Arterial blood supply to the brain

- Blood supply to the brain is via two pairs of vessels, the **internal carotid** arteries and the **vertebral** arteries

**Internal carotid**

- Arises from the **common carotid** and enters the middle cranial fossa via the **carotid canal**
- Forms a characteristic path known as the carotid **siphon**
- Passes through the **cavernous sinus** and then over the medial aspect of the **anterior clinoid process**, reaching the surface of the brain near the **optic chiasm**
- Gives rise to a number of pre-terminal branches along this route
  - **Hypophyseal arteries**
    - Arise from the intra-cavernous section, supply **neurohypophysis**
    - Form the **pituitary portal** system
  - **Ophthalmic artery**
    - Passes into orbit via optic canal
    - Supplies orbital structures, frontal and ethmoidal **sinuses**, frontal scalp, colum of nose
  - **Anterior choroidal artery**
    - Supplies **optic tract**, **choroid plexus** of lateral ventricle, **hippocampus**, some deep structures of the hemisphere, including the **internal capsule** and **globus pallidus**
  - **Posterior communicating artery**
    - Passes posteriorly to join with the posterior cerebral artery (forming part of the circle of Willis)
- Internal carotid gives rise to two **terminal branches** lateral to the optic chiasm
  - **Anterior cerebral artery**
    - Goes medially above optic nerve then goes via great longitudinal fissure between frontal lobes of the cerebral hemispheres
    - Joins to corresponding vessel of other side via the **anterior communicating artery**