

Median section trough head Sagittal Section of the Head with Deep Dissection

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This 3D model combines a midsagittal section of the head with preservation of brain and cranial cavity anatomy, with a unique deep dissection of the pharyngeal region via removal of basicranial bone and the anterior parts of the atlas and axis. As the opposing side is undissected it has been digitally eliminated from the model. Within the endocranial cavity the preservation of dura mater retains the superior sagittal sinus across much of its course from anterior to posterior, reaching the confluence of sinuses visible in cross-section. Both the tentorium cerebelli and the falx cerebelli are preserved. The cerebrum is well-reserved with retention of the cingulate gyrus and sulcus, and removal of the septum pellucidum inferior to the corpus callosum providing a view into the lateral ventricle (with retention of the interventricular foramen at the inferior margin of the septum). The diencephalon and midbrain structures (epithalamus, colliculi, mamillary body, infundibulum) are all appreciable in cross-section as is the cerebellar hemisphere and fourth ventricle. Small views of the anterior cerebral and posterior inferior cerebellar arteries are visible (and false coloured). Outside the endocranium, removal of parts of the occipital, temporal and sphenoid bones (alongside the atlas and axis) has been coupled with removal of the pharyngeal constrictors, carotid sheath and oral mucosa to demonstrate a unique view of several key neurovascular and glandular structures. Within the zone of removed tissue there is partial exposure of the right common carotid artery within the dissected petrous portion of the temporal, as well as partial exposure of the left vertebral artery through disruption of the occipital and dural covering.

The medial and lateral pterygoids are exposed near the posterior margin of the largely intact nasal cavity. Between the exposed dura and medulla and the pterygoids (and trapped deep to the sectioned and reflected stylohyoid muscle) the dissected carotid sheath has exposed the internal jugular vein, the vagus nerve, the internal carotid artery (with overriding ascending pharyngeal artery from the external carotid artery), and the sympathetic trunk (with superior cervical ganglion and internal carotid nerve). Immediately anterior to this bundle of neurovascular structures is the external carotid artery, giving rise to the ascending pharyngeal artery, a common trunk for the lingual and facial arteries, and then continuing superiorly out of the plane of dissection. The submandibular gland can be seen resting on the mylohyoid muscle near the lingual artery (which passes deep relative to the gland), with the duct passing towards the genu of the mandible and the origin of the reflected genioglossus muscle. At the inferior border of the specimen, the reflected margin of the dissected tongue the hypoglossal nerve can be seen deep to the lingual artery.