ANATOMY OF THE ANGLE pdf

1: Assessment of the anterior chamber

The ankle is a large joint made up of three bones: The shin bone (tibia) The thinner bone running next to the shin bone (fibula) A foot bone that sits above the heel bone (talus) The bony bumps.

The lower leg extends from the knee to the ankle. This area is commonly referred to as the calf. Lower leg bones Tibia. Also called the shin bone, the tibia is the longer of the two bones in the lower leg. It acts as the main weight-bearing bone of the leg. The fibula is located next to the tibia. It mainly serves as an attachment point for the muscles of the lower leg. Lower leg muscles Gastrocnemius. This is one of the main muscles in the calves. It allows for a type of movement called plantar flexion in the ankle. This allows the toes to point downward. This large muscle is located behind the gastrocnemius. It also helps with plantar flexion. This is a small muscle in the back of the lower leg. These muscles are found on the front and back sides of the lower leg. The muscles in the front allow for dorsiflexion. This involves pointing the toes upward. The muscles in the back help with plantar flexion and supporting the arch of the foot. These muscles are located on the front side of the lower leg. They help with dorsiflexion. Other important structures Fibular nerves. Fibular nerves stimulate the muscles of the front part of the lower leg. These nerves are branches of the sciatic nerve. This is one of the main nerves in the leg. Tibial nerves stimulate muscles in the back of the lower leg. The Achilles tendon attaches the muscles of the calves to the bones of the ankle and foot. The ankle is a joint that connects the lower leg to the foot. Its main function is to allow for plantar flexion and dorsiflexion of the foot. Ankle bones The ankle is made off the tibia and fibula of the leg as well as the talus of the foot. Ankle ligaments The ankle contains two groups of ligaments: The feet are made up of many bones , muscles , and ligaments. In fact, nearly one-quarter of the bones in the body are found in the feet. Foot bones Tarsals The tarsal bones are found near the ankle, in the middle of the foot, where they form an arch. The seven tarsal bones are the:

2: The Ankle Joint - Articulations - Movements - TeachMeAnatomy

Understanding the anatomy of the ankle ligaments is important for correct diagnosis and treatment. Ankle ligament injury is the most frequent cause of acute ankle pain. Chronic ankle pain often finds its cause in laxity of one of the ankle ligaments. In this pictorial essay, the ligaments around the.

Bones and Joints of the Foot and Ankle Ankle Lateral side of the ankle Joint capsule The bones of the foot and ankle begin with the ankle joint itself. The ankle joint, talocrural joint, is formed where the distal end of the leg meets the foot. The ankle joint is formed where the talus the uppermost bone in the foot and the tibia shin meet. The talus fits between the two bony prominences on either side of the ankle. In a hinge joint, a convex part of one bone fits into the concave part of the other bone. The mortise and tenon construct is well known to carpenters and craftsmen who use this type of construction to join everything from furniture to large buildings. The ankle joint allows the foot to bend up flex and down extend. When the foot is extended, the heel is drawn up and the toes point downward. Other movements, such as tilting and rotation take place in and around the joints in the foot itself. Strong ligaments on either each side of the joint limit movement. The ankle bones are connected by the anterior talofibular ligament, posterior talofibular ligament, and calcaneofibular ligament. The articular capsule surrounds the joint with thin fibrous tissue. A synovial membrane is in under the ligamnents. Of the ligaments, the deltoid is so strong that it usually resists a force which fractures the bone to which it is attached. Foot Bones of the foot as seen from the medial arch side. The foot forms a firm basis of support for the body in the erect posture, and is solidly built up and its parts are less movable on each other than those of the hand. The phalanges toes of the foot are smaller and their movements are more limited than the fingers of the hand. Very much more different between the metacarpal bone of the thumb and the metatarsal bone of the great toe. The metatarsal bone of the great toe helps support the weight of the body, is constructed with great solidity, lies parallel with the other metatarsals, and has a very limited amount of movement. The tarsus forms a considerable part of the foot, and is at right angles to the leg, and relates to an erect posture. In order to support our body weight with the least amount of surface area, the tarsus and a part of the metatarsus is made up of a series of arches. The bones of the foot include the tarsals, metatarsals and phalanges. Bones of the foot from the lateral side side opposite the arch. The two bones that make up the hindfoot are the talus and the calcaneus heel. Where the talus meets the calcaneus forms the subtalar joint. The subtalar joint allows the foot to rock from side-to-side. Tarsal Bones The tarsal bones work together as a group. The way these bones fit together is very interesting. When the muscles of the foot and leg twists the foot in one direction, the tarsal bones lock together and form a very rigid structure. When they twist in the opposite direction, the bones unlock, allowing the foot to conform to whatever surface the foot is contacting. There are seven tarsal bones: The calcaneus heel bone is the largest of the tarsal bones. It transmits the weight of the body to the ground and acts as a lever for the muscles of the calf. The calcaneus joins with the talus and cuboid. The talus ankle bone is the second largest of the tarsal bones and sits atop the calcaneus. It joins on either side with the malleoli and in front with the navicular. The talus forms a joint with four bones: The cuboid is on the lateral side opposite the arch of the foot and in front of the calcaneus. The cuboid forms a joint with four bones: The navicular sits at the medial side of the tarsus, between the talus behind and the cuneiform bones in front. The navicular forms joints with four bones: The first cuneiform forms a joint with four bones: The second cuneiform forms joints with four bones: The third cuneiform forms joints with six bones: Metatarsal Bones The metatarsus consists of 5 bones and are numbered starting from the arch side of the foot. The tarsal bones are connected to the 5 long bones of the foot called the metatarsals. There is a fairly rigid connection between the two groups without much movement at the joints. The base of each metatarsal bone forms a joint with one or more of the tarsal bones, and the head with one of the first row of phalanges. The first metatarsal forms a joint with the first cuneiform, the second with all three cuneiforms, the third with the third cuneiform, the fourth with the third cuneiform and the cuboid, and the fifth with the cuboid. Phalanges Finally, there are the bones of the toes, called the phalanges. The joints between the metatarsals and the first phalanx is called the metatarsal phalangeal joint. These joints form the ball of the foot, and movement in these joints is very important for a normal walking pattern. The phalanges of the foot correspond, in number and general arrangement, with those of the hand; there are two in the great toe, and three in each of the other toes. They differ from the hand, however, in their size, the bodies are shorter in length, and, especially in the first row, wider. Not much motion occurs at the joints between the bones of the toes phalanges. The big toe, or hallux is the most important toe for walking, and the first metatasal phalangeal joint is a common area for problems in the foot. In the second, third, fourth, and fifth toes the phalanges of the first row form joints behind with the metatarsal bones, and form joints in front with the second phalanges, which in their turn form joints with the first and third: Soft Tissues of the Foot and Ankle The soft tissues of the foot and ankle include ligaments, tendons, fascia, nerves and blood vessels. Ligaments attach bones to bones. So ligaments are usually named after the bones they connect. The name may also contain a directional description. For example, the Posterior talotibial ligament is on the posterior side back side of the foot and connects the talus and the tibia. Medial Ligaments of the Foot arch side of the foot Ligaments are strong, dense, flexible bands of fibrous connective tissue. The function of ligaments is to attach bones to bones. Ligaments help give the stability of the joint. Ligaments are often named after the the bones they join together. The ankle joint is bound by the strong deltoid ligament and three lateral ligaments:

3: Anatomy Of The Ankle - Anatomy Medical Pictures

The ankle, or the talocrural region, is the region where the foot and the leg meet. The ankle includes three joints: the ankle joint proper or talocrural joint, the subtalar joint, and the inferior tibiofibular joint.

Region[edit] As a region, the ankle is found at the junction of the leg and the foot. It extends downwards distally from the narrowest point of the lower leg and includes the parts of the foot closer to the body proximal to the heel and upper surface dorsum of the foot. The bony architecture of the ankle consists of three bones: The articular surface of the tibia may be referred to as the plafond French for "ceiling". The distal-most aspect of the fibula is called the lateral malleolus. Together, the malleoli, along with their supporting ligaments, stabilize the talus underneath the tibia. Because the motion of the subtalar joint provides a significant contribution to positioning the foot, some authors will describe it as the lower ankle joint, and call the talocrural joint the upper ankle joint. When the foot is plantar flexed, the ankle joint also allows some movements of side to side gliding, rotation, adduction, and abduction. The mortise is a rectangular socket. The distances between the bones in the ankle are as follows: The ankle joint is bound by the strong deltoid ligament and three lateral ligaments: The deltoid ligament supports the medial side of the joint, and is attached at the medial malleolus of the tibia and connect in four places to the talar shelf of the calcaneus , calcaneonavicular ligament , the navicular tuberosity , and to the medial surface of the talus. The anterior and posterior talofibular ligaments support the lateral side of the joint from the lateral malleolus of the fibula to the dorsal and ventral ends of the talus. The calcaneofibular ligament is attached at the lateral malleolus and to the lateral surface of the calcaneus. Though it does not span the ankle joint itself, the syndesmotic ligament makes an important contribution to the stability of the ankle. This ligament spans the syndesmosis , i. An isolated injury to this ligament is often called a high ankle sprain. The bony architecture of the ankle joint is most stable in dorsiflexion. Thus, a sprained ankle is more likely to occur when the ankle is plantar-flexed, as ligamentous support is more important in this position. The classic ankle sprain involves the anterior talofibular ligament ATFL , which is also the most commonly injured ligament during inversion sprains. Another ligament that can be injured in a severe ankle sprain is the calcaneofibular ligament. Retinacula, tendons and their synovial sheaths, vessels, and nerves[edit] A number of tendons pass through the ankle region. Bands of connective tissue called retinacula singular: It contains the anterior tibial artery and vein and the tendons of the tibialis anterior muscle within its tendon sheath and the unsheathed tendons of extensor hallucis longus and extensor digitorum longus muscles. The deep peroneal nerve passes under the retinaculum while the superficial peroneal nerve is outside of it. The inferior extensor retinaculum of foot is a Y-shaped structure. Its lateral attachment is on the calcaneus, and the band travels towards the anterior tibia where it is attached and blends with the superior extensor retinaculum. Along that course, the band divides and another segment attaches to the plantar aponeurosis. The tendons which pass through the superior extensor retinaculum are all sheathed along their paths through the inferior extensor retinaculum and the tendon of the fibularis tertius muscle is also contained within the retinaculum. The flexor retinaculum of foot extends from the medial malleolus to the medical process of the calcaneus, and the following structures in order from medial to lateral: The fibular retinacula hold the tendons of the fibularis longus and fibularis brevis along the lateral aspect of the ankle region. The superior fibular retinaculum extends from the deep transverse fascia of the leg and lateral malleolus to calcaneous. The inferior fibular retinaculum is a continuous extension from the inferior extensor retinaculum to the calcaneous. It was hypothesized that muscle spindle feedback from the ankle dorsiflexors played the most substantial role in proprioception relative to other muscular receptors that cross at the ankle joint. However, due to the multi-planar range of motion at the ankle joint there is not one group of muscles that is responsible for this. In , a relationship between proprioception of the ankle and balance performance was seen in the CNS. This was done by using a fMRI machine in order to see the changes in brain activity when the receptors of the ankle are stimulated. Further research is needed in order to see to what extent does the ankle affect balance. Function[edit] Historically, the role of the ankle in locomotion has been discussed by Aristotle and Leonardo da Vinci. There is no question that ankle push-off is a significant force in human gait , but how much energy is used in leg swing as opposed to advancing the whole-body center of mass is not clear. If the outside surface of the foot is twisted under the leg during weight bearing, the lateral ligament , especially the anterior talofibular portion , is subject to tearing a sprain as it is weaker than the medial ligament and it resists inward rotation of the talocrural joint.

4: Anatomy Of The Ankle - www.enganchecubano.com

The ankle joint is a hinged synovial joint with primarily up-and-down movement (plantarflexion and dorsiflexion). However, when the range of motion of the ankle and subtalar joints (talocalcaneal and talocalcaneonavicular) is taken together, the complex functions as a universal joint (see the image.

The foot consists of thirty three bones, twenty six joints and over a hundred muscles, ligaments and tendons. These all work together to bear weight, allow movement and provide a stable base for us to stand and move on. The foot needs to be strong and stable to support us yet flexible to allow all sorts of complex movements with activities such as walking, running, jumping and kicking. Here, you will find an overview of the different structures that make up the various aspects of foot anatomy, how they fit together and what can go wrong. To find out more about each, click on the relevant section. It also includes the heel bone, known as the calcaneus. The five bones of the midfoot are what make up our foot arches. They are arranged in a pyramid shape to be the shock absorbers of the feet. There is the navicular, cuboid and three cuneiform bones in the midfoot. There are nineteen bones in the forefoot. The five metatarsals connect the midfoot to the toes and fourteen phalanges make up the toes themselves. For more information, see the dedicated page about foot bones. Common problems that arise in the foot bones include hammertoe and mallet toe , turf toe , bone spurs and bunions. Foot Muscles Another important part of foot anatomy is the muscles. There are more than twenty muscles in the foot and they are commonly divided into two groups: The muscles that originate from the front and back of the lower leg and attach into the foot such as the calf muscles, gastrocnemius and soleus. Muscles work in pairs, simultaneously contracting shortening and relaxing lengthening to allow controlled movement. They are arranged in layers and are responsible for maintaining the correct shape of the foot for example the foot arches. The muscles attach to the foot bones via tendons. The most common problem affecting the foot muscles is tendonitis, where there is inflammation and degeneration of the tendons the cord part of the muscle where it attaches to the bone. Find out more in the foot tendonitis section. Ligaments Ligaments are strong, thick fibrous bands that connect bone to bone and hold them together. They are a really important part of ankle anatomy as they are the primary stabilisers of the ankle. There are eleven ligaments around the ankle, connecting the various different bones of the hindfoot and midfoot. The most common injury is a ligament sprain most commonly of the lateral ligament, aka anterior talofibular ligament. Alternatively, if you want help working out what is causing your pain, visit the foot pain diagnosis section,.

5: What is the Anatomy of the Ankle? (with pictures)

Before exploring gonioscopic techniques and findings, it is important to review the anatomy and function of the structures of the angle (1â€‘1 and 1â€‘2). Sketch of the anterior chamber angle.

I understand that not everyone cares what exact bone was fractured and what type of fracture it was etc. But when I hear this statement it always gets me thinking; what sport s were you playing when those injuries occurred? Are you currently playing that sport s or have you stopped? Did you receive proper rehabilitation after each instance? Are you taking the proper preventative measures each day to minimize your risk of further injury? That is why I am always curious as to what specific structure was involved when someone says that to me. To break it down a little bit, the foot is divided up into three zones: These bones act as the structural base for our entire body. But for us to move efficiently we need to have adequate range of motion ROM. In the foot and ankle, the combination of joints allows us to have various types of motion, including; plantarflexion, dorsiflexion, inversion, eversion, abduction and adduction, at the phalanges and circumduction. The first joint, most proximally is the distal tibiofibular joint. It is a syndesmotic joint, which means there is no movement at the joint and it is joined by connective tissue, in this case the tibia and fibula. The main static stabilizers of this joint are the anterior and posterior tibiofibular ligaments and interosseous membrane. Since this joint is not moveable, it takes a high amount of force for it to be injured and is very uncommon. The talocrural joint forms the ankle mortise, where the fibula, tibia and talus all meet to create the hinge. Yes, I know that sounds like a mouthful, and it is, but these two ligament complexes are the two most commonly injured in ankle sprains. The other substantial joint I referred to is the subtalar joint. It is a plane synovial joint which mainly allows for inversion, eversion and some gliding. It is supported by the medial, lateral and posterior talocalcaneal ligaments and the interosseous talocacalneal ligament, which binds the talus and calcaneus together. This joint is very important in allowing your foot to adjust to uneven terrain while moving by shifting from side to side. It is also very important in athletic movements such as pivoting or turning with a fixed foot. This movement is essential for proper gait, but can lead to increased risk of injury if excessive laxity in this joint becomes present, which can lead to hypermobility and overpronation. The final joint of the ankle is the transverse tarsal joint. This joint involves a slew of bone articulations and ligaments. It is distal to the previous three joints we have talked about and is located near the midfoot. It is a synovial joint and assists the subtalar joint in inversion and eversion of the foot. The ligaments that support this joint include: My goal for this article is to introduce you into the basic anatomy of the ankle joint. Take an interest in your body and your injuries, because the more knowledge you have, the more informed decisions you will be able to make in regard to your health care. If you have any questions about the anatomy of the ankle joint or injuries that you may have sustained in training, athletics or in your everyday activities, please reach out, and I encourage you to always HealByMoving.

6: Biomechanics of the ankle

Foot and Ankle Anatomy. Author: Chloe Wilson - BSc(Hons) Physiotherapy Foot and ankle anatomy is quite complex. The foot consists of thirty three bones, twenty six joints and over a hundred muscles, ligaments and tendons.

Top 10 amazing movie makeup transformations The anatomy of the ankle includes of all structures contained in and surrounding the ankle, or talocrural, joint. These include the contents of the joint capsule such as the ends of the articulating bones, joint cartilage , and synovial fluid. Ankle anatomy also refers to the ligaments enclosing the capsule and holding the bones together, the muscles and tendons crossing the ankle joint , and the fat and skin around it. A synovial joint, the ankle can produce the hinging movements of dorsiflexion and plantarflexion. Between these shin bones and the talus below is the synovial capsule or joint space. Within this lubricated, fluid-filled cavity is cartilage to cushion the bones against each other during weight-bearing movements as well as the front-to-back hinging movements of dorsiflexion and plantarflexion. Dorsiflexion is the act of lifting the top or dorsal surface of the foot upward toward the shin, while plantarflexion is the act of pressing the bottom or plantar surface of the foot downward away from the shin. Ad The anatomy of the ankle also includes two more articulations â€" the inferior tibiofibular joint above and the subtalar joint below. The inferior tibiofibular joint is where the lower ends of the tibia and fibula meet immediately above the ankle joint. A type of joint known as a syndesmosis that is held together by an interosseous ligament , its bones are permitted very little movement against one another. Below the talocrural joint on the underside of the talus bone is the subtalar joint. Found where the talus meets the top surface of the calcaneus or heel bone in the foot, the subtalar is the synovial articulation that allows the movements of eversion and inversion. This is the rolling of the ankle from side to side. Together with dorsiflexion and plantarflexion, these movements make circling the ankle possible and therefore the subtalar joint can be incorporated into an understanding of the anatomy of the ankle. The tibia and fibula are joined by their single interosseous ligament as well as the anterior and posterior tibiofibular ligaments in front and behind, respectively, while each bone has its own ligaments connecting it to the talus. The medial malleolus of the tibia, the rounded bony prominence felt on the inside of the ankle, is joined to both the talus and the heel bone by the broad deltoid ligament. Likewise, the lateral malleolus of the fibula, a similar bony prominence felt on the outside of the ankle, is linked to the talus via the anterior and posterior talofibular ligaments and to the calcaneus via the calcaneofibular ligament. A discussion of the anatomy of the ankle would not be complete without including the major muscles that act on the ankle joint. The large muscles of the calf on the posterior lower leg, the gastrocnemius and soleus, are responsible for the downward-hinging motion of plantarflexion, since they cross the back of the ankle as the Achilles tendon and attach to the heel bone. Dorsiflexion is initiated by several muscles of the anterior lower leg or shin that cross the ankle joint as individual tendons and insert in the foot, including the tibialis anterior, extensor digitorum longus, and extensor hallucis longus.

ANATOMY OF THE ANGLE pdf

7: Anatomy of the Angle - American Academy of Ophthalmology

Eighty-five percent of all ankle sprains are lateral ankle sprains, % are medial ankle sprains and the remaining 1% consist of syndesmotic or high ankle sprains. The other substantial joint I referred to is the subtalar joint.

This is the area in which the trabecular meshwork lies and is therefore the part of the eye that is responsible for aqueous outflow. The labeled structures listed alphabetically are: Iris When examined with the slit lamp, the iris is seen to have two main zones: A wavy border, the collarette, separates these areas. There are intermittent crypts, which can extend deep into the stoma, and concentric furrows, which become more prominent as the pupil dilates. The iris is composed of an anterior stromal layer and a posterior epithelial layer. The stroma is vascular connective tissue that has no anterior epithelial covering. The musculature of the iris lies within the stroma. A 1 mm wide band of sphincter muscle rings the pupil. The myoepithelial cells of the dilator muscle are spread throughout the stroma from the iris root as far centrally as the sphincter. Blood vessels in the iris are mostly located in the stromal layer and have a radial orientation. They are frequently visible in lightly pigmented eyes. The greater circle of the iris is found in the ciliary body or in the root of the iris and is often partially visible in a gonioscopic examination. Posteriorly, there are two epithelial layers. As in the ciliary body, the cells of these two epithelial layers are aligned apex to apex. The anterior layer has little pigmentation and is continuous with the outer pigmented layer of the ciliary body. The posterior layer is densely pigmented and faces the posterior chamber. This layer is continuous with the nonpigmented layer of ciliary epithelium. The iris generally inserts at a variable level into the face of the ciliary body, which is posterior to the scleral spur. Less commonly, the iris will insert on, or anterior to, the scleral spur. The iris thins at the periphery near its insertion. Ciliary Body Face The ciliary body lies behind the iris. Its functions include the manufacture of aqueous humor, the control of accommodation, the regulation of aqueous outflow, the secretion of hyaluronate into the vitreous, and the maintenance of a portion of the blood-aqueous barrier. There are two major muscle groups in the ciliary body: Hematoxylin and eosin stain. The peripheral ciliary zone is separated from the pupillary zone by the wavy collarette large arrow. The narrow band of sphincter muscle can be seen around the pupil. This iris has many crypts small arrow. The ciliary body face is the portion of the ciliary body that borders on the anterior chamber. The degree to which the ciliary body face is visible depends on the level and angle of iris insertion. In some eyes, the ciliary body face is not visible, being completely obscured by iris. Uveoscleral outflow is pressure-independent. Cholinergic agents, such as pilocarpine, compact the fibers in the ciliary body and decrease uveoscleral outflow. Anticholinergic drugs, such as atropine, increase nonconventional outflow through the ciliary body face Bill and Phillips, In some eyes with severe compromise of trabecular outflow, anti-cholinergic medications may lower intraocular pressure, while cholinergic drugs may, paradoxically, increase intraocular pressure. The prostaglandin F2a drugs appear to promote a marked increase in nonconventional outflow through the ciliary body face Gabelt and Kaufman, and are now routinely used as first-line agents in glaucoma therapy. Scleral Spur The scleral spur is composed of a ring of collagen fibers that run parallel to the limbus. It marks the posterior border of the trabecular meshwork. The spur projects slightly into the anterior chamber and is seen as a white to yellowish line in most eyes. The longitudinal muscle of the ciliary body attaches to the scleral spur and opens the trabecular meshwork by pulling on the spur. The longitudinal muscle LM of the ciliary body attaches to the scleral spur. This flow is pressure-dependent, increasing as intraocular pressure increases. For aqueous to exit the eye by this route, the intraocular pressure must be higher than the episcleral venous pressure. In most eyes the uveal meshwork is colorless and is either not visible or is seen only as a glistening veil in the angle of young patients. In some eyes the uveal meshwork is dense and pigmented, giving a rough appearance to the trabecular meshwork and occasionally obscuring portions of the scleral spur. The uveal meshwork does not provide any resistance to aqueous outflow. Iris processes appear as thicker strands in front of the uveal meshwork and extend from the periphery of the iris to the trabecular meshwork Chapter 5. Below episcleral venous pressure all outflow is through uveoscleral and other nonconventional means. C, outflow facility; IOP, intraocular pressure; Pe, episcleral venous pressure. Reprinted with permission from Macmillan Publishers

Ltd. Reprinted with permission from R. Note the large intervening spaces which do not provide resistance to aqueous outflow. The corneoscleral meshwork lies deep to the uveal meshwork. It is the central layer that extends from the scleral spur to the anterior wall of the scleral sulcus. This layer, like the uveal meshwork, does not offer significant resistance to aqueous outflow. Between these endothelial layers is a loose connective tissue. This juxtacanalicular tissue provides the most resistance to aqueous outflow. With time, this posterior portion of the meshwork usually becomes pigmented, whereas the anterior meshwork usually remains relatively nonpigmented. The endothelial cells in the trabecular meshwork differ from corneal endothelial cells in that they are larger with less prominent cell borders Spencer et al, A function of endothelial cells is to digest phagocytized foreign material. With age or repeated insult the endothelial cell count decreases, as does aqueous outflow. Occasionally, the canal is a plexus rather than a single, discrete vessel. At high intraocular pressures the canal collapses and resistance to aqueous outflow increases. Cholinergic drugs decrease resistance to outflow through this action.

8: Ankle - Wikipedia

The ankle joint is bound by the strong deltoid ligament and three lateral ligaments: the anterior talofibular ligament, the posterior talofibular ligament and the calcaneofibular ligament. â€¢ The deltoid ligament supports the medial side of the ankle and attaches the tibia to the calcaneus and talus.

View into the angle Modified from a figure by T. Landmarks and some gonioscopic observations Pupil. Visible with the gonioscope if dilated. Colour varies between individuals. The last roll of the iris may obscure the view of the ciliary body Ciliary body. Colour varies between individuals - may be pale brown, grey or dark. Protrusion of sclera into anterior chamber. Attached to ciliary body posteriorly and trabecular meshwork anteriorly. Multilayered network of fenestrated lamellae and endothelial cells draining aqueous into Canal of Schlemm which may visible when full of blood e. Most of the drainage occurs via the posterior, more pigmented, portion of the trabecular meshwork. There are variations in colour but usually grey with varying degrees of pigmentation. Very fine glossy white line. Posterior surface of Cornea. Other normal and and not so rare abnormal structures Iris processes. Fine bands of iris extending anteriorly to attach to ciliary body or scleral spur. May be associated with ICE iridocorneal endothelial syndrome or post argon laser trabeculoplasty. Neovascularisation of the angle. To rule out anterior segment inflammation e. However the approach to the trabecular region is obscured from view in all eyes except some rare exceptions for two reasons: Van Herrick and Schaffer grades Grade.

9: Muscles, Tendons & Ligaments of the Foot & Ankle - Foot Anatomy - www.enganchecubano.com

In this animated episode of eOrthopodTV, orthopaedic surgeon Randale Sechrest, MD discusses the anatomy of the ankle joint.

This article has been cited by other articles in PMC. Abstract This paper provides an introduction to the biomechanics of the ankle, introducing the bony anatomy involved in motion of the foot and ankle. The complexity of the ankle anatomy has a significant influence on the biomechanical performance of the joint, and this paper discusses the motions of the ankle joint complex, and the joints at which it is proposed they occur. It provides insight into the ligaments that are critical to the stability and function of the ankle joint. It describes the movements involved in a normal gait cycle, and also highlights how these may change as a result of surgical intervention such as total joint replacement or fusion. This paper will highlight key anatomical bony structures and soft tissues that form the ankle joint complex and will further highlight how the ankle joint complex functions during walking and how pathology changes these movements. Anatomy of the ankle The foot and ankle is made up of the twenty-six individual bones of the foot, together with the long-bones of the lower limb to form a total of thirty-three joints. The ankle joint complex is made up of the talocalcaneal subtalar , tibiotalar talocrural and transverse-tarsal talocalcaneonavicular joint. The subtalar joint The calcaneus is the largest, strongest and most posterior bone of the foot, providing attachment for the Achilles tendon. It is located inferiorly to the talus, and forms a triplanar, uniaxial joint with the talus. The two similarly articulated facets of the anterior talocalcaneal joint on the inferior aspect of the talus are convex, and on the superior aspect of the calcaneus are concave, while the facets for articulation of the posterior talocalcaneal joint on the inferior aspect of the talus are concave, and on the superior aspect of the calcaneus are convex. This geometry allows inversion and eversion of the ankle, and whilst other motion is permitted at this joint, most of eversion and inversion of the foot is provided here. The key linkage between the two is the interosseous talocalcaneal ligament, a strong, thick ligament that extends from the articular facets of the inferior talus to the superior surface of the calcaneus. Two further ligaments, the lateral talocalcaneal ligament and the anterior talocalcaneal ligament also contribute to the connection of this joint, 1 however these are relatively weak. The talocalcaneal joint is also supported by the calcaneofibular part of the lateral collateral ligament and the tibiocalcaneal ligament of the deltoid. Furthermore, the long tendons of peroneus longus, peroneus brevis, flexor hallucis longus, tibialis posterior, and flexor digitorum longus provide additional support. The load-bearing aspect of this joint is the tibial-talar interface. The talus bone includes the head, neck and body, and has no direct muscle connection. The trochlea of the talus fits into the mortise formed from the distal ends of the long bones of the shin. The malleoli of the tibia and fibula act to constrain the talus, such that the joint functions as a hinge joint, and primarily contributes to the plantar- and dorsiflexion motion of the foot. However, the geometry of the joint, such as the cone-shaped trochlea surface and the oblique rotation axis do indicate it may not function simply as a hinge. In stance phase, the geometry of the joint alone is sufficient to provide resistance to eversion; otherwise stability is derived from the soft tissue structures. The tibiotalar joint is a diarthrosis and is covered by a thin capsule attaching superiorly to the tibia, and the malleoli, and inferiorly to the talus. Stability is given to the joint through three groups of ligaments. The tibiofibular syndesmosis limits motion between the tibia and fibula during activities of daily living, maintaining stability between the bone ends. The syndesmosis consists of three parts â€” the anterior tibiofibular ligament, the posterior tibiofibular ligament and the interosseous tibiofibular joint. The deltoid ligament is fan shaped and comprises the anterior and posterior tibiotalar ligaments, the tibionavicular ligament and the tibiocalcaneal ligament. The lateral collateral ligaments reduce inversion of the joint, limiting varus stresses and reduce rotation. The anterior and posterior ligaments withstand high tensile forces under plantar and dorsiflexion respectively. These ligaments provide stability to the lateral tibiotalar joint, 4 , 5 , 6 and are frequently damaged during inversion injuries such as ankle sprain. The calcaneofibular ligament is the only direct connective tissue between the tibiotalar and subtalar joints.

ANATOMY OF THE ANGLE pdf

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