

Peroneal Nerve

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Also see p. PN5 >>

CPN is formed at the bifurcation of the sciatic nerve, usually at the junction of the upper two thirds and lower third of the posterior compartment of the thigh. The sciatic nerve arises from the sacral plexus and contributes fibers from the L4, L5, S1, and S2 spinal nerves to the CPN. After separation from the sciatic nerve, the CPN gives off two minor branches, the lateral sural cutaneous nerve and an articular nerve to the knee. The CPN continues obliquely along the lateral side of the popliteal fossa, medial to the tendinous insertion of the biceps femoris muscle and lateral to the lateral head of the gastrocnemius muscle. The nerve descends across the plantaris muscle and then curves around the lateral aspect of the fibular neck approximately 1 to 2 cm distal to the fibular head, where it is fixed to the bone by connective tissue. In this area the CPN is rather superficial and vulnerable to injury.

CPN then pierces the tendinous origin of the peroneus longus and enters a confined space bound medially by the periosteum of the fibula and laterally by the peroneus longus, sometimes referred to as the peroneal tunnel. This tunnel is the major site of entrapment of the CPN. Division of the CPN into the superficial peroneal nerve (SPN) and deep peroneal nerve (DPN) occurs within the peroneus longus muscle.

DPN pierces the lateral intermuscular septum to enter the anterior compartment. It courses inferiorly with the tibial artery and vein along the anterior aspect of the interosseous membrane. This nerve provides innervation to the muscles of the anterior compartment, namely, the tibialis anterior, extensor digitorum longus, extensor hallucis longus, and peroneus longus. Thus, the DPN is responsible for ankle dorsiflexion, ankle eversion, and toe extension. The DPN terminates in the dorsum of the foot into a lateral branch that innervates the extensor digitorum brevis and a medial branch that provides cutaneous innervation of the first web space.

SPN descends in the lateral compartment and provides innervation to the peroneus longus and brevis muscles, as well as sensory branches providing cutaneous innervation to the distal lateral aspect of the calf. In the distal part of the calf, the SPN pierces the fascia and divides into the medial and intermediate dorsal cutaneous nerves, which provide sensory innervation to the dorsum of the foot.

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