

Chapter 1 : Thoracic diaphragm - Wikipedia

My sports athletic trainer says there's a hole in the muscle fibers, so there's a hole! it doesn't hurt or anything, except for when you press on it with lots of pressure. I don't know how it is going to heal, but my trainer suggests to heat it a lot.

Variation[edit] The sternal portion of the muscle is sometimes wanting and more rarely defects occur in the lateral part of the central tendon or adjoining muscle fibers. Development[edit] The thoracic diaphragm develops during embryogenesis , beginning in the third week after fertilization with two processes known as transverse folding and longitudinal folding. The septum transversum , the primitive central tendon of the diaphragm, originates at the rostral pole of the embryo and is relocated during longitudinal folding to the ventral thoracic region. Transverse folding brings the body wall anteriorly to enclose the gut and body cavities. The pleuroperitoneal membrane and body wall myoblasts, from somatic lateral plate mesoderm, meet the septum transversum to close off the pericardio-peritoneal canals on either side of the presumptive esophagus, forming a barrier that separates the peritoneal and pleuropericardial cavities. Furthermore, dorsal mesenchyme surrounding the presumptive esophagus form the muscular crura of the diaphragm. Because the earliest element of the embryological diaphragm, the septum transversum, forms in the cervical region, the phrenic nerve that innervates the diaphragm originates from the cervical spinal cord C3,4, and 5. As the septum transversum descends inferiorly, the phrenic nerve follows, accounting for its circuitous route from the upper cervical vertebrae, around the pericardium , finally to innervate the diaphragm. Play media Real-time magnetic resonance imaging showing effects of diaphragm movement during breathing The diaphragm is the main muscle of respiration and functions in breathing. During inhalation, the diaphragm contracts and moves in the inferior direction, enlarging the volume of the thoracic cavity and reducing intra-thoracic pressure the external intercostal muscles also participate in this enlargement , forcing the lungs to expand. Cavity expansion happens in two extremes, along with intermediary forms. When the lower ribs are stabilized and the central tendon of the diaphragm is mobile, a contraction brings the insertion central tendon towards the origins and pushes the lower cavity towards the pelvis, allowing the thoracic cavity to expand downward. This is often called belly breathing. When the central tendon is stabilized and the lower ribs are mobile, a contraction lifts the origins ribs up towards the insertion central tendon which works in conjunction with other muscles to allow the ribs to slide and the thoracic cavity to expand laterally and upwards. When the diaphragm relaxes, air is exhaled by elastic recoil process of the lung and the tissues lining the thoracic cavity. The diaphragm is also involved in non-respiratory functions. It helps to expel vomit , feces , and urine from the body by increasing intra-abdominal pressure, aids in childbirth, [5] and prevents acid reflux by exerting pressure on the esophagus as it passes through the esophageal hiatus. In some non-human animals, the diaphragm is not crucial for breathing; a cow, for instance, can survive fairly asymptotically with diaphragmatic paralysis as long as no massive aerobic metabolic demands are made of it. Paralysis[edit] If either the phrenic nerve , cervical spine or brainstem is damaged, this will sever the nervous supply to the diaphragm. The most common damage to the phrenic nerve is by bronchial cancer , which usually only affects one side of the diaphragm. Hiatus hernia and Congenital diaphragmatic hernia A hiatus hernia is a hernia common in adults in which parts of the lower esophagus or stomach that are normally in the abdomen pass bulge abnormally through the diaphragm and are present in the thorax. Hernias are described as rolling, in which the hernia is beside the oesophagus, or sliding, in which the hernia directly involves the esophagus. These hernias are implicated in the development of reflux, as the different pressures between the thorax and abdomen normally act to keep pressure on the esophageal hiatus. With herniation, this pressure is no longer present, and the angle between the cardia of the stomach and the oesophagus disappear. When the pleuroperitoneal membranes fail to fuse, the diaphragm does not act as an effective barrier between the abdomen and thorax. Herniation is usually of the left, and commonly through the posterior lumbocostal triangle , although rarely through the anterior foramen of Morgagni. The contents of the abdomen, including the intestines , may be present in the thorax, which may impact development of the growing lungs and lead to hypoplasia. A large herniation has a mortality rate of three out of four, and requires immediate surgical repair. Due to its position separating the

thorax and abdomen, fluid abnormally present in the thorax, or air abnormally present in the abdomen, may collect on one side of the diaphragm. An X-ray may reveal this. Pleural effusion, in which there is fluid abnormally present between the two pleurae of the lungs, is detected by an X-ray of the chest, showing fluid collecting in the angle between the ribs and diaphragm. An X-ray may also be used to check for herniation. Relevant discussion may be found on Talk: Please help to ensure that disputed statements are reliably sourced. August Learn how and when to remove this template message The existence of a membrane separating the pharynx from the stomach can be traced widely among the chordates. Thus the model organism, the marine chordate lancelet, possesses an atriopore by which water exits the pharynx, which has been claimed and disputed to be homologous to structures in ascidians and hagfishes. Thus the diaphragm emerges in the context of a body plan that separated an upper feeding compartment from a lower digestive tract, but the point at which it originates is a matter of definition. Structures in fish, amphibians, reptiles, and birds have been called diaphragms, but it has been argued that these structures are not homologous. For instance, the alligator diaphragmaticus muscle does not insert on the esophagus and does not affect pressure of the lower esophageal sphincter. In birds and mammals, lungs are located above the diaphragm. The presence of an exceptionally well-preserved fossil of *Sinosauroptryx*, with lungs located beneath the diaphragm as in crocodiles, has been used to argue that dinosaurs could not have sustained an active warm-blooded physiology, or that birds could not have evolved from dinosaurs. They do not breathe in the same way as mammals, and do not rely on creating a negative pressure in the thoracic cavity, at least not to the same extent. They rely on a rocking motion of the keel of the sternum to create local areas of reduced pressure to supply thin, membranous airsacs cranially and caudally to the fixed-volume, non-expansive lungs. A complicated system of valves and air sacs cycles air constantly over the absorption surfaces of the lungs so allowing maximal efficiency of gaseous exchange. Thus, birds do not have the reciprocal tidal breathing flow of mammals. On careful dissection, around eight air sacs can be clearly seen. They extend quite far caudally into the abdomen.

Chapter 2 : Hole in muscle Igf-1 ???

Holes in muscle tissue.. I have had a hole appear in my tricep muscle, if i run my finger over my outer tri head there is a part about the size a a little finger nail where there feels like the muscle has gone from under the skin.

What are the types of muscles? The types of muscles are skeletal, smooth, and cardiac. What are the characteristics of Skeletal muscle? Skeletal muscle is striated and voluntary. What are the characteristics of Smooth muscle? Smooth muscle is NOT striated and is involuntary. What are the characteristics of Cardiac muscle? Cardiac muscle is striated and is involuntary. Layers of connective tissue that separate individual skeletal muscles and hold in place, separates the whole muscle from another whole muscle. Tendons are cords that attach muscles to bone. What is the aponeuroses? Aponeuroses is a sheet of connective tissues that attach a muscle to another muscle. Where is the Epimysium located? The epimysium surrounds the entire muscle and is right under the fascia. What is the perimysium? The perimysium is an extension of the epimysium. The compartments created by the perimysium are called Fascicles. Where do muscles come from? What are the muscle fibers surrounded by? These muscle fibers are surrounded by the endomysium and binds each set to its neighbor. Fill in the blank: Fascia is a complex network, is continuous even though we call them by different names. What is the sarcolemma? The sarcolemma is the cell membrane of a muscle. What is the sarcoplasm? The sarcoplasm is the cytoplasm of the muscle cell. What is the sarcoplasmic reticulum? What type of muscle is multinucleated many nuclei? The skeletal muscle is multinucleated many nuclei and are usually located near the periphery of the cell. Where are myofibrils located? Myofibrils are in the sarcoplasm. Myofibrils have two major types of protein filaments; actin and myosin. What leads to striations in skeletal muscle tissue? It is the arrangement of actin and myosin that lead to the striations of skeletal muscle tissue. What is the sarcomere defined as? What do these myosin heads do? The sarcoplasmic reticulum is a network of channels that serve as a reservoir for calcium ions. What are transverse tubules? The transverse tubules are invaginations of the sarcolemma the membrane of a muscle cell, they go deep into the muscle fibers, so the interior of the cell can receive impulses messages. Generally explain skeletal muscle contraction. In general, skeletal muscle contraction is accomplished by our myofibrils actin and myosin getting an impulse and they slide past each other. When the actin and myosin filaments slide do they shorten? No, remember that when actin and myosin filaments slide, they do NOT shorten, but the sarcomere does. How are contractions accomplished? To accomplish a contraction the skeletal muscle fibers are stimulated by motor neurons. Where is the neuromuscular junction located? The neuromuscular junction is where the ending of a motor neuron innervates the skeletal muscle. The motor end plate is the portion of the muscle fiber membrane where the sarcolemma is extensively folded. What does the end of a motor neuron contain? The end of the motor neuron part of the axon contains vesicles and these vesicles contain neurotransmitters. The space between the motor neuron ending and the motor plate is called the synaptic cleft. What does a motor unit consist of? We have an impulse in our muscle fiber, now what happens? What does ATP attach to? What does it do? ATP attaches to the myosin providing energy for the cross bridge to attach. What are the two steps that must take place for the muscles to relax? The two steps that must take place for the muscles to relax are: Creatine phosphate serves to store this phosphate because muscle cells cannot be used by muscle cells. What is hemoglobin? Hemoglobin is the pigment in red blood and functions to carry oxygen from the lungs. Myoglobin is the pigment in muscle cells and serves to temporarily store oxygen in the muscles. What does the temporary storage of oxygen by myoglobin allow? The temporary storage of oxygen by myoglobin allows for cellular respiration in muscles when they are compressed. What happens if there is an absence of oxygen? In the absence of oxygen pyruvic acid is converted to lactic acid and sent to the liver. What does it take to convert lactic acid into pyruvic acid? What does oxygen debt refer to? Oxygen debt refers to the amount of oxygen needed to convert the accumulated lactic acid back to pyruvic acid which serves to restore the ATP and creatine phosphate. What happens during muscle fatigue? During muscle fatigue muscles may lose the ability to contract. What can muscle fatigue be caused by? Muscle fatigue can be caused by: Muscle cramps sustained, involuntary contractions are typically caused by low concentration of electrolytes. What do athletes produce less of?

Athletes produce less lactic acid during strenuous exercise; due to training, new blood capillaries are created and more oxygen and nutrients can get into the muscle fibers. Skeletal muscles are a major source of heat and help maintain body temperature. What is the threshold stimulus? The threshold stimulus is the minimal strength required for contraction. If brought to threshold, it will contract completely: What is motor unit recruitment? What is the concept of muscle tone? The concept of muscle tone is even at rest, nerve impulses are sending signals to a few muscle fibers; allows for maintenance of posture, sitting, etc. What is an isotonic contraction? Isotonic contractions involve muscle length changes and movement at the joint. What are the two types of isotonic contractions? The two types of isotonic contractions are concentric and eccentric.

Leg thigh hole muscle All the information, content and live chat provided on the site is intended to be for informational purposes only, and not a substitute for professional or medical advice. You should always speak with your doctor before you follow anything that you read on this website.

Structure[edit] The pupil is a hole located in the centre of the iris of the eye that allows light to strike the retina. Iris anatomy The iris is a contractile structure, consisting mainly of smooth muscle , surrounding the pupil. Light enters the eye through the pupil, and the iris regulates the amount of light by controlling the size of the pupil. The iris contains two groups of smooth muscles; a circular group called the sphincter pupillae , and a radial group called the dilator pupillae. When the sphincter pupillae contract, the iris decreases or constricts the size of the pupil. The dilator pupillae, innervated by sympathetic nerves from the superior cervical ganglion, cause the pupil to dilate when they contract. These muscles are sometimes referred to as intrinsic eye muscles. This causes the effect in one eye to carry over to the other. Effect of light[edit] The pupil gets wider in the dark and narrower in light. When narrow, the diameter is 2 to 4 millimeters. In any human age group there is however considerable variation in maximal pupil size. After 25 years of age the average pupil size decreases, though not at a steady rate. The constriction of the pupil and near vision are closely tied. In bright light, the pupils constrict to prevent aberrations of light rays and thus attain their expected acuity; in the dark this is not necessary, so it is chiefly concerned with admitting sufficient light into the eye. When this muscle contracts, it reduces the size of the pupil. This is the pupillary light reflex , which is an important test of brainstem function. Furthermore, the pupil will dilate if a person sees an object of interest. Effect of drugs[edit] Iris dilated for retina examination If the drug pilocarpine is administered, the pupils will constrict and accommodation is increased due to the parasympathetic action on the circular muscle fibers, conversely, atropine will cause paralysis of accommodation cycloplegia and dilation of the pupil. Certain drugs cause constriction of the pupils, such as opioids. In pupillary constriction induced by pilocarpine, not only is the sphincter nerve supply activated but that of the dilator is inhibited. The reverse is true, so control of pupil size is controlled by differences in contraction intensity of each muscle. Another term for the constriction of the pupil is miosis. Substances that cause miosis are described as miotic. Dilation of the pupil is mydriasis. Dilation can be caused by mydriatic substances such as an eye drop solution containing tropicamide. Diseases[edit] A condition called bene dilitatism occurs when the optic nerves are partially damaged. This condition is typified by chronically widened pupils due to the decreased ability of the optic nerves to respond to light. In normal lighting, people afflicted with this condition normally have dilated pupils, and bright lighting can cause pain. At the other end of the spectrum, people with this condition have trouble seeing in darkness. It is necessary for these people to be especially careful when driving at night due to their inability to see objects in their full perspective. This condition is not otherwise dangerous. Size of pupil[edit] Main articles: Mydriasis and Miosis The size of the pupil can be a symptom of an underlying disease. Dilation of the pupil is known as mydriasis and contraction as miosis. Not all variations in size are indicative of disease however. In addition to dilation and contraction caused by light and darkness, it has been shown that solving simple multiplication problems affects the size of the pupil. Not all animals have circular pupils. Some have slits or ovals which may be oriented vertically, as in crocodiles , vipers , cats and foxes , or horizontally as in some rays , flying frogs , mongooses and artiodactyls such as sheep , elk , red deer , reindeer and hippopotamus , as well as the domestic horse. Goats , toads and octopus pupils tend to be horizontal and rectangular with rounded corners. Some skates and rays have crescent shaped pupils, [12] gecko pupils range from circular, to a slit, to a series of pinholes [13] , and the cuttlefish pupil is a smoothly curving W shape. There are rare cases of humans with very unusually shaped pupils, such as peanut-shell-shaped pupils, as if the sides of the pupils are pinched together in the middle, like a vertical peanut shell, being wide at the top and bottom of the pupil, but narrow in the middle. In felids, there are differences between small- and large eyed species. The domestic cat *Felis sylvestrus domesticus* has vertical slit pupils, its large relative the Siberian tiger *Panthera tigris altaica* has circular pupils and the Eurasian lynx *Lynx lynx* is intermediate between those of the

domestic cat and the Siberian tiger. A similar difference between small and large species may be present in canines. The small European red fox *Vulpes vulpes* has vertical slit pupils whereas their large relatives, the gray wolf *Canis lupus lupus* and domestic dogs *Canis lupus familiaris* have round pupils. One explanation for the evolution of slit pupils is that they can exclude light more effectively than a circular pupil. Constriction of a circular pupil by a ring-shaped muscle is less complete than closure of a slit pupil, which uses two additional muscles that laterally compress the pupil. The vertical slit pupil allows for use of all wavelengths across the full diameter of the lens, even in bright light. Most snake species with vertical pupils were nocturnal and also ambush foragers, and most snakes with circular pupils were diurnal and active foragers. Overall, foraging behaviour predicted pupil shape accurately in more cases than did diel time of activity, because many active-foraging snakes with circular pupils were not diurnal. It has been suggested that there may be a similar link between foraging behaviour and pupil shape amongst the felidae and canidae discussed above. However it noted that other hypotheses could not explain the orientation of the pupils. They showed that vertical pupils enable ambush predators to optimise their depth perception, and horizontal pupils to optimise the field of view and image quality of horizontal contours.

Chapter 4 : Hernia Anatomy - California Hernia Specialists

Helpful, trusted answers from doctors: Dr. Jaren on hole in leg muscle: As poor venous outflow from the muscles in the lower(distal) leg due to a blood clot(DVT).

Sitemap Hernia Anatomy Hernia anatomy of the muscles, arteries, veins, and nerves of the abdominal wall, especially within the groin and inguinal region, are some of the most difficult to understand – even for doctors! However, learning which muscles are weakened in a hernia and understanding hernia anatomy can help patients understand where hernias are located, how they form, and how we repair them. We hope that the following diagrams, pictures, and text help you understand more about the anatomy of an abdominal wall hernia. **Hernia Anatomy** – The layers of the Abdominal Wall The first concept to understand is the basic layers of the abdominal wall. These layers are a bit different between the umbilical region and the groin, but overall the basic layers are the same. From the outside to the inside is the skin, then a layer of fat. Underneath the fat is the layer of muscles which provide the strength to the abdominal wall. Under the muscles is a thin layer called peritoneum which serves as a barrier between the muscles and the internal organs which live underneath the peritoneum. **Inguinal Hernia Anatomy** In inguinal or groin hernias a hole forms in the internal oblique and transversus muscles. If this hole forms lateral or away from the middle to the inferior epigastric blood vessels, an indirect inguinal hernia forms. If the hole forms medial or towards the middle to the inferior epigastric blood vessels, a direct inguinal hernia is formed. Regardless, in open surgery, the external oblique muscle layer is opened over the hernia weakened internal and transversus muscle. The hole or holes in the internal oblique and the transversus muscle are found. A dual sided mesh is used to reinforce the hernia defect and the muscle around the hole. The image below shows the anatomy of the inguinal region looking from the inside of the body outwards. This would be the view from inside the right groin. This type of mesh allows one layer with the blue circles to be placed under the muscle, while the other top layer is placed over the damaged muscle. With this type of repair, the weakened muscles are treated from both the inside AND the outside of the hole. This cannot be done in laparoscopic surgery since only an inner layer mesh can be used. The image to the left again shows a view from inside the patients right groin. The blue layer of the dual mesh has been placed under the weakened muscles. Not pictured is that the top layer of the dual mesh is placed over the weakened muscles to reinforce the muscles from both the inside and the outside. You can see a clear hole in the muscle at the level of the belly button, or umbilicus. This hole is considered an umbilical hernia. The image below shows a normal umbilicus with no evidence of a hole, or a hernia. Although CT scans can be helpful in determining whether there is a hernia, most often examining the patient is all that is needed to determine whether there is a hernia present. **Mesh Used for Umbilical Hernias** Umbilical hernia repairs are almost always best done open. During open surgery, a small incision is made in the crease under the belly button. The belly button is lifted off of the underlying muscle and fat. The hole in the muscle is exposed and a mesh is placed through the hole. The mesh is then sutures sewn to the surrounding healthy muscle in several locations. Once the mesh is securely fastened to the muscle, the belly button is replaced down to the muscle or fat and the skin is sewn closed. Hernias are caused by a weakening of the abdominal muscles. However, the muscles around a hernia are already weak, and over time those muscles tend to pull apart and the hernia can recur, or come back. Therefore, most hernia specialists today utilize a mesh to help strengthen the muscles. When using a mesh, the muscles themselves are not sewn together see below. Instead, a mesh is placed over or under the hole in the muscle to prevent anything from pushing through the abdominal wall. Some patients have heard or read negative information about mesh surgery. However, the unbiased government agency The National Institutes of Health performed a study of whether mesh should or should not be used for hernia surgery. Read the article by clicking on the logo to the right: While there are some risks with any surgery, by utilizing the newest mesh available, these risks are minimized. Harris specializes in surgical repair for all hernia types. For patients who require a laparoscopic surgery, Dr. Harris commonly performs these procedures. When performing a tension free mesh hernia repair, Dr. Harris uses the latest and most advanced lightweight mesh available which significantly reduces pain and discomfort after the surgery. Many surgeons

DOWNLOAD PDF HOLE IN THE MUSCLE.

still use mesh which was invented 10 years ago which can increase the chances of post operative mesh pain. Although open surgical hernia repair is still an important option for many patients, every patient should consider being seen by a surgeon who can perform advanced laparoscopic hernia surgery and who uses the newest lightweight mesh. Only a small handful of the hundreds of general surgeons in Orange County, Los Angeles, Riverside and San Diego have the experience to perform hernia surgeries using laparoscopic techniques and use cutting edge lightweight mesh. Our Newport Beach office is conveniently located in Central Orange county adjacent to John Wayne Airport between the , 73, and 55 highways. We are happy to discuss all forms of payments with patients as needed. Specialty Care for Hernia Repair â€” Dr.

Chapter 5 : Hole in shin/calf muscle - Orthopedics - MedHelp

I have a hole in my muscle. The "tear drop" on the inner quad right where it attaches to the knee. Picture attached. When I squat knee fluid will push throuh it and form a visable bubble in the skin.

Chapter 6 : Leg Muscle "Dent"??

The soundtrack of this epic game, although I dunno if it's really the full song, since I only was able to rip this track. #4 Hole in the Wall.

Chapter 7 : Pupil - Wikipedia

The lingo in the muscle-building community is cut, definition or crack. But you need NOT be a physique enthusiast to "get" an indent in your outer thigh. But you need NOT be a physique enthusiast to "get" an indent in your outer thigh.

Chapter 8 : Holes in muscle

A few months ago I noticed that there was a discoloured spot on my arm. As I looked a little closer it was a hole. It feels like the muscle in a spot has disappeared.

Chapter 9 : i got a hole in my calf muscle? | Yahoo Answers

BIOLOGICAL OVERVIEW. Tissue development requires the controlled regulation of cell-differentiation programs. In muscle, the Mef2 transcription factor binds to and activates the expression of many genes and has a major positive role in the orchestration of differentiation.