



LOWER LIMB MUSCLES

GLUTEAL REGION

MAJOR MUSCLES

- Gluteus maximus
- Gluteus medius
- Gluteus minimus
- Tensor fasciae latae

MINOR MUSCLES

- Piriformis
- Inferior Gemellus
- Superior Gemellus
- Obturator internus
- Quadratus femoris

ANTERIOR COMPARTMENT

- Quadriceps femoris
 - Rectus femoris
 - Vastus lateralis
 - Vastus medialis
 - Vastus intermedius

Articularis Genu

Sartorius

Tensor fasciae latae

- Inferior Gluteal Nerve
- Superior Gluteal Nerve
- Ventral rami S1, S2
- Nerve to quadratus femoris
- Nerve to obturator internus
- Quadratus femoris

LATERAL COMPARTMENT

- Peroneus longus
- Peroneus brevis

POSTERIOR COMPARTMENT

SUPERFICIAL

- Gastrocnemius
- Soleus
- Plantaris

DEEP

- Popliteus
- Flexor digitorum longus
- Flexor hallucis longus
- Tibialis posterior

3rd layer

- Flexor hallucis brevis
- Flexor digiti minimi brevis
- Adductor hallucis

4th layer

- Interossei
 - 3 plantar
 - 4 dorsal

Tendons of

- tibialis posterior
- peroneus longus

- Medial plantar
- Lateral plantar

POSTERIOR COMPARTMENT

- Bicep Femoris
 - short head
 - long head

- Semitendinosus
- Semimembranosus
- Adductor magnus (ischial part)

MEDIAL COMPARTMENT

ANTERIOR / FIRST LAYER

- Pectineus
- Adductor longus
- Gracilis

MIDDLE / SECOND LAYER

- Adductor brevis

POSTERIOR / THIRD LAYER

- Adductor Magnus
 - Adductor part
 - Hamstring part

- tibial Sciatic Nerve
- Common Peroneal Sciatic Nerve
- Obturator Nerve
- Femoral Nerve

MEDIAL COMPARTMENT

Tendons of

- Sartorius
- Gracilis
- Semi tendinosus

ANTERIOR COMPARTMENT

- Tibialis anterior
- Extensor hallucis longus
- Extensor digitorum longus
- Peroneus tertius

- Saphenous Nerve
- Deep peroneal Nerve
- Superficial peroneal Nerve
- Tibial Nerve

MUSCLES OF SOLE

1st Layer

- Flexor digitorum brevis
- Abductor hallucis

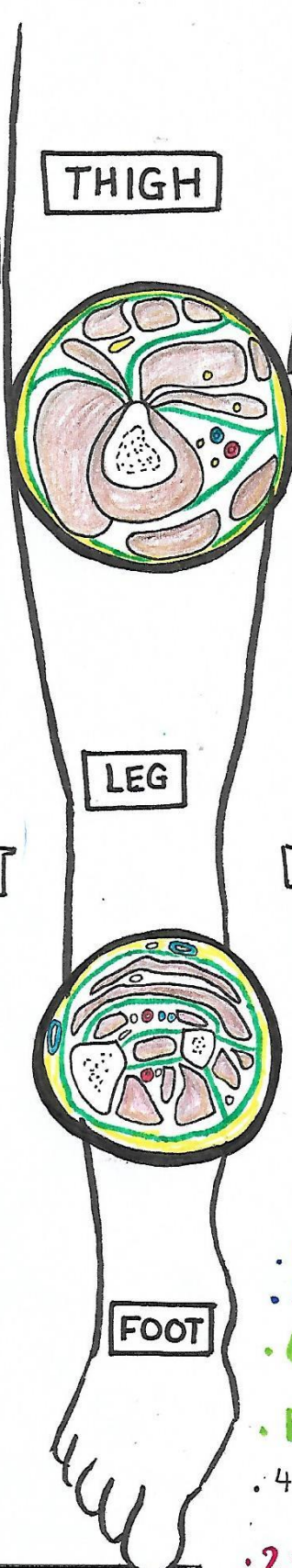
- Abductor digiti minimi

2nd Layer

- Flexor digitorum aecessorius

- 4 lumbricals
 - 1
 - 2, 3, 4

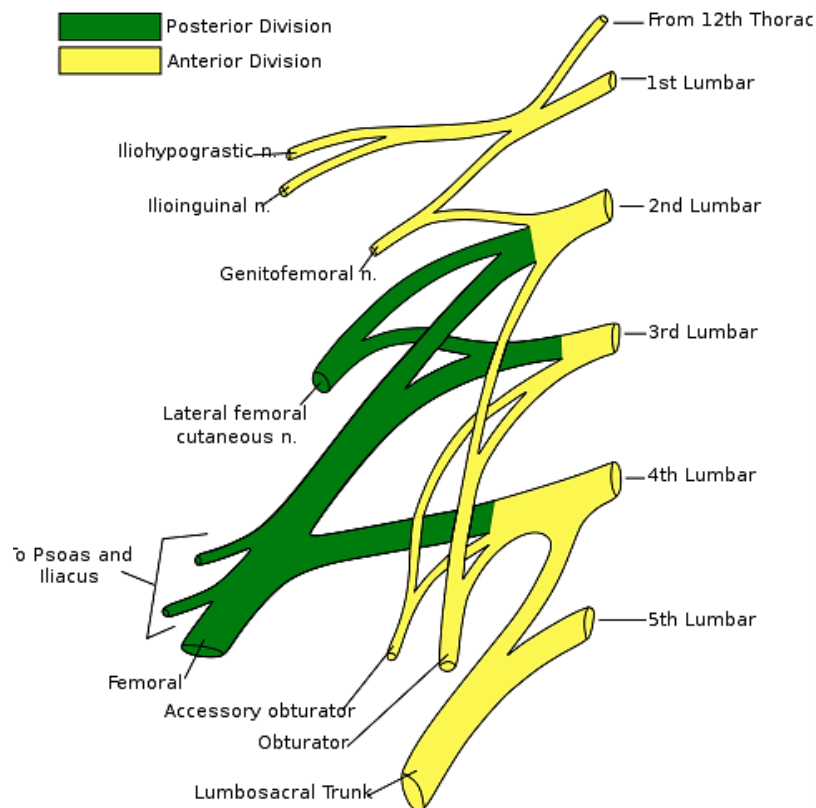
- 2 tendon — Flexor digitorum longus
- Flexor hallucis longus





LUMBAR PLEXUS

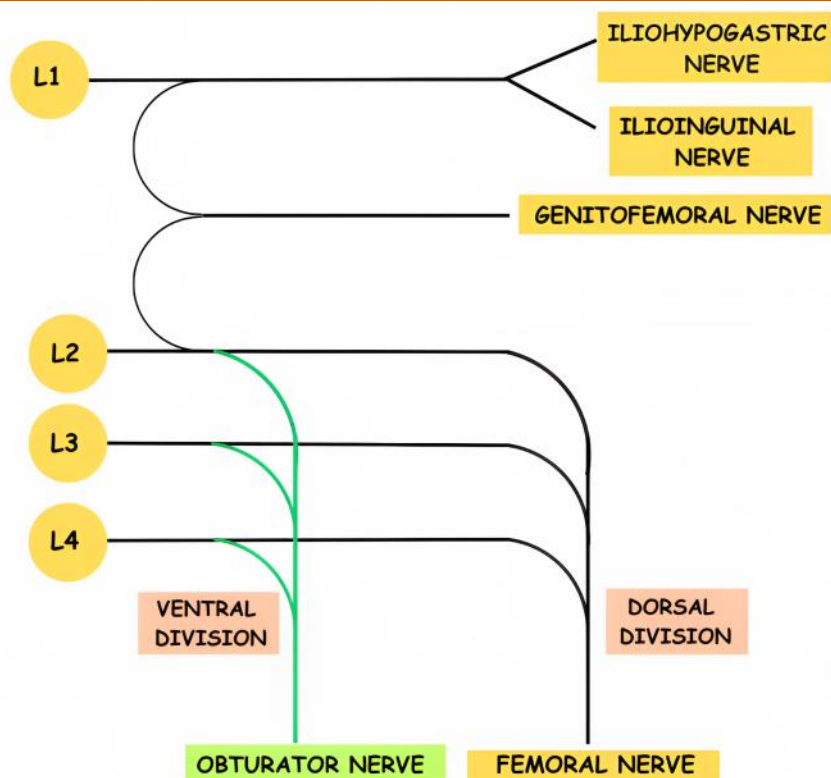
LUMBAR PLEXUS IS FORMED BY L1,L2,L3,L4



IMPORTANT INFORMATION



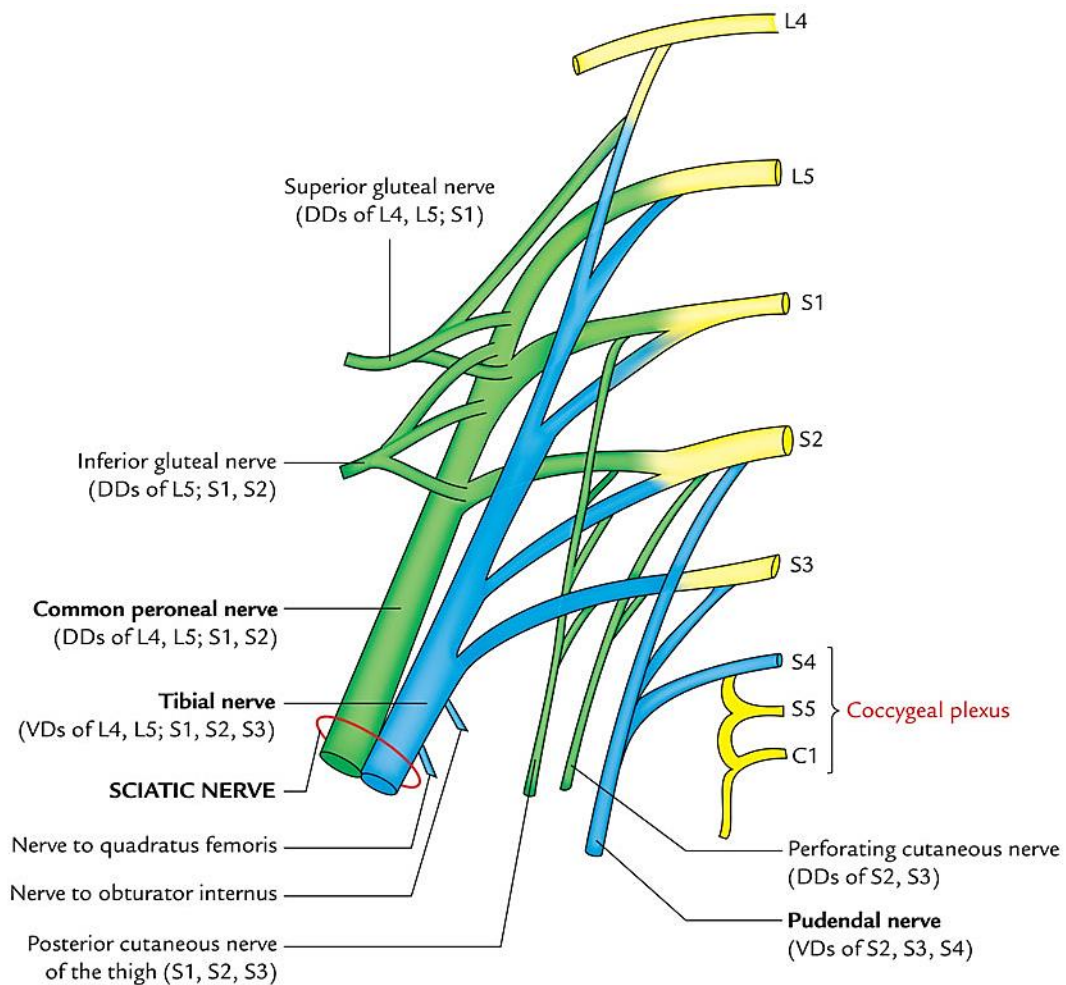
L4 + L5 FORMS LUMBOSACRAL TRUNK THAT IS INVOLVED IN SACRAL PLEXUS
L4 IS INVOLVED IN BOTH LUMBAR AND SACRAL PLEXUS - **NERVI FURCALIS**





SACRAL PLEXUS

- SACRAL PLEXUS IS FORMED BY L4, L5, S1, S2, S3, S4



FEMORAL NERVE



CHIEF NERVE OF ANTERIOR COMPARTMENT OF THIGH

ORIGIN - LARGEST BRANCH OF LUMBAR PLEXUS - FORM BY DORSAL DIVISION OF ANTERIOR PRIMARY RAMI (L2, 3, 4)

COURSE - FEMORAL NERVE → ENTER FEMORAL TRIANGLE BEHIND INGUINAL LIGAMENT LATERAL TO FEMORAL ARTERY
 - IN THIGH → LIE → BETWEEN ILIACUS & PSOAS OUTSIDE FEMORAL SHEATH.
 - AFTER SHORT COURSE → 2.5CM BELOW THE INGUINAL LIGAMENT NERVE DIVIDE INTO ANTERIOR AND POSTERIOR

BRANCHES -

MUSCULAR -
 1. TRUNK GIVE - BRANCH → ILIACUS & PECTINEUS
 2. ANTERIOR DIVISION → SARTORIUS
 3. POSTERIOR DIVISION → RECTUS FEMORIS & 3 VASTI MUSCLE

CUTANEOUS -
 1. ANTERIOR DIVISION → GIVE 2 CUTANEOUS BRANCHES (MEDIAL & INTERMEDIATE CUTANEOUS NERVE OF THIGH)



2. POSTERIOR DIVISION -> GIVE ONLY ONE CUTANEOUS BRANCH (SAPHANOUS NERVE)

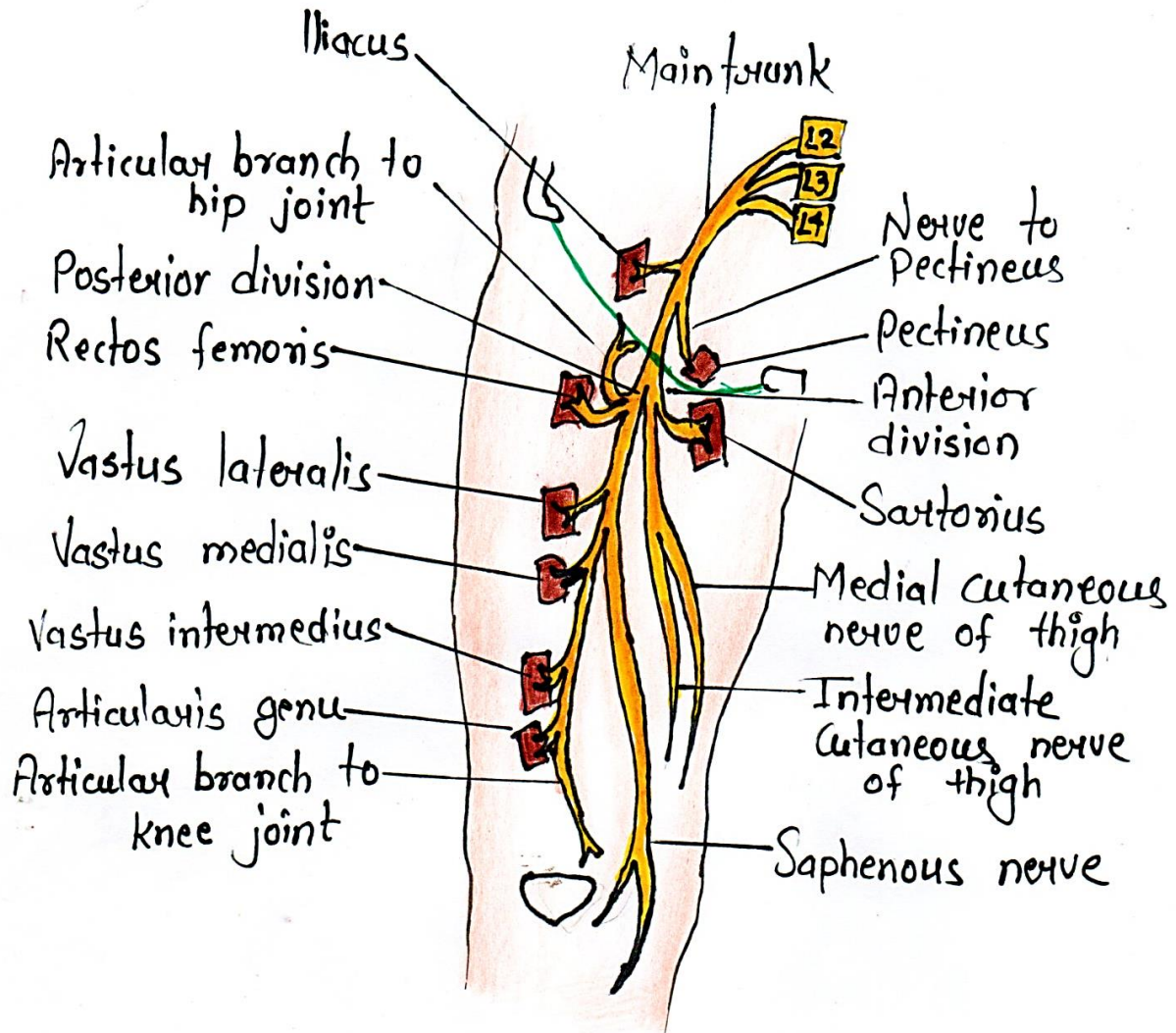
ARTICULAR - ARTICULAR BRANCH TO HIP JOINT & KNEE JOINT

VASCULAR BRANCH - TO FEMORAL ARTERY AND ITS BRANCHES

CLINICAL ANATOMY

FEMORAL NERVE INJURY -

INJURY TO FEMORAL NERVE BY WOUND IN GROIN, THOUGH RARE, CAUSE PARALYSIS OF QUADRICEPS FEMORIS AND SENSORY DEFICIT ON ANTERIOR AND MEDIAL SIDES OF THIGH AND MEDIAL SIDE OF LEGS



OBTURATOR NERVE



CHIEF NERVE OF ADDUCTOR COMPARTMENT OF THIGH

ORIGIN - BRANCH OF LUMBAR PLEXUS -> FORM BY VENTRAL DIVISION OF L2,3,4

- ENTER THE THIGH -> PASSING THROUGH OBTURATOR CANAL

COURSE -

1. WITH OBTURATOR CANAL -> NERVE DIVIDED INTO ANTERIOR & POSTERIOR DIVISION



2. ANTERIOR DIVISION → PASS DOWNWARD INTO FRONT OF OBTURATOR EXTERNUS

→ THEN DESCEND BEHIND ADDUCTOR LONGUS & PECTINEUS

→ SUPPLY - PECTINEUS & GRACILIS

- ADDUCTOR LONGUS

- ADDUCTOR BREVIS (IF NOT SUPPLY BY P.D.)

3. POSTERIOR DIVISION → ENTER THIGH BY PIERCING OBTURATOR EXTERNUS

→ THEN DESCEND BEHIND ADDUCTOR BREVIS

→ SUPPLY - OBTURATOR EXTERNUS

- ADDUCTOR MAGNUS

- ADDUCTOR BREVIS (IF NOT SUPPLY BY A.D.)

4. ITS TERMINAL PART FORMS AN ARTICULAR BRANCH CALLED GENICULAR BRANCH

- WHICH PIERCES THE ADDUCTOR MAGNUS TO REACH POPLITEAL FOSSA

- WHERE IT RUNS ALONG THE POPLITEAL VESSELS AND PIERCES THE OBLIQUE POPLITEAL LIGAMENT TO SUPPLY THE KNEE JOINT

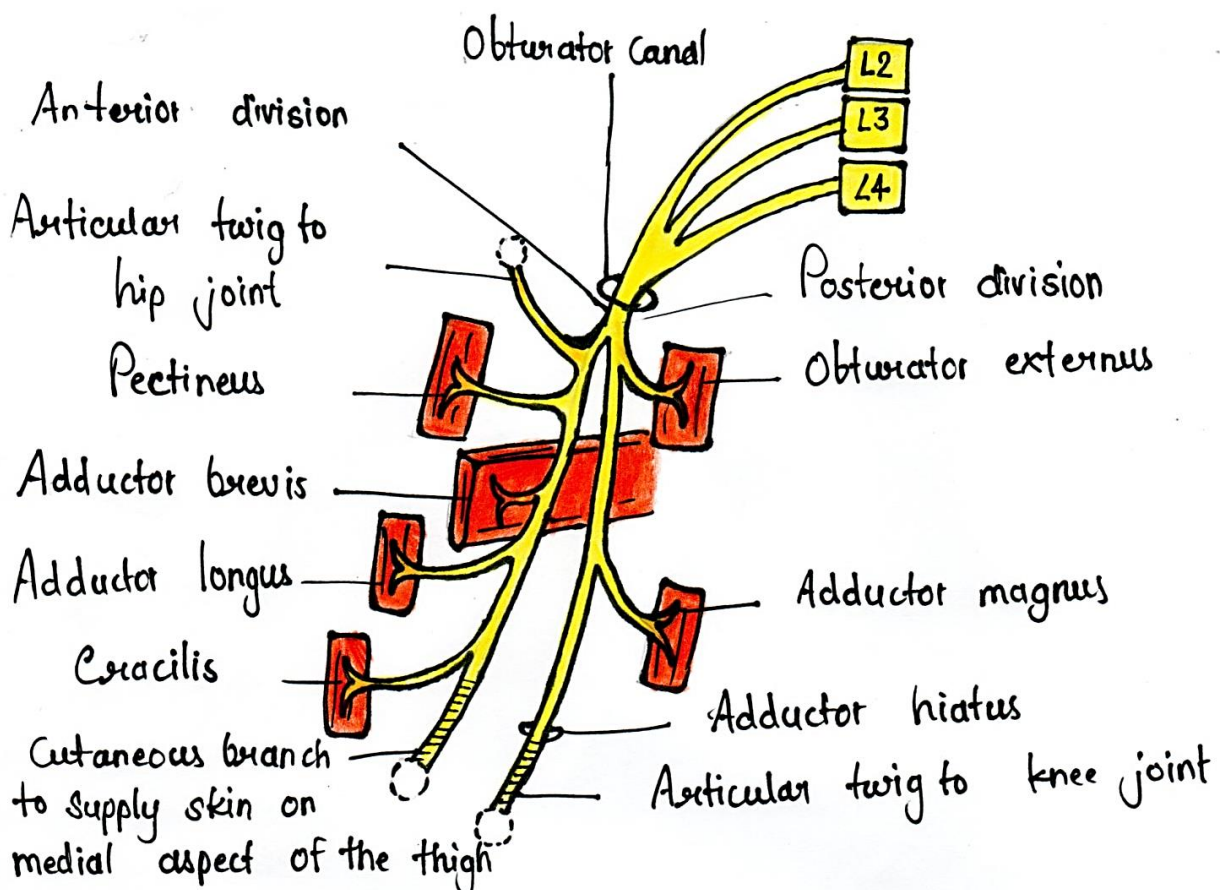
CLINICAL ANATOMY

ADDUCTOR SPASM OF THIGH -

SPASM OF ADDUCTORS OF THIGH IN SPASTIC PARAPLEGIA MAY BE RELIEVED BY SURGICAL DIVISION OF OBTURATOR NERVE

REFERRED PAIN -

IN DISEASE OF KNEE JOINT, PAIN MAY BE REFERRED TO HIP JOINT ALONG OBTURATOR NERVE BECAUSE IT SUPPLIES BOTH THESE JOINTS





SCIATIC NERVE

THICKEST NERVE IN THE BODY → ABOUT 1.5 - 2CM WIDE AT BEGINNING

BEGIN IN PELVIS → TERMINATE AT SUPERIOR ANGLE OF POPLITEAL FOSSA BY DIVIDING →
TIBIAL NERVE & COMMON PERONEAL NERVE

ORIGIN - LARGEST BRANCH OF SACRAL PLEXUS - ROOT VALUE L4,5 & S1,2,3

- **TIBIAL PART** - FORM BY - **VENTRAL DIVISION OF L4,5 & S1,2,3**
- **COMMON PERONEAL PART** - FORM BY - **DORSAL DIVISION OF L4,5 & S1,2**
- **TWO PARTS ARE USUALLY ENCLOSED IN A COMMON SHEATH OF CONNECTIVE TISSUE**

COURSE -

1. IN PELVIS - NERVE LIE IN FRONT OF PIRIFORMIS - UNDER COVER OF ITS FASCIA

2. IN GLUTEAL REGION - ENTER THROUGH GREATER SCIATIC FORAMEN

→ **RELATION IN GLUTEAL REGION**

1. **SUPERFICIAL - GLUTEAL MAXIMUS**

2. **DEEP - BODY OF ISCHIUM**

- **TENDON OF OBTURATOR INTERNUS WITH GEMELLI**
- **QUADRATUS FEMORIS**
- **OBTURATOR EXTERNUS**
- **ADDUCTOR MAGNUS**

3. IN THIGH - ENTER BACK OF THIGH

- RUN VERTICALLY DOWNWARDS UPTO SUPERIOR ANGLE OF POPLITEAL FOSSA

→ **RELATION THIGH -**

1. **SUPERFICIAL - CROSS LONG HEAD OF BICEPS FEMORIS**

2. **DEEP - ADDUCTOR MAGNUS**

3. **MEDIAL - SEMIMEMBRANOSUS & SEMITENDINOSUS**

4. **LATERAL - BICEPS FEMORIS**

4. **JUST ABOVE AT SUPERIOR ANGLE OF POPLITEAL FOSSA, IT DIVIDES INTO TWO
TERMINAL BRANCHES - TIBIAL AND COMMON PERONEAL NERVE**

BRANCHES -

1. **ARTICULATING BRANCH OF HIP JOINT**

2. **MUSCULAR BRANCH OF TIBIAL PART → SEMITENDINOSUS**

- **SEMIMEMBRANOSUS**

- **LONG HEAD OF BICEPS FEMORIS**

COMMON PERONEAL PART - SHORT HEAD OF BICEPS FEMORIS

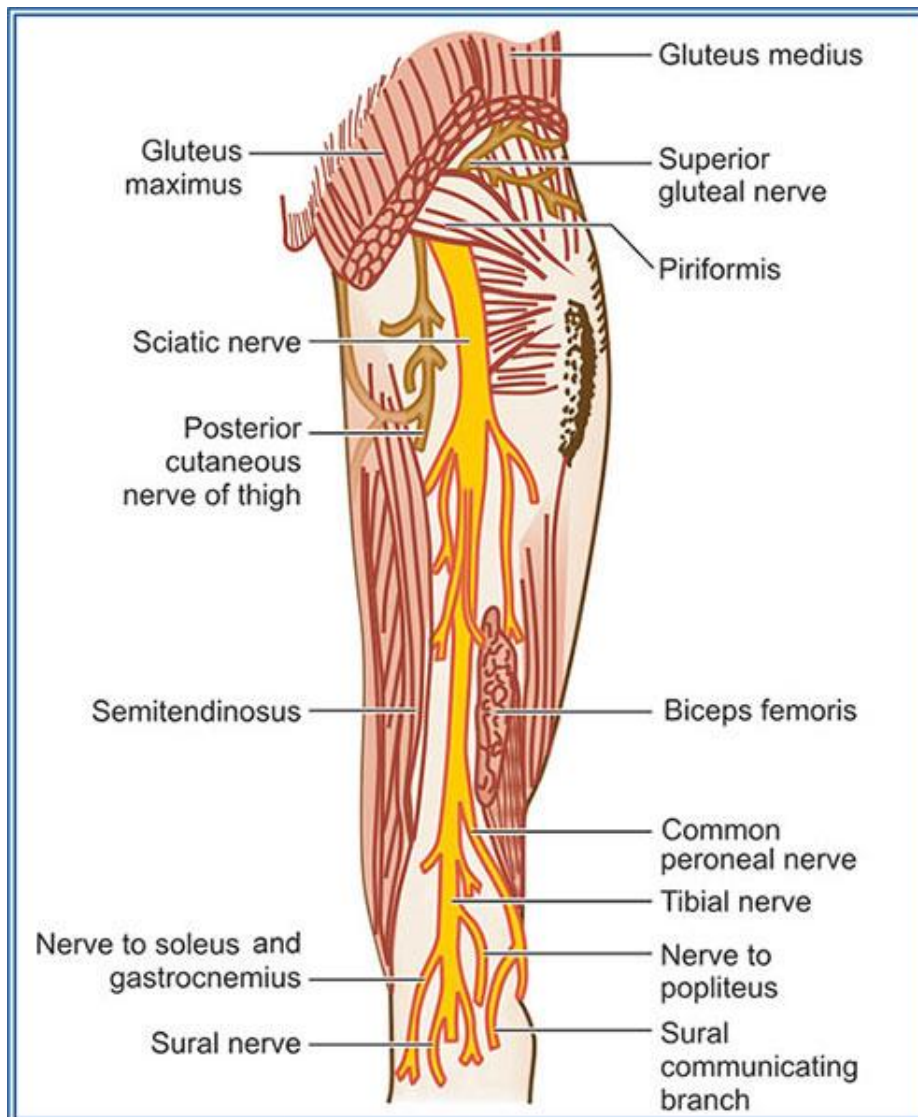
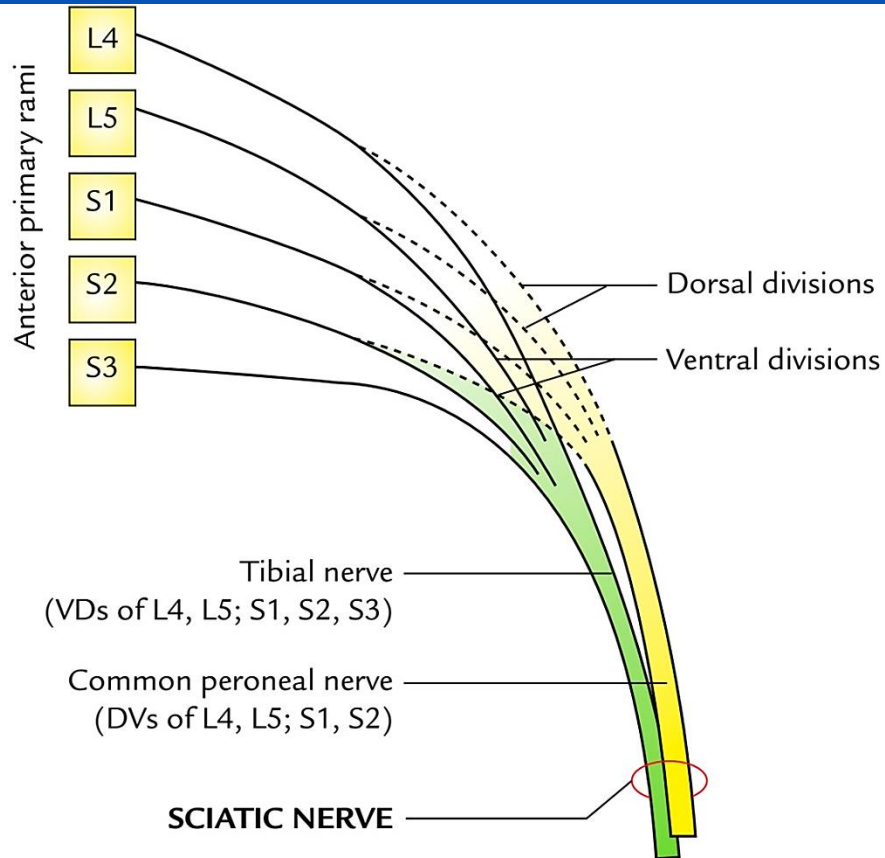
CLINICAL ANATOMY

SLEEPING FOOT

- **SCIATIC NERVE IS UNCOVERED ON THE BACK OF THIGH IN ANGLE BETWEEN THE LOWER BORDER OF GLUTEUS MAXIMUS AND LONG HEAD OF BICEPS FEMORIS**
- **TEMPORARY COMPRESSION OF SCIATIC NERVE AGAINST FEMUR AT LOWER BORDER OF GLUTEUS MAXIMUS CAUSES PARAESTHESIA IN LOWER LIMB**
- **IT IS CALLED SLEEPING FOOT**

SLEEPING FOOT

- **IT IS TERM APPLIED TO CLINICAL CONDITION CHARACTERISED BY SHOOTING PAIN FELT ALONG THE COURSE OF DISTRIBUTION OF SCIATIC NERVE**
- **OCCUR DUE TO COMPRESSION AND IRRITATION OF L4-S3 SPINAL NERVE ROOT BY HERNIATED INTERVERTEBRAL DISC OF LUMBAR VERTEBRAE**





COMMON PERONEAL NERVE

COMMON PERONEAL NERVE IS SMALLER TERMINAL BRANCH OF SCIATIC NERVE

DIVIDED INTO - DEEP AND SUPERFICIAL BRANCH

MOTOR BRANCHES OF DEEP PERONEAL NERVE SUPPLY -

- ALL MUSCLE OF ANTERIOR COMPARTMENT OF LEG → TIBIALIS ANTERIOR
→ EXTENSOR DIGITORUM LONGUS
→ EXTENSOR HALLUCIS LONGUS
→ PERONEAL TERTIUS

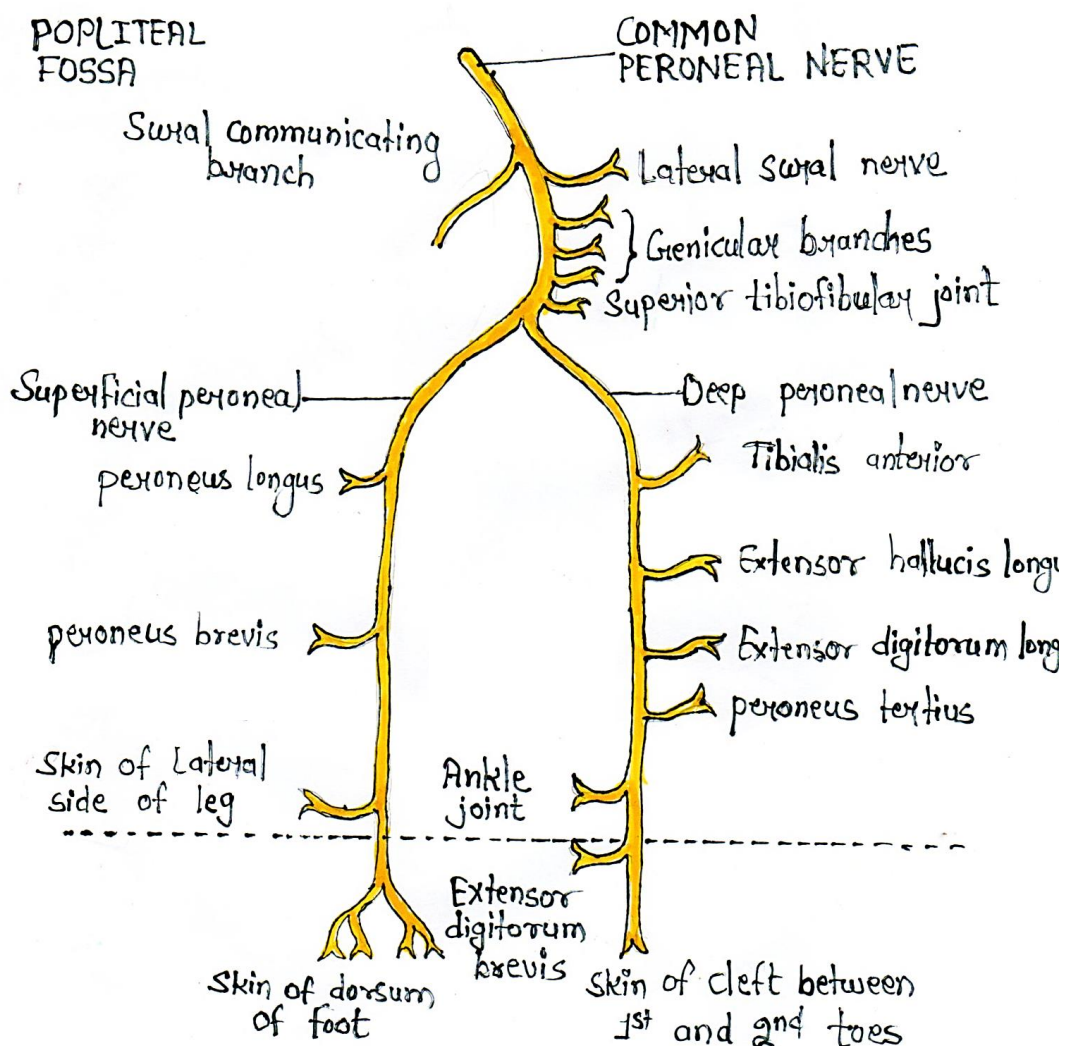
MOTOR BRANCHES OF SUPERFICIAL PERONEAL NERVE SUPPLY -

- ALL MUSCLE OF LATERAL COMPARTMENT OF LEG → PERONEUS LONGUS & BREVIS

CLINICAL ANATOMY

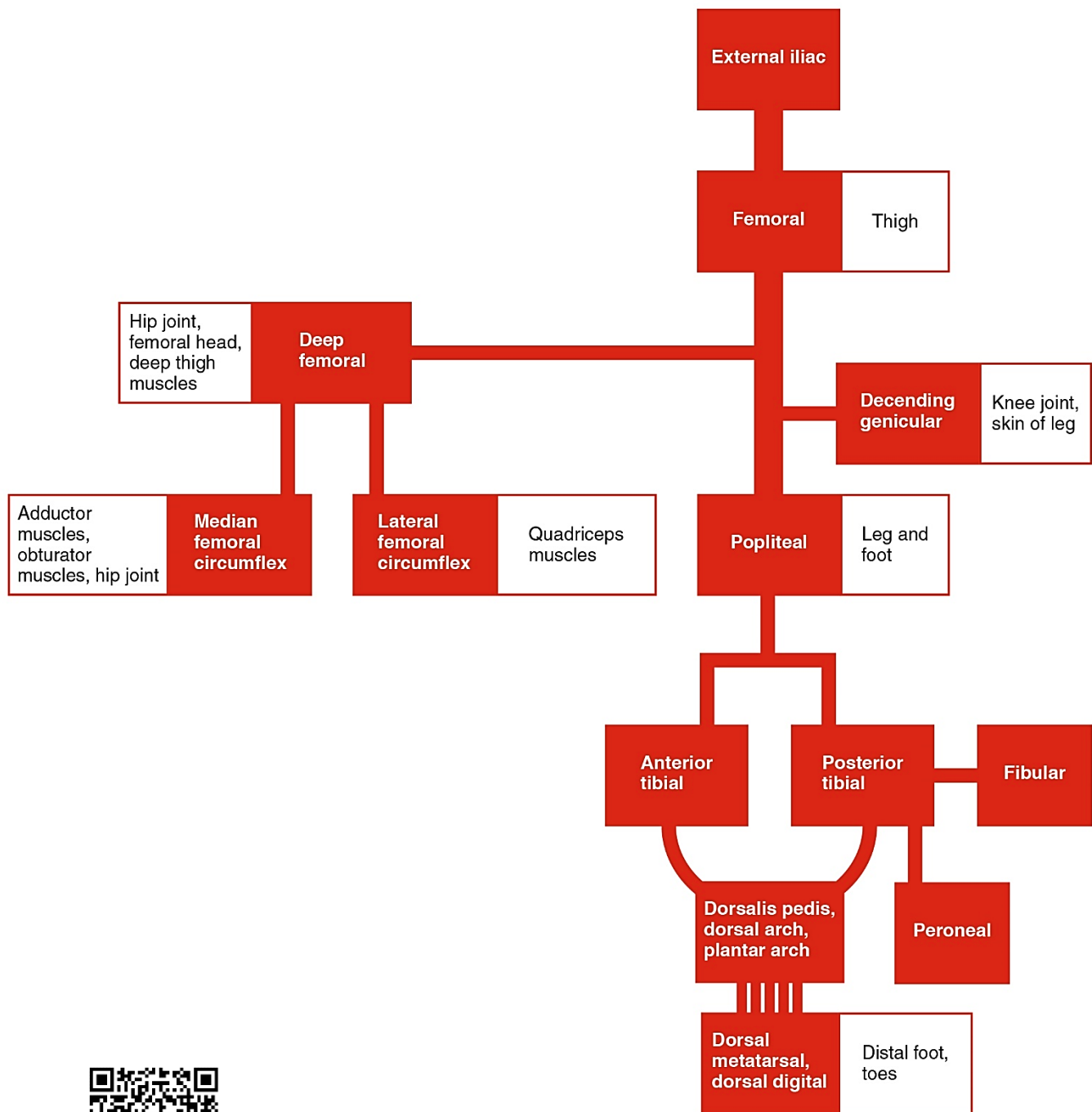
FOOT DROP

- INJURY TO COMMON PERONEAL NERVE CAUSE FOOT DROP
- COMMON PERONEAL NERVE IS EXTREMELY VULNERABLE TO INJURY AS IT WINDS AROUND THEN POSTEROLATERAL ASPECT OF NECK OF FIBULA
- AT THIS SIDE -> INJURY BY DIRECT TRAUMA, FRACTURE NECK OF FIBULA
- CLINICAL FEATURES -> PARALYSIS OF MUSCLE OF ANTERIOR COMPARTMENT OF LEGS





ARTERIAL SUPPLY OF LOWER LIMB



FEMORAL ARTERY

CHIEF ARTERY OF LOWER LIMB - CONTINUATION OF EXTERNAL ILIAC ARTERY

COURSE - BEGIN - BEHIND INGUINAL LIGAMENT - MID INGUINAL POINT

- PASSES DOWNWARD MEDIALY - 1ST - ENTERING IN FEMORAL TRIANGLE
- THEN ENTER IN ADDUCTOR CANAL - PASSES THROUGH OPENING OF ADDUCTOR MAGNUS → BECOME POPLITEAL ARTERY

RELATION -

1. ANTERIOR - SKIN, SUPERFICIAL & DEEP FASCIA, ANTERIOR WALL OF FEMORAL SHEATH
2. POSTERIOR - POSTERIOR WALL OF FEMORAL SHEATH
- PSOAS MAJOR & PECTINEUS
3. MEDIAL - FEMORAL VEIN
4. LATERAL - FEMORAL NERVE



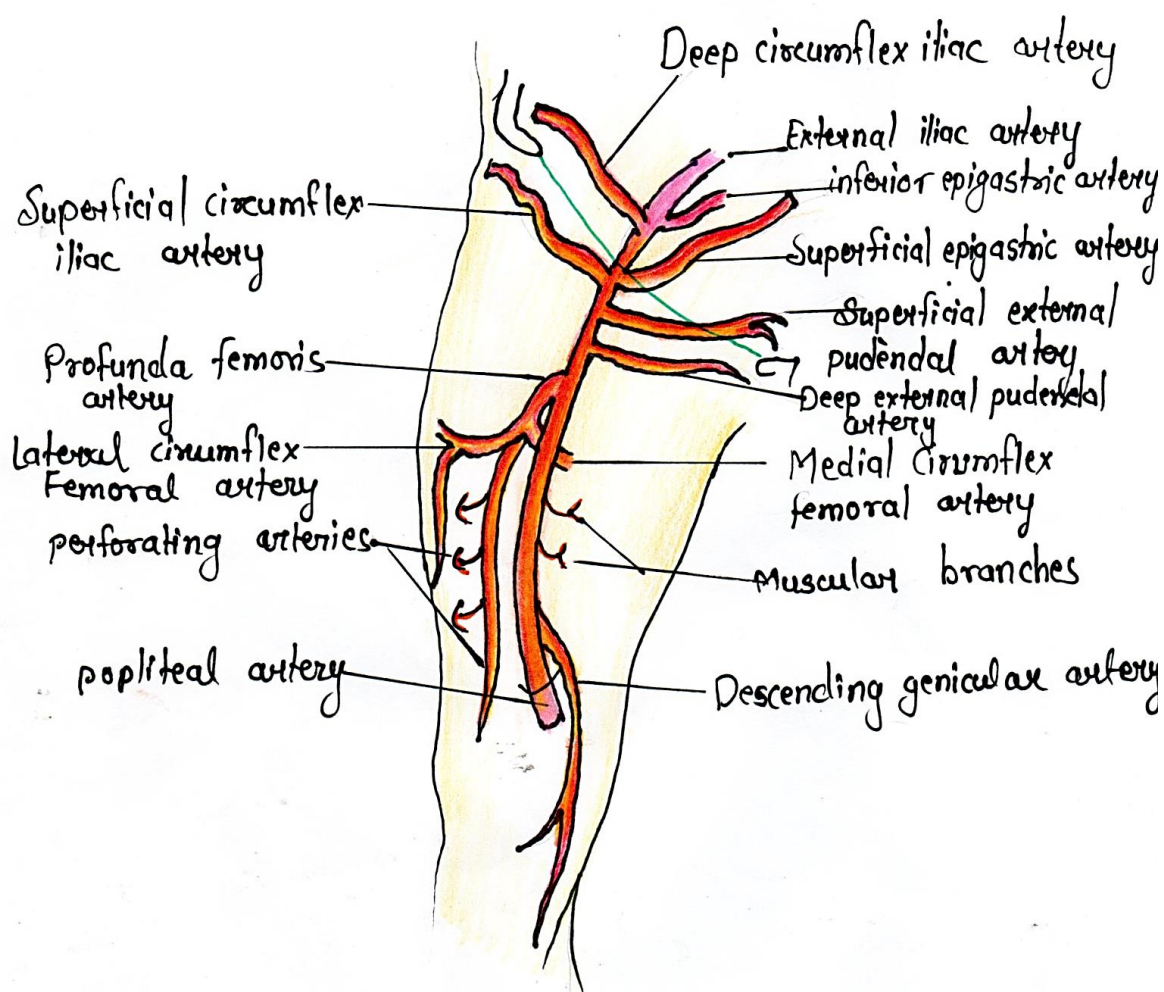
BRANCHES -> 3 SUPERFICIAL & 3 DEEP

SUPERFICIAL BRANCH - 1. SUPERFICIAL EXTERNAL PUDENDAL ARTERY
2. SUPERFICIAL EPIGASTRIC ARTERY
3. SUPERFICIAL CIRCUMFLEX ILIAC

DEEP BRANCH - 1. PROFUNDA FEMORAL ARTERY
2. DEEP EXTERNAL PUDENDAL ARTERY
3. MUSCULAR BRANCH

CLINICAL ANATOMY

PULSATION OF FEMORAL ARTERY CAN BE FELT AT THE MIDINGUINAL POINT, AGAINST THE HEAD OF FEMUR AND TENDON OF PSOAS MAJOR



DORSAL PEDIS ARTERY

IT IS CHIEF ARTERY OF DORSUM OF FOOT

ORIGIN c CONTINUATION OF TIBIAL ARTERY

COURSE -> BEGIN IN FRONT OF ANKLE BETWEEN MEDIAL AND LATERAL MALLEOLI

- PASSES FORWARD ALONG THE MEDIAL SIDE OF DORSUM OF FOOT TO REACH PROXIMAL END OF FIRST INTERMETATARSAL SPACE
- WHERE IT DIPS DOWNWARD BETWEEN THE TWO HEADS OF FIRST DORSAL INTEROSSEOUS MUSCLE TO ENTER SOLE OF FOOT
- WHERE IT END BY ANASTOMOSING WITH LATERAL PLANTAR ARTERY

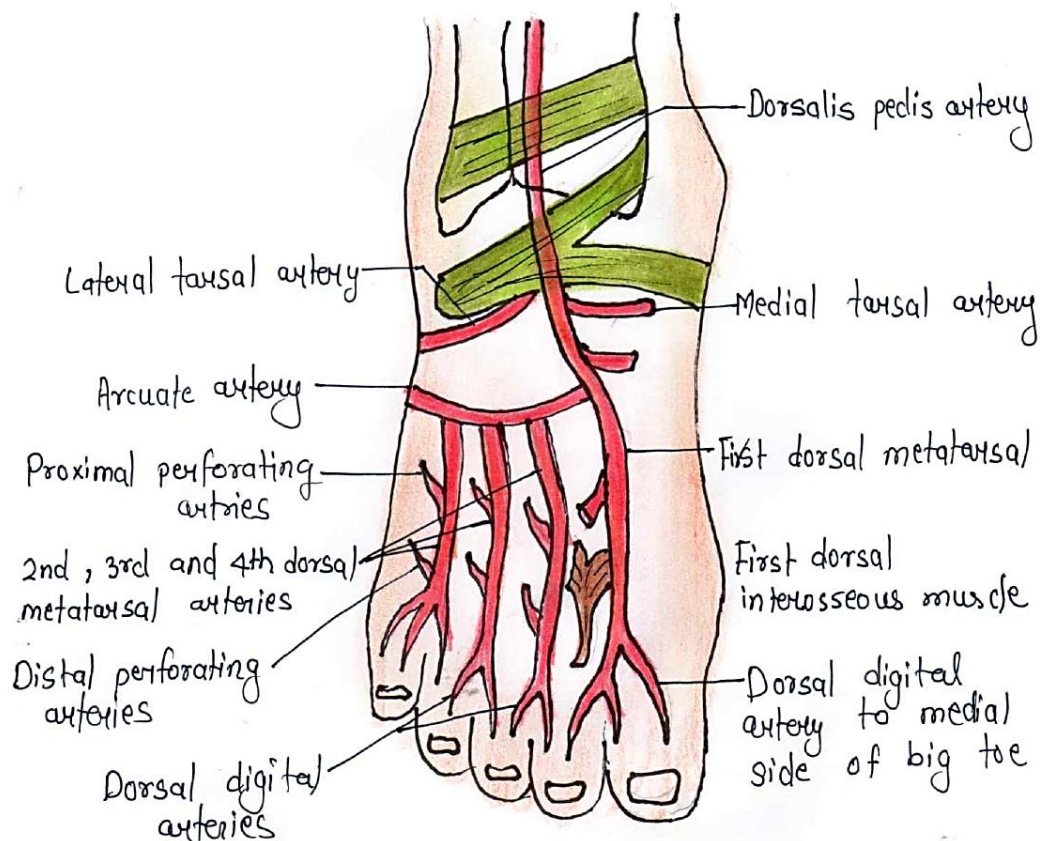


- BRANCHES** - 1) LATERAL TARSAL ARTERY
2) MEDIAL TARSAL ARTERY
3) ARCUATE ARTERY
4) FIRST DORSAL METATARSAL ARTERY

CLINICAL ANATOMY

DORSALIS PEDIS ARTERY PULSE

- 1) IT CAN BE EASILY FELT BETWEEN THE TENDONS OF EXTENSOR HALLUCIS LONGUS AND TENDON OF EXTENSOR DIGITORUM LONGUS
- 2) IT IS OFTEN PALPATED IN PATIENT SUFFERING FROM VASO-OCCLUSIVE DISEASE OF LOWER LIMB NAMELY BUERGER'S DISEASE



VENOUS DRAINAGE OF LOWER LIMB

VENOUS DRAINAGE OF LOWER LIMB IS OF IMMENSE CLINICAL AND SURGICAL IMPORTANCE

VEIN OF LOWER LIMB CLASSIFIED → 1) SUPERFICIAL 2) DEEP AND 3) PERFORATING VEIN

DEEP VEIN

- MEDIAL PLANTAR, LATERAL PLANTAR, DORSALIS PEDIS, ANTERIOR & POSTERIOR TIBIAL, PERONEAL, POPLITEAL & FEMORAL VEIN
- VALVE ARE MORE NUMEROUS IN DEEP VEIN
- MORE EFFICIENT CHANNEL BECAUSE DRIVING FORCE OF MUSCULAR CONTRACTION

**SUPERFICIAL VEIN**

- GREATER & SMALL SAPHENOUS VEIN → LIE IN SUPERFICIAL FASCIA
- VALVE ARE MORE IN DISTAL PART
- LARGE PORTION OF BLOOD → DRAINAGE - INTO DEEP VEIN THROUGH PERFORATING VEIN

LONG SAPHENOUS VEIN

FORMATION - UNION OF MEDIAL END OF DORSAL VENOUS ARCH WITH MEDIAL MARGINAL VEIN

COURSE

- PASS UPWARD IN FRONT OF MEDIAL MALLEOLUS
- CROSS LOWER 1/3RD OF MEDIAL SURFACE OF TIBIA TO REACH KNEE JOINT
- IN THING - INCLINE FORWARD TO REACH SAPHENOUS OPENING → WHERE IT PIERCE CRIBRIFORM FASCIA & OPEN INTO FEMORAL VEIN

CONNECTION - TO DEEP VEIN BY PERFORATING VEIN ->

- 1) 3 MEDIAL PERFORATOR JUST ABOVE ANKLE
- 2) 1 PERFORATOR JUST BELOW KNEE
- 3) ANOTHER ONE IN ADDUCTOR CANAL

TRIBUTARIES -

1. AT COMMENCEMENT → MEDIAL MARGINAL VEIN
2. LEG → COMMUNICATE WITH SMALL SAPHENOUS VEIN & DEEP VEIN
→ POSTERIOR ARCH VEIN & VEIN FROM CALF
3. THIGH → ACCESSORY SAPHENOUS VEIN
→ ANTERIOR CUTANEOUS VEIN
4. JUST BEFORE PIERCING THE CRIBRIFORM FASCIA → SUP. EPIGASTRIC
→ SUP. CIRCUMFLEX ILIAC
5. JUST BEFORE TERMINATION → DEEP EXTERNAL PUDENDAL VEIN

SMALL SAPHENOUS VEIN

FORMATION - UNION OF LATERAL END OF DORSAL VENOUS ARCH WITH LATERAL MARGINAL VEIN

COURSE -

IT ENTER THE BACK OF LEG BY PASSING BEHIND LATERAL MALLEOLUS TO LOWER PART OF POPLITEAL FOSSA

DRAIN → LATERAL BORDER OF FOOT → HEEL & BACK OF LEG

PERFORATING VEIN

- 1) INDIRECT PERFORATING VEIN → CONNECT SUPERFICIAL VEIN WITH DEEP VEIN THROUGH MUSCULAR VEIN.
- 2) DIRECT PERFORATING VEIN → CONNECT SUPERFICIAL VEIN WITH DIRECTLY WITH DEEP VEIN
1. IN THIGH - ADDUCTOR CANAL PERFORATOR → CONNECT → GREAT SAPHENOUS WITH FEMORAL VEIN.
2. BELOW THE KNEE - PERFORATOR → CONNECT → GREAT SAPHENOUS VEIN WITH POSTERIOR TIBIAL VEIN.
3. IN LEG - LATERAL PERFORATOR → CONNECT → SMALL SAPHENOUS VEIN WITH PERONEAL VEIN
- MEDIAL THERE ARE 3 PERFORATORS - CONNECT → POSTERIOR ARCH VEIN WITH POSTERIOR TIBIAL VEIN.



- MEDIAL 3 PERFORATORS ARE - UPPER MEDIAL PERFORATOR
- MIDDLE MEDIAL PERFORATOR
- LOWER MEDIAL PERFORATOR

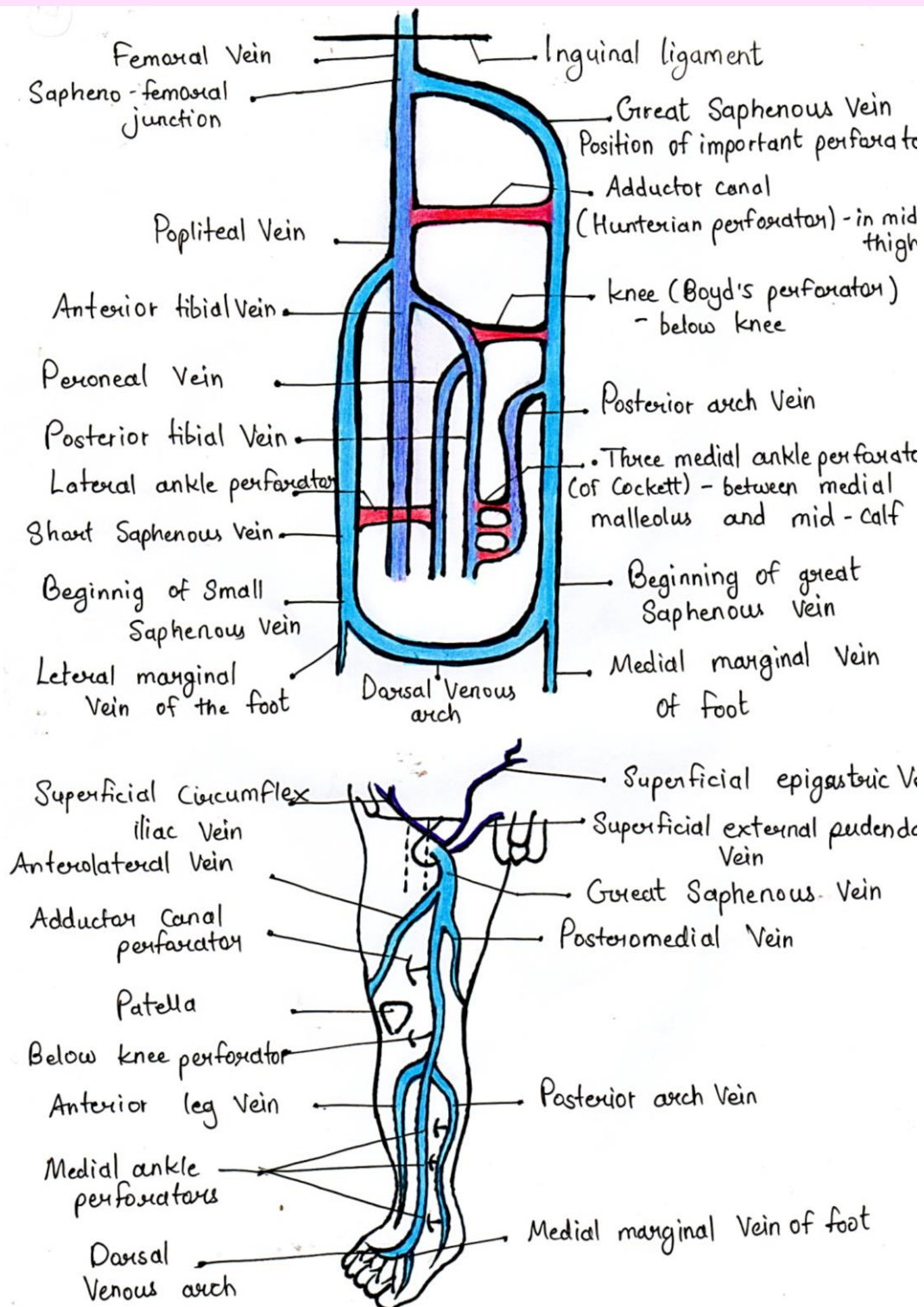
CLINICAL ANATOMY

GREAT SAPHENOUS VEIN GRAFT -

- IN CORONARY BYPASS SURGERY, A SEGMENT OF GREAT SAPHENOUS VEIN IS REMOVED AND USED FOR AORTOCORONARY GRAFTING TO BY PASS AN ARTERIAL OBSTRUCTION

VARICOSE VEIN -

IF THE VALVES IN PERFORATING VEIN OR AT THE TERMINAL OF SUPERFICIAL VEIN BECOME INCOMPETENT → RESULT IN DILATATION OF SUPERFICIAL VEIN AND GRADUAL DE-GENERATION OF WALL TO PRODUCE VARICOSE VEIN





FEMORAL TRIANGLE

TRIANGULAR DEPRESSION → IN FRONT OF UPPER 1/3RD THIGH BELOW INGUINAL LIGAMENT

BOUNDARIES -

1. LATERAL - MEDIAL BORDER SARTORIUS MUSCLE.
2. MEDIAL - MEDIAL BORDER OF ADDUCTOR LONGUS.
3. BASE - INGUINAL LIGAMENT.
4. APEX - LATERAL & MEDIAL BORDER CROSS.
5. ROOF - SKIN, SUPERFICIAL FASCIA & DEEP FASCIA.

SUPERFICIAL FASCIA → CONTENT → SUPERFICIAL INGUINAL L.N.

- FEMORAL BRANCH OF GENITOFEMORAL NERVE
- ILIOINGUINAL NERVE
- GREAT SAPHENOUS VEIN
- SUPERFICIAL BRANCH OF FEMORAL ARTERY

6. FLOOR - MEDIAL → ADDUCTOR LONGUS & PECTINEUS MUSCLE
LATERAL → PSOAS MAJOR & ILIACUS

CONTENT -

1. FEMORAL ARTERY → IT GIVES 6 BRANCHES- 3 SUPERFICIAL & 3 DEEP BRANCHES

2. FEMORAL VEIN → MEDIAL TO ARTERY

- FEMORAL VEIN RECEIVE → GREAT SAPHENOUS VEIN
- CIRCUMFLEX VEIN

→ VEIN CORRESPONDING TO BRANCH OF FEMORAL ARTERY

3. FEMORAL SHEATH → ENCLOSE UPPER 4CM OF FEMORAL VESSEL

4. DEEP INGUINAL L.N → DEEP TO DEEP FASCIA

- MEDIAL TO UPPER PART OF FEMORAL VEIN
- RECEIVE → LYMPH FROM - SUPERFICIAL INGUINAL L.N.
 - DEEP LYMPHATIC OF LOWER LIMB
 - FROM GLANS PENIS & CLITORIS

5. NERVE -

1) FEMORAL NERVE - LIE LATERAL TO FEMORAL ARTERY → OUTSIDE FEMORAL SHEATH

2) NERVE TO PECTINEUS - ARISE FROM FEMORAL NERVE
- PASS BEHIND FEMORAL SHEATH

3) FEMORAL BRANCH OF GENITOFEMORAL NERVE -

-> OCCUPY LATERAL -> COMPARTMENT TO FEMORAL SHEATH ALONG FEMORAL ARTERY

4) LATERAL CUTANEOUS NERVE OF THIGH -> CROSS THE LATERAL ANGLE OF TRIANGLE.

FEMORAL SHEATH



FUNNEL SHAPE SLEEVE OF FASCIA - ENCLOSING UPPER 4CM OF FEMORAL VESSEL

SHEATH IS FORM DOWNWARD EXTENSION OF -> 2 LAYERS OF FASCIA OF ABDOMEN

BOUNDARIES

ANTERIOR WALL → FOR → FASCIA TRANSVERSALIS

POSTERIOR WALL → FORM → FASCIA ILIAC

INFERIORLY - SHEATH MERGE WITH CONNECTIVE TISSUE AROUND FEMORAL VESSEL



SHEATH IS DIVIDED INTO 3 COMPARTMENT BY SEPTA:-

1. LATERAL COMP. → CONTENT → **FEMORAL ARTERY**
→ FEMORAL BRANCH OF GENITOFEMORAL NERVE
2. INTERMEDIATE COMP. → **FEMORAL VEIN**
3. MEDIAL COMP. → ALSO KNOWN AS FEMORAL CANAL

FEMORAL CANAL

MEDIAL COMP. OF FEMORAL SHEATH → CONICAL IN SHAPE → WIDE ABOVE, NARROW BELOW
BASE OR UPPER END OF FEMORAL CANAL ALSO KNOWN AS FEMORAL RING.

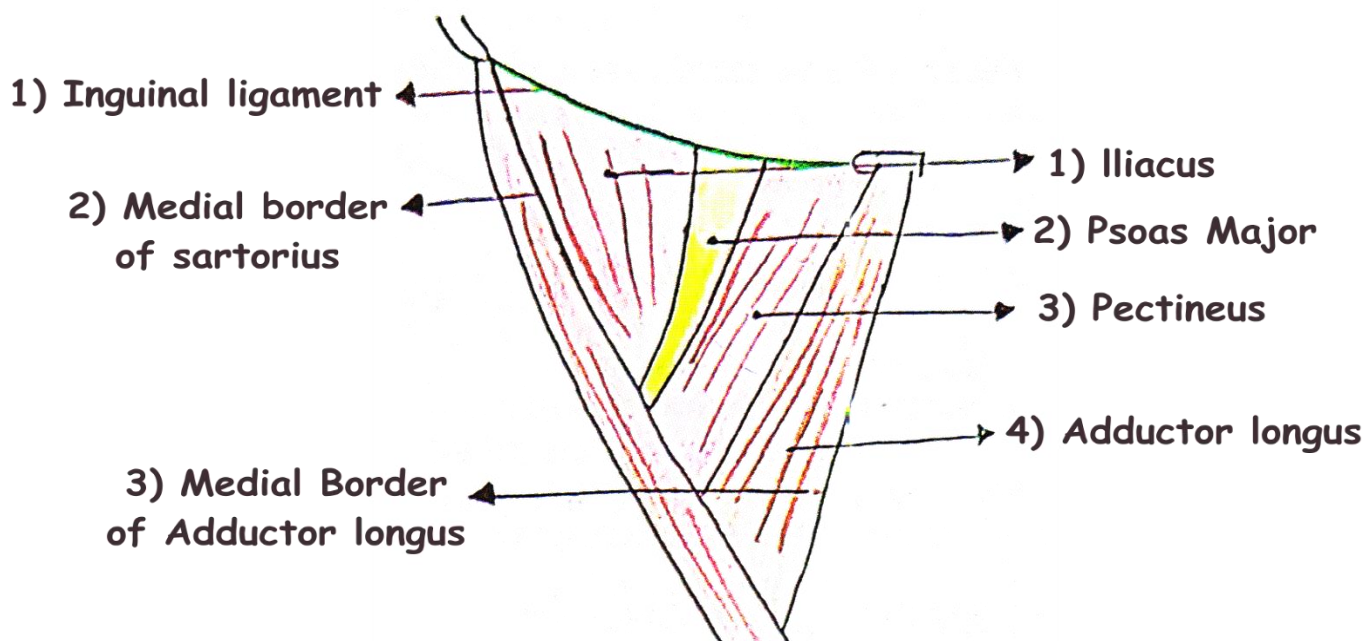
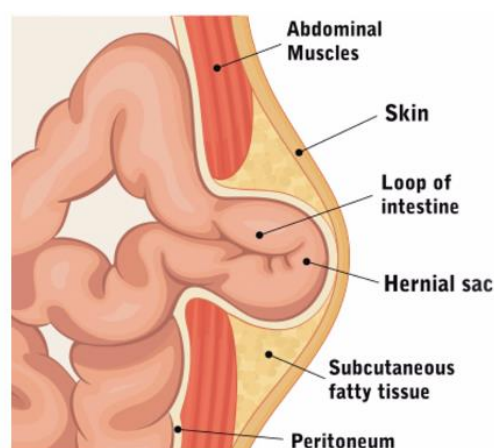
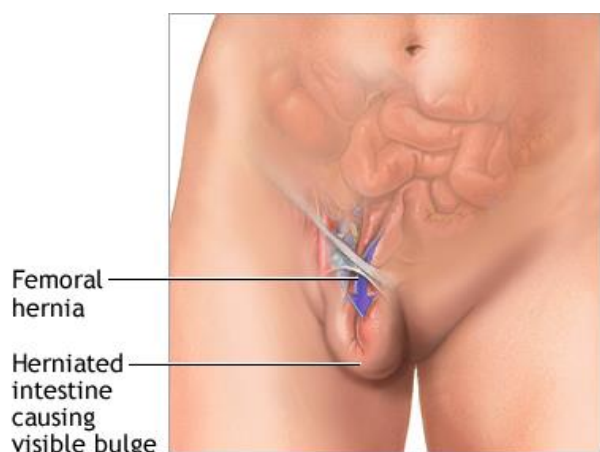
CONTENT - LYMPH NODE & SMALL AMOUNT OF AREOLAR TISSUE

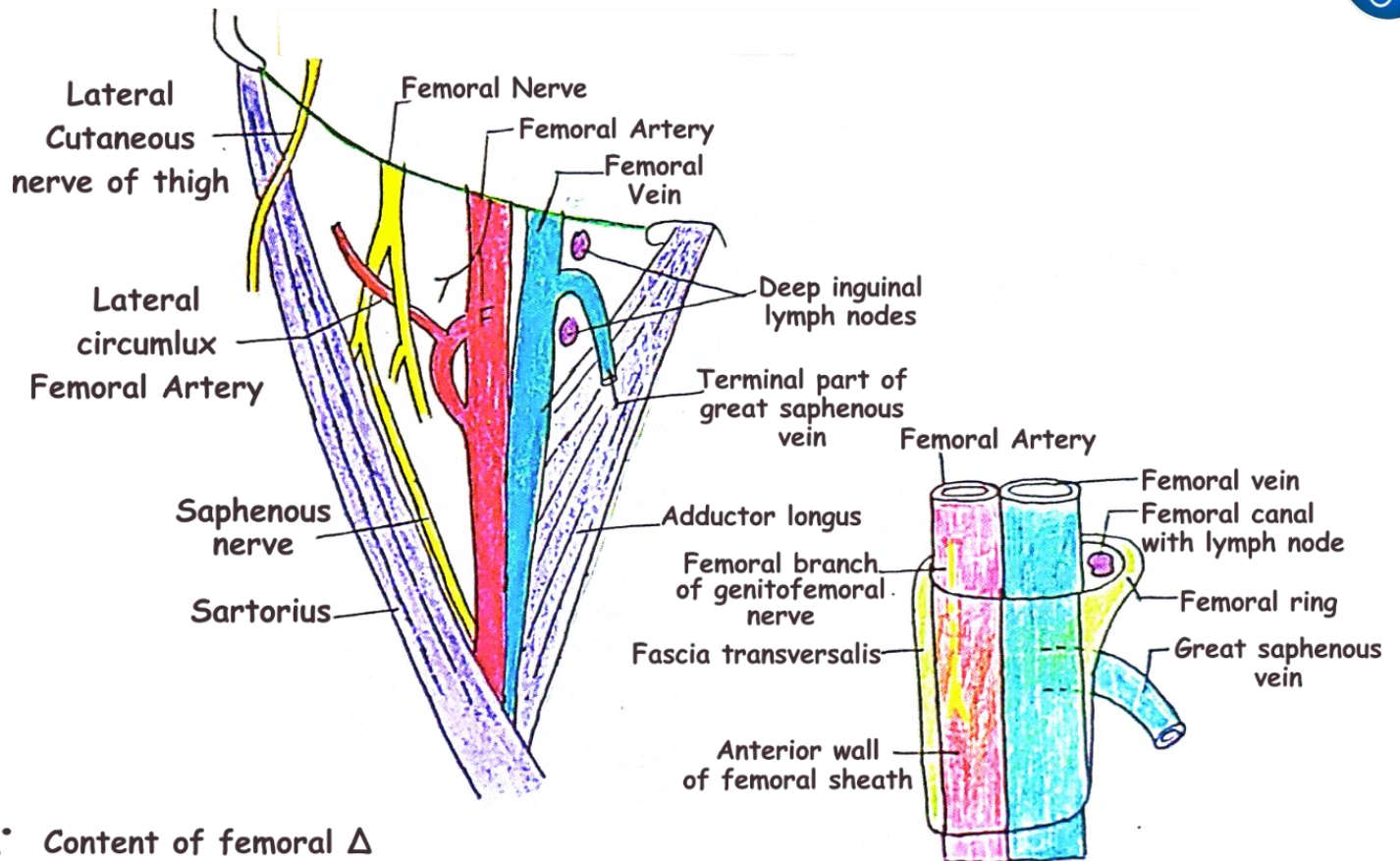
CLINICAL ANATOMY

FEMORAL HERNIA -

FEMORAL CANAL IS AREA OF POTENTIAL WEAKNESS IN ABDOMINAL WALL → THROUGH WHICH
ABDOMINAL CONTENT MAY BULGE OUT FORM FEMORAL HERNIA

MORE COMMON IN FEMALES BECAUSE FEMORAL CANAL IS WIDER





∴ Content of femoral Δ

∴ Femoral Canal



ADDUCTOR CANAL

INTERMUSCULAR SPACE SITUATED ON MEDIAL SIDE MIDDLE 1/3RD OF THIGH
EXTEND - APEX OF FEMORAL TRIANGLE → TENDINOUS OPENING OF ADDUCTOR MAGNUS

BOUNDARIES -

1. ANTEROLATERAL - VASTUS MEDIALIS
2. POSTEROMEDIAL - ADDUCTOR LONGUS ABOVE
- ADDUCTOR MAGNUS BELOW
3. MEDIAL WALL - SARTORIUS

SUB SARTORIAL PLEXUS NERVE → LIE UNDER SARTORIUS

→ FORM BY - SAPHENOUS NERVE

- ANT. DIVISION OF OBTURATOR NERVE
- MEDIAL CUTANEOUS NERVE OF THIGH

CONTENT -

1. FEMORAL ARTERY → ENTER CANAL AT APEX OF FEMORAL TRIANGLE
→ GIVE → MUSCULAR BRANCH AND DESCENDING GENICULAR BRANCH
2. FEMORAL VEIN → LIE → POSTERIOR TO FEMORAL ARTERY IN UPPER PART
→ LATERAL TO FEMORAL ARTERY IN LOWER PART



3. SAPHENOUS NERVE → CROSS → FEMORAL ARTERY ANTERIORLY

4. NERVE TO VASTUS MEDIALIS → LATERAL TO FEMORAL ARTERY

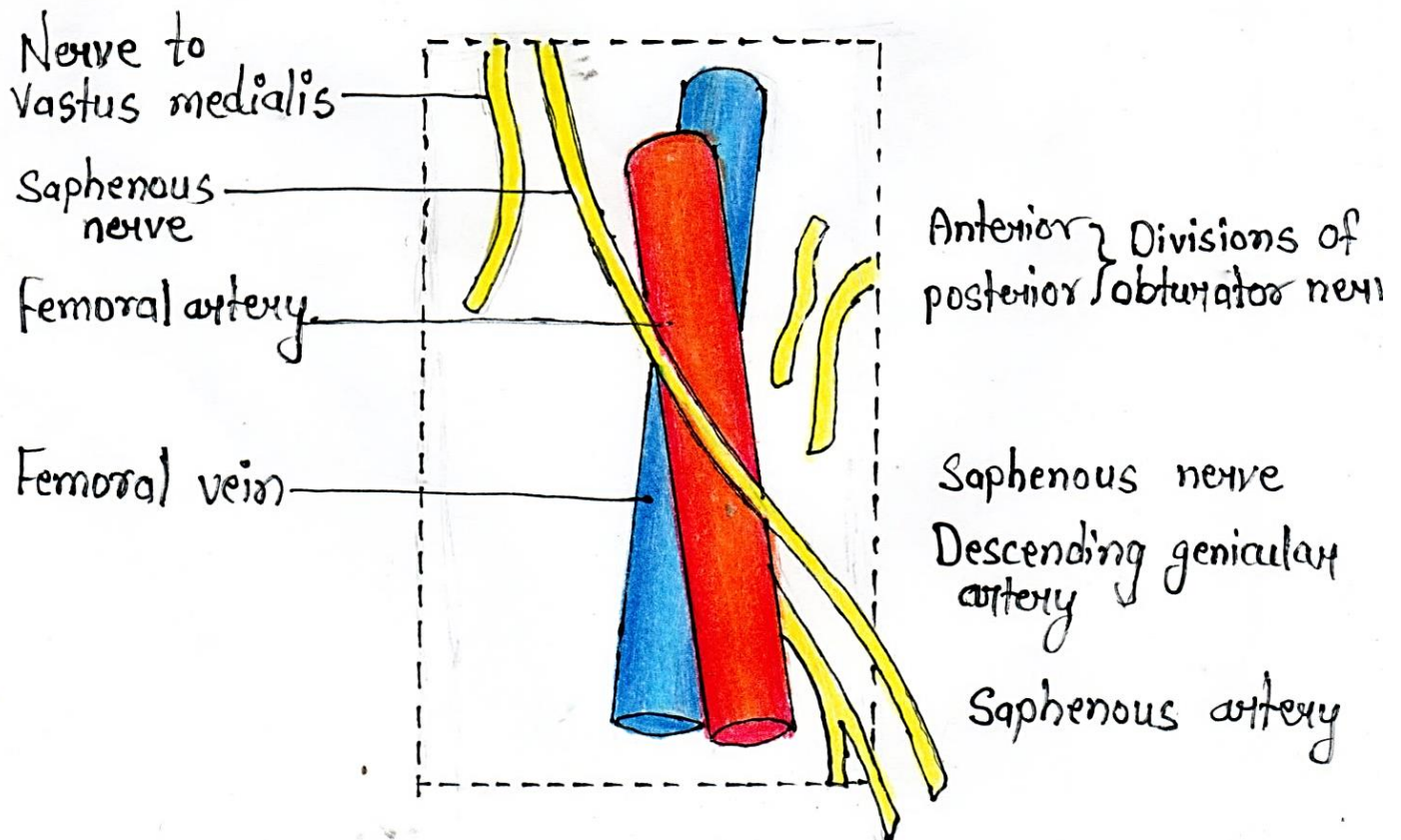
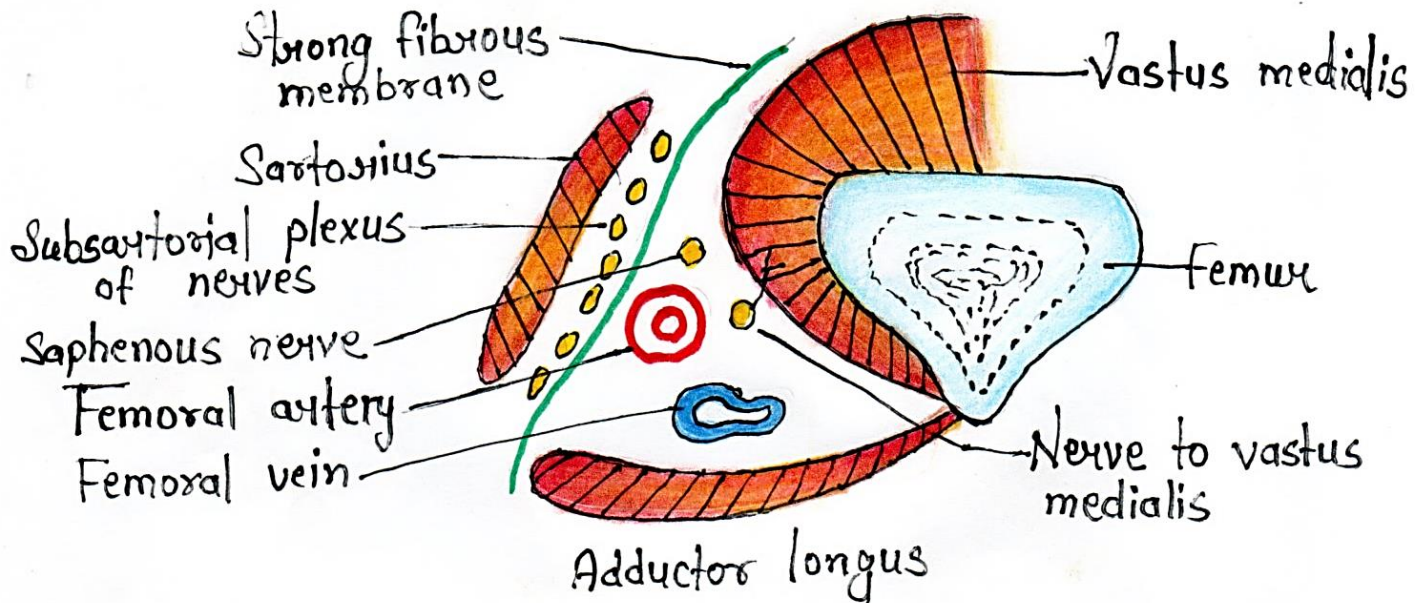
5. BRANCH OF TWO DIVISION OF OBTURATOR NERVE

→ ANTERIOR DIVISION → EMERGE AT LOWER BORDER OF ADDUCTOR MAGNUS

POSTERIOR DIVISION → RUN ON ANT. SURFACE OF ADDUCTOR MAGNUS

CLINICAL ANATOMY

FEMORAL ARTERY IS EXPOSED AND LIGATED IN THE ADDUCTOR CANAL DURING SURGERY FOR ANEURYSM OF POPLITEAL ARTERY





POPLITEAL FOSSA

DIAMOND SHAPE DEPRESSION → BEHIND KNEE JOINT, LOWER PART OF FEMUR AND UPPER PART OF TIBIA

IMPORTANT ANATOMICAL REGION BECAUSE IT PROVIDE PASSAGE FOR MAIN VESSELS AND NERVE FROM THIGH TO LEG

BOUNDARIES -

1. SUPEROLATERAL - BICEP FEMORIS MUSCLE
2. SUPEROMEDIAL - SEMITENDINOSUS MUSCLE
3. INFEROLATERAL - LATERAL HEAD GASTROCNEMIUS
4. INFEROMEDIAL - MEDIAL HEAD OF GASTROCNEMIUS
5. ROOF - DEEP FASICA
 - SUPERFICIAL FASICA → SMALL SAPHENOUS VEIN
 - POSTERIOR CUTANEOUS NERVE OF THIGH
 - POSTERIOR DIVISION OF MEDIAL CUTANEOUS NERVE OF THIGH
 - PERONEAL NERVE
6. FLOOR - POPLITEAL SURFACE OF FEMUR
 - CAPSULE OF KNEE JOINT
 - POPLITEAL MUSCLE

CONTENT -

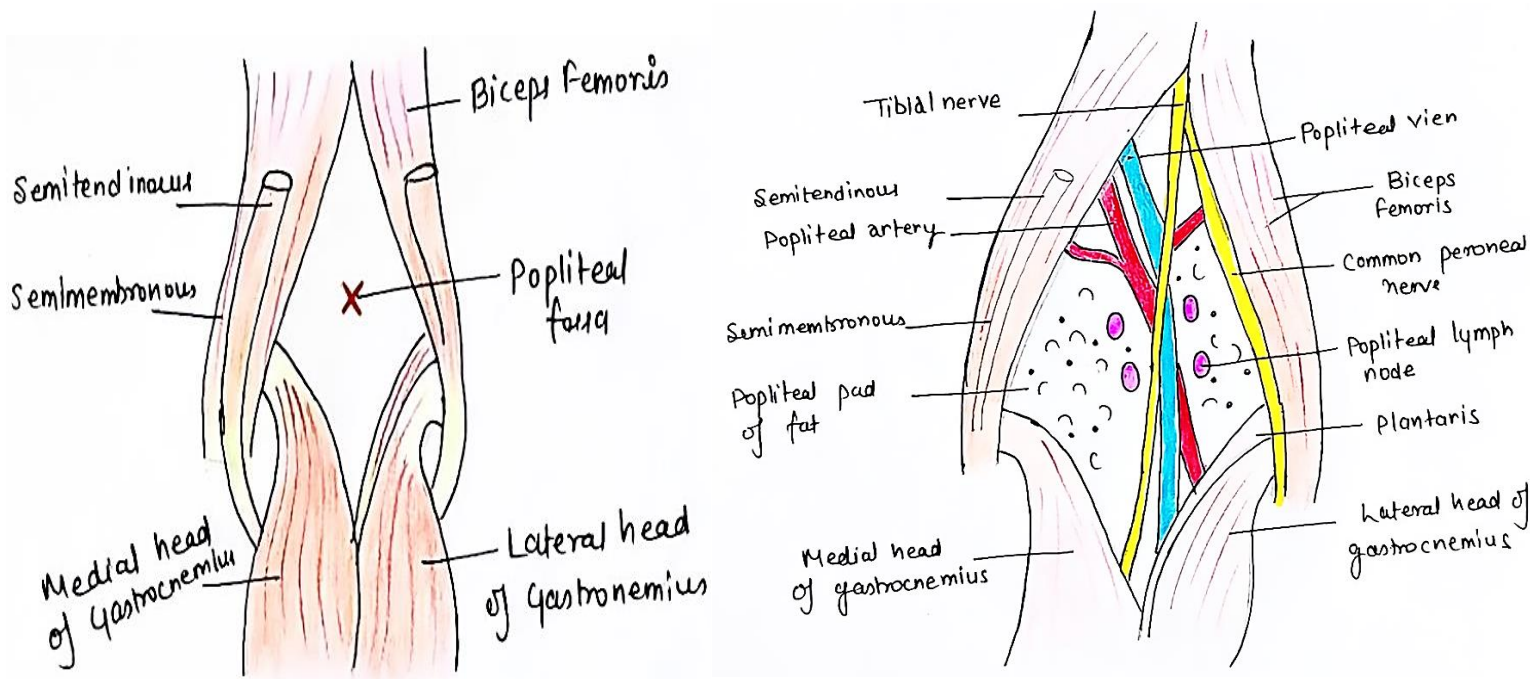
1. POPLITEAL ARTERY & VEIN
2. TIBIAL NERVE
3. COMMON PERONEAL NERVE
4. GENICULAR BRANCH OF OBTURATOR NERVE
5. POPLITEAL LYMPH NODE & FAT SURROUNDING ALL STRUCTURE

CLINICAL ANATOMY

POPLITEAL ANEURYSM -

POPLITEAL ARTERY IS MORE PRONE TO ANEURYSM THAN ANY OTHER ARTERY IN BODY

CLINICALLY, POPLITEAL ANEURYSM PRESENT AS A PULSATILE MIDLINE SWELLING IN POPLITEAL FOSSA





HAMSTRING MUSCLE

FEATURES - ORIGIN FROM ISCHIAL TUBEROSITY

- NERVE SUPPLY - TIBIAL PART OF SCIATIC NERVE
- MUSCLE ACT AS FLEXOR KNEE & EXTENSOR OF HIP

1. SEMITENDINOSUS -

ORIGIN - INFEROMEDIAL IMPRESSION ON THE UPPER PART OF ISCHIAL TUBEROSITY

INSERTION - UPPER MEDIAL SURFACE OF TIBIA

NERVE SUPPLY - TIBIAL PART OF SCIATIC NERVE

ACTION - FLEXION OF KNEE & MEDIAL ROTATION OF LEG, WEAK EXTENSOR OF HIP

2. SEMIMEMBRANOSUS -

ORIGIN - SUPEROLATERAL IMPRESSION - ISCHIAL TUBEROSITY

INSERTION - POSTERIOR SURFACE OF MEDIAL CONDYLE OF TIBIA

NERVE SUPPLY - TIBIAL PART OF SCIATIC NERVE

ACTION - FLEXION OF KNEE & MEDIAL ROTATION OF LEG, WEAK EXTENSOR OF HIP

3. BICEPS FEMORIS -

ORIGIN - LONG HEAD - INFEROMEDIAL IMPRESSION

SHORT HEAD - ISCHIAL TUBEROSITY

INSERTION - HEAD OF FIBULA

NERVE SUPPLY - LONG HEAD - TIBIAL PART OF SCIATIC NERVE

- SHORT HEAD - COMMON PERONEAL NERVE

ACTION - LATERAL ROTATION OF KNEE - WEAK EXTENSOR OF HIP

4. ADDUCTOR MAGNUS -

ORIGIN - LOWER LATERAL PART OF ISCHIAL TUBEROSITY

- INFERIOR RAMUS OF PUBIS

INSERTION - MEDIAL MARGIN OF GLUTEAL TUBEROSITY

- LINEA ASPERA & MEDIAL SUPRACONDYLAR LINE

- ADDUCTOR TUBERCLE

NERVE SUPPLY - DOUBLE NERVE SUPPLY - TIBIAL PART OF SCIATIC NERVE

- OBTURATOR NERVE

ACTION - EXTENSION OF HIP

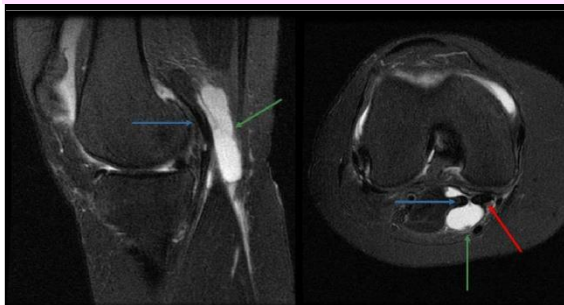
- ADDUCTOR PART - CAUSE ADDUCTION OF THIGH

CLINICAL ANATOMY

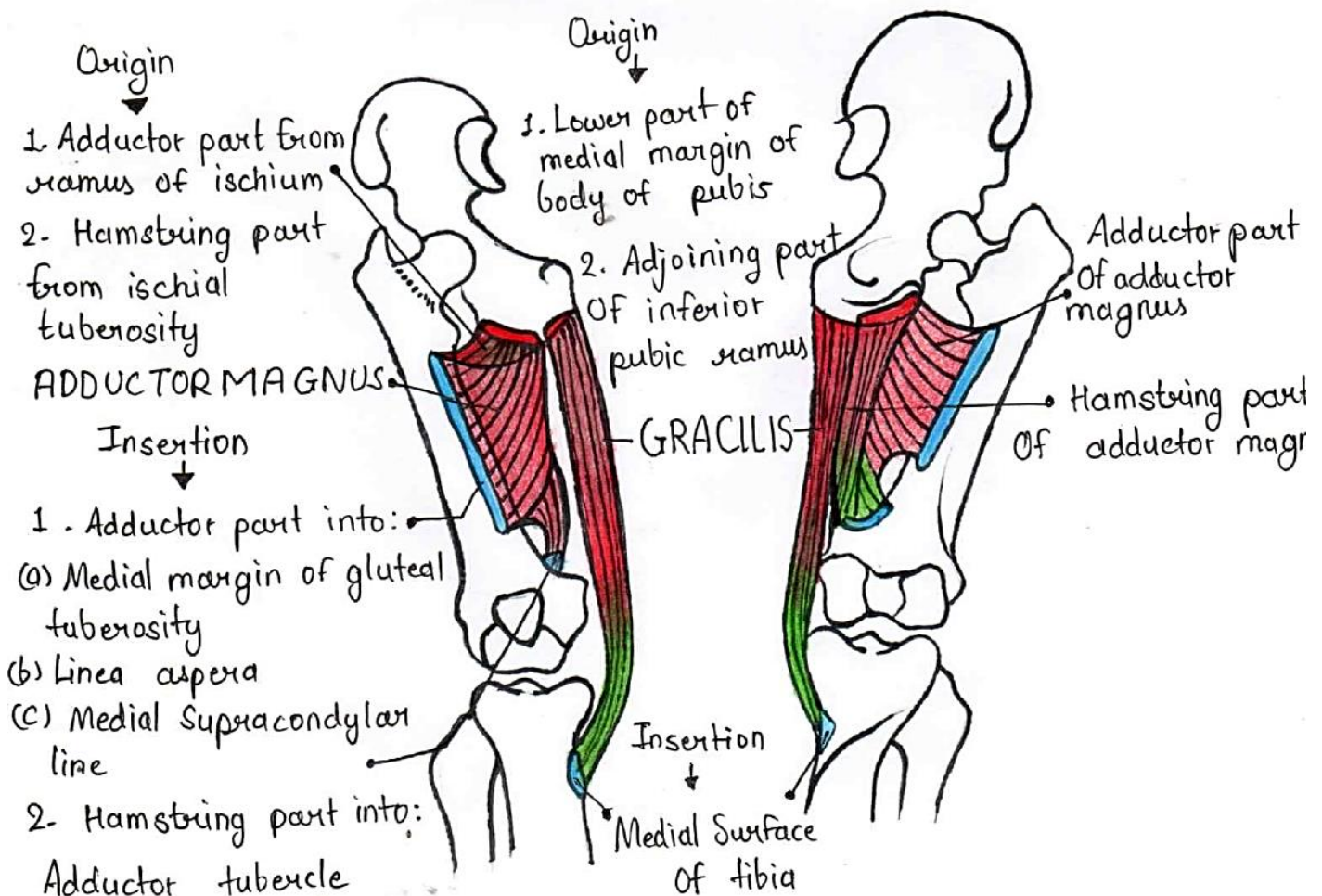
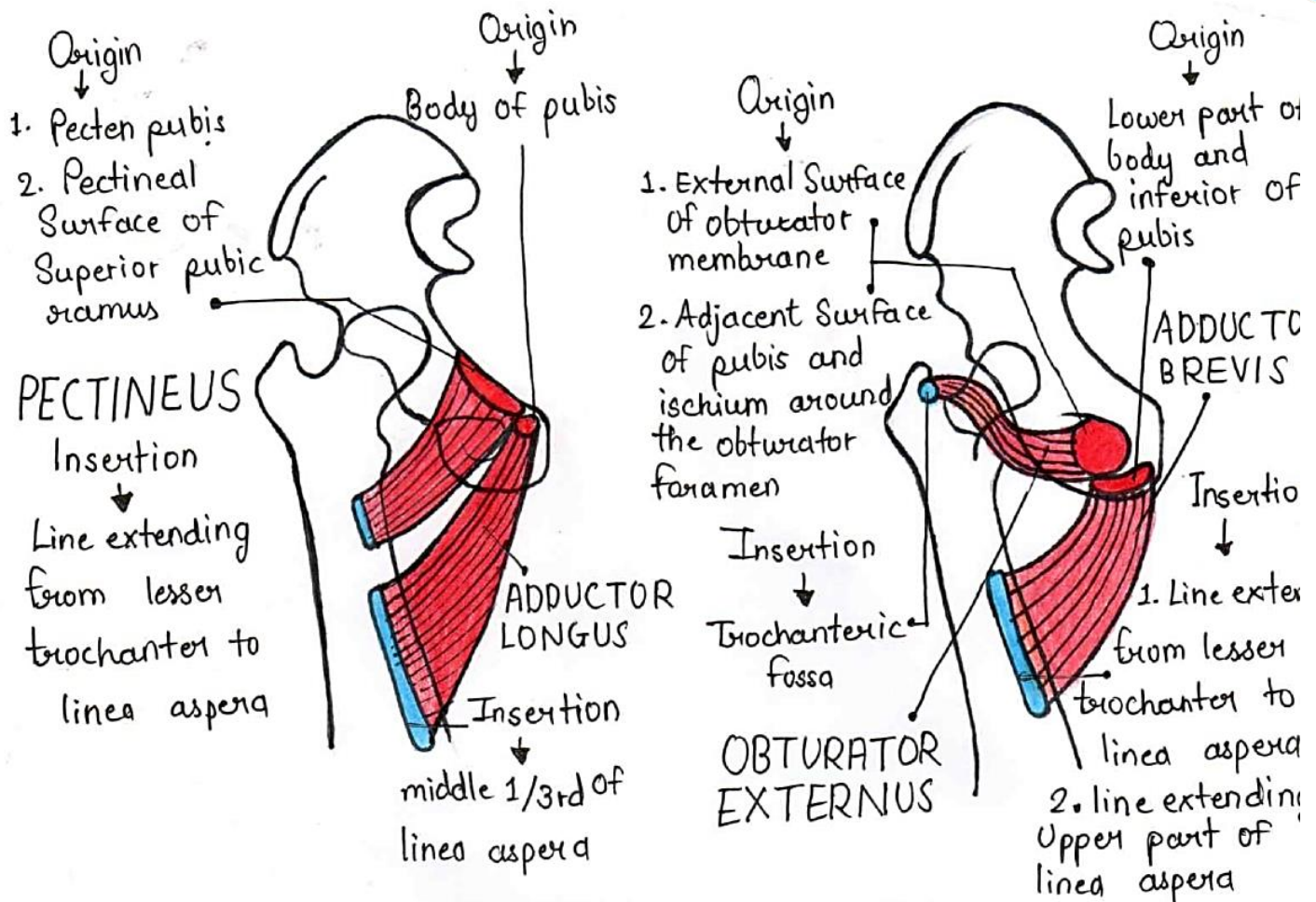
SEMIMEMBRANOSUS BURSITIS -

SEMIMEMBRANOUS BURSA ON MEDIAL SIDE MAY INFLAME THE CONDITION IS CALLED SEMIMEMBRANOSUS BURSITIS

BAKER'S CYST - HERNIATION OF SYNOVIAL MEMBRANE AND LIE IN MIDLINE



Sagittal and axial T2 weighted sequences demonstrate a T2 hyperintense fluid collection between the medial head of the gastrocnemius tendon and the semimembranosus tendon compatible with fluid in the gastrocnemius-semimembranosus bursa, commonly known as a popliteal or Baker's cyst.





GLUTEUS MAXIMUS

LARGE, QUADRILATERAL POWERFUL MUSCLE- COVERS MAINLY THE POSTERIOR SURFACE OF PELVIS

ORIGIN

1. OUTER SLOPE OF THE DORSAL SEGMENT OF ILIAC CREST
2. POSTERIOR GLUTEAL LINE
3. POSTERIOR PART OF GLUTEAL SURFACE OF ILEUM BEHIND THE POSTERIOR GLUTEAL LINE
4. APONEUROSIS OF ERECTOR SPINAE
5. DORSAL SURFACE OF LOWER PART OF SACRUM
6. SIDE OF COCCYX
7. SACROTUBEROUS LIGAMENT
8. FASCIA COVERING GLUTEUS MEDIUS

INSERTION

1. THE DEEP FIBRES- GLUTEAL TUBEROSITY (ONE-FOURTH PART)
2. THE GREATER PART OF THE MUSCLE- ILIOTIBIAL TRACT (THREE-FOURTHS PART)

NERVE SUPPLY - INFERIOR GLUTEAL NERVE (L5, S1, 2)

ACTIONS

- 1) CHIEF EXTENSOR OF THE THIGH AT THE HIP JOINT- IMPORTANT IN RISING FROM A SITTING POSITION.
- 2) ESSENTIAL FOR MAINTAINING THE ERECT POSTURE.
- 3) OTHER ACTIONS ARE:
 - LATERAL ROTATION OF THE THIGH
 - ABDUCTION OF THE THIGH (BY UPPER FIBRES)
 - ALONG WITH THE TENSOR FASCIAE LATAE STABILISES THE KNEE THROUGH THE ILIOTIBIAL TRACT.

STRUCTURE UNDER GLUTEUS MAXIMUS

MUSCLES

1. GLUTEUS MEDIUS
2. GLUTEUS MINIMUS
3. REFLECTED HEAD OF THE RECTUS FEMORIS
4. PIRIFORMIS
5. OBTURATOR INTERNUS WITH TWO GEMELLI
6. QUADRATUS FEMORIS
7. OBTURATOR EXTERNUS
8. ORIGIN OF THE FOUR HAMSTRINGS FROM THE ISCHIAL TUBEROSITY
9. UPPER FIBRES OF THE ADDUCTOR MAGNUS

VESSELS

1. SUPERIOR GLUTEAL VESSELS
2. INFERIOR GLUTEAL VESSELS
3. INTERNAL PUDENDAL VESSELS
4. ASCENDING BRANCH OF THE MEDIAL CIRCUMFLEX FEMORAL ARTERY
5. TROCHANTERIC ANASTOMOSES



6. CRUCIATE ANASTOMOSES
7. THE FIRST PERFORATING ARTERY

NERVES

- 1) SUPERIOR GLUTEAL (L4, 5, S1)
- 2) NERVE TO THE QUADRATUS FEMORIS (L4, 5, S1)
- 3) PUDENDAL NERVE (S2, 3, 4)
- 4) INFERIOR GLUTEAL (L5, S1, 2)
- 5) NERVE TO THE OBTURATOR INTERNUS (L5, S1, 2)
- 6) SCIATIC (L4, 5, S1, 2, 3)
- 7) PERFORATING CUTANEOUS NERVES (S2, 3)
- 8) POSTERIOR CUTANEOUS NERVE OF THIGH (S1, 2, 3)

BONES AND JOINTS

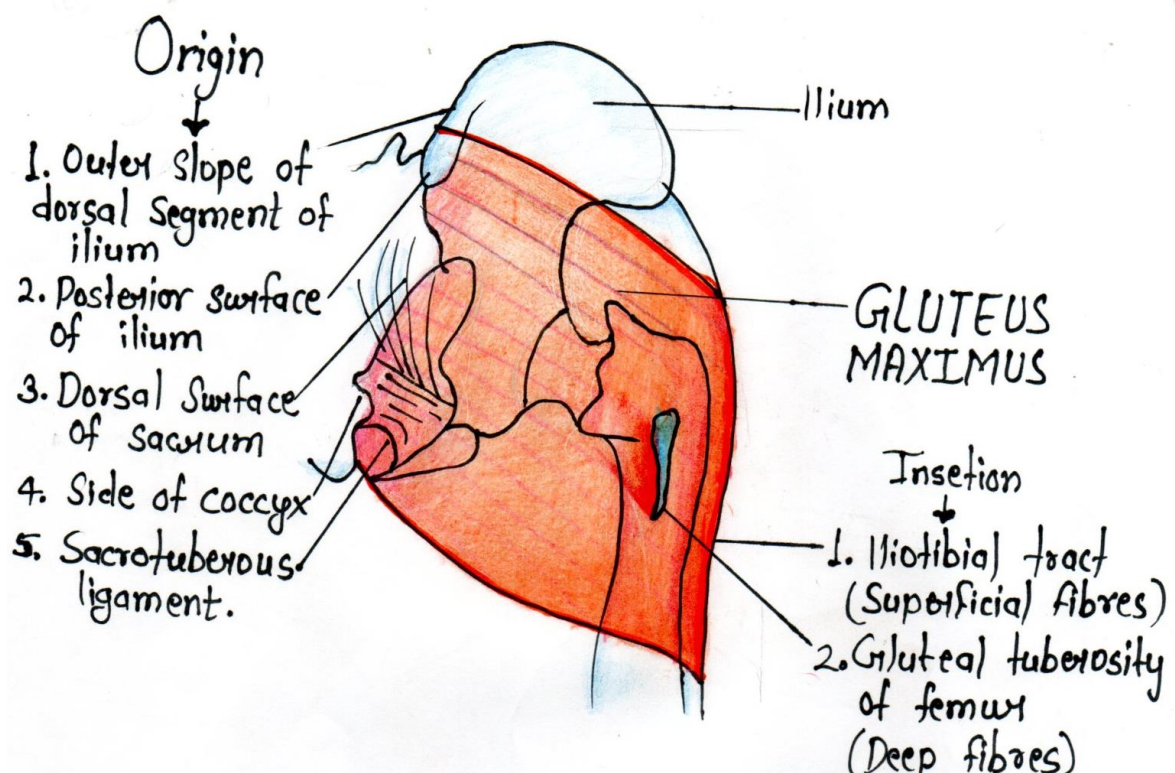
1. ILIUM
2. ISCHIUM WITH ISCHIAL TUBEROSITY
3. UPPER END OF FEMUR WITH THE GREATER TROCHANTER
4. SACRUM AND COCCYX
5. HIP JOINT
6. SACROILIAC JOINT

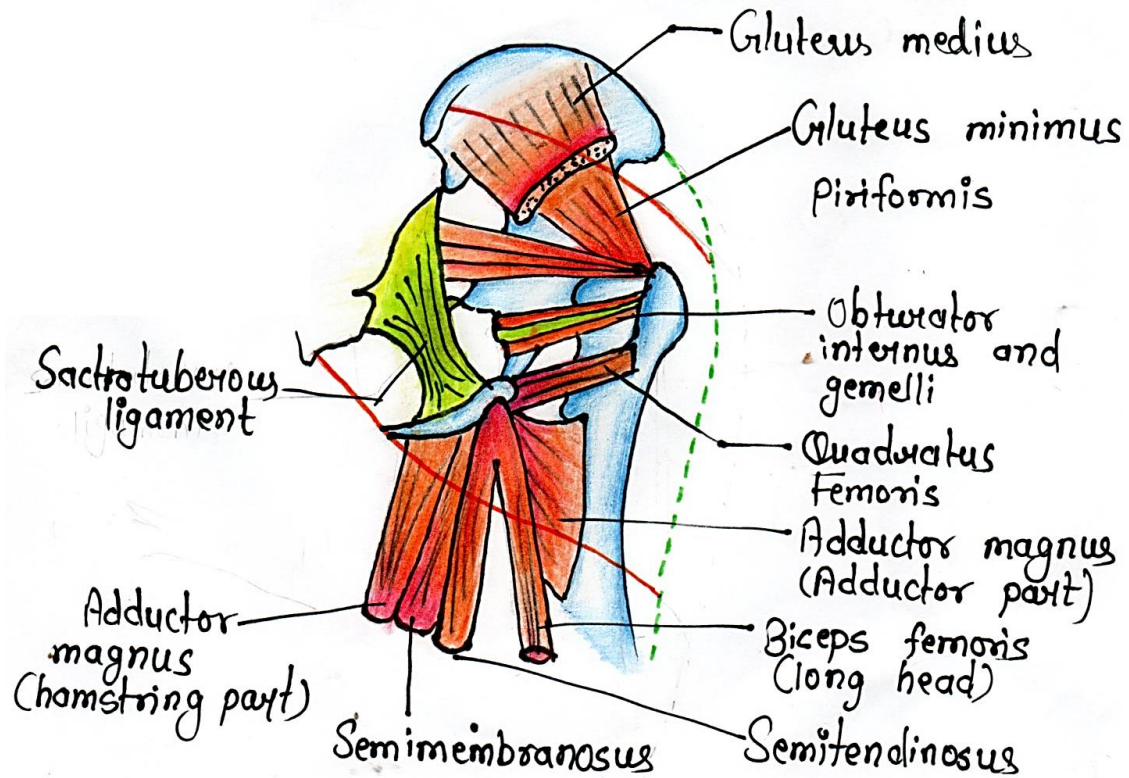
LIGAMENTS

1. SACROTUBEROUS
2. SACROSPINOUS
3. ISCHIOFEMORAL

BURSAE

- 1) TROCHANTERIC BURSA OF GLUTEUS MAXIMUS
- 2) BURSA OVER THE ISCHIAL TUBEROSITY
- 3) BURSA BETWEEN THE GLUTEUS MAXIMUS AND VASTILATERALIS





EXTENSOR RETINACULUM

AROUND THE ANKLE, THE DEEP FASCIA IS THICKENED TO FORM BANDS CALLED RETINACULUM. ON THE FRONT OF THE ANKLE THERE ARE THE SUPERIOR AND INFERIOR EXTENSOR RETINACULUM

SUPERIOR EXTENSOR RETINACULUM

ATTACHMENT

- MEDIALY - LOWER PART OF THE ANTERIOR BORDER OF THE TIBIA
- LATERALLY- LOWER PART OF THE ANTERIOR BORDER OF THE FIBULA

RELATIONS

- MEDIALY- SPLITS TO ENCLOSE THE TENDON OF TIBIALIS ANTERIOR

INFERIOR EXTENSOR RETINACULUM

ATTACHMENT

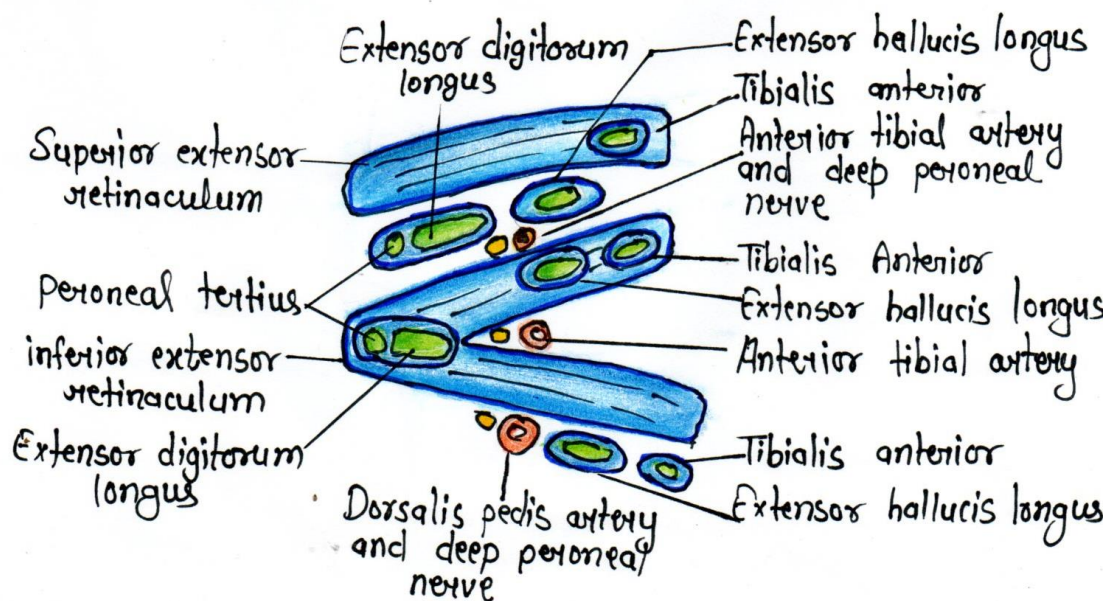
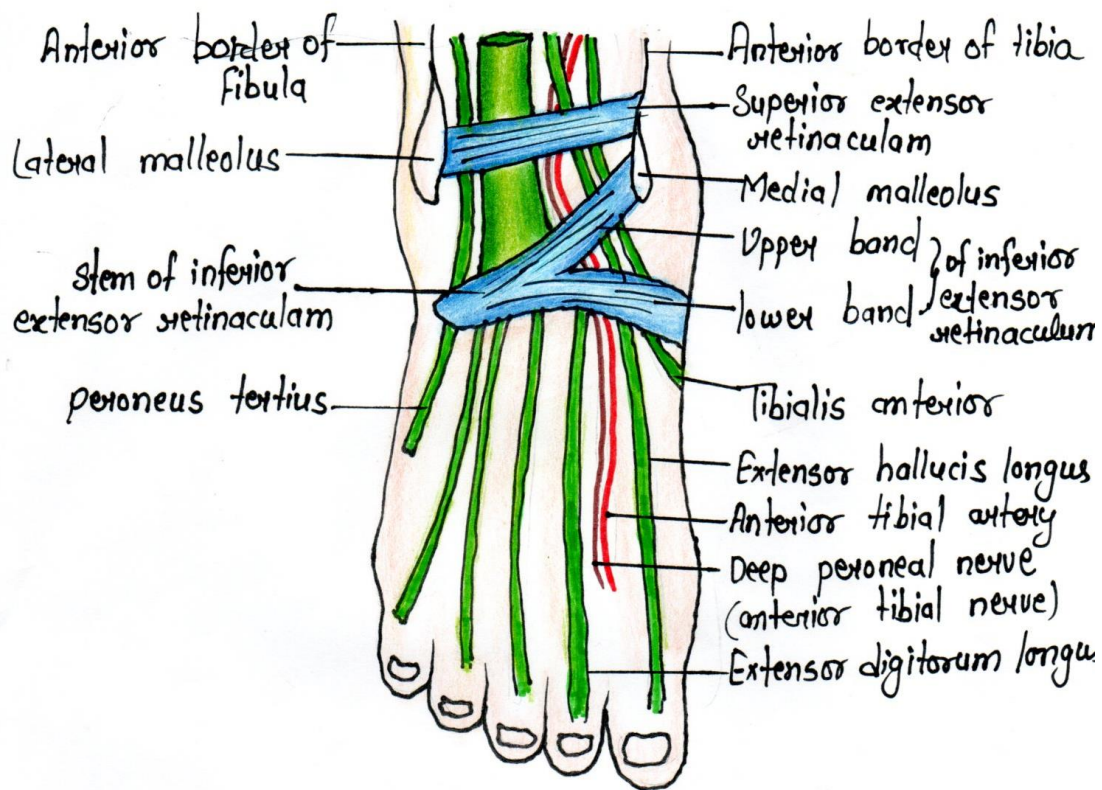
- STEM - ATTACHED TO THE ANTERIOR NON-ARTICULAR PART OF CALCANEUM
- UPPER BAND - ATTACHED TO ANTERIOR BORDER OF THE MEDIAL MALLEOLUS
- LOWER BAND- ATTACHED TO THE PLANTAR APONEUROSIS

RELATIONS

- STEM- LOOPS AROUND THE TENDONS OF EXTENSOR DIGITORUM LONGUS AND PERONEUS TERTIUS
- THE UPPER BAND- TENDONS OF TIBIALIS ANTERIOR AND EXTENSOR HALLUCIS LONGUS
- THE LOWER BAND- SUPERFICIAL TO THE TENDONS OF TIBIALIS ANTERIOR, EXTENSOR HALLUCIS LONGUS, DORSALIS PEDIS ARTERY AND DEEP PERONEAL NERVE

**STRUCTURES PASSING UNDER RETINACULUM**

1. TIBIALIS ANTERIOR
2. EXTENSOR HALLUCIS LONGUS
3. ANTERIOR TIBIAL VESSELS
4. DEEP PERONEAL NERVE
5. EXTENSOR DIGITORUM LONGUS
6. THE PERONEUS TERTIUS



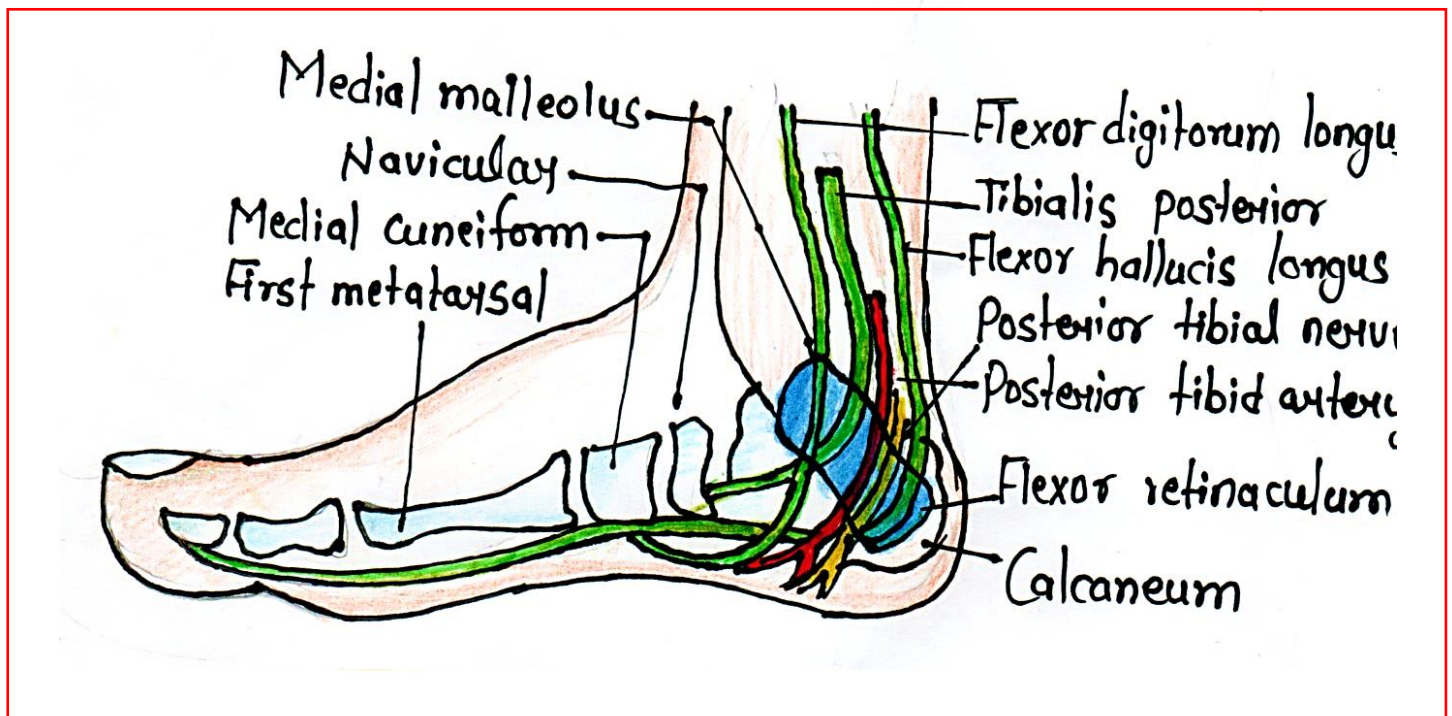


FLEXOR RETINACULUM

ATTACHMENT - ANTERIORLY → MEDIAL MALLEOLUS
- POSTERIOR & laterally → MEDIAL TUBERCLE OF CALCANEUM

STRUCTURE PASSING DEEP TO FLEXOR RETINACULUM -

1. TENDON OF TIBIALIS POSTERIOR & FLEXOR DIGITORUM LONGUS
2. POSTERIOR TIBIAL ARTERY & TIBIAL NERVE
3. TENDON OF FLEXOR HALLUCIS LONGUS



ARCHES OF FOOT



ARCHES OF FOOT HELP IN FAST WALKING & JUMPING.

THE SKELETON OF FOOT IS ARCHED, BOTH LONGITUDINALLY AND TRANSVERSELY, WITH CONCAVITY DIRECTED TOWARD THE PLANTAR SURFACE

THE PRESENCE OF ARCHES MAKES THE SOLE CONCAVE BOTH ANTEROPERTERIORLY AND TRANSVERSELY

CLASSIFICATION OF ARCHES -

1. LONGITUDINAL - MEDIAL & LATERAL ARCH
2. TRANSVERSE - ANTERIOR & POSTERIOR

MEDIAL LONGITUDINAL ARCH

ARCH IS CONSIDER HIGHER, MORE MOBILE → IT CONSIDER AS BIG ARCH OF MORE BONE & MORE JOINT

ENDS - ANT.END → HEAD OF 1ST, 2ND & 3RD METATARSAL BONE

- POST.END → MEDIAL TUBERCLE OF CALCANEUM

SUMMIT - SUPERIOR ARTICULAR SURFACE OF BODY OF TALUS



PILLARS - ANT.PILLAR - LONG AND WEAK

- FORM BY TALUS, THE NAVICULAR & 3 CUNEIFORM BONES

POST.PILLAR - SHORT AND STRONG

- FORM BY MEDIAL PART OF CALCANEUM

MAIN JOINT -> TALOCALCANEONAVICULAR JOINT.

LATERAL LONGITUDINAL ARCH

CHARACTERISTICS -> LOW WITH LESS BONE & JOINT & MOBILITY

END - ANT.END -> HEAD OF 5TH & 4TH METATARSAL BONE

POST.END -> LATERAL TUBERCLE OF CALCANEUM

SUMMIT - SUPERIOR SPACE OF CALCANEUM

PILLAR - ANT.PILLAR -> LONG & WEAK

-> FORM BY CUBOID BONE, 4TH & 5TH METATARSAL

POST.PILLAR -> SHORT & STRONG

-> FORM BY LATERAL HALF OF CALCANEUM

MAIN JOINT- CALCANEOCUBOIDAL JOINT

TRANSVERSE ARCH (T.A.)

1.ANTERIOR T.A -> FORM BY 5 METATARSAL BONE

-> COMPLETE ARCH BECAUSE HEAD OF 1ST & 2ND METATARSAL COME IN CONTACT WITH GROUND

2.POSTERIOR T.A -> FORM BY GREATER PART OF TARSAL & BASE OF METATARSAL

-> IN COMPLETE ARCH BECAUSE ONLY THE LATERAL END COME IN CONTACT WITH THE GROUND

CLINICAL ANATOMY

FLAT FOOT -

- IT OCCURS DUE TO COLLAPSE OF MEDIA; LONGITUDINAL ARCH

- THE EFFECT OF FLAT FOOT ARE :

1.THE PERSON USUALLY HAS CLUMSY SHUFFLING GAIT DUE TO THE LOSS OF SPRING IN FOOT

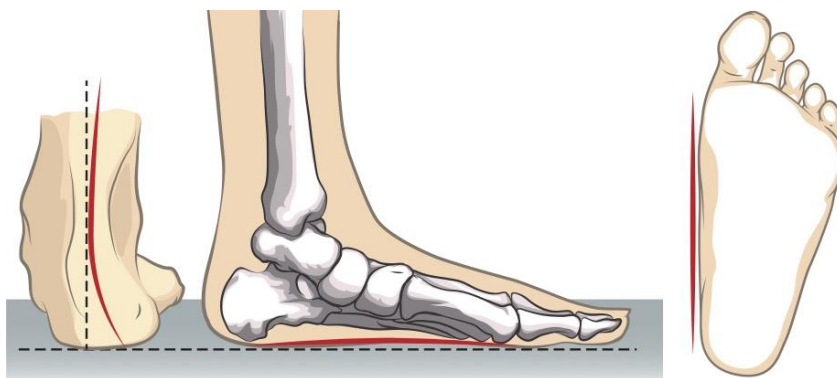
2.MAKE FOOT MORE LIABLE TO TRAUMA DUE TO LOSS OF SHOCK ABSORBING FUNCTION

3.COMPRESSION OF NERVE AND VESSEL OF SOLE DUE TO LOSS CONCAVITY OF SOLE

HIGH ARCHED FOOT (PES CAVUS) -

THE EXAGGERATION OF LONGITUDINAL ARCH OF FOOT CAUSES PES CAVUS

THIS USUALLY OCCUR BECAUSE OF A CONTRACTURE AT THE TRANVERSE TARSAL JOINT



Flat feet



CLUB FOOT - MAYBE CONGENITAL OR ACQUIRED

- TALIPES EQUINUS - FOOT IS PLANTAR FLEXED AND PERSON WALK ON TOES
- TALIPES CALCANEUS - PERSON WALK ON THE HEEL WITH FOREFOOT RAISED
- TALIPES VARUS - FOOT IS INVERTED AND ADDUCTED, PERSON WALK ON OUTER BORDER OF FOOT
- TALIPES VALGUS - PERSON WALK ON INNER BORDER OF FOOT



Talipes equinus



Talipes calcaneus



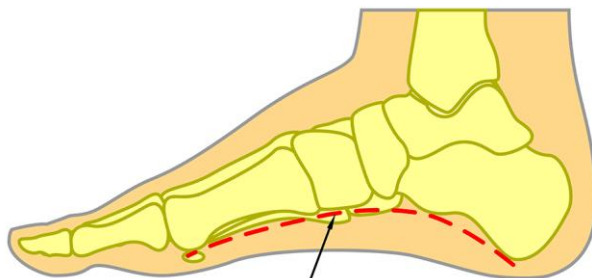
Talipes varus



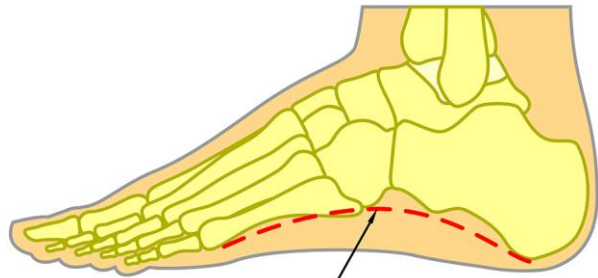
Talipes valgus

Medial view of the foot

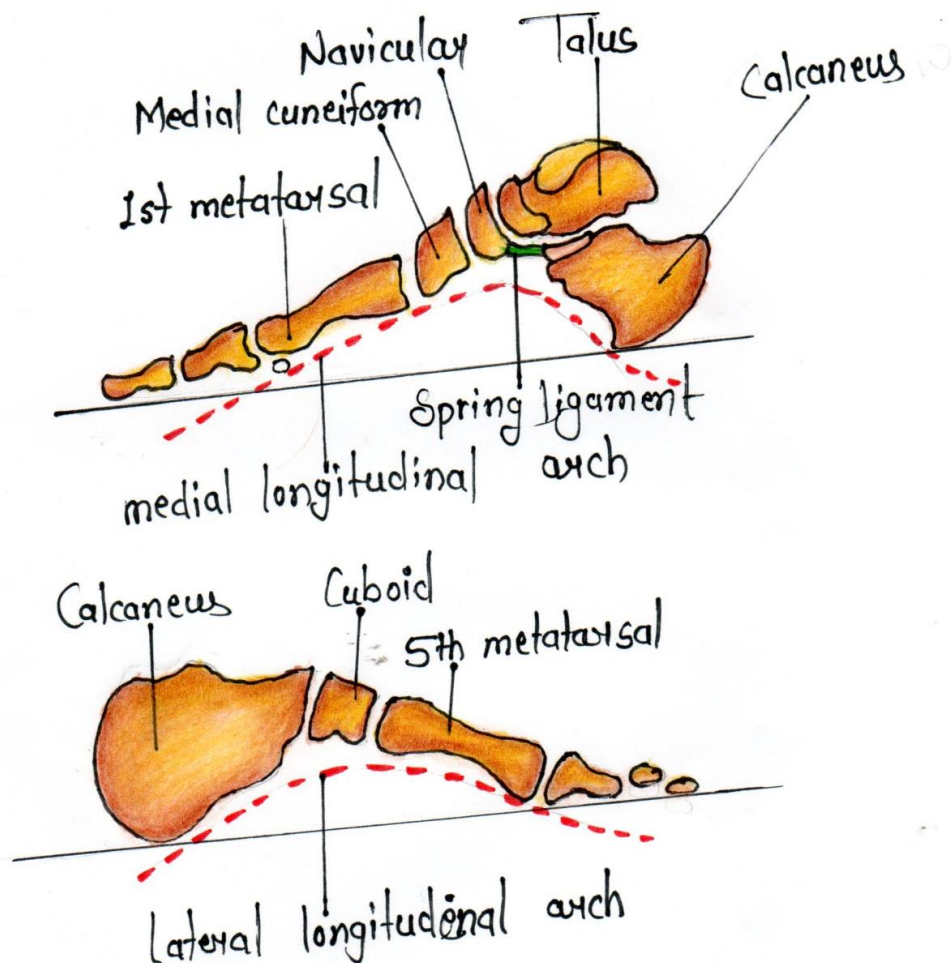
Lateral view of the foot



Medial Longitudinal Arch



Lateral Longitudinal Arch





HIP JOINT

TYPE - BALL & SOCKET VARIETY OF SYNOVIAL JOINT.

ARTICULATING SURFACE -> HEAD OF FEMUR WITH ACETABULUM OF HIP JOINT.

HIP JOINT IS UNIQUE HAVING HIGH DEGREE OF STABILITY AS WELL AS MOBILITY.
STABILITY DEPEND UPON - DEPTH OF ACETABULUM TENSION & STRENGTH OF LIGAMENT.
STRENGTH OF SURROUNDING MUSCLE
LENGTH AND OBLIQUITY OF NECK OF FEMUR.

LIGAMENT

1. **FIBROUS CAPSULE** - ATTACHED ON HIP BONE TO ACETABULUM LABRUM
 - ON FEMUR TO THE INTERTROCHANTERIC LINE INFRONT
2. **ILIOFEMORAL LIGAMENT** - STRONGEST LIGAMENT OF BODY
 - TRIANGULAR IN SHAPE
 - APEX IS ATTACHED - ANT. INFERIOR ILIAC SPINE
 - BASE - INTERTROCHANTERIC LINE.
3. **PUBOFEMORAL LIGAMENT** - SUPPORT THE JOINT INFEROMEDIALY
 - TRIANGULAR IN SHAPE
 - SUPERIOR ATTACH - ILIOPUBIC EMINENCE & OBTURATOR CRURIS
 - INFERIORLY - ANTEROINFERIOR PART OF CAPSULE
 - LOWER BORDER OF ILIOFEMORAL LIGAMENT.
4. **ISCHIOFEMORAL LIGAMENT** - COVER THE JOINT POSTERIORLY
 - FIBER ARE TWISTED EXTEND FROM ISCHIUM TO ACETABULUM
5. **LIGAMENT OF HEAD OF FEMUR** - TRIANGULAR IN SHAPE
 - APEX ATTACHED - FOVEA CAPITIS
 - BASE - MARGIN OF ACETABULUM NOTCH
6. **ACETABULAR LABRUM** - FIBROCARILAGINOUS RIM
 - ATTACHED TO MARGIN OF ACETABULUM.

RELATION -

1. **ANTERIORLY** - TENDON OF ILIOPSOAS
 - FEMORAL ARTERY
 - FEMORAL NERVE
 - FEMORAL VEIN
2. **POSTERIORLY** - PIRIFORMIS
 - SCIATIC NERVE
 - OBTURATOR INTERNUS & GEMELLI
 - QUADRATUS FEMORIS
 - GLUTEUS MAXIMUS



- 3.SUPERIOR - GLUTEUS MAXIMUS
- GLUTEUS MINIMUS
- GLUTEUS MEDIUS

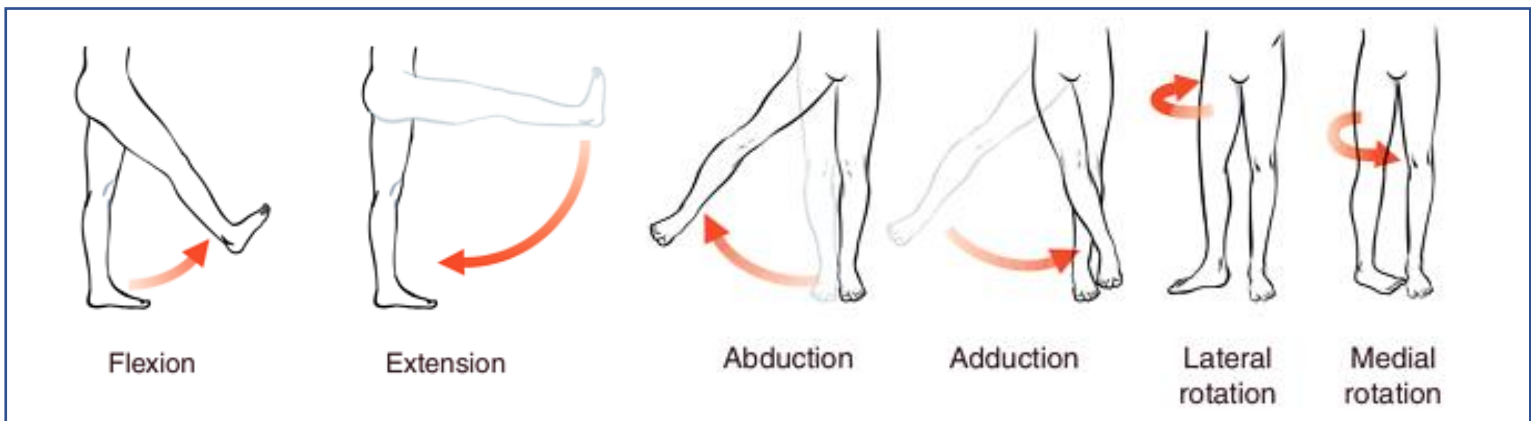
- 4.INFERIOR - OBTURATOR EXTERNUS
- HAMSTRING MUSCLE

BURSAE - 7 IN NUMBER -> 4 UNDER GLUTEUS MAXIMUS
-> 1 UNDER GLUTEUS MEDIUS
-> 1 UNDER GLUTEUS MINIMUS
-> 1 UNDER PSOAS TENDON

BLOOD SUPPLY - OBTURATOR ARTERY & 2 CIRCUMFLEX FEMORAL, 2 GLUTEAL ARTERY

NERVE SUPPLY - FEMORAL NERVE → THROUGH NERVE TO RECTUS FEMORIS
- ANTERIOR DIVISION OF OBTURATOR NERVE
- NERVE TO QUADRATUS FEMORIS
- SUPERIOR GLUTEAL NERVE

MOVEMENT - FLEXION & EXTENSION - TRANSVERSE AXIS
- ADDUCTION & ABDUCTION - ANTERIOR & POSTERIOR AXIS
- MEDIAL & LATERAL ROTATION - VERTICAL AXIS
- CIRCUMDUCTION



CLINICAL ANATOMY

DISLOCATION OF HIPJOINT -

- DISLOCATION OF HIP MAY BE POSTERIOR (MOST COMMON), ANTERIOR (LESS COMMON)
- MAY BE CONGENITAL DISLOCATION & ACQUIRED DISLOCATION

PERTHES' DISEASE

- IT IS CLINICAL CONDITION CHARACTERIZED BY DESTRUCTION AND FLATTENING OF HEAD OF FEMUR WITH AN INCREASE JOINT SPACE IN RADIOGRAPH

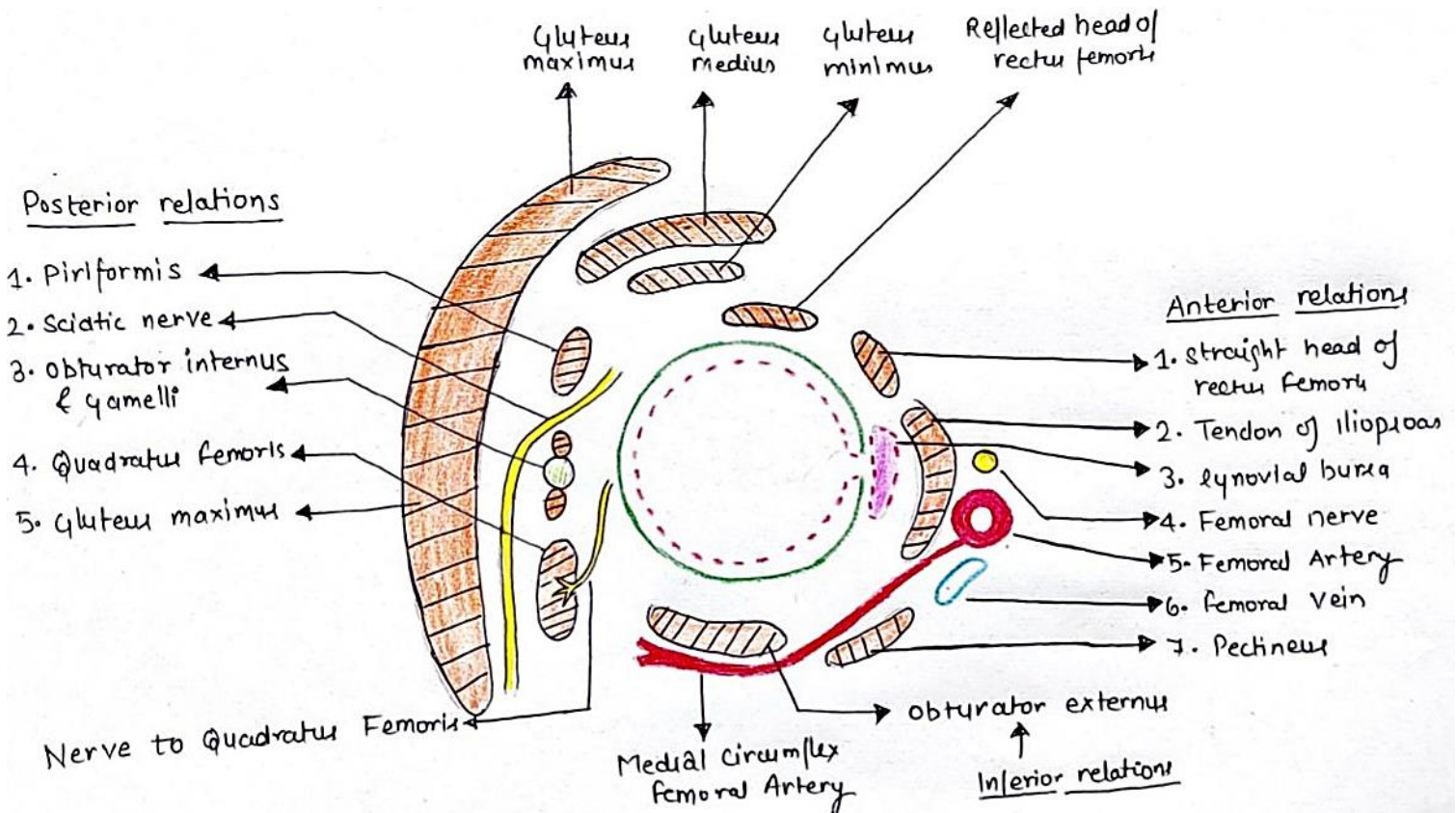
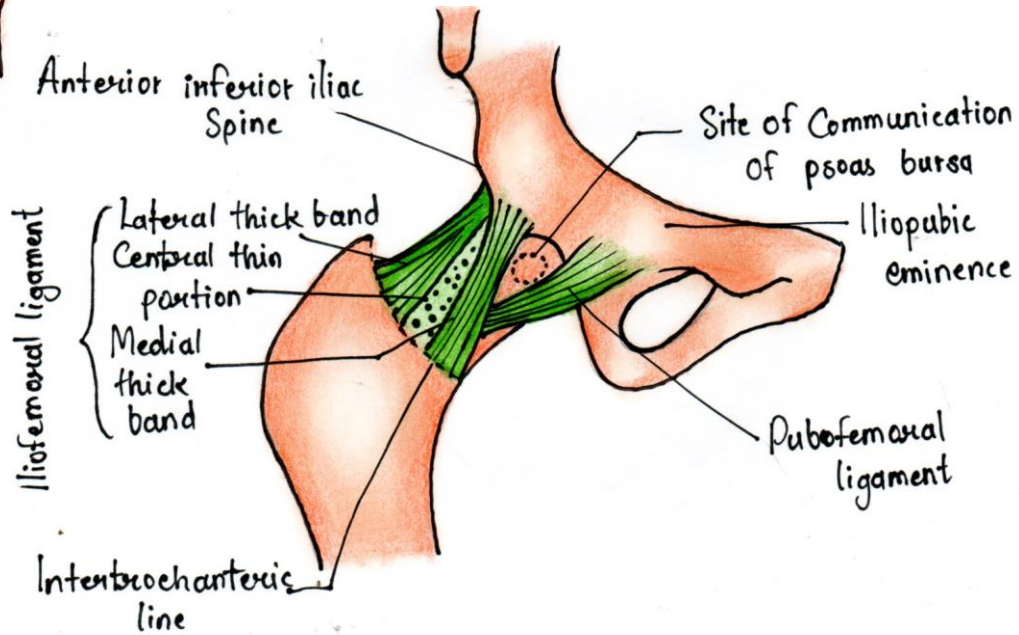
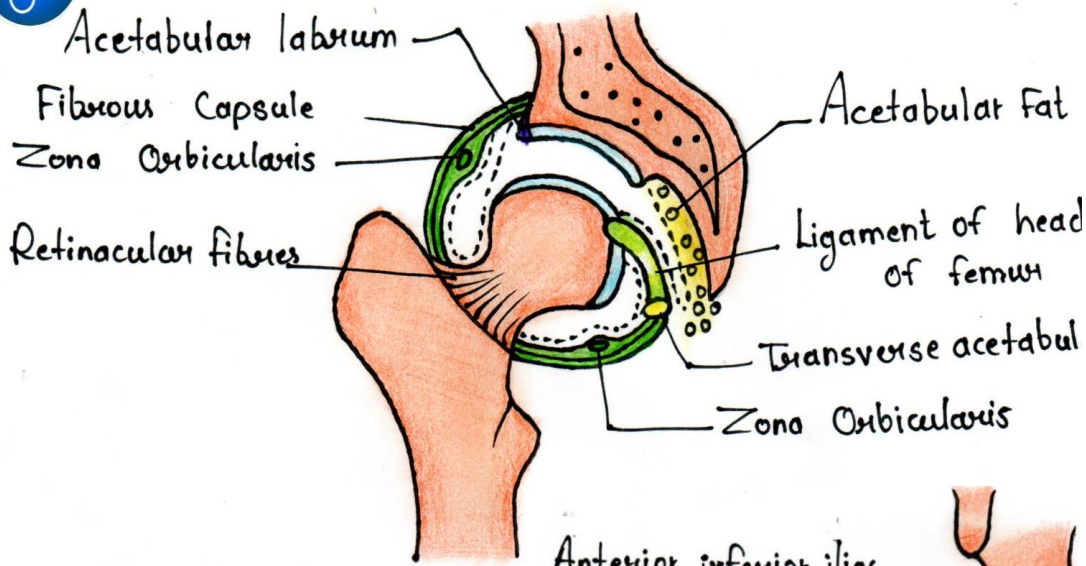
OSTEOARTHRITIS

IT IS A DISEASE OF OLD AGE

IT IS CHARACTERISED BY GROWTH OF OSTEOPHYTES AT THE ARTICULAR END,WHICH NOT ONLY LIMITS THE MOVEMENTS BUT ALSO MAKE THEM GRATING AND PAINFUL

FRACTURES OF NECK OF FEMUR

UNFORTUNATELY, IT IS REFERRED AS FRACTURED HIP IMPLYING THAT THE HIP BONE IS BROKEN





KNEE JOINT

TYPE - CONDYLAR SYNOVIAL JOINT

- 2 CONDYLAR JOINT BETWEEN CONDYLE OF FEMUR & TIBIA.
- 1 SADDLE JOINT BETWEEN FEMUR & PATELLA.

ARTICULAR SURFACE - CONDYLE OF FEMUR, PATELLA, CONDYLE OF TIBIA

LIGAMENT -

1. FIBROUS CAPSULE - THIN AND DEFICIENT ANTERIORLY.

- REPLACE BY QUADRICEP FEMORIS & LIGAMENTUM PATELLAE
- FEMORAL ATTACHMENT - ANT. - DEFICIENT
 - POST. - INTERCONDYLAR LINE
- TIBIAL ATTACHMENT - ANT. - TIBIAL TUBEROSITY
 - POST. - INTERCONDYLAR RIDGE

2. LIGAMENTUM PATELLAE - THIS IS THE CENTRAL PORTION OF COMMON TENDON OF INSERTION OF QUADRICEPS FEMORIS

- ATTACHMENT → ABOVE-POSTERIOR SURFACE OF APEX OF PATELLA
- BELOW - TIBIAL TUBEROSITY

3. TIBIAL COLLATERAL LIGAMENT - THIS IS A LONG BAND OF GREAT STRENGTH

- ATTACHMENT → SUPERIOR-MEDIAL EPICONDYLE SHAFT OF FEMUR
 - INFERIOR - DEVIDED INTO ANT. AND POST. PART
 - ANT. PART - MEDIAL SURFACE OF SHAFT OF TIBIA
 - POST. PART - MEDIAL CONDYLE OF TIBIA

4. FIBULAR COLLATERAL - SUPERIOR - ATTACHMENT - LATERAL EPICONDYLE OF FEMUR

- INFERIORLY - HEAD OF FIBULA

5. OBLIQUE POPLITEAL LIGAMENT - EXPANSION FROM TENDON OF SEMIMEMBRANOSUS

- RUN LATERAL WITH POST. SURFACE OF CAPSULE
- ATTACHMENT → INTERCONDYLAR LINE & LATERAL CONDYLE OF FEMUR

6. ARCUATE POPLITEAL LIGAMENT - POSTERIOR EXPANSION FROM SHORT LATERAL LIGAMENT

- EXTEND BACKWARD FROM HEAD OF FIBULA TO POSTERIOR BORDER OF INTERCONDYLAR AREA OF TIBIA.

7. MENISCUS - ARE 2 FIBROCARILAGINOUS DISC - LATERAL & MEDIAL MENISCUS.

8. CRUCIATE LIGAMENT - VERY THICK & STRONG FIBROUS BAND

ANT. CRUCIATE LIGAMENT -> BEGIN FROM ANT. INTRACONDYLAR AREA OF TIBIA TO POSTERIOR PART OF LATERAL CONDYLE OF FEMUR.

POST. CRUCIATE LIGAMENT ->> POSTERIOR PART OF INTERCONDYLAR AREA OF TIBIA TO ANT. PART OF MEDIAL CONDYLE OF FEMUR.

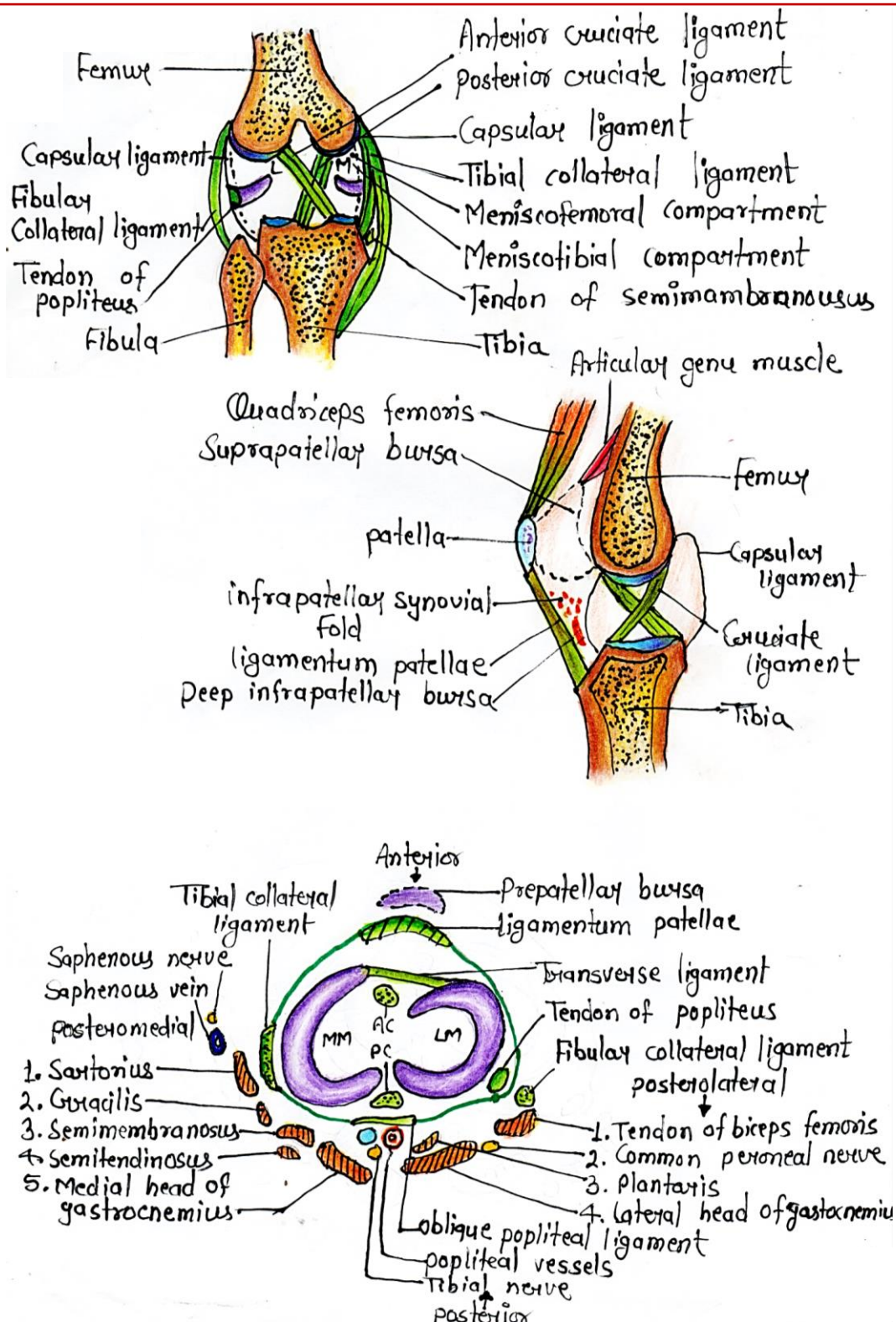
9. TRANSVERSE LIGAMENT - CONNECT ANTERIOR END OF LATERAL & MEDIAL MENISCUS

**BLOOD SUPPLY**

- 1.5 GENICULAR BRANCH OF POPLITEAL ARTERY
2. DESCENDING GENICULAR BRANCH OF FEMORAL ARTERY
3. DESCENDING BRANCH OF LATERAL CIRCUMFLEX ARTERY
- 4.2 RECURRENT BRANCH OF ANTERIOR TIBIAL ARTERY
5. CIRCUMFLEX FIBULAR BRANCH OF POSTERIOR TIBIAL ARTERY

NERVE SUPPLY -

1. FEMORAL NERVE → BRANCH TO VASTI ESPECIALLY VASTUS MEDIALIS
2. SCIATIC NERVE THROUGH GENICULAR BRANCH OF THE TIBIAL & COMMON PERONEAL NERVES
3. OBTURATOR NERVE → THROUGH POSTERIOR DIVISION





LOCKING AND UNLOCKING KNEE JOINT

1. MECHANISM THAT ALLOW THE KNEE TO REMAIN IN THE POSITION FULL EXTENSION WITHOUT MUSCULAR EFFORT.
2. LOCKING OCCUR → MEDIAL ROTATION OF FEMUR DURING LAST STAGE OF EXTENSION
3. DIAMETER OF LATERAL FEMORAL CONDYLE IS LESS THAN MEDIAL CONDYLE
4. AS RESULT → LATERAL CONDYLE FULLY ARTICULATE IN EXTENSION
→ PART OF MEDIAL CONDYLE REMAIN UNUSED
→ AT THIS STAGE LATERAL CONDYLE SERVE AS AXIS & MEDIAL ROTATION OF FEMUR OCCUR
→ SO REMAINING PART OF MEDIAL CONDYLAR SURFACE IS ALSO TAKEN UP.
5. LOCKING PRODUCED BY CONTINUED ACTION OF EXTENSOR MUSCLE → QUADRICEPS FEMORIS
6. UNLOCK IS REVERSE OF LOCKING BY LATERAL ROTATION OF FEMUR
7. UNLOCK CAUSED BY → POPLITEUS MUSCLE

INVERSION & EVERSION OF FOOT

1. INVERSION - MOVEMENT IN WHICH MEDIAL BORDER OF FOOT IS ELEVATED
- SOLE FACE MEDIALY.
2. EVERSION - MOVEMENT IN WHICH LATERAL BORDER OF FOOT IS ELEVATED.
- SOLE FACE Laterally.

PERFORM VOLUNTARY ONLY WHEN THE FOOT IS OFF THE GROUND.

WHEN FOOT IS ON THE GROUND THIS MOVEMENT HELP TO ADJUST THE UNEVEN GROUND.

3. INVERSION - ACCOMPANIED BY PLANTAR FLEXION OF FOOT
- ADDUCTION OF FORE FOOT.
4. EVERSION - ACCOMPANIED BY DORSI FLEXION OF FOOT

DORSIFLEXION & PLANTAR OF FOOT

1. DORSIFLEXION → FORE-FOOT IS RAISED
→ ANGLE BETWEEN FRONT OF LEG & DORSUM OF THE FOOT IS DIMINISHED
2. PLANTAR FLEXION → FORE-FOOT IS DEPRESSED
→ ANGLE BETWEEN LEG & FOOT IS INCREASED.
- ABDUCTION OF FORE FOOT.





ANKLE JOINT

TYPE -SYNOVIAL JOINT (HINGE VARIETY)

ARTICULAR SURFACES

THE UPPER ARTICULAR SURFACE IS FORMED BY:

1. LOWER END OF THE TIBIA AND MEDIAL MALLEOLUS
2. LATERAL MALLEOLUS OF THE FIBULA
3. INFERIOR TRANSVERSE TIBIOFIBULAR LIGAMENT

THE INFERIOR ARTICULAR SURFACE IS FORMED BY: ARTICULAR AREAS ON THE UPPER, MEDIAL AND LATERAL ASPECTS OF THE TALUS.

LIGAMENTS

➤ THE JOINT IS SUPPORTED BY:

- a. FIBROUS CAPSULE
- b. THE DELTOID OR MEDIAL LIGAMENT
- c. LATERAL LIGAMENT

FIBROUS CAPSULE:

WEAK ANTERIORLY AND POSTERIORLY. ATTACHED ALL AROUND THE ARTICULAR MARGINS WITH TWO EXCEPTIONS:

- i. POSTEROSUPERIORLY- ATTACHED TO THE INFERIOR TRANSVERSE TIBIOFIBULAR LIGAMENT.
 - ii. ANTEROINFERIORLY- ATTACHED TO THE DORSUM OF THE NECK OF THE TALUS
- THE ANTERIOR AND POSTERIOR PARTS: LOOSE AND THIN- ALLOW HINGE MOVEMENTS

DELTOID OR MEDIAL LIGAMENT:

- STRONG TRIANGULAR LIGAMENT ON MEDIAL SIDE OF THE ANKLE.
- DIVIDED INTO SUPERFICIAL AND DEEP PART.

LATERAL LIGAMENT:

THIS LIGAMENT CONSISTS OF THREE BANDS AS FOLLOWS.

- i. ANTERIOR TALOFIBULAR LIGAMENT
- ii. POSTERIOR TALOFIBULAR LIGAMENT
- iii. CALCANEOFIBULAR LIGAMENT

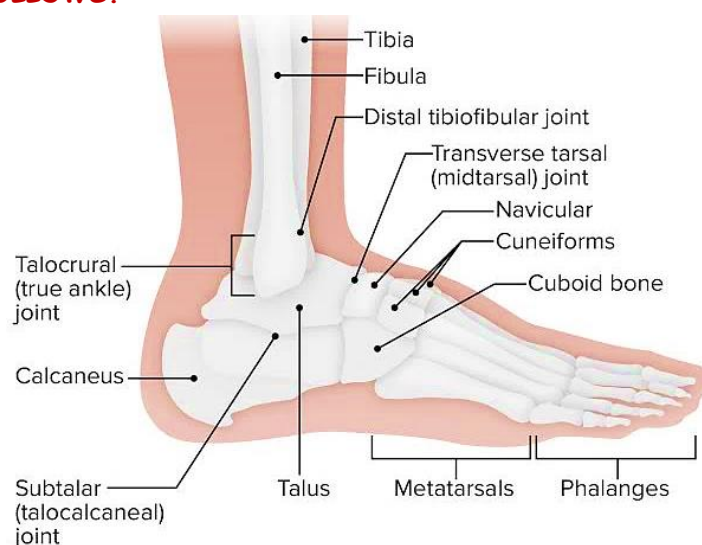
RELATIONS

ANTERIORLY- FROM MEDIAL TO LATERAL SIDE:

- i. TIBIALIS ANTERIOR
- ii. EXTENSOR HALLUCIS LONGUS
- iii. ANTERIOR TIBIAL VESSELS
- iv. DEEP PERONEAL NERVE
- v. EXTENSOR DIGITORUM LONGUS,
- vi. PERONEUS TERTIUS

POSTEROMEDIALY- FROM MEDIAL TO LATERAL SIDE:

- i. TIBIALIS POSTERIOR
- ii. FLEXOR DIGITORUM LONGUS
- iii. POSTERIOR TIBIAL VESSELS





iv. TIBIAL NERVE

v. FLEXOR HALLUCIS LONGUS.

POSTEROLATERALLY -

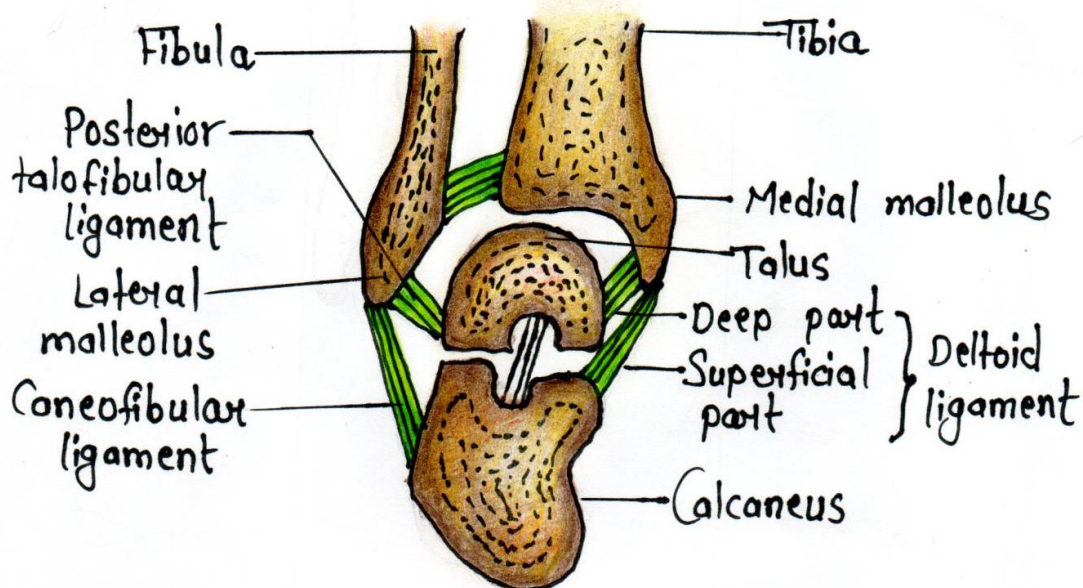
i. PERONEUS LONGUS

ii. PERONEUS BREVIS

BLOOD SUPPLY - ANTERIOR TIBIAL, POSTERIOR TIBIAL, AND PERONEAL ARTERIES.

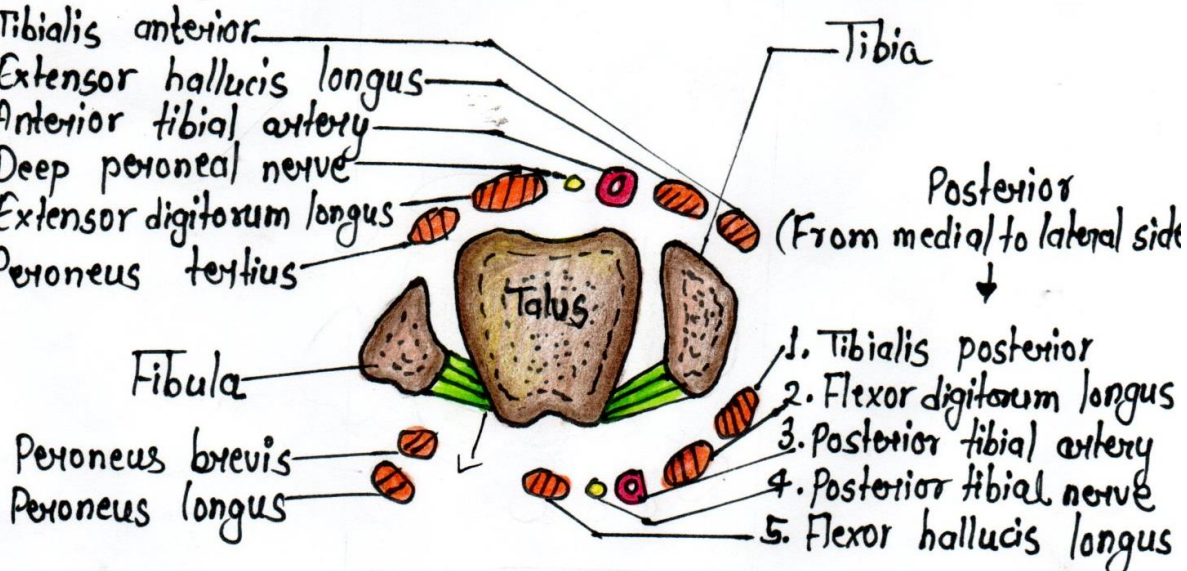
NERVE SUPPLY - DEEP PERONEAL AND TIBIAL NERVES

Interosseous ligament of inferior tibiofibular Syndesmosis



Anterior
(From medial to lateral side)

1. Tibialis anterior
2. Extensor hallucis longus
3. Anterior tibial artery
4. Deep peroneal nerve
5. Extensor digitorum longus
6. Peroneus tertius





STUDY TIPS FOR MAXIMUM MARKS



HOW TO WRITE IN UNIVERSITY EXAM AND HOW TO DRAW DIAGRAMS
ALREADY MENTIONED IN UPPER LIMB

PREVIOUS YEAR UNIVERSITY QUESTIONS

LONG QUESTIONS - 20 MARKS

- 1) DESCRIBE THE ROOT VALUE, COURSE, RELATIONS, BRANCHES AND DISTRIBUTION AND APPLIED ANATOMY OF OBTURATOR NERVE ?
- 2) DESCRIBE THE TYPE OF LIGAMENTS, RELATION, MUSCLES PRODUCING THE MOVEMENTS AND APPLIED ANATOMY OF HIP JOINT ?
- 3) FEMORAL TRIANGLE AND FEMORAL SHEATH & CANAL WITH CLINICAL ANATOMY
- 4) DESCRIBE VENOUS DRAINAGE OF LOWER LIMBS ITS APPLIED ASPECT ?
- 5) DESCRIBE THE TYPE OF LIGAMENTS, MOVEMENTS AND MUSCLES PRODUCING THE MOVEMENTS AND APPLIED ANATOMY OF HIP JOINT ?

SHORTS QUESTION - 5 MARKS

- 1) FEMORAL ARTERY
- 2) FEMORAL NERVE
- 3) ADDUCTOR CANAL
- 4) POPLITEAL FOSSA
- 5) ARCHES OF FOOT
- 6) HAMSTRING MUSCLE
- 7) LOCKING & UNLOCKING OF KNEE
- 8) FLEXOR RETINACULUM OF FOOT

