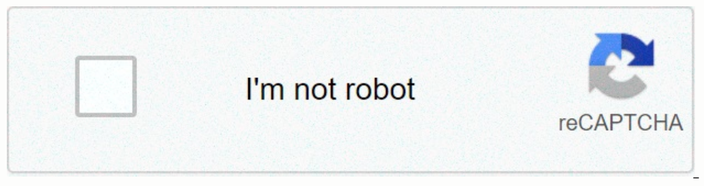

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Human skeleton diagrams

Medically Reviewed by William Morrison, MD - Written by Jill Seladi-Schulman, Ph.D. - Updated on August 30, 2018Axial AnatomyDiagramAppendicular AnatomyFunctionConditionsHealth Tips The human skeletal system consists of all bones, cartilage, tendons and ligaments in the body. Overall, the skeleton accounts for about 20 percent of a person's body weight. The adult skeleton contains 206 bones. Children's skeletons actually contain more bones because some of them, including the bones of the skull, come together when they grow up. There are also some differences in male and female skeletons. The male skeleton is usually longer and has a high bone mass. The female skeleton, on the other hand, has a wider pelvis to accommodate for pregnancy and the birth of a child. Regardless of age or gender, the skeletal system can be divided into two parts, known as the axial skeleton and the adetic skeleton. The adult axial skeleton consists of 80 bones. It consists of bones that form the vertical axis of the body, such as the bones of the head, neck, chest and spine. Skull bone The adult skull consists of 22 bones. These bones can be further classified by location: Craybon. Eight cram bones make up most of your skull. They help protect your brain. Facial bones. There's 14 facial bones. They are located on the front of the skull and form a face. Auditory ossiclesSystel ossicles are six small bones found in the inner sound system in the skull. There are three auditory ossicles on each side of the head, known as: malleus (hammer) incus (anvil) stapes (caliper)They work together to transmit sound waves from the surrounding environment to the structures of the inner ear. Hyoid Hyoid is a U-shaped bone located at the bottom of the jaw. It serves as an attachment point for the muscles and ligaments in the neck. The spineSa spine consists of 26 bones. The first 24 are vertebrae, followed by sacrum and skeleton (skeleton). 24 vertebrae can be further divided into: cervical vertebrae. These seven bones are located in the head and neck. Thoracer vertebrae. These 12 bones are located in the upper back. Lumbar vertebrae. These five bones are located in the lower back. The sacrum and skeleton consist of several wobbled vertebrae. They help promote body weight while sitting. They also serve as attachment points for different ligaments. Thoracid cage The thorac cage consists of a sternum (sternum) and 12 pairs of ribs. These bones form a protective cage around the organs of the upper torso, including the heart and lungs. Some ribs attach directly to the sternum, while others are connected to the sternum through the cartilage. Some do not have a connection point and are referred to as floating ribs. Explore the interactive 3-D diagram below for more information about the skeletal system. A total of 126 in the application skeleton. It consists of bones that form the hands and feet, as well as bones that attach them to the axial skeleton. Breast girdlesParor belt is where the hands attach to the axial skeleton. It consists of the collarbone (collarbone) and the shoulder blade(s). There are two of them - one for each hand. Upper limbs Each arm contains 30 bones, known as: Humerus. Humerus is a long bone in the shoulder. Radius. The radius is one of the two long bones of the forearm, located on the side of the thumb. Ulna. Ulna is the second long bone of the forearm, located on the side of the little finger. Carpathians. The Carpathians are a group of eight bones found in the wrist area. Metacarpals. Metacarpals are five bones found in the central area of the hand. Phalanphalanses. Phalanges are 14 bones that make up the fingers. Pelvic belt The pelvic belt, commonly known as the hips, is where the legs attach to the axial skeleton. It consists of two hipbones - one for each leg. Each lumbar bone consists of three parts, known as: Ilium. The ilium is the upper part of each hip bone. Ischium. Ischium is a curved bone that forms the basis of each hip bone. Pubis. Pubis is located in front of the hip bone. Lower limbs Each leg consists of 30 bones, known as: Femur. The femur is a large bone of the upper leg. Tibia. The tibia is the main bone of the lower limb. It forms the tibia. Fibula. The fibula is the second bone in the lower leg, located in the outer leg. Patella. The patella is also called apples. Tarsals. Tarsals are the seven bones that make up the ankle. Metatarsal. Metatarsal are five bones that form the middle region of the foot. Phalanphalanses. Phalanges are 14 bones that make up toes. The main function of the skeletal system is to provide support for the body. For example, the spine provides support for the head and torso. The legs, on the other hand, support and carry the weight of the upper body while the person stands. But the skeletal system has several other functions, including:Protection of internal organs from injury. For example, the skull protects the brain, while the rib cage protects the heart and lungs. Allows movement. The muscles bind to the bones through the tendons. This connection allows the body to move in many different ways. Produce blood cells. The soft bone marrow inside many bones produces red blood cells, white blood cells and platelets. Storage of minerals and nutrients. Bones can store and release minerals, including calcium and phosphorus, which are important for many bodily functions. In addition, fat (fat) tissue that can be used as energy can be found in part of the bone marrow. The fracture can also be referred to as a broken bone. Fractures usually occur as a result of injury or trauma, such as a car accident or a fall. There are many different types of but they are generally categorized by the nature and location of the break. Metabolic bone diseasesMetabolic bone diseases refer to a group of conditions that affect bone strength or integrity. They can be caused by things like vitamin D deficiency, bone loss, and the use of certain medications such as steroids or chemotherapy. ArthritisArthritis is an inflammation of the joints. This can cause pain and limited range of motion. Several things can cause arthritis, including cartilage breakdown, which is found in joints, autoimmune conditions, or infections. CancerCancer can develop in bone tissues or bone-produced cells. Cancer, which is formed in the primary bone tissue, is in fact quite rare. Cancers of blood cells produced by bone, such as myeloma or lymphoma, are more common. Curvature of the spine The curvature of the spine is when the spine is not a curve in its usual shape. Typically, the spine follows fine forward and backward curves. There are three main types of curvature of the spine: Kyphosis. Kyphosis creates rounding in the upper back. Lordosis. Lordosis causes the lower back to close inside. Scoliosis. Scoliosis causes an S or C-shaped curve in the spine. Skeletal system provides the basis for all movements of the body, among other important functions. Follow these tips to keep it in good condition:Consume calcium. Calcium-rich foods include leafy green vegetables, broccoli, tofu and fish such as salmon. Get enough vitamin D. Most people get a lot of this by spending regular time outdoors, but a vitamin D supplement can help those in areas that don't have much sunlight. Do weight-bearing exercises. These include things like walking, jogging, and climbing stairs. Wear protection. Always wear protective equipment when riding a bike or playing contact sports to avoid bone fractures and other potentially serious injuries. Last medically reviewed on August 30, 2018 Continued from above... calcium, iron and energy in the form of fat. Eventually, the skeleton grows throughout childhood and provides a framework for the rest of the body to grow along with it. Skeletal system Anatomy Skeletal system in the adult body consists of 206 individual bones. These bones are arranged in two main divisions: the axial skeleton and the adendicular skeleton. The axial skeleton runs along the axis of the middle line of the body and consists of 80 bones in the following areas: Skull Hyoid auditory ossicles ribs of the thoratus spine The adendicular skeleton consists of 126 bones in folowing areas: The upper limbs of the lower limb of the pelvic braid breast (shoulder) knitted skull Skull consists of 22 bones, which are fused together, except for the almond. These 21 woked bones are separated in children to allow the skull and brain to grow, but the fuses give added strength and protection as an adult. Mandible remains as the movable jaw bone and forms the only movable joint in the temporum skull. The bones of the superior part of the skull are known as the skull and protect the brain from damage. The bones of the lower and anterior parts of the skull are known as facial bones and support the eyes, nose and mouth. Hyoid and auditory ossicles hyoid is a small U-shaped bone found only inferior to the lower bone. Hyoid is the only bone in the body that does not form a joint with another bone–that is floating bones. Hyoid function is to help keep the tesles open and create a bony connection for the muscles of the tongue. Malleus, incus, and stapes-known together as auditory ossicles-are the smallest bones in the body. Found in a small cavity inside the time bone, they serve to transmit and amplify sound from the eardrum to the inner ear. Vertebrae Twenty-six vertebrae form the vertebral column of the human body. They are named after the region: With the exception of singular sacrum and skeletons, each vertebra is named for the first letter of its region and its position along the superior-lower axis. For example, the most superior thoracid vertebra is called T1 and the most inferior is called T12. Ribs and thorax Bone The thorax or thorax bone is a thin knife-shaped bone located along the centre line of the front of the thorax area of the carcass. The thorage coma attaches to the ribs with thin strips of cartilage called cartilage ribs. There are 12 pairs of ribs, which together with the thoracidous soust form the thoracid thoracidal muscle of the thoraid region. The first seven ribs are known as real ribs because they connect the thoracal vertebrae directly to the sternum through their own band of rib cartilage. Ribs 8, 9 and 10 attach to the sternum through cartilage, which is attached to the cartilage of the seventh rib, so we consider them to be false ribs. Ribs 11 and 12 are also false ribs, but they are also considered floating ribs because they have no cartilage attached to the sternum at all. Breast belt and upper limb The breast belt connects the bones of the upper limb (arm) with the axial skeleton and consists of the left and right collarbones and the left and right shoulder blades. Humerus is the bone of the arm. It forms a spherical and shoulder joint clam with a shoulder blade and forms an elbow joint with the lower arm's bone. The radius and ulna are the two bones of the forearm. Ulna is on the medial side of the forearm and forms a hanging joint with humerus in the elbow. The radius allows the forearm and hand to rotate on the wrist joint. The bones of the lower arm form the wrist joint with carpathians, a group of eight small bones that give more flexibility to the wrist. Carpals are associated with five metacarpals, which form the bones of the hand and attach to each of the Each finger has three bones known as phalanges, except for the thumb, which has only two phalanphalanses. The pelvic belt and lower limb formed the left and right hip bones, the pelvic girdle connects the lower leg (leg) bones to the axial skeleton. The femur is the largest bone in the body and the only bone of the femur area. The femur forms a ball and socket hip joint with the hip bone and forms the knee joint with the tibia and patella. Commonly called apples, the patella is special because it is one of the few bones that are not present at birth. Patella forms in early childhood to support the knee for walking and crawling. The tibia and fibula are the bones of the lower limb. The tibia is much larger than the fibula and carries almost the entire body weight. The fibula is mainly a muscle binding point and is used to maintain balance. The tibia and fibula form the ankle joint with the talus, one of the seven tarsal bones in the leg. Tarsals are a group of seven small bones that form the back end of the foot and heel. Tarsals form joints with five long leg metatarsals. Then each of the metatarsal forms a joint with one of a set of phalanges in the toss. Each toe has three phalanges, except for the big toe, which only has two phalanphalanses. Microscopic bone structure The skeleton makes up about 30-40% of an adult's body weight. Skeleton mass consists of an inanimate bone matrix and many small bone cells. Roughly half of the mass of the bone matrix is water, while the other half is collagen protein and solid crystals of calcium carbonate and calcium phosphate. Living bone cells are located at the edges of the bones and in small cavities inside the bone matrix. Although these cells make up very little of the total bone mass, they have several very important roles in the functions of the skeletal system. Bone cells allow bones: Growth and development To be repaired after injury or daily wear Let them break down in order to release their stored minerals Bone types All bones of the body can be divided into five types: long, short, flat, irregular and sesameoid. Long. Long bones are longer than they are wide and are the main bones of the limbs. Long bones grow more than other bone classes in childhood, so they are responsible for most of our height as adults. The hollow meduary cavity is located in the center of long bones and serves as a storage area for the bone marrow. Examples of long bones include the femur, tibia, fibula, metatarsals and phalanges. Short. Short bones are about as long as they are wide and are often cubes or round shape. The carpal bones of the wrist and the tarsal bones of the foot are examples of short bones. Flat. Flat bones vary greatly in size and shape, but

have a common feature is very thin in one direction. Since they are thin, bones do not have medulular cavities, like long bones. The frontal, parietal and eccipital bones of the skull – along with the ribs and hip bones – are examples of flat bones. Irregular. Irregular bones have a shape that does not fit into the pattern of long, short or flat bones. Vertebrae, sacrum, and spinal skeletons-like sphenoid, ethmoid, and zygomatic skull bones–are all irregular bones. Sesamoid. Sesameoid bones are formed after birth inside the tendons that run through the joints. Sesameoid bones grow to protect the tendon from stress and strains in the joint and can help provide a mechanical advantage to the muscles pulling the tendon. The patella and pisiform bone of carpathianmountain are the only sesameoid bones counted as part of the body's 206 bones. Other sesameoid bones can form in the joints of the hands and feet, but they are not present in all people. Bone parts The long bones of the body contain many different areas due to the way they develop. At birth, each long bone is made of three individual bones separated by hyaline cartilage. Each terminal bone is called the pineal garysis (epi = on; physis = growth), while the middle bone is called the diaphysis (dia = passing). The pineal gland and diaphysis grow to each other and eventually fuse into one bone. The area of growth and possible fusion between the pineal gary and the diaphysis is called metaphysis (meta = after). Once the long parts of the bones have merged, only the hyaline cartilage left in the bone is located as articular cartilage at the ends of the bone that forms the joints with other bones. Articular cartilage acts as a shock absorber and a gliding surface between the bones to facilitate movement in the joint. Looking at the bone in the cross section, there are several distinct layered areas that make up the bone. The outer part of the bone is covered with a thin layer of dense irregular connective tissue called periosteum. Periost contains many strong collagen fibers, which are used to firmly anchor tendons and muscles to the bone for movement. Stem cells and osteoblast cells in the periosteum are involved in the growth and repair of the outer part of the bone due to stress and injury. The blood vessels present in the periosteum provide energy to the cells on the surface of the bone and penetrate into the bone itself to nourish the cells inside the bone. Periost also contains nerve tissue and many nerve endings to give the bone its sensitivity to pain when injured. Deep into the periosteum is a compact bone that forms a hard mineralized part of the bone. The compact bone is made of a matrix of hard mineral salts reinforced with hard collagen fibers. Many small cells called osteocytes live in small spaces in the matrix and help maintain the strength and integrity of the compact bone. Deep into the compact bone is the area of spongy bone where bone tissue grows in thin columns called trabeculae with gaps for the red bone marrow in between. Trabeculae grow in a specific pattern to withstand external tension with as little mass as possible, keeping bones light but strong. Long bones have a fungal bone at the ends, but they have a hollow medulose cavity in the middle of the diaphysis. The meduary cavity contains a red bone marrow in childhood, eventually turning into a yellow bone marrow after puberty. Articulation Articulation or joint is the point of contact between the bone, between the bone and the cartilage, or between the bone and the tooth. Synovial joints are the most common type of articulation and have a small gap between the bone. This gap allows free range of motion and space for synovial fluid to lubricate the joint. Fibrous joints exist where the bones are very tightly connected and offer little to no movement between the bones. Fibrous joints also hold teeth in their bony drawers. Finally, cartilaginous joints are formed, where the bone meets the cartilage or where there is a layer of cartilage between the two bonees. These joints provide a small amount of flexibility in the joint due to the gel-like consistency of cartilage. Physiology and protection of the skeletal system The primary function of the skeletal system is to create a solid framework that supports and protects the organs of the body and anchors the skeletal muscles. The bones of the axial skeleton act as a hard shell to protect internal organs – such as the brain and heart – from damage caused by external forces. The bones of the adendicular skeleton provide support and flexibility in the joints and anchor the muscles that move the limbs. Movement The bones of the skeletal system act as a fixing point for the skeletal muscles of the body. Almost every skeletal muscle works by pulling two or more bones either closer together or further apart. Joints act as pivot points for bone movement. The areas of each bone where the muscles attach to the bone grow larger and stronger to support the additional strength of the muscle. In addition, the total weight and thickness of the bone increase when under severe stress from lifting weights or supporting body weight. Blood production The red bone marrow produces red and white blood cells in a process known as blood production. The red bone marrow is located in the hollow space inside the bones known as the meduary cavity. Children tend to have more red bone marrow compared to their body size than adults, due to their body's constant growth and development. The amount of red bone marrow decreases at the end of puberty, replaced by a yellow bone marrow. Storage Skeletal system stores many different types of basic substances to facilitate the growth and repair of the body. The skeletal system cell matrix acts as our calcium bank by retaining calcium ions to the blood as needed. Proper levels of calcium ions in the blood are essential for the proper functioning of the nervous and muscular systems. Bone cells also release osteocalcin, a hormone that helps regulate blood sugar levels and fat storage. The yellow bone marrow inside our hollow long bones is used to store energy in the form of lipids. Finally, the red bone marrow stores some iron in the form of a ferritin molecule and uses this iron to create hemoglobin in red blood cells. Growth and development The skeleton begins to form at the beginning of fetal development as a flexible skeleton made of hyaline cartilage and dense irregular fibrous connective tissue. These tissues act as a soft, growing framework and placeholder of the bony skeleton that replaces them. As development progresses, blood vessels begin to grow into the soft fetal skeleton, bringing stem cells and nutrients for bone growth. Eight tissue slowly replaces cartilage and fibrous tissue in a process called calcification. Calcified areas have spread from their blood vessels, replacing old tissues, until they reach the limit of another bony region. At birth, the skeleton of a newborn has more than 300 bones; As a person ages, these bones grow together and fuse into larger bones, leaving adults with only 206 bones. Flat bones follow the process of intramembranous ossification, where young bones grow from the primary ossification center in fibrous membranes and leave a small area of fibrous tissue between them. In the skull these soft spots are known as fontanels, and give the skull flexibility and space for bones to grow. The bone slowly replaces the fontanels until the individual bones of the skull fuse together to form rigid adult skulls. Long bones follow the process of endochondral ossification, where the diaphysis grows inside the cartilage of the primary ossification center until it composes most of the bone. The pineal gland then grows from secondary ossification centers at the ends of the bone. A small strip of hyaline cartilage remains between the bone like a growth plate. As we grow in childhood, growth plates grow under the influence of growth and sex hormones, slowly separating bones. At the same time, the bones grow larger by growing back into the growth plates. This process continues until the end of puberty, when the growth plate ceases to grow and the bones are permanently broken down into one bone. The huge difference in height and length of the limbs between birth and adulthood is mainly the result of endochondral ossification in long bones. Diseases and diseases A number of diseases of the articular apparatus, from arthritis to cancer, can disrupt our mobility and lead to loss of quality of life or even death. At other times, symptoms of joint pain can lead to diagnoses of other underlying health problems. Pay attention to joint pain and any changes in their ability to move, to share them with their healthcare provider. Also, you can learn more about DNA health tests that can tell you if you are at a genetically higher risk of hemochromatosis–one of the most common hereditary disorders, causing joint pain-like Gaucher disease. Testing can also tell you if you are an asymptomatic carrier of a genetic variant that you could pass on to your children. Children.

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