

Introduction to Lower Limb

- The lower limb or extremities are modified in the human body for weight transmission and bipedal locomotion.

Parts of Lower Limb

The lower limb consists of four parts

1. Thigh
2. Gluteal region
3. Leg or crus
4. Foot or pes

Thigh

- It extends from hip to the knee; it includes femur and patella.

Gluteal region

- The gluteal region (*gloutos* = rump in Greek) overlies the back side of pelvis. It extends from iliac crest above and the gluteal fold below. Hip is the superolateral part of gluteal region. Buttock or *naḥīs* is the inferomedial rounded bulge of the gluteal region. Hip bone consists of ilium, ischium, and pubis which are fused at acetabulum. Bony pelvis includes sacrum, coccyx, and two hip bones.

Leg region

- The leg region extends between knee and ankle. The leg consists of tibia and fibula.

Foot region

- The foot is the distal part of the lower limb. It has dorsal or upper surface and lower or plantar surface (sole). Foot provides platform for supporting the body weight when standing and plays a vital role in locomotion.
- Foot consists of 7 tarsals, 5 metatarsals, and 14 phalanges. Five toes project forward from the foot.

Bones of Lower Limb

- Each lower limb consists of the following bones (Fig. 1.1):

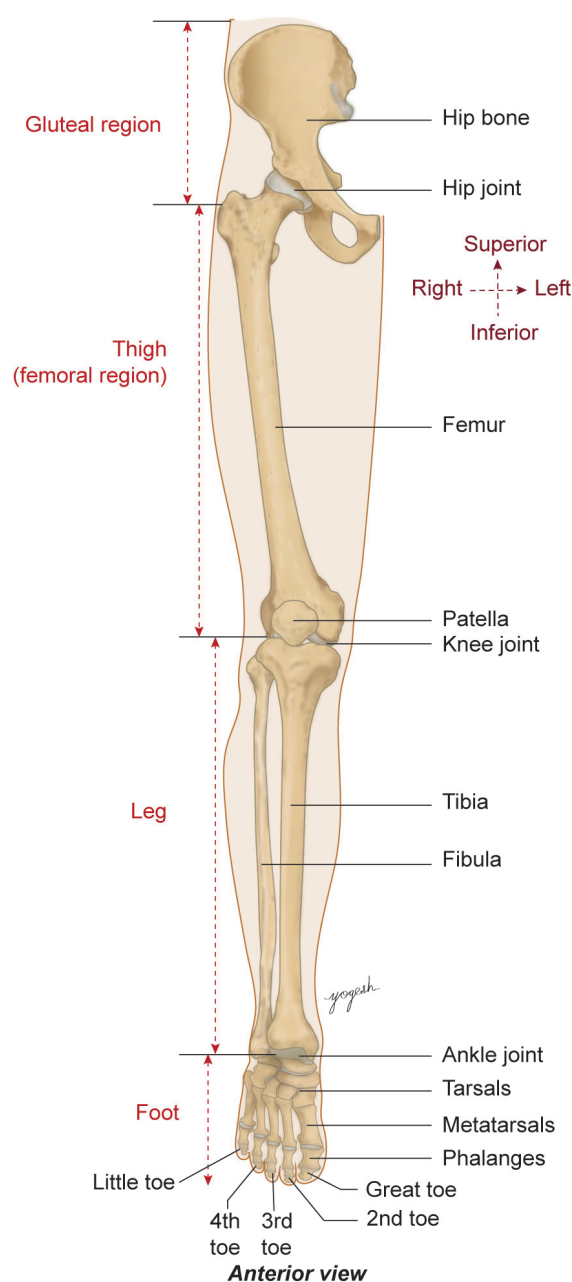


Fig. 1.1: Parts and bones of lower limb (right, anterior view)

Hip bone:	Ilium Ischium Pubis
Bones of thigh	
Femur	1 bone
Patella	1 bone
Bones of leg	
Tibia	1 bone
Fibula	1 bone
Bones of foot	
Tarsals	7 bones
Metatarsals	5 bones
Phalanges	14 bones

JOINTS OF LOWER LIMB

- The bones of lower limb form the following joints:
 - Hip joint
 - Knee joint
 - Tibiofibular joint (superior, middle, and inferior)
 - Ankle joint
 - Subtalar and transverse tarsal joints
 - Tarsometatarsal joints
 - Intermetatarsal joints
 - Metatarsophalangeal joints
 - Interphalangeal joints (proximal and distal)

Muscles of Lower Limb

- Muscles of the lower limb include:
 - Muscles attached to hip bones
 - Muscles of thigh, leg, and foot
- The muscles of thigh are grouped as anterior, posterior, and medial compartments; the muscles of leg are grouped into anterior, posterior, and lateral compartments. The muscles of sole are grouped into four layers (one to four).

Vessels of Lower Limbs

Arteries of lower limbs

- Major arteries of lower limbs include the following:
 - Femoral artery
 - Profunda femoris artery
 - Superior and inferior gluteal arteries
 - Obturator artery
 - Popliteal artery
 - Anterior and posterior tibial arteries
 - Medial and lateral plantar arteries
 - Plantar arch

Veins of lower limb

- Veins of the lower limb are grouped as follows:
 - Superficial veins
 - Long saphenous vein
 - Short saphenous vein
 - Deep veins
 - Femoral vein
 - Popliteal vein
 - Medial plantar vein
 - Lateral plantar vein
 - Dorsalis pedis vein
 - Anterior and posterior tibial veins
 - Peroneal vein
 - Perforating veins

They connect the superficial veins with the deep veins.

Innervations (Nerve Supply) of Lower Limb

- Lower limb is supplied mainly by the following nerves:
 - Femoral nerve
 - Obturator nerve
 - Superior and inferior gluteal nerves
 - Sciatic nerve
 - Tibial nerve
 - Common, superficial, and deep peroneal nerves
 - Medial and lateral plantar nerves