

How Does Exercise Affect the Human Body?

Directions: Read to learn the effects of exercise on the human body.



Did you know that scientists and doctors believe that children and adolescents ages 6 through 17 years should get 60 minutes or more of physical activity each day? Physical activity is often referred to as exercise. Exercise allows the body to sweat, breathe heavily, and get the heart beating quickly.



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There are different ways to get physical activity. Aerobic exercises like running, swimming, and biking increase heart rate and breathing. Anaerobic exercises, or muscle-strengthening activities, like playing on a jungle gym, push-ups, and gymnastics build strong muscles, bones, and joints. Doctors recommend a mixture of both types of exercise throughout the week.

What's your favorite way to get exercise?



How does exercise affect the human body's systems?

Your body is made up of different systems that work together to function properly. Exercising affects each body system directly.

Respiratory System: The main function, or job, of the respiratory system is to take oxygen into the lungs and to get rid of carbon dioxide and water. The oxygen is supplied to all cells throughout the body. Major organs of the respiratory system include the lungs, mouth, nose, trachea (windpipe), bronchi, and alveoli.



Exercising makes your lungs work harder, as you need to breathe faster and heavier to take in more oxygen. Exercise increases the amount of oxygen the lungs can take in. The more oxygen that is taken in, the more that is sent to the blood cells.

How does the respiratory system help you while you are exercising?

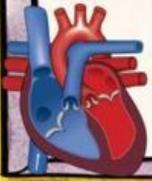


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Circulatory System: The circulatory system is made up of your heart, blood cells, and blood. The circulatory system is important to your body because it delivers substances to your cells, carries waste away from the cells, and helps to regulate your body temperature.

Exercising helps the circulatory system because it pumps more blood with each heartbeat. This helps to increase blood supply throughout the body. Exercise also reduces the chances of having a heart attack or stroke and reduces blood pressure.



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Muscular System: Your body has around 600 muscles in it. The muscular system is important to us because it helps our bodies move. When we exercise, we can build our muscles to become even stronger. Strong muscles can protect bones from injury and protect joints from developing arthritis. Arthritis causes swelling and stiffness in joints, which are areas where bones meet. Strong muscles also help with balance, coordination, and stability when we move.



What do your muscles do?

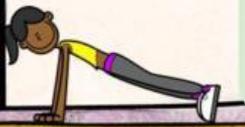
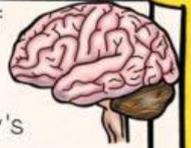
Skeletal System: The skeletal system is made up of bones, cartilage, and marrow. There are 206 bones in the human body. Bones are the foundation of the body, giving it its shape, protecting internal organs, providing movement, and producing blood cells.

When you exercise, your bones will continue to build bone and become denser. This will help to prevent the bone from breaking. As you age, the body loses bone mass, and exercising can help slow this down.

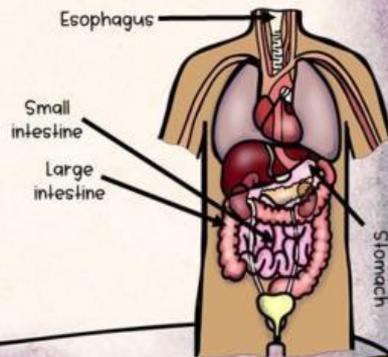
How does exercise help your bones?

Nervous System: The function, or job, of your nervous system is to send and receive messages that control your body's activities. The brain, spinal cord, and nerves make up this system. The nervous system acts as the control center of the body. The messages it receives and sends tell the body how it should act and also protects it from danger. Exercise helps the nervous system by improving brain function and memory speed. Exercise can help you sleep better at night by allowing the body to repair and grow as it rests.

How does this system control your entire body?



Digestive System: Digestion is how our body changes food into energy that it can use. The parts of the digestive system include the mouth, nose, esophagus, stomach, and small and large intestines. As food flows through these body parts, it is broken down into energy that the body can use. Whatever cannot be absorbed and used will be eliminated from the body.



Exercise helps the digestive system burn fats and carbohydrates. The increased blood flow from the circulatory system helps the digestive muscles push food along to be digested quicker and more efficiently. Exercise also balances the bacteria in our stomachs. Bacteria is needed to help break down food in the stomach.

Think about it:

You have read about several body systems so far.

How do they work together to help the human body?

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Endocrine System: The endocrine system is made up of about ten endocrine glands found inside the body that help it respond to changes in the environment. Some of these changes include mood, growth, and development. Glands are organs that produce special chemicals called hormones.

Endocrine glands release their chemicals directly into the blood inside of the body. The blood then helps to release them throughout the body.

During exercise, the pituitary gland releases growth hormone. This hormone acts like a security guard for muscles. It protects the muscles and tells the body to break down fats for energy. This gland is also responsible for



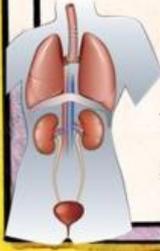
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controlling your metabolism. Your metabolism is the rate at which the body breaks down food. A quick metabolism will break down food faster. The hypothalamus is another gland in our bodies. This gland helps to produce sweat to cool us down as our bodies heat up from exercise.

What is the job of the endocrine system?



Excretory System: Your body is constantly taking in new substances and releasing ones it doesn't need. As your body takes in substances, it uses what it needs, and the rest becomes waste. Your body rids itself of waste through the excretory system. The lungs, kidneys, ureters, urinary bladder, urethra, skin, and liver make up this system. These parts work together to rid the body of waste products like urea, water, and carbon dioxide.



When you exercise, your body releases sweat as it tries to control its temperature. Sweat removes water and salts from the body, along with small

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amounts of urea. The endocrine system tells the body to conserve water which could impact your kidneys' production of urine. Your body may become dehydrated if you are not drinking enough liquids while exercising and throughout the day.

Why is it important to drink water all day long?



Integumentary System: The integumentary system is important to us because it helps in five very important ways. It helps us regulate our body temperatures, eliminates wastes, protects the body, gathers information about the environment, and produces vitamin D. The integumentary system includes our skin, hair, nails, sweat, and oil glands.

Through exercise, the increase in blood flow sends oxygen and nutrients to the skin cells which keeps them healthy. This also promotes them to make new skin cells. Exercise also makes sweat pour out of the skin. When this happens, your body gets rid of wastes. This helps

your skin cleanse itself from the inside out as the wastes are released. Sweat contains water, so it is important to replenish those fluids throughout the day.

How does the integumentary system help you while you are exercising?



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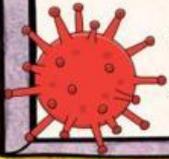
Immune System: The immune system is one of the human body systems that is designed to eliminate pathogens and other sicknesses that invade the body, allowing it to maintain homeostasis.

Homeostasis is the process of keeping an organism's internal environment stable, despite factors such as pathogens that try to invade or destroy it. Pathogens are organisms that try to invade the body and cause disease. The immune system has three layers. These layers work like soldiers in a war. The first layer, or line of defense, is the skin, the breathing passages: nose, pharynx, trachea, bronchi, and mouth, and the stomach. The second line of defense is

the inflammatory response system, which is made of white blood cells. The third line of defense is the immune response system. This line of defense uses T cells and B cells to destroy pathogens.

Regular exercise helps the immune system keep illnesses and infections down because it keeps the immune system in shape to fight against pathogens. Exercise helps the body to perform efficiently by increasing blood flow, decreasing stress, and strengthening antibodies to fight off pathogens.

Why is the immune system important?



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HOW DOES EXERCISE IMPROVE THE BODY'S SYSTEMS?

Explain how exercise helps each body system.

SKELETAL SYSTEM

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CIRCULATORY SYSTEM

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DIGESTIVE SYSTEM

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IMMUNE SYSTEM

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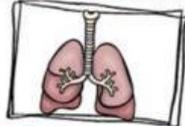
MUSCULAR SYSTEM

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NERVOUS SYSTEM

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RESPIRATORY SYSTEM



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ENDOCRINE SYSTEM

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EXCRETORY SYSTEM

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INTEGUMENTARY SYSTEM

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