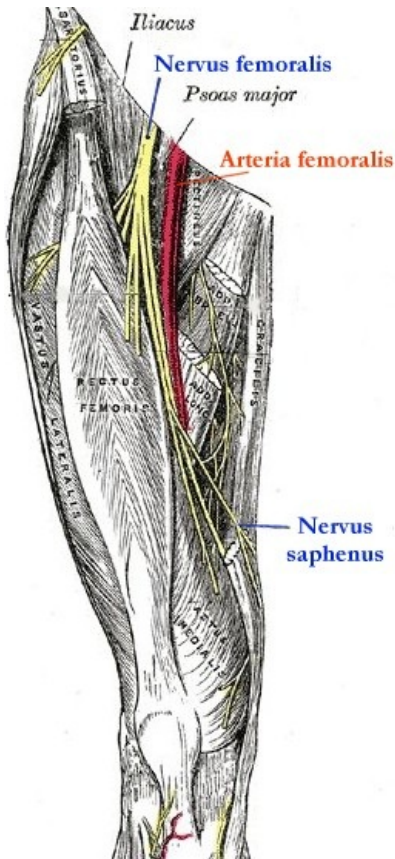


Vessels of the lower limb

The arteries of the lower extremity are branches of a. iliaca externa, which arises from the division of a. iliaca communis in the pelvis. A. iliaca externa passes into the inguinal region through **lacuna vasorum**, where it lies lateral to v. iliaca externa and medial to r. femoralis nervi genitofemoralis. Passing through the lacuna vasorum into the fossa iliopectinea, the external iliac artery turns into a. femoralis, which then branches into five main arteries.



Topography of the front of the thigh with a. femoralis and n. femoralis

The veins of the lower limb can be divided into deep veins running mostly in pairs along the arteries of the same name, and superficial veins.

Artery of the lower limb

Branches of a. femoralis

- **Aa. pudendae externae** – artery supplying the external genital area.
- **A. epigastrica superficialis** – branch for the surface layer of the abdominal wall in the range of m. rectus abdominis.
- **A. circumflexa ilium superficialis** – it rises in the subcutaneous tissue upwards along ligamentum inguinale to spina iliaca anterior superior.
- **A. descendens genus** – the longest branch of a. femoralis, which departs in canalis adductorius, together with v. saphena magna and n. saphenus pierces membrana vastoadductoria and supplies the knee joint (forms rete articulare genus).
- **A. profunda femoris** – a very strong branch that descends to the depth of fossa iliopectinea and gives off branches that participate in the supply of the ventral and dorsal side of the thigh and the hip joint.
 - **A. circumflexa femoris medialis** – turns medially and dorsally, supplying adductors, pelvitrochanteric muscles and hip joint.
 - **A. circumflexa femoris lateralis** – twists laterally and dorsally, participates in the majority of the supply of the quadriceps femoris muscle.
 - **Aa. perforantes** – 3 branches successively breaking through m. adductor magnus and nourishing the muscles of the dorsal group (m. biceps femoris, m. semimembranosus et m. semitendinosus).

A. poplitea and its branches

A. femoralis continues together with the vein of the same name caudally in the trigonum femorale, passing gradually into canalis adductorius. The artery initially runs laterally from the vein, but in the course of canalis adductorius of the vein it passes and enters medially and dorsally. After passing through hiatus adductorius, it

turns into a popliteal artery.

A. poplitea is therefore a continuation of the a. femoralis from the mouth of hiatus adductorius to the upper edge of the soleus muscle, where it branches into the **a. tibialis anterior et posterior**. During the course in regio poplitea, the vessel is located close to the capsule of the knee joint, ventromedially from the vein of the same name. The nerves running most laterally and superficially – n. tibialis and n. fibularis communis.

Apart from the tibial artery, the popliteal artery also gives off branches for the knee joint - *a. superior medialis genus*, *a. superior lateralis genus*, *a. media genus*, *a. inferior medialis genus*, *a. inferior lateralis genus* - together with a. genus descendens form rete articulare genus.

Aa. tibiales

Aa. tibiales (anterior et posterior) they arise at the upper edge of the soleus muscle by the division of the popliteal artery.

1. **A. tibialis posterior** – is a free continuation of the popliteal artery along the back of the lower leg, runs under arcus musculi solei, is taken into the deep sheet of the fascia of the lower leg between the superficial and deep muscle groups. It gradually turns behind the inner ankle, where it is covered by retinaculum musculorum flexorum, accompanied by 2 veins and lying dorsal to m. flexor digitorum longus. As it passes through canalis malleolaris, it branches into the main branches of the plantar - a. plantaris medialis et lateralis
 - r.circumflexus fibularis
 - rr.malleolares mediales
 - rete malleolares mediales
 - rr.calcanei
 - a.nutricia tibiae
 - **A. fibularis** – the branch of the a. tibialis posterior, which splits off during its course under arcus musculi solei and runs in Hyrtl's musculofibular canal (between m. flexor hallucis longus and the fibula), mainly supplies the ankle joint.
- A) r.perforans
- B) r.communicans
- C) rr.malleolares laterales
- D) a.nutricia fibulae
- **A. tibialis anterior** – runs above membrana interossea and runs ventrally, gradually joins n. fibularis profundus coming from the lateral side of the lower leg, gives off branches for rete maleolare mediale et laterale and terminal branches for the dorsum pedis - a. dorsalis pedis et a. arcuata.
 - **1. a.tarsalis lateralis** - collum tali
 - **2.a.tarsalis medialis** - from the medial surface of the artery to the inner edge of the leg
 - **3.a.arcuata**
 - **4.aa.metatarsales dorsales** -4 branches
 - **5.aa.digitales dorsales** - to the adjacent surfaces of two adjacent fingers
 - **6.a.plantaris profunda** - it gets on the foot

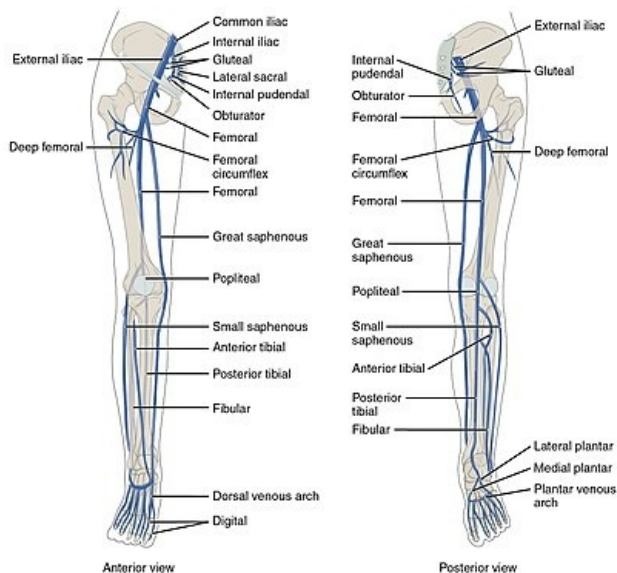
Leg arteries

The arteries of the leg are the final branches of the a. tibialis anterior et posterior.

- **A. plantaris medialis** – the weaker of the terminal branches of the a. tibialis posterior, runs together with the n. plantaris medialis along the plantar side of the thumb muscles.
 - **R. superficialis** – supplies the medial side of the leg (runs along m. adductor hallucis) and continues as the a. digitalis plantaris hallucis.
 - **R. profundus** –branch for the deep muscles of the leg (mm. interossei), contributes to the arcus plantaris.
- **A. plantaris lateralis** – the stronger of the final branches of the a. tibialis posterior, together with the n. plantaris lateralis runs between the m. flexor digitorum brevis and m. quadratus plantae, continues along the muscles of the little finger, plunges deep and forms the arcus plantaris.
 - **Arcus plantaris** – arterial arch running under the m. adductor hallucis, gives off aa. metatarsales plantares (4 arteries along the interosseous spaces) which continue as **aa. digitale plantares communes** to the metatarsophalangeal joints, where it divides into 2 **aa. digitales plantares propriae** for toes.
- **A. dorsalis pedis** – the final branch of a. tibialis anterior on the back of the leg going over the first metatarsal space, on the back it sends **a. tarsalis medialis**, **aa. tarsales laterales** and strong **a. arcuata**.
 - **A. arcuata** – an arched, laterally twisting vessel, supplies the back of the foot and the toe.
 - **Aa. metatarsales dorsales** – 4 arteries above the interosseous spaces, each giving off 2 aa. digitales dorsales for the toes.
 - **R. plantaris profundus** – branch from a. metatarsalis dorsalis I, which penetrates deep

through the first metatarsal space and anastomoses with the arcus plantaris.

Veins of the lower limb



Venous system of the lower limb

Superficial veins

- **Rete venosum dorsale pedis** – venous plexus collecting blood from the back of the leg and from the plantar through connections from the rete venosum plantare, from the medial side of the plexus v. saphena magna is formed, from the lateral side v. saphena parva.
- **V. saphena magna** – the main superficial vein of the lower limb, runs together with the saphenous nerve in front of the inner ankle, continues to rise in the subcutaneous tissue along the ventromedial side of the lower leg, knee (behind the inner condyle) and thigh, in the area of the trigonum femorale it pierces the fascia lata at the so-called hiatus saphenus and flows into fossa iliopectinea to v. femoralis. Even before the mouth, it collects the veins of the thigh, genitals and abdomen - v. *saphena accesoria*, vv. *pudendae externae*, v. *epigastrica superficialis* et v. *circumflexa ilium superficialis* (these veins are arranged radially and form the so-called **Cockett's star**).
- **V. saphena parva** collects from the lateral side of the rete venosum dorsale pedis, passes in the subcutaneous tissue behind the outer ankle and turns together with the suralis nerve to the back of the lower leg, pierces the superficial fascia in the area of the popliteal fossa and flows into the popliteal vein, variably increases from above the femoropopliteal vein draining blood from the dorsal side of the thigh.

Deep veins

Often doubled veins (on the lower leg) accompanying the arteries of the same name, have numerous connections with each other and with superficial veins (using perforators), which is of great importance in the pathogenesis of varicose veins, or deep vein thrombosis.

- **V. poplitea** – it is located dorsolaterally from the artery of the same name, receives the v. saphena parva, runs upwards from the arcus musculi solei to the hiatus adductorius, where it passes into the femoral vein.
- **V. femoralis** – it continues from the adductor hiatus laterally and dorsally to the artery, in the course of the canalis adductorius it gradually reaches behind the artery and to its medial side, in the fossa iliopectinea the superficial veins (v. saphena magna and Cockett's star veins) flow into it, it passes through the lacuna vasorum medially from the artery at lig. lacunare and passes smoothly in v. iliaca externa.

Links

Related articles

- Varicose veins of the lower limb
- Chronic venous insufficiency
- Thromboembolic disease
- Diagnostic imaging methods in the examination of peripheral vessels
- Vessels of the upper limb
- Lymphatic drainage of the limbs

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- GRIM, Miloš – DRUGA, Rastislav. *Základy anatomie. 5., Anatomie krajín těla. 1.* edition. Galén : Karolinum, 2002. ISBN 80-7262-179-3.