

Tikrit University

College of Nursing

Basic Nursing Sciences



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Anatomy

First stage

عنوان المحاضرة

Lower limb arteries and Veins

by:

Asst. Lecturer:

Saif Mohammed Fanar

Lower limb arteries and Veins:

Femoral Artery:

The largest and most significant artery that brings oxygenated blood to the entire lower extremity is the femoral artery. It gives off several branches throughout the thigh which supply the skin of the inguinal and the external genital areas, as well as some muscles of the thigh.

These branches include :

1. superficial epigastric artery.
2. superficial circumflex iliac artery.
3. superficial external pudendal artery.
4. deep external pudendal artery.
5. deep femoral artery.
6. descending genicular artery.

Hip and thigh:

In addition to the femoral artery, there are several other important ones traveling through the hip and thigh:

1. Superior and inferior gluteal artery.
2. Obturator artery.
3. Deep femoral artery.
4. Descending genicular arteries.

The two gluteal arteries stem from the internal iliac arteries and supply blood to the piriformis, quadratus femoris, and gluteal muscles. In addition, they also supply the skin over the upper thigh and gluteal regions.

The obturator artery also originates from the internal iliac artery and supplies the adductor muscles of the thigh. As you've seen previously, the deep femoral and descending genicular arteries originate directly from the femoral artery. They supply several muscles of the thigh and gluteal regions, as well as the knee joint, respectively.

Knee and leg Continuing further down the lower extremity, we reach the arteries of the knee and leg:

1. Popliteal artery.
2. medial and lateral superior genicular artery.
3. medial and lateral inferior genicular.
4. tibial (anterior and posterior) artery.
5. anterior malleolar (medial and lateral) artery.
6. Fibular or peroneal arteries.

The popliteal artery is a direct continuation of the femoral artery carrying blood further down the lower limb. In the knee, it gives off the superior and inferior genicular arteries which wrap around this region and supply it with blood.

The popliteal artery then splits into the anterior and posterior tibial arteries that travel all the way towards the foot. The anterior tibial artery is the main blood supply for the anterior compartment of the leg. The posterior tibial artery supplies oxygenated blood to structures of the leg, such as the tibia , medial malleolus, and calcaneus with its surrounding muscles.

In addition, it supplies a large number of leg muscles via its important branch, the fibular artery. Ankle and foot Continuing further down the leg, we meet the ankle and foot. The ankle joint is supplied by the anterior and posterior malleolar arteries, together with their branches.

When it comes to the arteries of the foot, there are several important candidates:

1. dorsalis pedis artery (dorsal artery of the foot).
2. plantar arteries (medial and lateral).
3. tarsal arteries (medial and lateral).
4. arcuate artery.
5. dorsal metatarsal arteries.
6. deep plantar arch, and plantar metatarsal arteries.

Within the foot, the anterior and posterior tibial arteries continue as the dorsalis pedis artery and the plantar arteries, respectively. The plantar arteries supply the skin and muscles of the

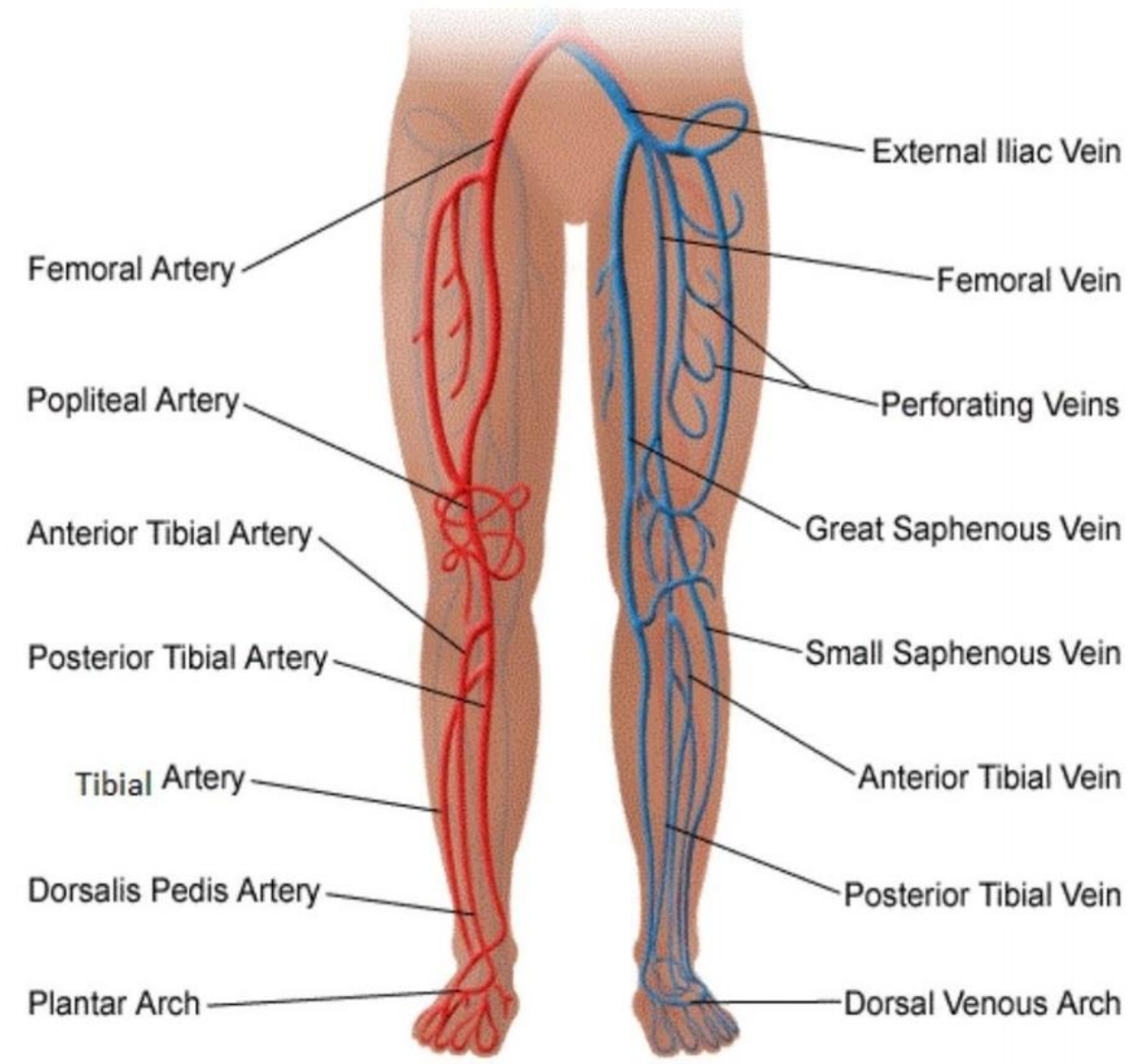
lateral and medial sides of the foot. The tarsal, arcuate, and dorsal metatarsal arteries all stem from the dorsalis pedis artery.

They supply the metatarsals, extensor digitorum brevis muscle, and the structures of the medial side of the foot. The dorsal metatarsal arteries also supply the toes via their branches called the dorsal digital arteries. The deep plantar arch supplies the structures of the sole, or underside of the foot, as well as the toes via branches named plantar metatarsal arteries. Veins The venous drainage of the lower limb can be divided into superficial and deep systems. As you know, venous drainage happens in the opposite direction compared to the arterial blood supply.

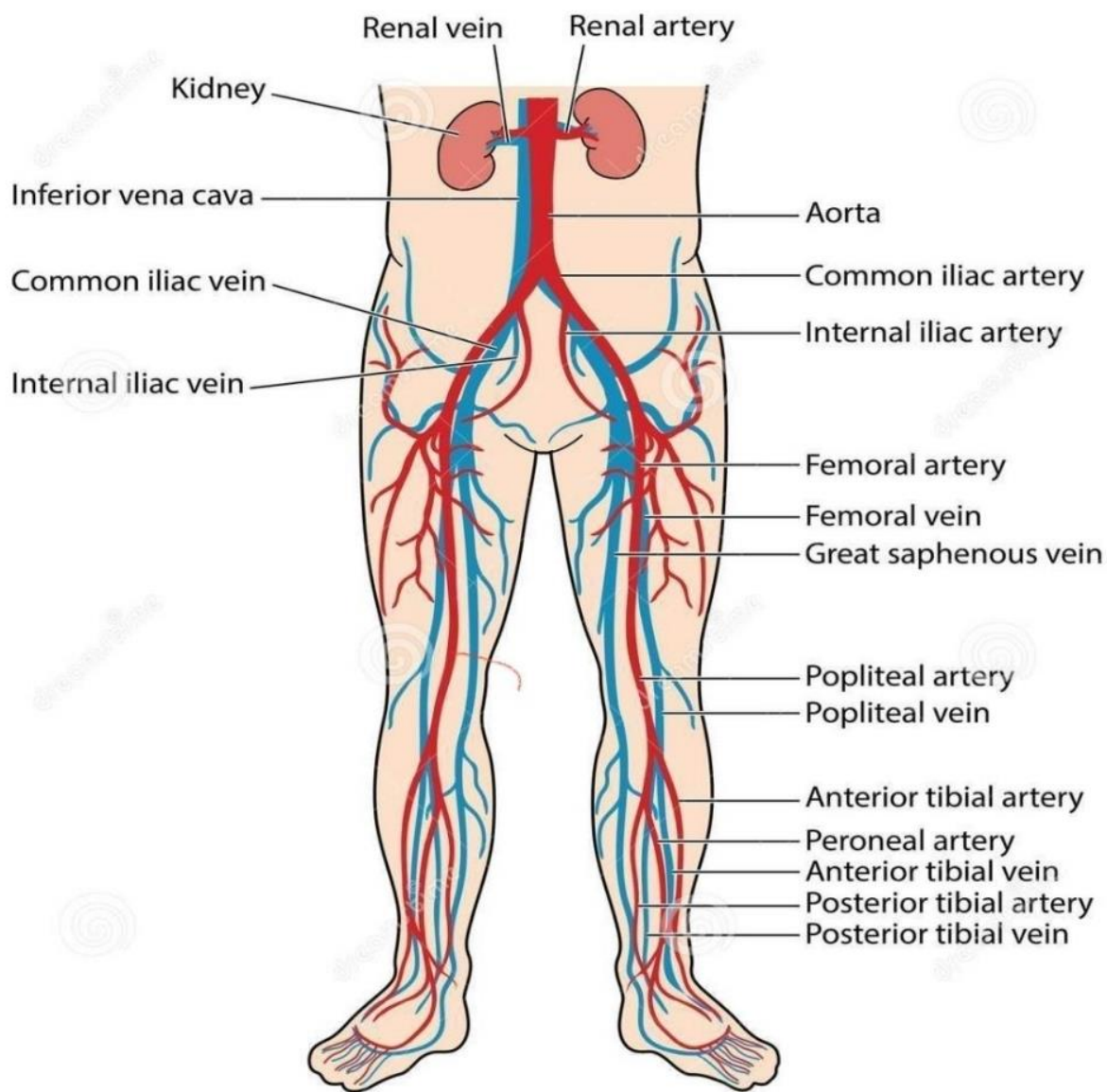
Starting from the foot, the superficial system begins with the superficial dorsal and plantar venous networks, together with the marginal and metatarsal veins. These veins drain from one into another, ultimately ending up in one of the two saphenous veins: small saphenous or great saphenous vein.

The small/short saphenous vein ascends along the posterior leg, ultimately draining into the popliteal vein located within the popliteal fossa. The great/long saphenous vein travels along the medial leg, but continues along the thigh as well, opening into the femoral vein. The great saphenous vein also receives blood from the small saphenous along its course. As the name implies, the deep venous system is located deeper within the lower limb than the superficial one. In the foot, it starts with the digital and metatarsal veins that drain into the corresponding deep plantar and dorsal venous arches.

These drain into larger veins that closely follow the course of the similarly named arteries. From here, the veins of the leg and thigh mirror the arteries.



Arteries and veins of the lower limb



Blood vessels of the lower limb and abdomen region