell pieces that help your blood clot when you have an injury. The blood cells, platelets, and dissolved food and proteins are all carried in **plasma**—a pale yellow liquid.

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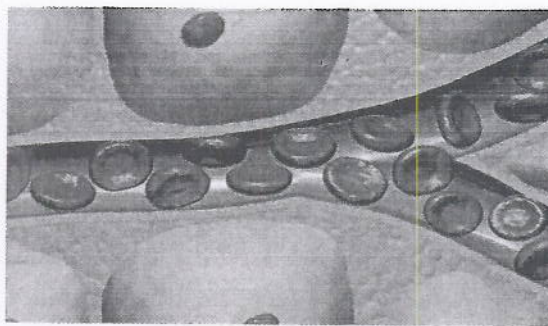
082 Tissues,
Organs, and
Systems

Did You Know?

Certain proteins on the surface of red blood cells cause people to have different blood types. You can have A, B, AB, or O type blood.

Your **heart** is a fist-sized organ in your chest. The heart pumps blood throughout your body. From the heart, blood moves into large blood vessels called **arteries**. Arteries divide into smaller and smaller blood vessels that carry blood away from your heart. Eventually the blood is carried into tiny blood vessels called **capillaries**. Valuable nutrients in blood are then exchanged between the capillaries and your cells.

Arteries and away both start with A. Use this mnemonic to help remember that arteries carry blood away from the heart.



Blood cells moving through capillaries



Blood carrying wastes (including carbon dioxide) and depleted of oxygen then returns to the heart through a system of blood vessels called **veins**. From the heart, the blood is pumped to the lungs where it releases carbon dioxide waste and picks up more oxygen. This fresh blood then returns to the heart where it is again pumped out to the body.

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