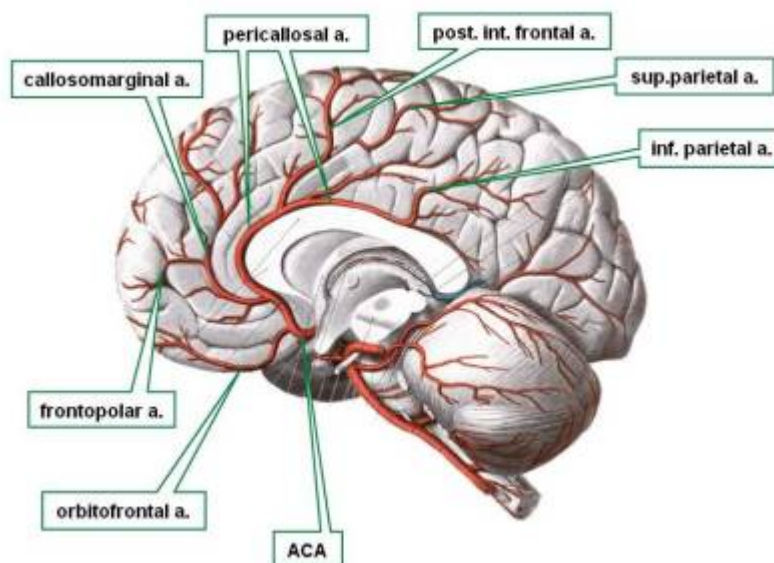


Anterior Cerebral Artery (ACA)



The anterior [cerebral artery](#) extends upward and forward from the [internal carotid artery](#) (ICA).

Segments

[Anterior Cerebral Artery Segments.](#)

Branches

1. [Recurrent artery of Heubner](#): 80% arise from A1 (one of the larger medial lenticulostriates, remainder of lenticulostrates may arise from this artery head of caudate, putamen, and anterior internal capsule)

2. [Medial orbitofrontal artery](#)

3. [Frontopolar artery](#)

4. [Callosomarginal artery](#)

A. internal frontal branches 1. anterior 2. middle 3. posterior

5. [Pericallosal artery](#)

Territory

[Anterior cerebral artery territory.](#)

Supply

It supplies the frontal lobes, the parts of the brain that control logical thought, personality, and voluntary movement, especially of the legs.

Pathology

see [Anterior cerebral artery infarct](#).

see [Anterior cerebral artery aneurysm](#).

Description of the anterior cerebral artery and its cortical branches: Variation in presence, origin, and size

Certain aspects of the anterior cerebral artery (ACA) cortical branches tend to vary, including absent or additional arteries, variation in origin, and changes to diameter and length. Knowledge of these factors can be crucial in aneurysm and arteriovenous malformation surgery. Few studies report on these aspects and a South African study have not been completed. Therefore, the aim of this study is to report absent or additional arteries, the origin, diameter and length of ACA cortical branches in a Western Cape population.

A coloured silicone was injected into the ACA of 121 hemispheres (60 right, 61 left), consisting of 83 males and 38 females. Specimens were divided in groups younger than 34 (n=36), between 35 and 48 (n=35), older than 49 (n=40), and unknown (n=10). There were three population groups; coloured (n=72), black (n=37), white (n=10), and unknown (n=2). Any absent or additional arteries were noted, as well as the origins. External diameter and lengths were measured using a digital micrometre, string and a ruler.

The diameter and lengths indicated significant differences between right and left, sex, age and population groups. Most commonly absent (callosomarginal artery) and additional (paracentral lobule artery) arteries were noted. Origins were similar to the literature; however, previously unreported origins and common trunks were also observed.

The aspects reported have been neglected in previous work and neurosurgeons should be aware of these variations and anomalies to avoid complications. Studies should continue to assess the cerebral vasculature since undocumented variations are still being reported ¹⁾.

¹⁾

Cilliers K, Page BJ. Description of the anterior cerebral artery and its cortical branches: Variation in presence, origin, and size. Clin Neurol Neurosurg. 2016 Dec 2;152:78-83. doi: 10.1016/j.clineuro.2016.11.024. [Epub ahead of print] PubMed PMID: 27936431.

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