



Anatomy I Lab . 5

(UOMU013033)

1st term

“lower limb”

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Second Stage
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The lower extremity can be divided into several parts or regions, as follows:

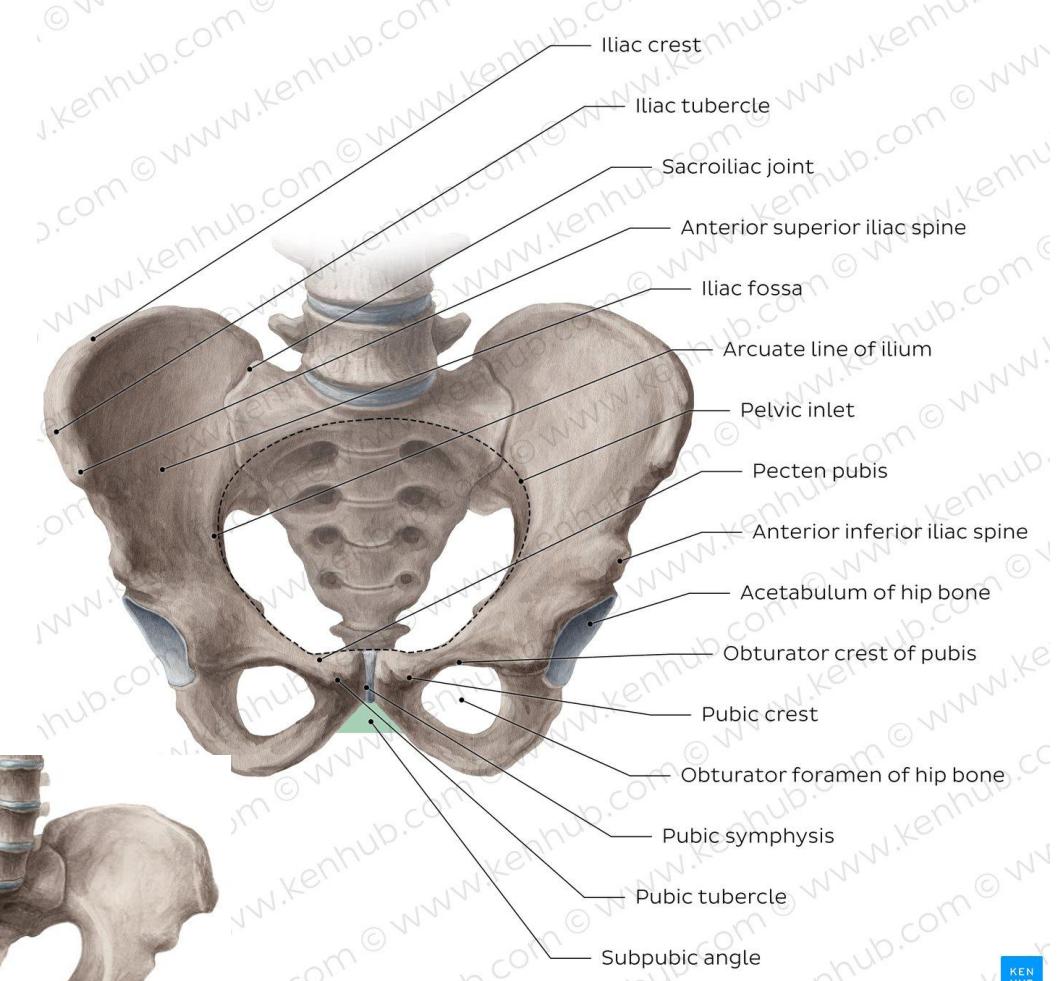
1. Hip
2. Thigh
3. Knee
4. Leg
5. Ankle
6. Foot

Hip and pelvis

Bones

The structural framework of the hip region is provided by the pelvis, a structure composed of the pelvic girdle and the coccyx. In turn, the pelvic girdle consists of two hip bones and the sacrum, interconnected at the pubic symphysis and sacroiliac joints.

Each hip bone has three parts (**ilium**, **ischium**, **pubis**) and accepts **the head of the femur** to form the hip joint. This ball-and-socket joint is responsible for providing the lower extremity with an extensive degree of movement.

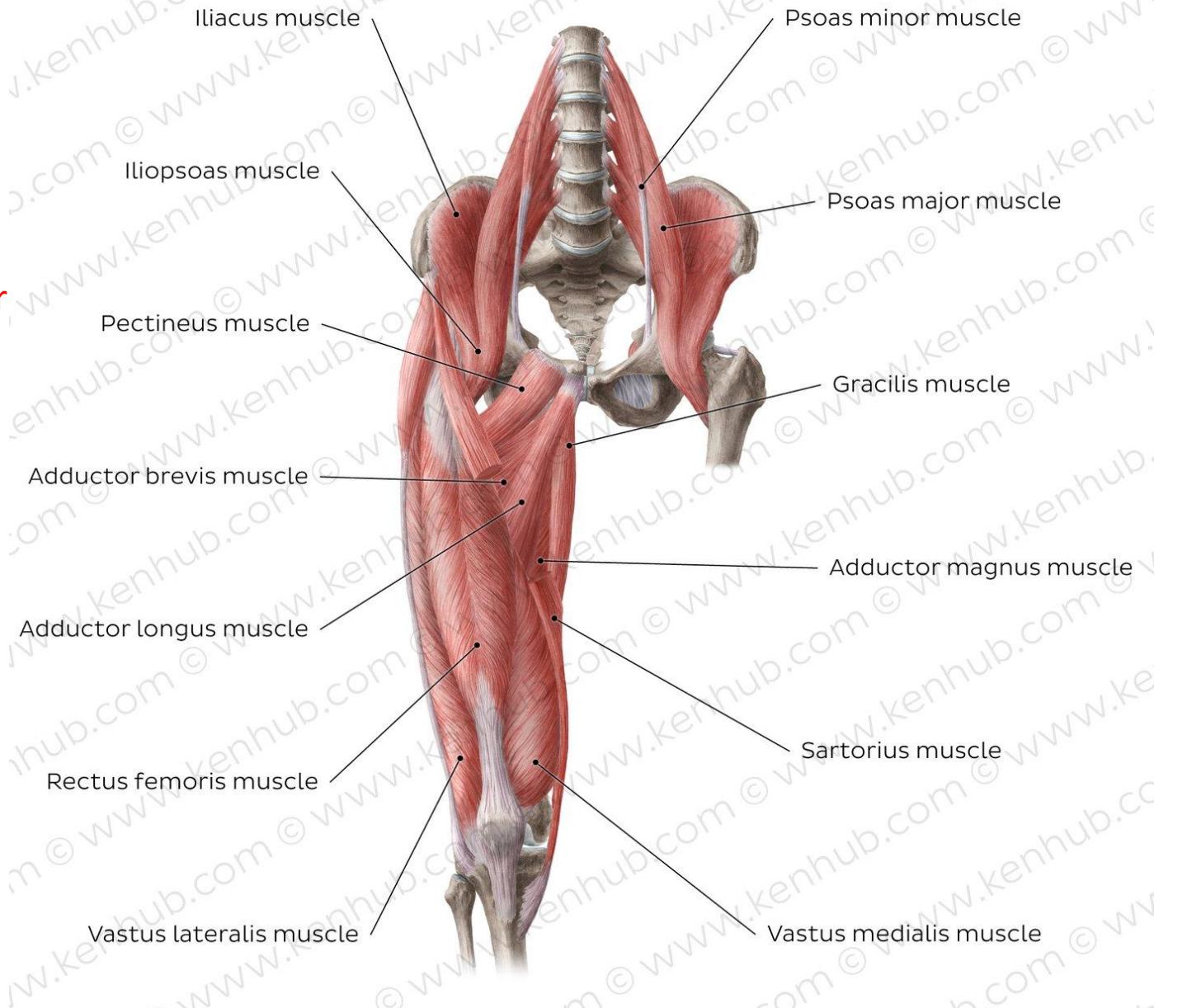


The hip muscles are all the muscles that act on the hip joint.

- the gluteal muscles
- the inner hip muscles.

There are **nine inner hip muscles**, found at the **anterior side** of the pelvis:

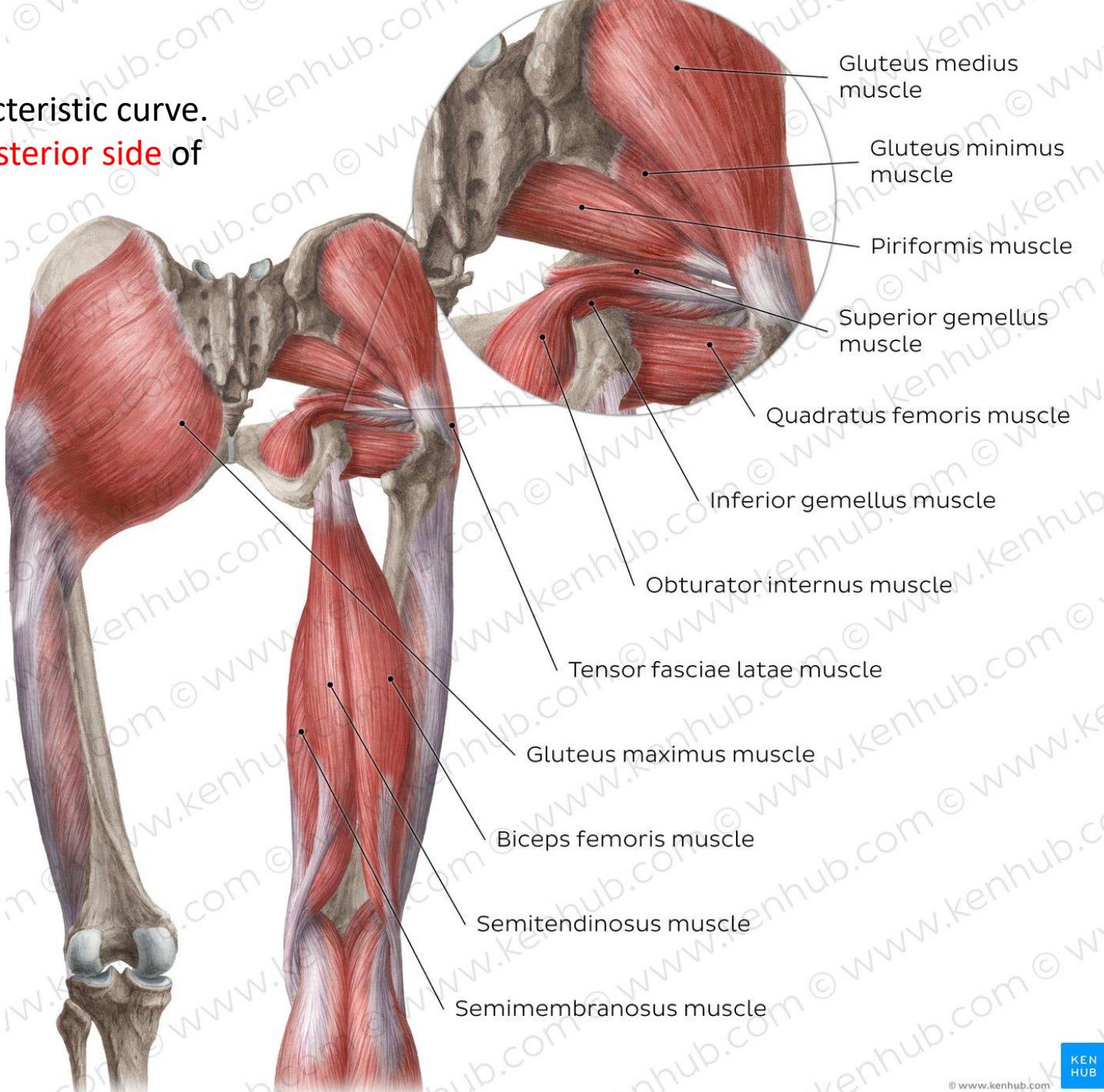
1. iliacus,
2. psoas major
3. psoas minor
4. obturator externus
5. obturator internus
6. Superior gemelli
7. inferior gemelli
8. Piriformis
9. quadratus femoris muscles



The gluteal muscles give the buttocks their characteristic curve.

There are **four gluteal muscles**, located on the **posterior side** of the hip bone:

1. gluteus maximus
2. gluteus medius
3. gluteus minimus
4. tensor fasciae latae



The thigh is the region between the hip and knee joints.

The thigh muscles are divided into three compartments:

Anterior thigh muscles - flexors of the hip joint, extensors of the knee joint

Posterior thigh muscles - extensors of the hip joint, flexors of the knee joint

Medial thigh muscles - adductors of the hip joint

There are **five muscles** in the **anterior** thigh compartment:

1. Sartorius
- the **four quadriceps muscles**
2. rectus femoris
3. vastus medialis
4. vastus lateralis
5. vastus intermedius.



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The quadriceps femoris muscle

There are **three posterior** compartment muscles, also known as the **hamstring muscles**:

1. biceps femoris
2. semimembranosus
3. semitendinosus muscles



Semitendinosus muscle



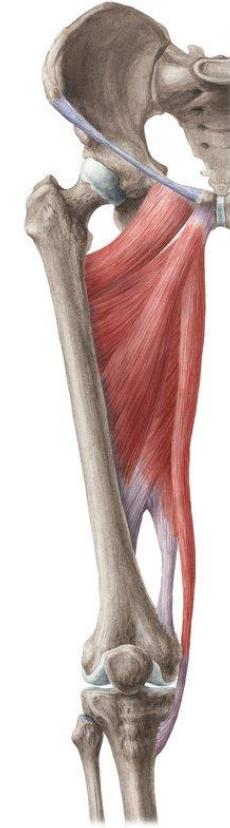
Semimembranosus muscle



Biceps femoris muscle

The **medial** compartment of the thigh is comprised of **six** muscles(**hip adductors**):

1. gracilis
2. pectineus
3. adductor longus
4. adductor brevis
5. adductor magnus
6. obturator externus



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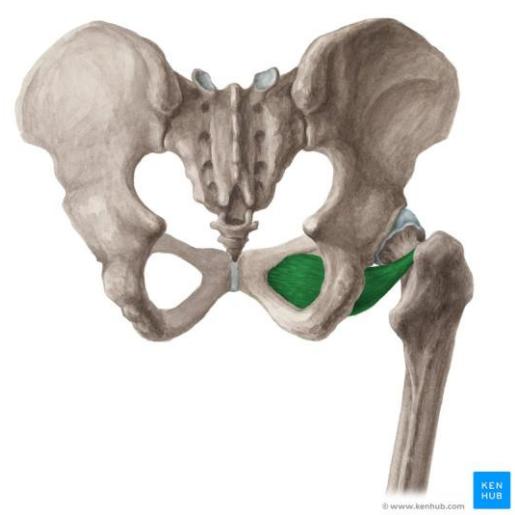
hip adductors muscles



adductor magnus



pectineus



obturator externus



adductor longus



adductor brevis



Gracilis muscle

Basic Nerves of the Leg:

- Medial compartment - Obturator nerve
- Anterior compartment - Femoral nerve
- Posterior compartment - Sciatic nerve

Knee joint

the knee joint is a complex **synovial joint** that connects three bones (the femur, tibia and patella) which together form a pair of articulations:

The tibiofemoral joint, formed between the tibia and the femur.

Patellofemoral joint, formed between the patella and the femur.

is the largest joint of the body, responsible for bearing a considerable amount of biomechanical stress every time we stand or walk



Tibia and fibula

The tibia and fibula are the two long bones of the leg

The tibia is the second largest bone in the body (after the femur)



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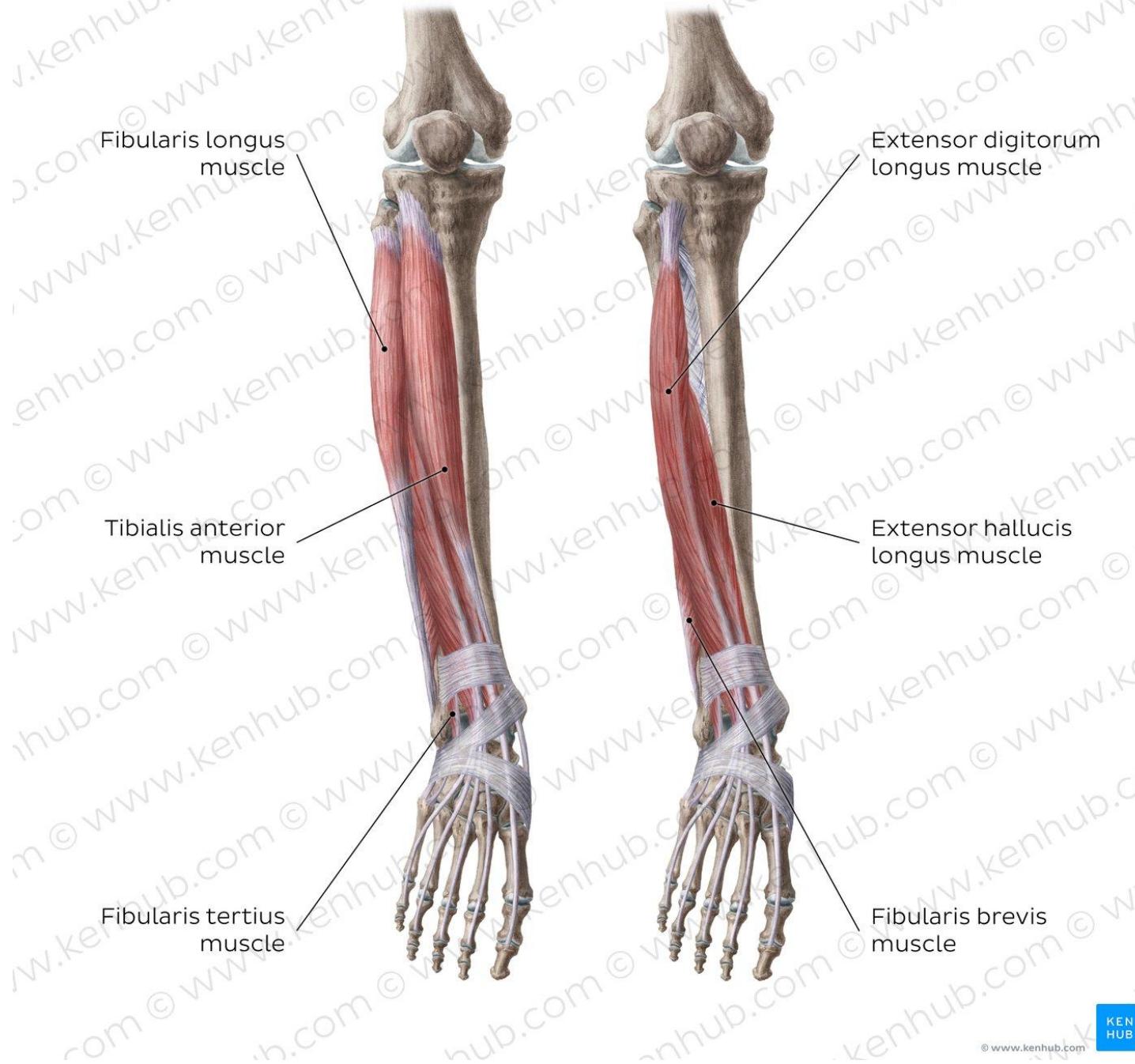


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Muscles of the leg (Anterior view)

Anterior (dorsiflexor) group, which contains

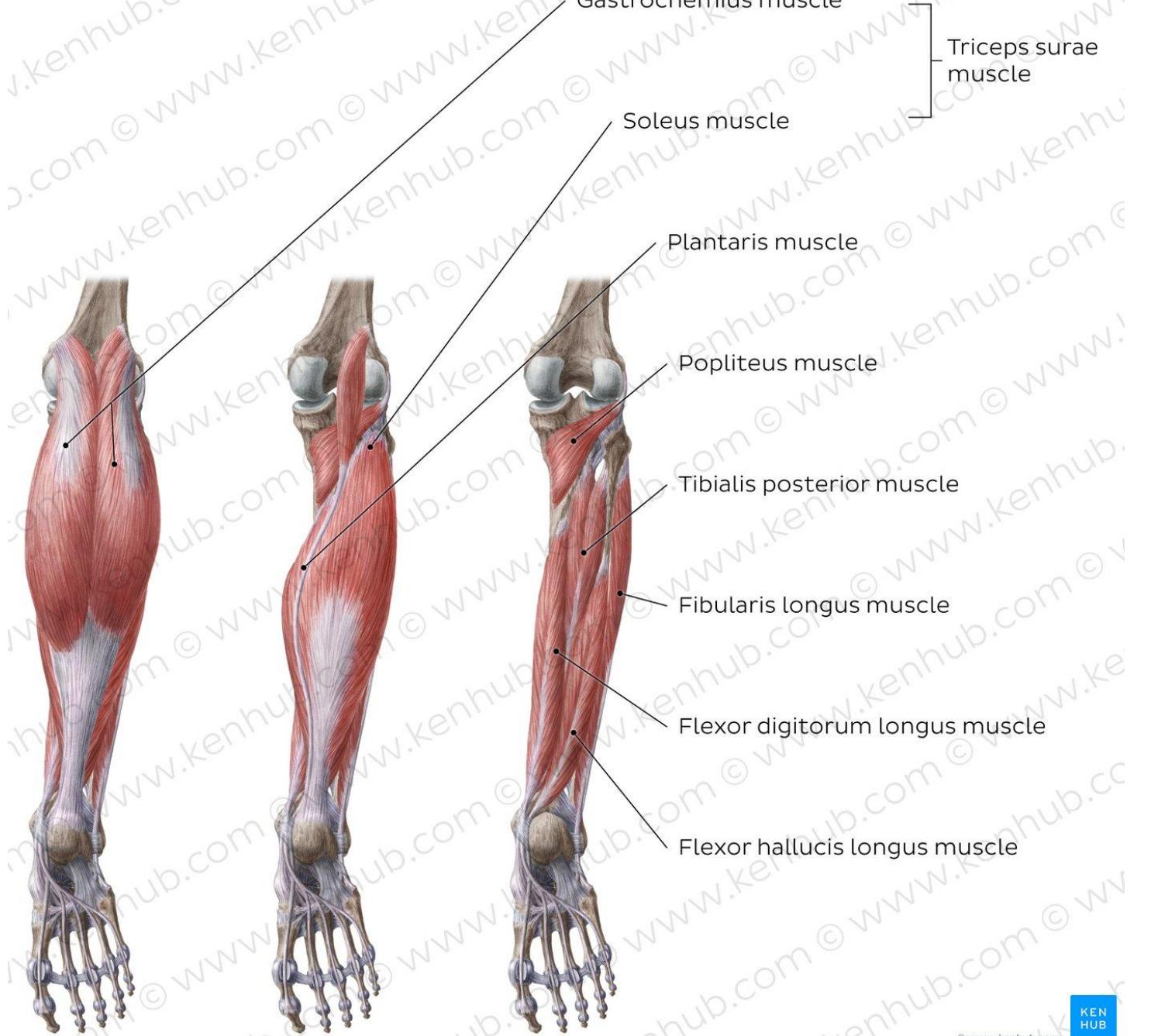
1. the tibialis anterior
2. extensor digitorum longus
3. fibularis tertius
4. extensor hallucis longus.



Muscles of the leg (Posterior view)

Posterior (plantar flexor) group, which consists of a superficial layer comprised of the

1. gastrocnemius,
2. plantaris and
3. soleus,
- and a deep layer comprised of
4. tibialis posterior,
5. flexor hallucis longus,
6. popliteus and
7. flexor digitorum longus muscles.



The lateral (fibular) group, consists of fibularis longus and fibularis brevis.



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Fibularis longus muscle



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Fibularis brevis muscle

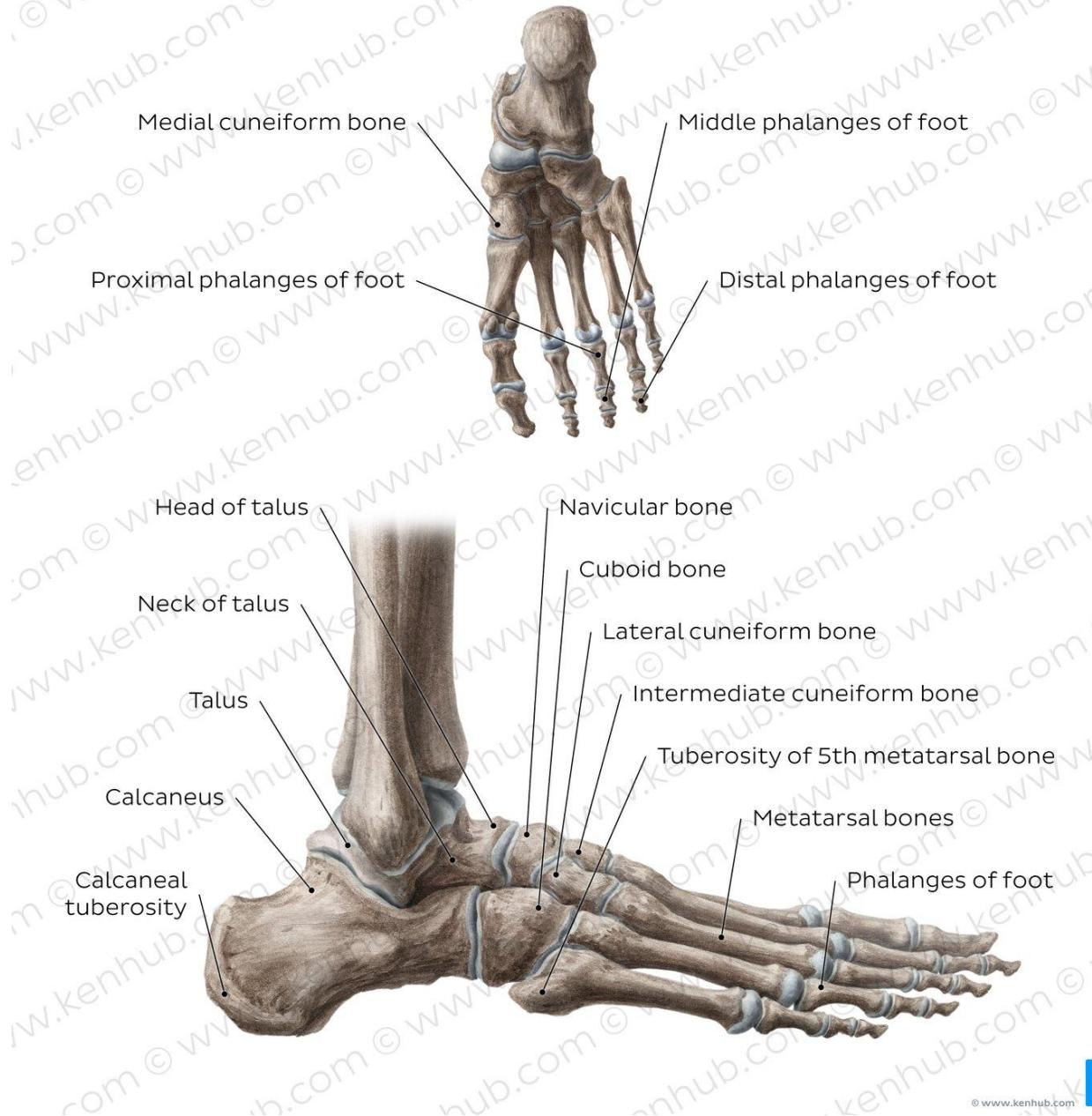
Ankle and foot

The ankle joint is a hinged joint capable of plantarflexion and dorsiflexion. It is composed of three bones: tibia, fibula, and talus (ankle bone).

foot bones (26).

These include the 7 tarsals.

1. calcaneus
2. talus
3. navicular
4. cuboid, cuneiform (three in total) bones, as well as the metatarsals (5), and Phalanges(14).

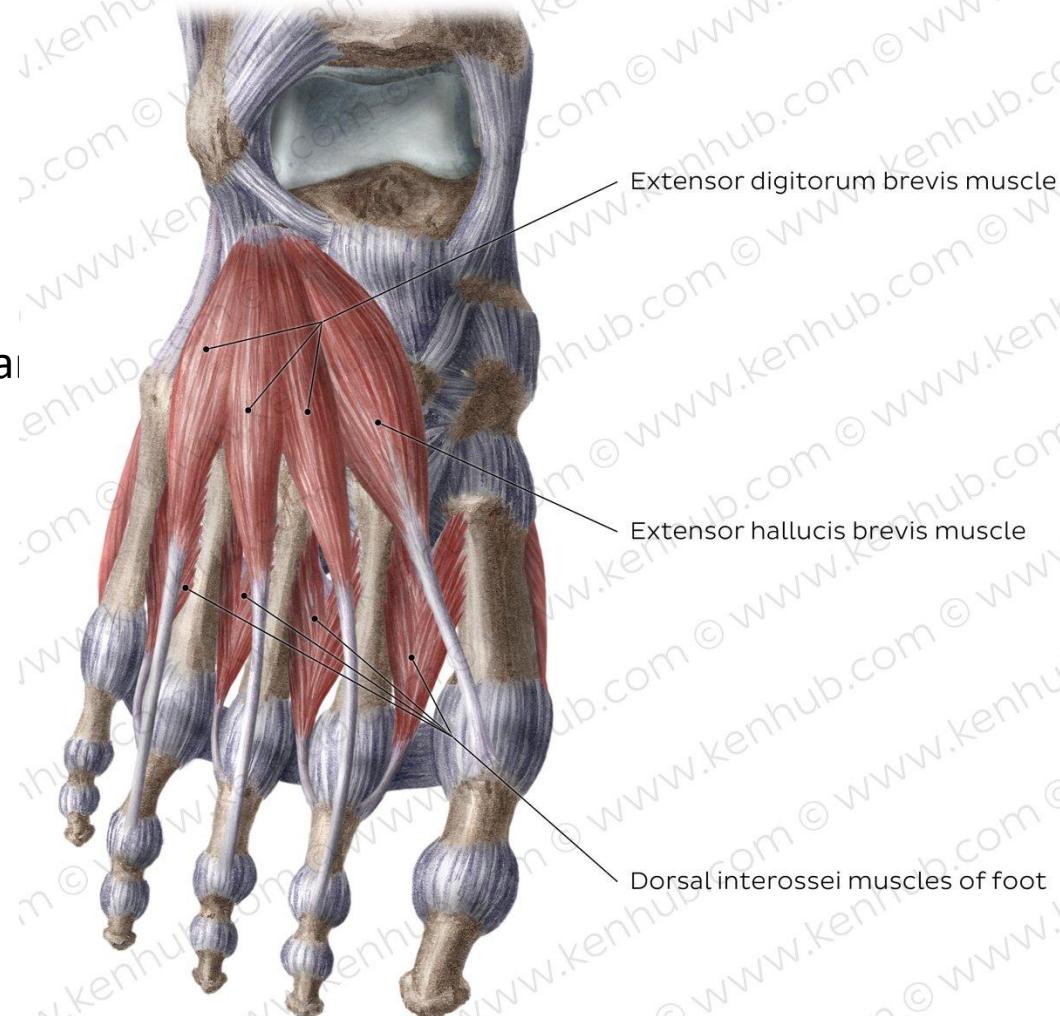


Muscles

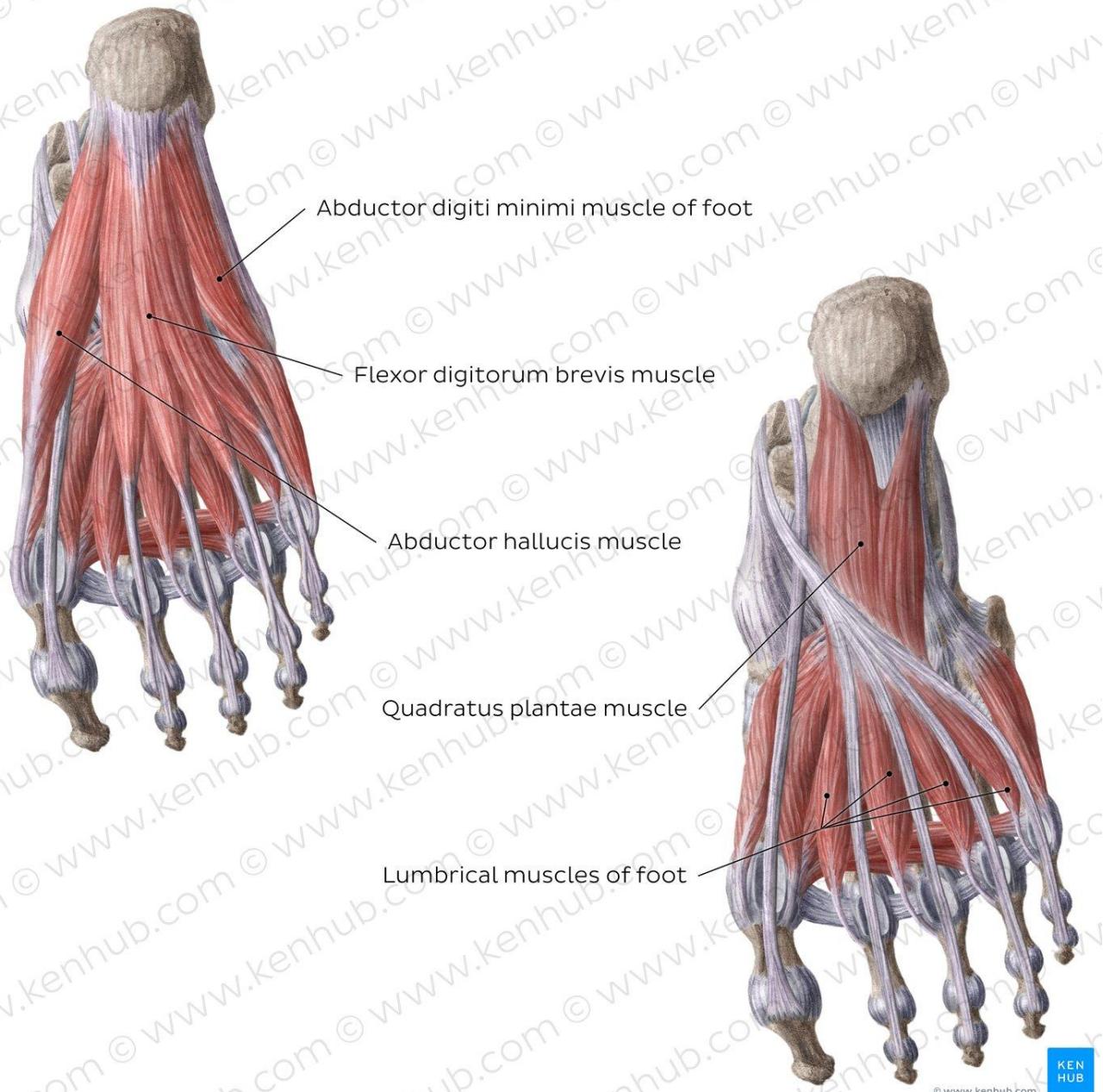
They are divided into **four groups**:

1. central,
2. lateral,
3. medial, and
4. dorsal.

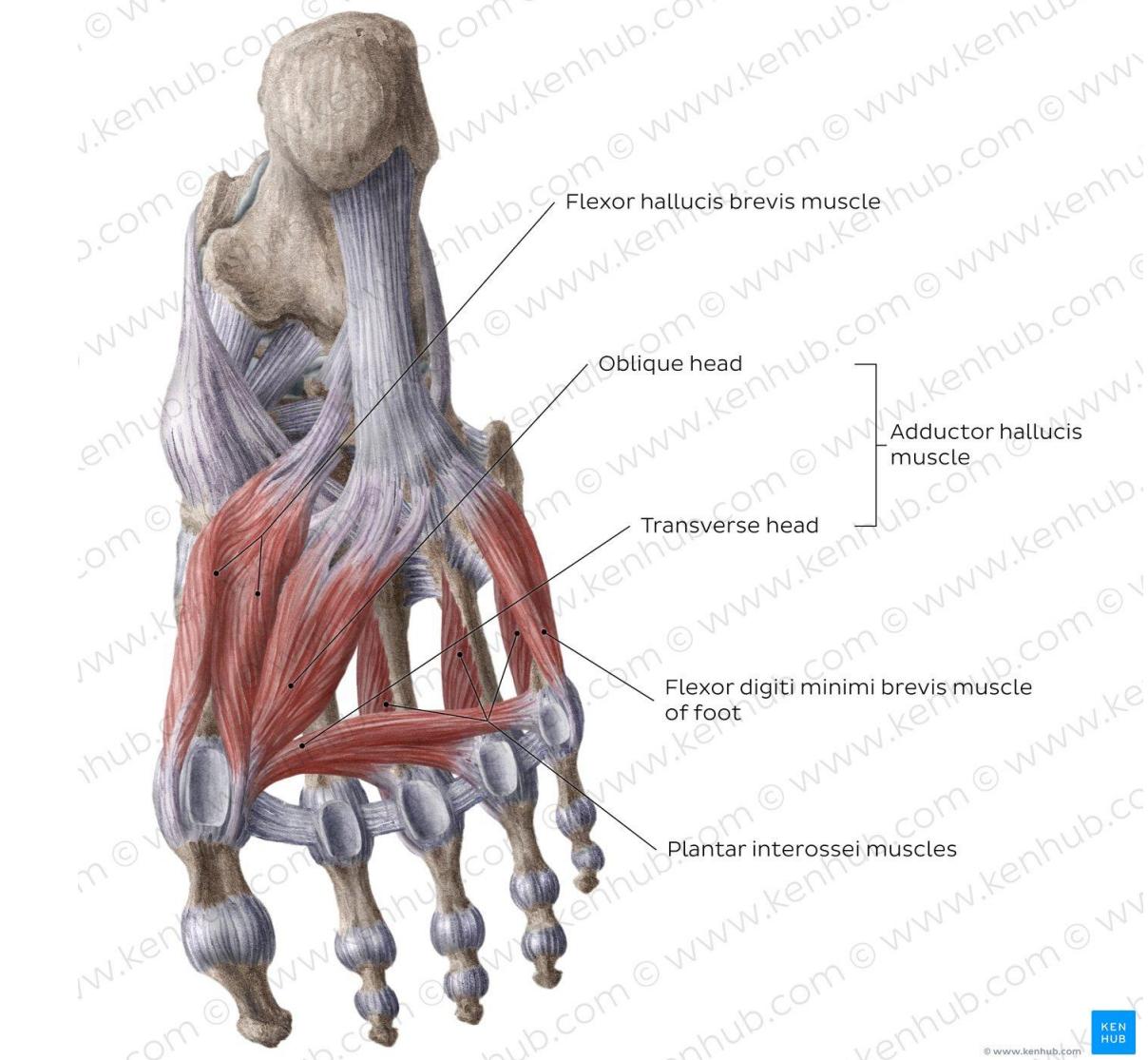
The first three groups are collectively called the **plantar muscles** of the foot because they are located on the plantar aspect.



Dorsal muscles of the foot



1st and 2nd plantar layers of the foot



3rd and 4th plantar layers of the foot