

Labyrinthine artery

The labyrinthine [artery](#), also known as the [auditory artery](#) or [internal auditory artery](#), is a long and slender artery that is the main arterial supply to the vestibular apparatus and [cochlea](#). It also vascularizes the VII and VIII cranial nerves.

It usually originates from the [AICA](#) (~85%), although it can also branch from the [basilar artery](#) (~15%), [vertebral artery](#) (~5%) or even [superior cerebellar artery](#).

From its origin, it accompanies the vestibulocochlear nerve and passes into the internal acoustic meatus where it divides into two branches:

anterior vestibular artery

common cochlear artery, which further divides into

proper cochlear artery

vestibulocochlear artery: gives of a vestibular ramus and a cochlear ramus

The labyrinthine artery (auditory artery, internal auditory artery), a long slender branch of the [anterior inferior cerebellar artery](#) (85%-100% cases) or [basilar artery](#) (<15% cases), arises from near the middle of the artery; it accompanies the [vestibulocochlear nerve](#) through the [internal acoustic meatus](#), and is distributed to the [internal ear](#).

Spasm is thought to be one of the causes of postoperative sensory hearing loss after attempted hearing preservation removal of an [vestibular schwannoma](#). The use of topical [papaverine](#), a nonspecific vasodilator, to prevent vascular insufficiency to the inner ear and to improve hearing outcomes has been suggested but not proven.

An animal model of vasospasm was described. Mechanically induced vasospasm was prevented by the topical application of papaverine. These findings have clinical implications for surgical procedures involving the internal auditory canal/cerebellopontine angle such as [vestibular schwannoma](#) removal¹⁾.

¹⁾
Morawski K, Telischi FF, Merchant F, Namyslowski G, Lisowska G, Lonsbury-Martin BL. Preventing internal auditory artery vasospasm using topical papaverine: an animal study. Otol Neurotol. 2003 Nov;24(6):918-26. PubMed PMID: 14600475; PubMed Central PMCID: PMC1769327.

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Last update: **2024/06/07 02:59**

