I'm not a robot

How does body systems work together

A body system is a group of body parts that work together to perform a certain job. Use your touchpad or mouse to move around the image and to zoom in and out. Your respiratory system relies on your circulatory system to deliver the oxygen it gathers, while the muscles of your heart cannot function without the oxygen they receive from your lungs. Each system relies on the others in order to keep the body healthy and working correctly. It controls both your conscious and unconscious bodily processes like moving, breathing, and blinking. The goal of wellness is to optimize the coordinated function of these systems for your benefit. Here are a few examples: The nervous and endocrine systems direct the action and function of the body. Other body systems, including the digestive, circulatory, and excretory systems, are affected by the disease. Order today to take back your wellness and promote optimal full-body function! The body is made up of 11 systems that work together. However, a very basic and fundamental understanding of the body's integrated working parts and organ systems has been in place for centuries. Incredibly, all of these cells, vessels and organs work together to keep you alive. Digestive systemThis system resembles a long tube with attached organs. This biological system is in charge of sexual reproduction. They control movement, posture and assist the body with heat generation. Kidneys are blood purifiers filtering liquid from the bloodstream, removing undesirable substances (such as toxins) and returning those still required to the blood. Excretory systemThe excretory system is composed of the kidneys (urine-forming organs), the bladder (temporary storage for urine) and channels for moving this liquid waste around. Both the nervous system and endocrine system serve to integrate the body's various other systems, keeping things in synch. The biological purpose of this process is the continuation of life. The palm has 5 bones that connect with 14 finger bones. For immune support, our Daily Immune Complex give your immune system an extra shield against sickness. Though absorption of some drugs and alcohol may start in the stomach, absorption is mainly the function of the small intestines. Each of your body systems relies on the others to work well. Cardiovascular systemThe heart and blood vessels make up this system. He believed the workings of the human body to be an analogy for the workings of the universe. The hormone glucagon causes the liver to add glucose to the blood. There are 206 bones in the human skeleton that provide a hard framework able to support the body and protect the organs that they surround. Together the hormones insulin and glucagon--supplied by the pancreas--keep glucose in the blood at a healthy level. For example, the respiratory and circulatory systems work together to provide the body with oxygen and to rid the body of carbon dioxide. Note: this 3D image may take slightly longer to load. Your circulatory system delivers oxygen-rich blood to your bones. From exercise and diet to daily supplementation, you can help to strengthen and protect your body’s systems from damage. It is part of the cardiovascular system and it carries products of digestion (digestive system) to body cells, excretory wastes (excretory system) to the kidneys and hormones (endocrine system) to target organs such as those forming part of the reproductive system. Cells throughout the body take their fill of oxygen and nutrients and dispose of carbon dioxide and waste products, which eventually flow back to the heart's right-sided chambers; then on to the lungs to exchange carbon dioxide with oxygen. The wrist has many smaller bones and joints, allowing the hand to move in different directions. Ingested food is broken down into constituent nutrient molecules that are then absorbed into the bloodstream. Your skeletal system relies on your urinary system to remove waste produced by bone cells; in return, the bones of your skeleton create structure that protects your bladder and other urinary system organs. Respiratory systemOur bodies are made up of countless cells all requiring oxygen to carry out the important process of respiration. Your heart pumps blood through a complex network of blood vessels. The digestive system is responsible for breaking down food into molecules small enough to be used by the body's cells and tissues. Some body systems share a common organ that performs more than one job. Working together, these systems maintain internal stability and balance, otherwise known as homeostasis. The respiratory system is composed of the lungs, airways, and blood vessels and functions to carry oxygen throughout the body to the lungs and tissues. The Cardiovascular & Circulatory Systems These systems – comprised of the heart, lymphatic vessels and glands, blood and blood vessels, and lymph – are responsible for circulating blood and lymph throughout the body to maintain homeostasis, or balance. Reviewed by: Tom Iarocci, M.D. Is this an emergency? Type I diabetes is managed by injections of insulin and small regularly spaced meals and snacks to keep the amount of glucose in the blood at a steady and normal level. This causes the level of glucose in the bloodstream to rise, and a condition known as Type I diabetes mellitus results. Your blood also carries oxygen inhaled by the lungs. Glucose is the main source of energy for the body's cells. The system that provides your body's shape is the skeletal system, and it is made up of cartilage and bone. Your circulatory system carries vital nutrients to the skeletal and muscular systems. The nervous system is made up of two parts: The central nervous system (CNS) is made of the brain and spinal cord. For example, the pancreas serves both the digestive system and the endocrine system. We offer family practice and 39 medical specialties to help all ten of your body systems work together. The endocrine system utilizes your brain, thymus, pancreas, and more to transfer signals throughout the body. A disorder in one system can cause other systems to break down. This system is made up of your skin and hair, or your exterior defense system against outside entities and atmospheres. The cardiovascular system with its heart-pump and network of arteries and veins shuttles oxygen-rich blood from the lungs to all of the body's organs and tissues. These body systems are interconnected and dependent upon one another to function. The kidneys filter out wastes from the blood to form urine, which flows down the ureters and enters the urinary bladder. The fascia and connective tissues provide a framework for holding all of us together and allowing us to maintain our function in the face of gravity. If you are experiencing serious medical symptoms, please see the National Library of Medicine’s list of signs you need emergency medical attention or call 911. Bile from the liver also works on fats. Although scientists categorize groups of organs into different body systems, these systems do not work in isolation. This is a very simplified look at the body’s internal workings as there are many other organs and processes that come into play – but this is an effective overview to help you grasp just how complex the body is. Scientists divide the human body into systems to better understand how its parts interact with each other, to function as a whole. Sources: Organs of the Body Cleveland Clinic AIDS.org Your body is a beautiful, complicated web of systems that work together with efficient intricacy. We want you to live your best life, and we provide tools and information to do so! Well Theory was designed by orthopedic surgeon, wellness expert and creator of The Healing Sole, Dr. Meredith Warner. Let’s define these systems and dive deeper into how and why they work together, as well as how you can make sure they are functioning to the best of their abilities. But what does this mean? This is why it is essential to protect the body as a whole. Your heart does not beat unless your brain and nervous system tell it to do so. The immune system also plays a role in detecting non-self markers on cells that may arise in cancer cells and due to organ transplants. Your circulatory system delivers oxygen and nutrients to the other cells of your body then picks up any waste products created by these cells, including carbon dioxide, and delivers these waste products to the kidneys and lungs for disposal. The process of breathing allows these gases to be exchanged between the blood and lungs. Skin is one of the first barriers to viruses and other pathogens and is subject to a lot of oxidative stress. Rights: Photograph copyright Luc Viatour Vitruvian Man Leonardo da Vinci’s drawing of the Vitruvian Man (c. Immune systemThe immune system is a protection mechanism composed of specialised cells, cell products, tissues, organs and processes within an organism that protect against pathogens. For more information on the connection between body systems, talk to your health professional at Revere Health. If your immune system is left unable to protect the body from outside dangers, your reproductive system and nervous systems are left vulnerable to illness. Movement in the body is the result of muscle contraction; when muscles combine with the action of joints and bones, obvious movements are performed, such as jumping and walking. Hormones are typically produced by a gland such as the pituitary, thyroid or gonads, and released into the bloodstream. The pituitary is is considered a master gland, since it governs the release of hormones by other glands. Even seemingly unrelated body systems are connected. Stress, as perceived by the nervous system, can have a remarkable impact on the immune system and also the digestive system, which happens to be another major site of immune cell activity. Bacteria, parasites and fungi that may cause infection meet a system of immune soldiers, including T-lymphocytes, macrophages and neutrophils. The immune system is also the major player in healing from tissue damage from injury and aging. It regulates body temperature, protects underlying layers of tissue from sun damage and prevents pathogens from freely entering your body. This system works directly with the digestive system. Each individual system works in conjunction with other systems to improve our chances of survival by maintaining a stable internal body environment. Inhaled air passes through your nasal passages, throat and lung airways reaching tiny alveoli, the site of gas exchange. Damage or limited function of any one of these systems can result in something as inconsequential as short-lived painful sensations to chronic diseases like heart disease and Chrohn’s disease. There are two interconnected nervous systems: the central nervous system and the peripheral nervous system. If left untreated, coma and death can follow. Reproductive systemThe human body has a system of organs that work together for the purpose of reproduction. If you become ill with the AIDS virus that affects your immune system, for example, you may develop pneumonia in your respiratory system, a yeast infection in your reproductive system, Candida that affects your esophagus in your digestive system or the skin cancer known as Kaposi’s sarcoma. Learning how these systems interact can help us understand how food, exercise, and disease affect more than just a single system. Other organ systems, such as the endocrine and nervous system, directly and indirectly regulate the cardiovascular system. The newly oxygen-rich blood travels back from the lungs to the heart's left-sided chambers, where it gets pumped out at great pressure via arteries to reach the needy tissues once again. This is the regulatory system that ensures balance in all other functions of the body. A body system is a collection of parts able to work together to serve a common purpose – growth, reproduction and survival. Although each body system performs a different role, all the systems work together to keep the entire body healthy. The nervous system controls both voluntary and involuntary, automatic activities and bodily functions. Now that we have defined these systems, why are they important, and how do they function together so seamlessly? Don’t forget to strengthen your nervous system with our newest addition to the Well Theory family, our Brain Booster Multivitamin! We’ve got a lot to choose from to find your perfect supplement regimen. This system protects you from hot and cold temperatures, dust, allergens, and more. The immune system is a network of cells, tissues and organs that work together to attack pathogens that try to invade your body. Rights: The University of Waikato Te Whare Wānanga o Waikato The body’s systems The human body is made up of a number of inter-related systems that work together to maintain a stable internal environment. Rights: The University of Waikato Te Whare Wānanga o Waikato Nervous system The five senses are an integral part of the nervous system, which is made up of a network of specialised cells, tissues and organs that coordinate and regulate our responses to internal and external stimuli. When your blood circulates through your digestive system, for example, it picks up nutrients your body absorbed from your last meal. The circulatory system provides your brain with a constant supply of oxygen-rich blood while your brain regulates your heart rate and blood pressure. It also excretes waste products such as carbon dioxide. The human body is beautifully complex. Image Credit: mihtiander/iStock/Getty Images New discoveries about how the body's systems function and work together continue to emerge almost daily. If an unknown entity enters the body, white blood cells quickly attack the intruder, absorb it, and remove it from the body. With time, the immune system's B-lymphocytes can produce antibodies against a new unknown invader. The peripheral nervous system (PNS) is composed of the nerves extending from the brain and spinal cord to the rest of the body. The lungs provide a place where oxygen can reach the blood and carbon dioxide can be removed from it. In this process cells use oxygen gas and produce carbon dioxide gas – a waste product that must be removed from the body. And so the cycle continues. Well-rounded nutrition, stress reduction, and physical activity can keep your body happy, healthy, and pain-free. The female reproductive system is made up of the uterus and ovaries while the male reproductive system includes the prostate and testis. 1492) shows his interest in proportion. Scientific knowledge is concerned with understanding how individual parts of a system work and how these systems work together to create a whole. This line of wellness products is formulated for full-body wellness. Fibers, undigestible material, bile and loads of bacteria travel through the large intestines and out through the colon and rectum. There are 10 body systems: Circulatory Respiratory Nervous Muscular Skeletal Digestive Endocrine (hormones) Lymphatic, or immune system Reproductive Integumentary (skin, hair) A body system is a group of parts that work together to serve a common purpose. The bladder collects the urine and releases when full, out through a the urethra. Your cardiovascular system works to circulate your blood while your respiratory system introduces oxygen into your body. READ MORE: GIVE YOUR IMMUNE SYSTEM AN EXTRA KICK This immune system targets and eliminates unknown microbes in the body to keep it safe from viruses and infection. It also includes the distal ends of the forearm bones. Home Videos Health & Medicine The human body is composed of many parts. For example, the pancreas may fail to produce enough of the hormone insulin. The nervous system is responsible for transmitting sensations and commands throughout the body. It works hand in hand with the nervous system for internalized communication and regulation of bodily function. 3 & 4. 6. The nervous system allows basic electrical signals to be interpreted into our feelings and sensations. Find pain reduction for muscles, joints, and tissue with our Essential multivitamin, Foot Pain Relief Cream, and Cooling Pain Recovery Cream. The body is composed of 13 major systems: This system acts as the messenger throughout the entire body by the release of hormones. Insulin travels through the bloodstream to help cells remove glucose from the blood and use it. August 22, 2016 | Internal MedicineThe human body contains trillions of cells, 78 different organs and more than 60,000 miles of blood vessels if you stretched them end-to-end. The bones of your skull and spine protect your brain and spinal cord, but your brain regulates the position of your bones by controlling your muscles. Both digestive and excretory systems are regulated with input from the nervous system and endocrine system, and the cardiovascular system is inextricably linked with bowel and kidney function on multiple levels. Rights: Tavernier Amaury, licensed under CC BY-NC-SA 4.0 3D image of a hand and wrist This illustrates the bones of the hand: wrist, palm and fingers. Each part of the body has a specific function. Endocrine glands produce hormones (chemical messengers) released into the blood and transported to target sites around the body. Full-body wellness is exactly what it sounds like. This is also called the Lymphatic System. An example of the way these systems are inter-related is the blood. Each organ belongs to one of ten human body systems. Our bodies are held together by connective tissue. When one of these systems is not functioning properly, you are guaranteed to feel this imbalance throughout the other systems within your body. Each part of a system depends on the other parts to perform tasks that can’t be achieved by single parts acting alone. If you are looking for protection from inflammation and free radicals, our Tart Cherry Extract Supplement can provide you with a strong defense. For example, the skin, hair, and nails are part of a system called the integumentary system, which protects the body from its environment. Digestible nutrients pass through from the small intestines and their microvilli to capillaries and on to the liver for detoxification and further processing and conditioning, then out to the body. Edwin Powell Hubble (1889–1953) Our five senses make up a system within the nervous system. If your nervous system is compromised, you may lose sensation or mobility in other areas of the body and have limited control of the muscular system. The digestive, respiratory, and circulatory systems work together to remove waste from the body while also absorbing necessary nutrients and compounds. The heart is a pump forcing blood into a network of blood vessels allowing it to travel to organs and delivery sites requiring oxygen gas for respirationnutrients and the removal of waste substances. Unlike the nervous system, there is no physical "wiring" with neurons, however, and the hormones reach their target via the blood stream, where they exert their effect. It also provides the body with strength and stability. Meanwhile, the circulatory system carries hormones from the endocrine system, and the immune system’s white blood cells that fight off infection. Equipped with his five senses, man explores the universe around him and calls the adventure science. The integumentary system is also home to millions of nerves that respond to touch, pressure and pain. Disease in one body system can disrupt homeostasis and cause trouble in other body systems. The cardiovascular system is what allows oxygen to reach each and every cell of your body. Musculoskeletal systemThe skeleton provides a framework on which the human body is arranged. This system is controlled by the nervous system. This stable environment is known as homeostasis. Each Body System Works with the Others Each individual body system works in conjunction with other body systems. Meanwhile, your bones are busy making new blood cells. Symptoms include excessive urination, thirst, loss of appetite, poor circulation, and vomiting. Your skeletal system relies on the nutrients it gains from your digestive system to build strong, healthy bones. Nervous systemThe nervous system is made up of a network of specialised cells, tissues and organs that coordinate and regulate the responses of the body to internal and external stimuli. This is your internalized signaling system made up of your brain, nerves, ganglia, and spinal cord. When the cardiovascular system is low on fluid, such as in severe dehydration, the skin loses its normal resiliency and can actually form a "tent" when pinched, instead of springing back into shape. Endocrine systemComposed of a number of small organs distributed throughout the body, the endocrine system coordinates the metabolic activity of body cells by interacting with the nervous system. These products, when paired with a healthy and active lifestyle, can help each of the systems in the body to function optimally. The urinary system (including the kidneys, bladder, and urinary organs) is in charge of excreting waste substances from the body, absorbing nutrients before excretion, and detoxifying our systems. In the digestive system, the pancreas helps break down food into nutrients by secreting enzymes into the small intestine to digest fats, starches, and proteins. As part of the endocrine system, the pancreas produces two kinds of hormones--insulin and glucagon--to regulate the amount of glucose, or sugar, in the blood. The digestive system is composed of organs such as the pancreas, stomach, liver, intestines, and gallbladder that can process food and nutrients that enter the body. The lining of the digestive system is another primary barrier to pathogens like viruses. This is the background code running in your human-computer that allows the software of the other 12 systems to be useful. It receives information and responds to it. The peripheral nervous system includes all of the nerves and sends messages from the brain to the rest of the body. This is the unifying system of all other systems. All 206 of your adult bones make up the skeletal system, giving the body internal structure and form. Cartilage provides support with flexibility and resistance, and acts as padding to soften the pressure that is exerted from the bones. It is articulated to allow free movement in conjunction with the skeletal muscles. The central nervous system includes the spinal cord and the brain, which gets the information from the body and sends out instructions. The circulatory system is a good example of how body systems interact with each other. The immune system is another example of a system that protects the body. This system provides compression strength and the ability to resist tension that is necessary for motion and work in our environments. The Muscular and Connective Tissue System READ MORE: THE MECHANICS OF MOVEMENT This system is made up of muscle fibers and gives the body the ability to move. The integumentary system, or skin, is the body's first line of defense. The endocrine system largely governs many processes related to reproduction and sexual maturity, as well. The PNS is made up of a sensory part (made of nerve fibres carrying impulses to the CNS from sensory receptors found in the five senses) and a motor part (taking messages from the CNS to muscles, glands and organs). The contraction of muscles provides the body posture, joint stability and heat production. The food is broken apart through chewing and stomach churning, but also chemically -- through the stomach's acid-loving enzymes, and on to the small intestine, which receives pancreatic enzymes and juices specially tailored to dissolve and digest proteins, carbohydrates and fibers. Indigestible remains are then egested. Some body systems work together to complete a job. The endocrine system system uses hormones, or chemical messengers across distances to effect target organs and tissues. Integumentary systemCommonly known as the skin, this system wraps the body in a protective covering with a number of functions such as UV protection and temperature regulation, taking it well beyond being just a mere covering. It consists of a complex network of organs, tissues, and cells, such as white blood cells, that help the body recognize and destroy foreign substances and fight off infections. The endocrine and nervous system may work together on the same organ, and each may influence the actions of the other system. They are responsible for receiving information from the environment outside the body and relaying it to the brain for processing.