
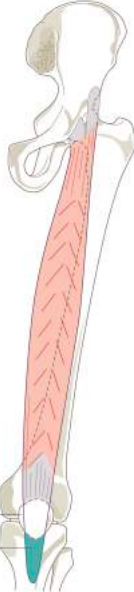


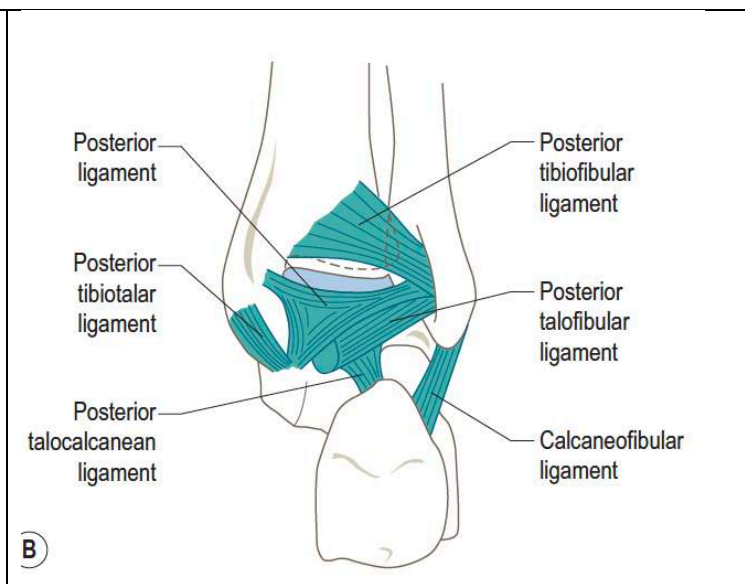
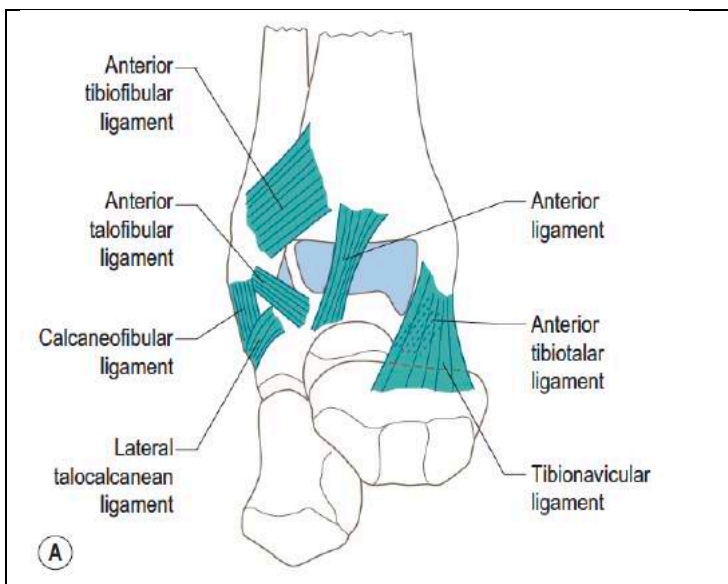
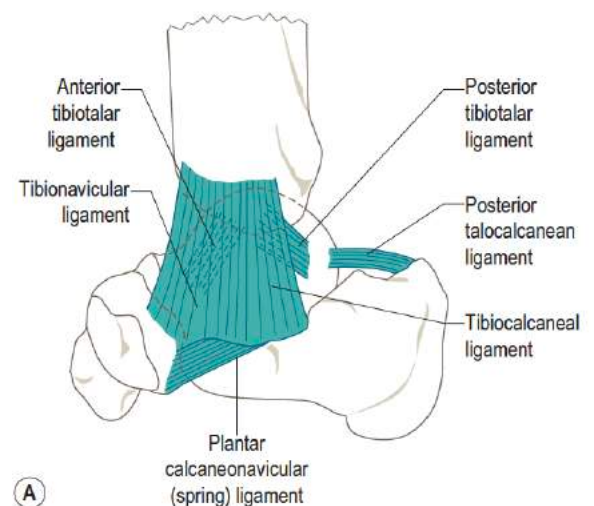
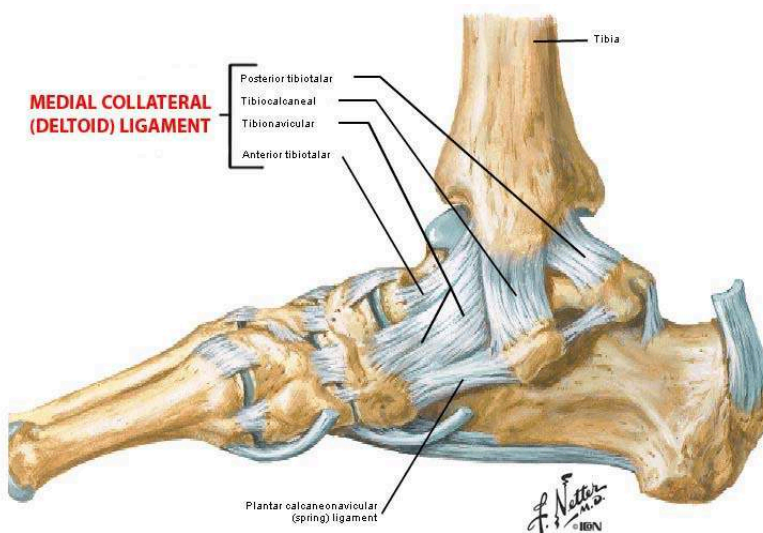
5.1 Identify, describe the attachments of and deduce the actions of the muscles of the thigh:

Anterior group	Proximal attachment	Distal attachment	Action of muscle
Sartorius  <p><small>Figure 3.31 Left sartorius, anterior view.</small></p>	ASIS	<ul style="list-style-type: none"> » Upper part of shaft tibia (middle surface) » MCL of knee 	<p>Flex hip, knee joint</p> <p>Ext rot and abd of thigh</p> <p>Int rot of tib on femur</p>
Rectus Femoris  <p><small>Figure 3.32 Left rectus femoris, anterior view.</small></p>	<ul style="list-style-type: none"> » AIIS » Ilium just superior to acetabulum 	Tibial tuberosity via patellar ligament	Extend knee joint
Vastus Lateralis	<ul style="list-style-type: none"> » Intertrochanteric line (upper lateral part) » Lower border greater trochanter » Gluteal tuberosity (lateral side) » Lateral lip of linea aspera (upper half) 	<ul style="list-style-type: none"> » Tibial tuberosity via tendon of rectus femoris and patellar ligament » Blends with ITB 	Extend knee joint

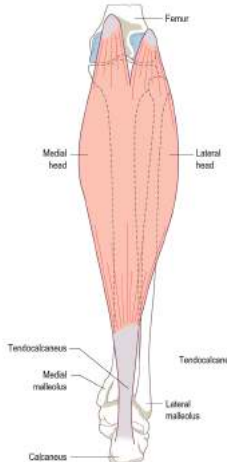
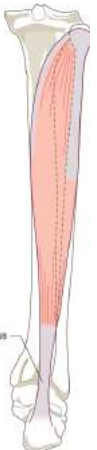
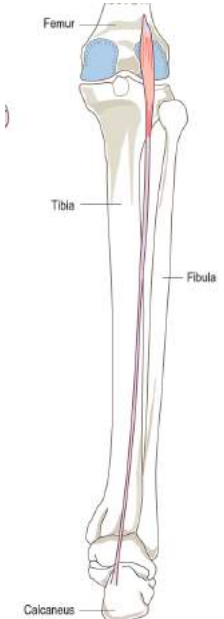
ANAT101 – Muscle of the Thigh and Bones + Joints of Leg and foot (5&6)

Ligaments:

- Deltoid ligament (MCL of ankle)
- Strong, roughly triangular ligament composed of several bands of fibres fused together. Have deep and superficial parts, attaching by its apex to the anterior and posterior borders and to the fossa at tip of medial malleolus
 - Extensive, triangular in shape
 - Superficial parts
 - Tibionavicular – attaches to the tuberosity on the navicular
 - Tibiocalcaneal – descend vertically to attach to sustentaculum tali
 - Together – prevent abduction at ankle
 - Deep parts
 - Anterior tibiotalar
 - Limit plantarflexion
 - Posterior tibiotalar
 - Limit dorsiflexion

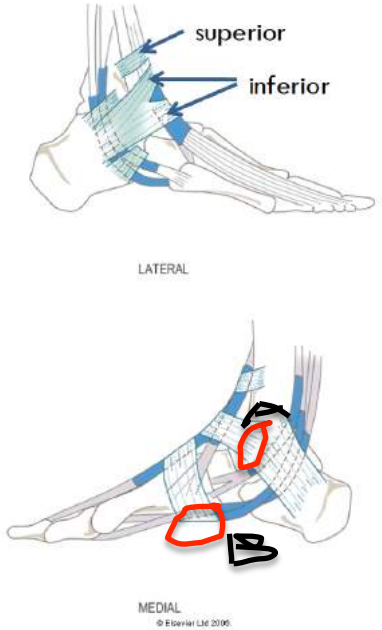
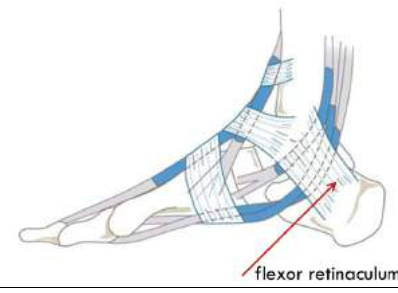
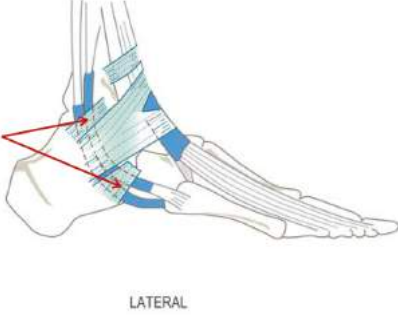


ANAT101 – Muscle of the Thigh and Bones + Joints of Leg and foot (5&6)

Posterior Group	Proximal attachment	Distal attachment	Action of muscle
Gastrocnemius 	<ul style="list-style-type: none"> - posterior aspect of the medial and lateral femoral condyles. - Capsule of knee joint 	<ul style="list-style-type: none"> - posterior calcaneus via tendocalcaneus 	<ul style="list-style-type: none"> - strong plantarflexor of ankle joint - strong flexor of the knee
Soleus 	<ul style="list-style-type: none"> - soleal line and posterior surface of tibia and upper third of fibula 	<ul style="list-style-type: none"> - posterior calcaneus via tendocalcaneus/ Achilles tendon 	<ul style="list-style-type: none"> - strong plantarflexor of ankle joint (prevent body falling forward at ankle joint during standing)
Plantaris 	<ul style="list-style-type: none"> - lateral supracondylar ridge of femur - adjacent part of popliteal surface of femur - knee joint capsule 	<ul style="list-style-type: none"> - posterior calcaneus (medial side) 	<ul style="list-style-type: none"> - weak flexor of knee and plantarflexor of ankle joint

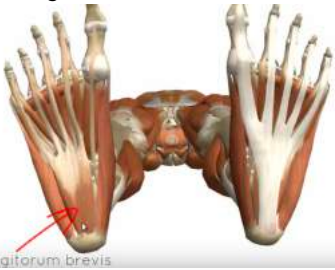








7.2 Identify and / or describe the location of the following features and state their specific mechanical function:

In general, function of retinacula: hold tendons (across ankle joint) in place when contracting and prevent bow-stringing. They are named according to the tendons they serve (flexor, extensor, fibular/peroneal)


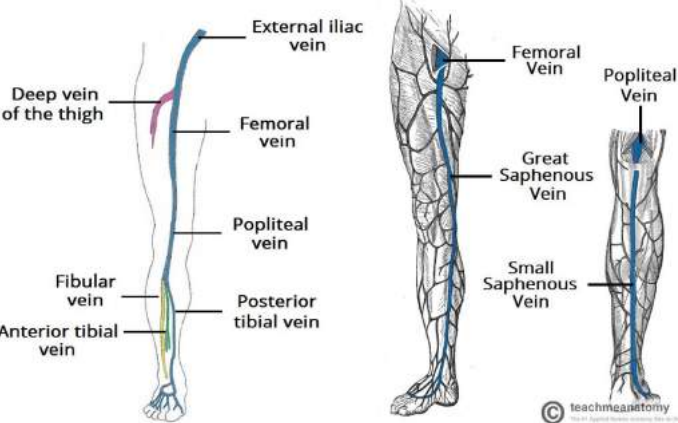
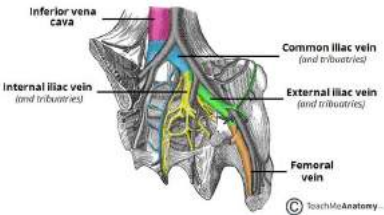
	Location	Mechanical function
Extensor retinacula  <p>LATERAL</p> <p>MEDIAL</p> <p>© Elsevier Ltd 2006</p>	1. Superior extensor retinaculum: <ul style="list-style-type: none"> - runs horizontally above ankle Inferior extensor retinaculum: <ul style="list-style-type: none"> - Y shaped band anterior to talocrural ligaments. - The Y shaped attaches to the upper surface of calcaneus anteriorly and floor of sinus tarsi - A= medial malleolus - b= deep fascia on medial side of foot 	1. binds with tendons of TA, EHL, EDL, PT 2. binds down TA, EHL, EDL, PT
Flexor retinaculum  <p>flexor retinaculum</p>	<ul style="list-style-type: none"> - passes b/w back of medial malleolus and medial tubercle of calcaneus - Bridges over the posterior tibial vessels and nerves 	Converts the bony grooves into canals for tendons of TP, FDL, FHL as they pass behind medial malleolus
Peroneal retinacula  <p>LATERAL</p>	Superior and inferior peroneal retinacula: <p>Attaches to the lateral side of calcaneus and passes over the tendons of peroneus longus and brevis behind lateral malleolus</p>	binds the two peroneal tendons to the lateral side of calcaneus

ANAT101 – Muscle of the Thigh and Bones + Joints of Leg and foot (5&6)

The plantar muscle is described in four layers – from superficial to deep.
Remember the mnemonic '3,2,3,2' (1st - 4th layer)

Plantar surface (sole) – plantar muscles	Proximal attachment	Distal attachment	Action of muscle
<p>Layer 1: most superficial</p> <p>1. Flexor digitorum brevis</p>  <p>2. Abductor hallucis</p> <p>3. Abductor digiti minimi</p> 	<p>1. medial tubercle of calcaneus (it forms four tendons)</p> <p>2. medial tubercle of calcaneus</p>  <p>3. M&L tubercles of calcaneus (thus have large origin)</p>	<p>1. plantar surface of the base of middle phalanx of digits 2-5</p>  <p>2. medial aspect of the base of proximal phalanx of digit 1 (with FHB)</p>  <p>3. lateral aspect base of proximal phalanx digit 5</p> 	<p>1 flexes the digits 2-5 at proximal IP joint</p> <p>2. abduction of big toe and flex great toe at MTP joint</p> <p>3. abduction of little toes at MTP joint</p> <p>Fnc: act as a bowstring for the lateral longitudinal arch (maintaining it when under stress)</p>
<p>Layer 2: deep</p> <p>1. Flexor accessories (quadratus plantae)</p> 	<p>1. m/l tubercles of calcaneus</p> 	<p>1. tendon of FDL</p> 	<p>1. contract and pull on FDL to create tension give toe flexion (2-5)</p>

8.3 Identify and describe general areas of drainage of veins of the lower limb:

<p>Deep veins</p>  <p>anterior tibial vein</p>	
<p>anterior tibial</p>	<ul style="list-style-type: none"> » originate and receive blood from dorsal pedis veins, on the back of foot and empties into popliteal vein » drain ankle joint, knee joint, tibiofibular joint and anterior portion of lower leg
<p>posterior tibial</p>	<ul style="list-style-type: none"> » carry blood from fibular veins, up the leg and to popliteal veins
<p>peroneal</p>	<ul style="list-style-type: none"> » drain the muscles in the lateral and posterior parts of leg » empty into the posterior tibial veins (2/3 way up the leg)
<p>popliteal (single vessel)</p>	<ul style="list-style-type: none"> » carries blood from knee (thigh and calf muscles) back to heart » originate at the junction of A/P tibial vein
<p>femoral (single vessel)</p>	<ul style="list-style-type: none"> » located in the upper thigh and pelvic region » instead of draining deoxygenated blood from specific parts of the body, it receives blood from several significant branches (i.e. popliteal, profunda femoris and great saphenous veins) and transport blood to the inferior vena cava
<p>external iliac veins</p>	<ul style="list-style-type: none"> » an extension of the femoral vein » return deoxygenated blood from the legs back to the heart
<p>inferior vena cava</p> 	<ul style="list-style-type: none"> » Formed by joining of the two common iliac veins » Largest vein in the body » Carry deoxygenated blood from lower and middle body into the right atrium of the heart 