

UNDERSTANDING THE HUMAN BODY THE REPRODUCTIVE SYSTEM (UNDERSTANDING THE HUMAN BODY) pdf

1: Female Reproductive System

Understanding the Human Body: An Introduction to Anatomy and Physiology, 2nd Edition. Discover this essential guide to understanding the remarkable anatomy and physiology of the human body, presented by a trusted surgeon and professor of medicine.

Reproduction is the process by which organisms make more organisms like themselves is one of the things that sets living things apart from nonliving matter. In the human reproductive process, two kinds of sex cells, or gametes, are involved. When the sperm fertilizes, or meets, the egg, this fertilized egg is called the zygote. The zygote goes through a process of becoming an embryo and developing into a fetus. Both the male and female reproductive systems are essential for reproduction. The female needs a male to fertilize her egg, even though it is she who carries offspring through pregnancy and childbirth. Humans, like other organisms, pass certain characteristics of themselves to the next generation through their genes, the special carriers of human traits. The genes that parents pass along are what make their children similar to others in their family, but also what make each child unique. Most species have two sexes: Each sex has its own unique reproductive system. They are different in shape and structure, but both are specifically designed to produce, nourish, and transport either the egg or sperm. The external part of the female reproductive organs is called the vulva, which means covering. Located between the legs, the vulva covers the opening to the vagina and other reproductive organs located inside the body. The fleshy area located just above the top of the vaginal opening is called the mons pubis. Two pairs of skin flaps called the labia which means lips surround the vaginal opening. The clitoris, a small sensory organ, is located toward the front of the vulva where the folds of the labia join. Between the labia are openings to the urethra the canal that carries urine from the bladder to the outside of the body and vagina. Once girls become sexually mature, the outer labia and the mons pubis are covered by pubic hair. The vagina is a muscular, hollow tube that extends from the vaginal opening to the uterus. The vagina is about 3 to 5 inches 8 to 12 centimeters long in a grown woman. Because it has muscular walls, it can expand and contract. This ability to become wider or narrower allows the vagina to accommodate something as slim as a tampon and as wide as a baby. The vagina serves three purposes: It provides the route for the menstrual blood the period to leave the body from the uterus. A very thin piece of skin-like tissue called the hymen partly covers the opening of the vagina. Hymens are often different from female to female. Most women find their hymens have stretched or torn after their first sexual experience, and the hymen may bleed a little this usually causes little, if any, pain. The vagina connects with the uterus, or womb, at the cervix which means neck. The cervix has strong, thick walls. During childbirth, the cervix can expand to allow a baby to pass. The uterus is shaped like an upside-down pear, with a thick lining and muscular walls in fact, the uterus contains some of the strongest muscles in the female body. These muscles are able to expand and contract to accommodate a growing fetus and then help push the baby out during labor. At the upper corners of the uterus, the fallopian tubes connect the uterus to the ovaries. The ovaries are two oval-shaped organs that lie to the upper right and left of the uterus. They produce, store, and release eggs into the fallopian tubes in the process called ovulation. There are two fallopian tubes, each attached to a side of the uterus. The fallopian tubes are about 4 inches 10 centimeters long and about as wide as a piece of spaghetti. Within each tube is a tiny passageway no wider than a sewing needle. At the other end of each fallopian tube is a fringed area that looks like a funnel. When an egg pops out of an ovary, it enters the fallopian tube. The ovaries are also part of the endocrine system because they produce female sex hormones such as estrogen and progesterone. Although most people think of the gonads as the male testicles, both sexes actually have gonads: In females the gonads are the ovaries. The female gonads produce female gametes eggs ; the male gonads produce male gametes sperm. After an egg is fertilized by the sperm, the fertilized egg is called the zygote. When a baby girl is born, her ovaries contain hundreds of thousands of eggs, which remain inactive until puberty begins. At puberty, the pituitary gland, located in the central part of the brain, starts making hormones

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that stimulate the ovaries to produce female sex hormones, including estrogen. The secretion of these hormones causes a girl to develop into a sexually mature woman. Toward the end of puberty, girls begin to release eggs as part of a monthly period called the menstrual cycle. Approximately once a month, during ovulation, an ovary sends a tiny egg into one of the fallopian tubes. Unless the egg is fertilized by a sperm while in the fallopian tube, the egg dries up and leaves the body about 2 weeks later through the uterus – this is menstruation. Blood and tissues from the inner lining of the uterus combine to form the menstrual flow, which in most girls lasts from 3 to 5 days. Premenstrual syndrome PMS includes both physical and emotional symptoms that many girls and women get right before their periods, such as acne, bloating, fatigue, backaches, sore breasts, headaches, constipation, diarrhea, food cravings, depression, irritability, or difficulty concentrating or handling stress. Many girls also experience abdominal cramps during the first few days of their periods caused by prostaglandins, chemicals in the body that make the smooth muscle in the uterus contract. These involuntary contractions can be either dull or sharp and intense. During that time, her body is adjusting to the hormones puberty brings. On average, the monthly cycle for an adult woman is 28 days, but the range is from 23 to 35 days. Between 75 and million sperm are in this small amount of semen, and they "swim" up from the vagina through the cervix and uterus to meet the egg in the fallopian tube. It takes only one sperm to fertilize the egg. About a week after the sperm fertilizes the egg, the fertilized egg zygote has become a multicelled blastocyst. The blastocyst burrows itself into the lining of the uterus, called the endometrium. The hormone estrogen causes the endometrium to become thick and rich with blood. Progesterone, another hormone released by the ovaries, keeps the endometrium thick with blood so that the blastocyst can attach to the uterus and absorb nutrients from it. This process is called implantation. As cells from the blastocyst take in nourishment, another stage of development, the embryonic stage, begins. The inner cells form a flattened circular shape called the embryonic disk, which will develop into a baby. The outer cells become thin membranes that form around the baby. The cells multiply thousands of times and move to new positions to eventually become the embryo. During the fetal stage, which lasts from 9 weeks after fertilization to birth, development continues as cells multiply, move, and change. The fetus floats in amniotic fluid inside the amniotic sac. Pregnancy lasts an average of days – about 9 months. When the baby is ready for birth, its head presses on the cervix, which begins to relax and widen to get ready for the baby to pass into and through the vagina. When the contractions of labor begin, the walls of the uterus contract as they are stimulated by the pituitary hormone oxytocin. The contractions cause the cervix to widen and begin to open. After several hours of this widening, the cervix is dilated opened enough for the baby to come through. The baby is pushed out of the uterus, through the cervix, and along the birth canal. After it has separated from the inner lining of the uterus, contractions of the uterus push it out, along with its membranes and fluids. Problems of the Female Reproductive System Some girls might experience reproductive system problems, such as: Problems of the Vulva and Vagina Vulvovaginitis is an inflammation of the vulva and vagina. It may be caused by irritating substances such as laundry soaps or bubble baths or poor personal hygiene such as wiping from back to front after a bowel movement. Symptoms include redness and itching in the vaginal and vulvar areas and sometimes vaginal discharge. Vulvovaginitis also can be caused by an overgrowth of Candida, a fungus normally present in the vagina. Nonmenstrual vaginal bleeding is most commonly due to the presence of a vaginal foreign body, often wadded-up toilet paper. It may also be due to urethral prolapse, in which the mucous membranes of the urethra protrude into the vagina and form a tiny, doughnut-shaped mass of tissue that bleeds easily. Labial adhesions, the sticking together or adherence of the labia in the midline, usually appear in infants and young girls. Although there are usually no symptoms associated with this condition, labial adhesions can lead to an increased risk of urinary tract infection. Sometimes topical estrogen cream is used to help separate the labia. A woman with this condition can develop severe abdominal pain and should see a doctor because surgery may be necessary. Endometriosis occurs when tissue normally found only in the uterus starts to grow outside the uterus – in the ovaries, fallopian tubes, or other parts of the pelvic cavity. It can cause abnormal bleeding, painful periods, and general pelvic pain. Girls with ovarian tumors may have abdominal pain and

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masses that can be felt in the abdomen. Surgery may be needed to remove the tumor. Ovarian cysts are noncancerous sacs filled with fluid or semisolid material. Although they are common and generally harmless, they can become a problem if they grow very large. Large cysts may push on surrounding organs, causing abdominal pain. In most cases, cysts will disappear on their own and treatment is unnecessary. If the cysts are painful, a doctor may prescribe birth control pills to alter their growth or they may be removed by a surgeon. Polycystic ovary syndrome is a hormone disorder in which too many male hormones androgens are produced by the ovaries. This condition causes the ovaries to become enlarged and develop many fluid-filled sacs, or cysts.

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2: Human body - Wikipedia

Understanding the basic anatomy and physiology of the human body The reproductive system The female reproductive system. The main features of the internal organs of the female reproductive system.

Reproduction is the process by which organisms make more organisms like themselves. It is one of the things that sets living things apart from nonliving things. In the human reproductive process, two kinds of sex cells, or gametes, are involved. Both the male and female reproductive systems are essential for reproduction. Humans pass certain characteristics of themselves to the next generation through their genes, the special carriers of human traits. Each sex has its own unique reproductive system. They are different in shape and structure, but both are specifically designed to produce, nourish, and transport either the egg or sperm. Unlike the female, whose sex organs are located entirely within the pelvis, the male has reproductive organs, or genitals, that are both inside and outside the pelvis. The male genitals include: The testicles are oval-shaped and grow to be about 2 inches 5 centimeters in length and 1 inch 3 centimeters in diameter. The testicles are also part of the endocrine system because they produce hormones, including testosterone. Testosterone is a major part of puberty in boys, and as a guy makes his way through puberty, his testicles produce more and more of it. Testosterone is the hormone that causes boys to develop deeper voices, bigger muscles, and body and facial hair, and it also stimulates the production of sperm. Alongside the testicles are the epididymis and the vas deferens, which make up the duct system of the male reproductive organs. The vas deferens is a muscular tube that passes upward alongside the testicles and transports the sperm-containing fluid called semen. The epididymis is a set of coiled tubes one for each testicle that connects to the vas deferens. The epididymis and the testicles hang in a pouch-like structure outside the pelvis called the scrotum. This bag of skin helps to regulate the temperature of testicles, which need to be kept cooler than body temperature to produce sperm. The scrotum changes size to maintain the right temperature. When the body is cold, the scrotum shrinks and becomes tighter to hold in body heat. This happens without a guy ever having to think about it. The brain and the nervous system give the scrotum the cue to change size. The accessory glands, including the seminal vesicles and the prostate gland, provide fluids that lubricate the duct system and nourish the sperm. The seminal vesicles are sac-like structures attached to the vas deferens to the side of the bladder. The prostate gland, which produces some of the parts of semen, surrounds the ejaculatory ducts at the base of the urethra, just below the bladder. The urethra is the channel that carries the semen to the outside of the body through the penis. The urethra is also part of the urinary system because it is also the channel through which urine passes as it leaves the bladder and exits the body. The penis is actually made up of two parts: The shaft is the main part of the penis and the glans is the tip sometimes called the head. At the end of the glans is a small slit or opening, which is where semen and urine exit the body through the urethra. The inside of the penis is made of a spongy tissue that can expand and contract. All boys are born with a foreskin, a fold of skin at the end of the penis covering the glans. Some boys are circumcised, which means that a doctor or clergy member cuts away the foreskin. Although circumcision is not medically necessary, parents who choose to have their sons circumcised often do so based on religious beliefs, concerns about hygiene, or cultural or social reasons. All penises work and feel the same, regardless of whether the foreskin has been removed. What the Male Reproductive System Does The male sex organs work together to produce and release semen into the reproductive system of the female during sexual intercourse. The male reproductive system also produces sex hormones, which help a boy develop into a sexually mature man during puberty. When puberty begins, usually between the ages of 9 and 15, the pituitary gland, which is located near the brain, secretes hormones that stimulate the testicles to produce testosterone. The production of testosterone brings about many physical changes. Although the timing of these changes is different for every guy, the stages of puberty generally follow a set sequence: During the first stage of male puberty, the scrotum and testes grow larger. Next, the penis becomes longer and the seminal vesicles and prostate gland grow. Hair begins to grow in the

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pubic area and later on the face and underarms. Boys also have a growth spurt during puberty as they reach their adult height and weight. Sperm A male who has reached puberty will produce millions of sperm cells every day. Each sperm is extremely small: Sperm develop in the testicles within a system of tiny tubes called the seminiferous tubules. At birth, these tubules contain simple round cells, but during puberty, testosterone and other hormones cause these cells to transform into sperm cells. The cells divide and change until they have a head and short tail, like tadpoles. The head contains genetic material genes. The sperm use their tails to push themselves into the epididymis, where they complete their development. It takes sperm about 4 to 6 weeks to travel through the epididymis. The sperm then move to the vas deferens, or sperm duct. The seminal vesicles and prostate gland produce a whitish fluid called seminal fluid, which mixes with sperm to form semen when a male is sexually stimulated. The penis, which usually hangs limp, becomes hard when a male is sexually excited. Tissues in the penis fill with blood and it becomes stiff and erect an erection. When the erect penis is stimulated, muscles around the reproductive organs contract and force the semen through the duct system and urethra. Each time a guy ejaculates, it can contain up to million sperm. From the vagina, the sperm make their way up through the cervix and move through the uterus with help from uterine contractions. This fertilized egg is now called a zygote and contains 46 chromosomes – half from the egg and half from the sperm. The genetic material from the male and female has combined so that a new individual can be created. Disorders of the Scrotum, Testicles, or Epididymis Conditions affecting the scrotal contents may involve the testicles, epididymis, or the scrotum itself. Even a mild injury to the testicles can cause severe pain, bruising, or swelling. Most testicular injuries happen when the testicles are struck, hit, kicked, or crushed, usually during sports or other trauma. Testicular torsion, when one of the testicles twists around, cutting off its blood supply, is also a medical emergency that, thankfully, is not common. Surgery is needed to untwist the cord and save the testicle. This is a varicose vein an abnormally swollen vein in the network of veins that run from the testicles. Varicoceles often develop while a boy is going through puberty. A varicocele is usually not harmful, but can damage the testicle or decrease sperm production. Take your son to see his doctor if he is concerned about changes in his testicles. It occurs when cells in the testicle divide abnormally and form a tumor. Teen boys should be encouraged to learn to perform testicular self-examinations. Epididymitis is inflammation of the epididymis, the coiled tubes that connect the testes with the vas deferens. It is usually caused by an infection, such as the sexually transmitted disease chlamydia, and results in pain and swelling next to one of the testicles. A hydrocele is when fluid collects in the membranes surrounding the testes. In some cases, surgery may be needed to correct the condition. When a portion of the intestines pushes through an abnormal opening or weakening of the abdominal wall and into the groin or scrotum, it is known as an inguinal hernia. The hernia may look like a bulge or swelling in the groin area. It is treated with surgery. Disorders of the Penis Disorders affecting the penis include: Inflammation of the penis. Symptoms of penile inflammation include redness, itching, swelling, and pain. Balanitis is when the glans the head of the penis becomes inflamed. Posthitis is foreskin inflammation, usually due to a yeast or bacterial infection. In this disorder, the urethra opens on the underside of the penis, not at the tip. This is a tightness of the foreskin of the penis and is common in newborns and young boys. It usually eases without treatment. If it interferes with urination, circumcision removal of the foreskin might be recommended. A doctor may use lubricant to make a small incision so the foreskin can be pulled forward. In most boys born with this disorder, the penis may be very small or nonexistent, but testicular tissue is present. In a small number of cases, the child may have both testicular and ovarian tissue. This is a disorder in which the penis, although normally formed, is well below the average size, as determined by standard measurements. If your son has symptoms of a problem with his reproductive system, talk with your doctor – many problems with the male reproductive system can be treated. The doctor is also a good resource for your son if he has questions about growth and sexual development.

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3: 9 Study Tips To Help You Learn Human Anatomy

Reproductive System: An Introduction to Anatomy and Physiology Rated 5 out of 5 by JackC from Understanding the Human Body & Modern Electronics.

May 17, 4 Comments Human Body Organ Systems The human body is made up of 11 organ systems that work with one another interdependently. These systems include the integumentary system, skeletal system, muscular system, lymphatic system, respiratory system, digestive system, nervous system, endocrine system, cardiovascular system, urinary system, and reproductive systems. We will briefly discuss the major functions of each organ system below.

Integumentary system— skin, hair, nails Forms the external body covering and protects deeper tissues from injury. Houses cutaneous receptors, sweat glands, oil glands, and synthesizes vitamin D. Provides a framework muscles use movement. Bones also store minerals and create blood cells.

Muscular system— skeletal muscles Maintains posture and produces movement locomotion.

Lymphatic system— red bone marrow, thymus, lymphatic vessels, thoracic duct, spleen, lymph nodes Houses white blood cells lymphocytes involved in immunity. Returns leaked fluid from blood vessels to the blood and disposes debris within the lymphatic stream.

Respiratory system— nasal cavity, pharynx, larynx, trachea, bronchus, lung Removes carbon dioxide and continually supplies blood with oxygen. Gaseous exchanges occur in the respiratory system lungs.

Digestive system— oral cavity, esophagus, liver, stomach, small intestine, large intestine, rectum, anus Breaks down food to be absorbed and eliminates indigestible waste.

Nervous system— brain, spinal cord, nerves Control system of the body, responds to internal and external changes, activates muscles and glands.

Endocrine system— pineal gland, pituitary gland, thyroid gland, thymus, adrenal gland, pancreas, ovary, testis Glands from the endocrine system secrete hormones that regulate many processes like growth, metabolism, and reproduction.

Cardiovascular system— heart, blood vessels The heart pumps blood and blood vessels transport it. Blood carries oxygen, carbon dioxide, nutrients, waste and more throughout the body.

Urinary system— kidney, ureter, urinary bladder, urethra Eliminates nitrogenous wastes from the body. Sex hormone and sperm are produced by the male testes. Male ducts and glands help deliver the sperm. Ovaries produce female sex hormones and eggs. Other female reproductive structures serve as sites of fertilization and development. For instance, the mammary glands produce milk for the newborn.

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4: Human Body Organ Systems: An Orientation : Anatomy & Physiology

you because an organ or organ system is not functioning properly in their body. In order to treat them well, you must first understand how the body functions when it is healthy.

To identify the process by which body systems are kept within certain limits. To explain the role of feedback mechanisms in homeostasis. To distinguish negative feedback from positive feedback. To identify and example of two organ systems working together to maintain homeostasis. To summarize the role of the endocrine system in homeostasis. To outline the result of a disturbance in homeostasis of a body system. The human body is made up of trillions of cells that all work together for the maintenance of the entire organism. While cells, tissues, and organs may perform very different functions, all the cells in the body are similar in their metabolic needs. Maintaining a constant internal environment by providing the cells with what they need to survive oxygen, nutrients, and removal of waste is necessary for the well-being of individual cells and of the entire body. The many processes by which the body controls its internal environment are collectively called homeostasis. The complementary activity of major body systems maintains homeostasis. Homeostasis Homeostasis refers to stability, balance, or equilibrium within a cell or the body. Homeostasis is an important characteristic of living things. Keeping a stable internal environment requires constant adjustments as conditions change inside and outside the cell. The adjusting of systems within a cell is called homeostatic regulation. Because the internal and external environments of a cell are constantly changing, adjustments must be made continuously to stay at or near the set point the normal level or range. Homeostasis can be thought of as a dynamic equilibrium rather than a constant, unchanging state. Feedback Regulation Loops The endocrine system plays an important role in homeostasis because hormones regulate the activity of body cells. The release of hormones into the blood is controlled by a stimulus. For example, the stimulus either causes an increase or a decrease in the amount of hormone secreted. Then, the response to a stimulus changes the internal conditions and may itself become a new stimulus. This self-adjusting mechanism is called feedback regulation. Feedback regulation occurs when the response to a stimulus has an effect of some kind on the original stimulus. The type of response determines what the feedback is called. Negative feedback occurs when the response to a stimulus reduces the original stimulus. Positive feedback occurs when the response to a stimulus increases the original stimulus. A Negative Feedback Loop Negative feedback is the most common feedback loop in biological systems. The system acts to reverse the direction of change. Since this tends to keep things constant, it allows the maintenance of homeostatic balance. For instance, when the concentration of carbon dioxide in the human body increases, the lungs are signaled to increase their activity and exhale more carbon dioxide, your breathing rate increases. Thermoregulation is another example of negative feedback. When body temperature rises, receptors in the skin and the hypothalamus sense the temperature change. The temperature change stimulus triggers a command from the brain. This command, causes a response the skin makes sweat and blood vessels near the skin surface dilate , which helps decrease body temperature. Control of blood glucose level is an example of negative feedback. Blood glucose concentration rises after a meal the stimulus. The hormone insulin is released by the pancreas, and it speeds up the transport of glucose from the blood and into selected tissues the response. Blood glucose concentrations then decrease, which then decreases the original stimulus. The secretion of insulin into the blood is then decreased. Positive feedback is less common in biological systems. Positive feedback acts to speed up the direction of change. An example of positive feedback is lactation milk production. As the baby suckles, nerve messages from the mammary glands cause the hormone prolactin, to be secreted by the pituitary gland. The more the baby suckles, the more prolactin is released, which stimulates further milk production. Not many feedback mechanisms in the body are based on positive feedback. Positive feedback speeds up the direction of change, which leads to increasing hormone concentration, a state that moves further away from homeostasis. System Interactions Each body system contributes to the homeostasis of other systems and of the entire organism. No

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system of the body works in isolation and the well-being of the person depends upon the well-being of all the interacting body systems. A disruption within one system generally has consequences for several additional body systems. Most of these organ systems are controlled by hormones secreted from the pituitary gland, a part of the endocrine system. Table 1 summarizes how various body systems work together to maintain homeostasis. Main examples of homeostasis in mammals are as follows: This is known as osmoregulation. This happens primarily in the kidneys. This is known as excretion. This is done by the excretory organs such as the kidneys and lungs. This is mainly done by the skin. This is mainly done by the liver and the insulin and glucagon secreted by the pancreas in the body. Hormones are chemical messenger molecules that are made by cells in one part of the body and cause changes in cells in another part of the body. The endocrine system regulates the metabolism and development of most body cells and body systems through feedback mechanisms. The endocrine glands also release hormones that affect skin and hair color, appetite, and secondary sex characteristics of males and females. The endocrine system controls almost every other body system through feedback mechanisms. Most of the mechanisms of the endocrine system are negative feedback. The endocrine system has a regulatory effect on other organ systems in the human body. In the muscular system, hormones adjust muscle metabolism, energy production, and growth. In the nervous system, hormones affect neural metabolism, regulate fluid and ion concentration and help with reproductive hormones that influence brain development. Urinary System Toxic wastes build up in the blood as proteins and nucleic acids are broken down and used by the body. The urinary system rids the body of these wastes. The urinary system is also directly involved in maintaining proper blood volume. The kidneys also play an important role in maintaining the correct salt and water content of the body. The kidneys also produce a hormone called erythropoietin, also known as EPO, which stimulates red blood cell production. Reproductive System The reproductive system does little for the homeostasis of the organism. The reproductive system relates instead to the maintenance of the species. However, sex hormones do have an effect on other body systems, and an imbalance in sex hormones can lead to various disorders. For example, a woman whose ovaries are removed early in life is at higher risk of developing osteoporosis, a disorder in which bones are thin and break easily. The hormone estrogen, produced by the ovaries, is important for bone growth. Therefore, a woman who does not produce estrogen will have impaired bone development. Disruption of Homeostasis Many homeostatic mechanisms keep the internal environment within certain limits or set points. When the cells in your body do not work correctly, homeostatic balance is disrupted. Homeostatic imbalance may lead to a state of disease. Disease and cellular malfunction can be caused in two basic ways: When homeostasis is interrupted, your body can correct or worsen the problem, based on certain influences. In addition to inherited genetic influences, there are external influences that are based on lifestyle choices and environmental exposure. The endocrine system of a person with diabetes has difficulty maintaining the correct blood glucose level. A diabetic needs to check their blood glucose levels many times during the day, as shown in Figure 3, and monitor daily sugar intake. A person with diabetes has to monitor their blood glucose carefully. This glucose meter analyses only a small drop of blood. Genes are sometimes turned off or on due to external factors which we have some control over. Other times, little can be done to prevent the development of certain genetic diseases and disorders. Cancer can be genetically inherited or be due to a mutation caused by exposure to toxin such as radiation or harmful drugs. A person may also inherit a predisposition to develop a disease such as heart disease. Such diseases can be delayed or prevented if the person eats nutritious food, has regular physical activity, and does not smoke. If your diet lacks certain vitamins or minerals your cells will function poorly, and you may be at risk to develop a disease. For example, a menstruating woman with inadequate dietary intake of iron will become anemic. Hemoglobin, the molecule that enables red blood cells to transport oxygen, requires iron. Therefore, the blood of an anemic woman will have reduced oxygen-carrying capacity. In mild cases symptoms may be vague e. Physical activity is essential for proper functioning of our cells and bodies. Adequate rest and regular physical activity are examples of activities that influence homeostasis.

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5: Human anatomy and physiology | Health and medicine | Science | Khan Academy

The human body is everything that makes up, well, you. The basic parts of the human body are the head, neck, torso, arms and legs. Our bodies consist of a number of biological systems that carry.

Outline of human anatomy and Anatomy Human anatomy is the study of the shape and form of the human body. The human body has four limbs two arms and two legs , a head and a neck which connect to the torso. The spine at the back of the skeleton contains the flexible vertebral column which surrounds the spinal cord , which is a collection of nerve fibres connecting the brain to the rest of the body. Nerves connect the spinal cord and brain to the rest of the body. All major bones, muscles, and nerves in the body are named, with the exception of anatomical variations such as sesamoid bones and accessory muscles. Blood vessels carry blood throughout the body, which moves because of the beating of the heart. Venules and veins collect blood low in oxygen from tissues throughout the body. From here, the blood is pumped into the lungs where it receives oxygen and drains back into the left side of the heart. Here blood passes from small arteries into capillaries , then small veins and the process begins again. Blood carries oxygen , waste products, and hormones from one place in the body to another. Blood is filtered at the kidneys and liver. The body consists of a number of different cavities, separated areas which house different organ systems. The brain and central nervous system reside in an area protected from the rest of the body by the blood brain barrier. The lungs sit in the pleural cavity. The intestines , liver , and spleen sit in the abdominal cavity Height, weight, shape and other body proportions vary individually and with age and sex. Body shape is influenced by the distribution of muscle and fat tissue. Outline of physiology and Physiology Human physiology is the study of how the human body functions. This includes the mechanical, physical, bioelectrical , and biochemical functions of humans in good health, from organs to the cells of which they are composed. The human body consists of many interacting systems of organs. These interact to maintain homeostasis , keeping the body in a stable state with safe levels of substances such as sugar and oxygen in the blood. Some combined systems are referred to by joint names. For example, the nervous system and the endocrine system operate together as the neuroendocrine system. The nervous system receives information from the body, and transmits this to the brain via nerve impulses and neurotransmitters. At the same time, the endocrine system releases hormones, such as to help regulate blood pressure and volume. Together, these systems regulate the internal environment of the body, maintaining blood flow, posture, energy supply, temperature, and acid balance pH.

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6: Understanding the basic anatomy and physiology of the human body - The reproductive system

The reproductive system is a collection of internal and external organs " in both males and females " that work together for the purpose of procreating, according to the Cleveland Clinic. Due.

Purpose To understand that there are different systems within the body and that they work independently and together to form a functioning human body. **Context** At this level, children can begin to view the body as a system, in which parts do things for other parts and for the organism as a whole. Through the use of an online interactive activity, children learn about the concept of separate components working together to build a body system. In addition, this lesson focuses on activities to help students learn that body systems work together to build the functioning human body. In order to be able to do this lesson, students should understand that most items are composed of different parts and that an item may not work if its parts are missing. Also, they should know that an assembly of parts can perform functions that the single parts cannot perform alone. More specific to the human body, students at this level should realize that the human body has parts that help it seek and take in food when it feels hunger. They should understand that the brain is the part of the body that enables humans to think and it communicates with the other parts of the body. This prerequisite knowledge should help elementary-school students understand that parts within a system usually influence one another and that a system may not work as well, or at all, if a part is missing, broken or worn out, or misconnected. In addition, they should be able to make correlations about systems in general to systems of the human body. Specific to the human body, students should understand the following: *Benchmarks for Science Literacy*, p. Research shows that student misconceptions about systems arise from their difficulty in recognizing that a natural phenomenon e. Studies of student thinking show that, at all ages, they tend to interpret phenomena by noting the qualities of separate objects rather than by seeing the interactions between the parts of a system. For upper elementary-school students, research specific to the human body indicates that, in terms of internal bodily organs, upper elementary students are able to list a large number of organs. In terms of the nervous system, they know the brain helps the body parts but do not always realize the converse that the body helps the brain. They do know, however, that nerves conduct messages, control activity, and stabilize the body. In terms of the digestive system, once students reach the fifth grade, they know that food undergoes a transformation process in the body. Further, they may have some knowledge about the exchange of gases in the lungs and understand that air goes to all parts of the body. In terms of the circulatory system, upper elementary-school students realize that the heart is a pump, but they do not realize that the blood returns to the heart. *Benchmarks for Science Literacy*, pp. **Motivation** Questions about familiar body systems can be useful in getting students to start thinking about systems in general. This process can initiate the understanding that each organ affects and is affected by others. Hold up an apple or some other healthy snack. What am I holding in my hand? If I were going to eat this apple, what parts of my body would I use? Have students discuss the body parts we use when biting, chewing, swallowing, and digesting an apple. If so, you can use these categories to help you organize the information: **Body Parts for Biting**.

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7: Male Reproductive System

The scrotum is a thin sac of skin and thin muscle in which lie the testicles. The scrotum acts as a climate control system, allowing the testicles to be slightly away from the rest of the body and keeping them slightly cooler than normal body temperature for optimal sperm development.

Many courses will begin with the introduction of anatomical terminology and an overview of the cellular processes and tissue classifications. Students learn about the gross and microscopic anatomy of the following systems: Human anatomy courses will generally offer a laboratory component that parallels and reinforces concepts through the use of anatomical models, histological slides, skeletal materials and cadaver demonstrations. Study early and frequently When learning a new subject it is important to keep up with the course material and develop a habit of reviewing your coursework on a daily basis. Repetition is an important factor that will contribute to your overall success, study new and previous material to improve your understanding of the subject matter. Understand your optimal learning style Are you a visual, auditory or tactile learner. Determine what method works the best for you and develop your study habits based on your preferred learning style. When learning about such a complex structure like the human body it is important to manage your time by setting priorities and planning study sessions. A general rule of thumb is to allocate 90 " minutes for outside study for every 60 minutes spent in the classroom. Similar to establishing a good exercise routine, you will want to establish a study routine throughout the week dedicated to learning the material. Shorter, more frequent study sessions will improve your retention of the material and avoid burnout. The human brain has about ,, neurons. Create a suitable study space Creating a good study environment allows you to maximize your learning efficiency. When combined with effective time management, good reading and note taking skills, developing effective test taking strategies, a good study space serves as impetus for productive effort. Depending on your optimal learning style, you will want to recognize which environmental distractions are most likely to interfere with your concentration. Formulate a reading strategy Memory is formed by associations, so if you want help remembering things, create associations for yourself. Developing a sound reading strategy is crucial to successfully learning the material. Before class make sure to scan the chapter by looking at the headings, terms and figures so that you are aware of the topics and terms that will be discussed during the lecture. Following the lecture, review the chapter and use the notes taken in class as a guide. Take breaks between reading sections and review the information before moving on to the next session. Make a list of what you need to read and budget out the material in an easy to manage manner, this will prevent you from cramming too much information into one study session. Set goals that are realistic and attainable. Take detailed notes The SQ3R reading method can be incorporated into your note taking system. When taking notes during the lecture, record only the essentials or telegraphic sentences. Formulate questions based on the lecture material immediately after class, this will improve retention of the material and also provides study questions for upcoming exams. Recite the answers to your questions in your own words and then reflect on the material. Once you have completed this process, spend ten minutes every week reviewing your previous notes to improve retention and prepare you for exams. Study actively Active study techniques are important for many reasons, especially when it comes to learning about human anatomy. Learning any complicated subject takes time. Understanding human anatomy involves a number of pre-requisites and drawing from information gained from previous courses. The human brain learns by hearing, seeing, feeling, tasting and detecting motion or kinetic energy. When studying human anatomy you will listen to your professor lecturing, you will read your course material, you will feel the anatomical models, and record the information from lectures, labs and reading. There are a number of active study tips including mnemonics, study cards, memorization that can help you increase material retention. Repetition is essential to learning a complicated subject like human anatomy. Develop effective test taking strategies Developing effective test strategies is much easier when you have established a sound study routine. When dealing with

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course material that you are familiar with rather than material you are just learning will improve your overall retention and lead to better performance in exams. Many of the strategies previously discussed will prove to be beneficial leading up to your exam. Use all resources available to you It is important to properly manage your resources just as you manage your time. Utilize open lab periods to expand and test your knowledge. By taking good notes and asking good questions you will be able to work with your instructors on any issues you may have, hopefully long before the exam. Create a study group of fellow students to review the material and develop study questions based on important topics. Summary Learning human anatomy is difficult and it will take a considerable amount of time and dedication. As mentioned earlier you should expect to invest hours per week studying anatomy outside of class, including weeks after breaks. Human anatomy courses are largely based on memorization, both visual cadavers, 3D anatomical models, anatomical charts and definitions. There is also a critical thinking component where you will need to be able to identify a part of the anatomy based upon clues. As stated before, repetition and developing sound study techniques will provide you the framework for success in learning human anatomy. For more about the products discussed here â€¦ Our secure, easy-to-use e-commerce site, [www. Connect With Us](http://www.ConnectWithUs.com) â€¦.

8: Understanding the Human Body: An Introduction to Anatomy | The Great Courses Plus

Click on each of the names above to learn what each part of the system does. The female reproductive system is all the parts of your body that help you reproduce, or have babies. And it is quite amazing! Consider these two fabulous facts: Your body likely has hundreds of thousands of eggs that could.

9: Basic Anatomy : Human Anatomy

Basic anatomy introduces the students to the definitions, terminology and basic theme of anatomy. Without knowing the very basic concepts, it is very difficult to understand the complex structural details of human body and that is why, basic anatomy must be learned completely before learning human anatomy.

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