Superficial Facial nerves + Parotid Gland

Price inquiry: +48 605999769, kontakt@openmedis.pl

Product code: AM02689




This 3D model presents the superficial anatomy of the face and head, and compliments the superficial facial anatomy of our HW 44 model with a more expanded dissection across the scalp and occipital regions. The superficial neurovascular and muscular structures in the face largely mirror the structures described in reference to our HW 44 specimen (see description), although the terminal branches of the facial nerve (CNVII) can be largely followed across a longer course from the parotid gland and the platysma muscle has been retained superficial to the mandible and extends towards the neck. In contrast to the HW 44 specimen, this model has a more expansive superficial dissection inferior to the external ear and across the posterior scalp and occipital region. This allows for an expanded appreciation of the neurovascular distribution of the supraorbital and supratrochlear nerves and arties with the superficial temporal artery. Inferior to the ear, the retromandibular vein has been exposed with the ascending fibres of the great auricular nerve on its superficial surface (and further branches of this nerve on the surface of the sternocleidomastoid muscle). At the posterior border of the sternocleidomastoid muscle the lesser occipital nerve is just preserved, near the exiting and ascension of the occipital artery and vein near the trapezius muscle towards the posterior scalp. Surrounding the external ear are fibres of the auricularis superior and posterior muscles. Near the margin of the dissection window posteriorly the deep fibres of the occiptalis muscle can be seen integrated into the epicranius (occipitofrontalis) muscle.

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Transverse Section of the Head

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Product code: AM02690




This 3D model preserves a transverse section through the cranial cavity with partial dissection of the brain and exposure of the left orbital roof, alonside a deep dissection of the face and temporomandibular joint region. Within the cranial cavity, the dura mater has been largely removed from the anterior cranial fossa, with retention of the layer in part across the middle and posterior cranial fossae. On the right side, the cerebrum has been dissected to expose the lateral ventricle and to open the lateral fissure to demonstrate the course of the middle cerebral artery between the frontal, parietal and temporal lobes. A more significant dissection of the brain on the left side allows for an appreciation of the midline third ventricle and retained septum pellucidum on the right side, the falx cerebri (with the superior sagittal sinus visible in crosssection), and parts of the anterior and posterior horns of the lateral ventricle with choroid plexus. This differential dissection of the brain also provides an excellent view of the optic nerves, chiasm and tracts, and the relation of these nervous structures to the left internal carotid artery, and bases of the anterior and middle cerebral arteries. Anteriorly in the cranial cavity, the left optic nerve can be followed into the left orbit, which has been opened to expose several key orbital structures. Centrally, the frontal nerve is well-preserved on the levator palpebrae superioris muscle. Laterally, the lacrimal gland rests in the superior quadrant, while medially the partial dissection into the frontal bone and sinuses affords a clear view of the superior oblique muscle passing through the trochlea. Deep to these superficial structures extraocular fat has been removed to show the medial rectus muscle laterally, and the nasocilliary nerve and medial rectus muscles medially. In the face, the skin, superficial tissue, orbicularis oculi and extraocular fat have been removed from the right orbit to expose the extraocular muscles and lacrimal gland. The levator palpebrae superioris is well-defined despite being detached from the superior tarsal plate. The reflection of the superior oblique muscle from the trochlea onto the eye can be seen, as well as the insertions of the medial and lateral rectus muscle, and the full course of the inferior oblique.

Across the rest of the right side of the face and temporal region a deep dissection has exposed a number of structures. Inferior to the orbital margin, the infraorbital artery and nerve have been exposed exiting via the infraorbital foramen. The superficial and deep heads of the masseter are well defined, and the partial dissection of the temporalis muscle provides a perspective on its broad origin and depth of fibres near pterion (and in contrast to the exposed and undissected right side). Inferior to the zygomatic, the parotid gland has been dissected to expose the mandibular condyle resting in the glenoid fossa and to demonstrate the relationship of the external ear relative to the external auditory meatus.

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Sinus Pathways

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Product code: AM02686




This 3D model provides a midsagittal to parasagittal segment of a right head to demonstrate the relationships and passageways of the paranasal sinuses. These passageways have been highlighted with thin coloured markers to indicate the relationship of these communicating routes between the paranasal sinuses and the nasal cavity. Starting anteriorly in the nasal cavity, the opening of the nasolacrimal duct (white) is present just deep to the inferior nasal conchae. The middle nasal concha has been sectioned to allow for a clear view of the opening of the maxillary sinus (visible in the parasagittal plane) across the semilunar hiatus (green), as well as the drainage of the frontal sinus (blue; with the sinus visible superiorly in the section and in the transverse cut through the specimen) and the anterior (orange) and middle (yellow) ethmoidal cells. The opening of the posterior ethmoidal cells into the superior meatus is shown through the purple marker, which is visible within a small opened window into the ethmoid just superior to the nasal cavity. Finally, the opening of the sphenoid sinus is marked in red and visible through the opened sphenoid sinus itself just superior to the nasopharyngeal region. In addition to these pathways, this 3D model also captures some of the surrounding anatomy within the section. Visible in the midsagittal view are the other primary structures of the nasal cavity from the nostril to the opening of the auditory tube posteriorly. The soft palate and uvula are preserved, as is the rest of the pharynx just to the level of the epiglottis and collapsed laryngeal region at the inferior part of the preserved specimen.

The oral cavity is displayed in cross section, with distinct genioglossus and geniohyoid muscles. In the cranial cavity, parts of the brain are preserved including the inferior parts of the frontal lobe and the right optic nerve/ chiasm/tract. The pituitary gland is visible in cross-section just superior to the sphenoid sinus. The pons, medulla oblongata, and most of the cerebellum are present, with a small part of the tentorium cerebelli separating the cerebellum from the right occipital lobe of the cerebrum. On the parasagittal side of the specimen there is a continuation of the tentorium cerebelli separating these parts of the brain, with clear cross-sections of the transverse sinus and part of the sigmoid sinus on either side of the cerebellum. Overlying this is a small part of the medial temporal lobe of the cerebellum with part of the anterior horn of the lateral ventricle deep within the lobe.

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

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Product code: AM02685




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.

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Parotid Gland and Facial Nerve Dissection

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Product code: AM02692




This 3D model provides a superficial dissection window into the lateral face to demonstrate the anatomy of the parotid gland relative to surface features and neurovascular structures. These structures are of particular significance for management in Mohs surgery in the management of skin cancers, or in certain plastic and reconstructive surgical procedures. The opened window extends from just anterior to the external ear, from the level of the zygomatic arch to the angle of the mandible and extending from the anterior margin of the masseter muscle to the origin of the sternocleidomastoid muscle. Exposed within the window is the bulk of the parotid gland, with the superior portions of the gland removed to demonstrate the superficial temporal artery and the facial nerve dividing into the superior terminal branches (e.g., the temporal, zygomatic and buccal). The parotid duct traverses the opened dissection window before passing towards the buccal region (and its termination into the buccinator muscle). An ascending branch of the great auricular nerve can be observed along the inferior and posterior margins of the parotid gland, and just anterior relative to the sternocleidomastoid.

Parasagittal Section of the Head and Neck

Price inquiry: +48 605999769, kontakt@openmedis.pl

Product code: AM02687

   

This 3D model of the head and neck represents a specimen sectioned just off the midsagittal plane to retain some midline anatomical structures (e.g., the falx cerebri, the septum pellucidum, the nasal septum) that are absent from other specimens in the series. There has also been fixative-induced shrinkage of the neural tissue. This reduction in volume has the benefit of exaggerating the space between the brain and endocranial contours and structures which are normally in closer approximation. The undissected side of the specimen has been digitally removed. The anterior part of the falx cerebri has been retained from its anterior attachment at the crista galli to roughly the midpoint of its extent towards the tentorium cerebelli. At the attachment of the falx part of the dura has been removed to demonstrate the extent of the superior sagittal sinus within the retained portion of the dural infold. The brain itself has been sectioned with preservation of the septum pellucidum and the interventricular foramen (of Monro) defining the passageway between the deep lateral ventricle and sectioned third ventricle. This section plane also captures the infundibulum extending from the hypothalamus to the pituitary gland, which is seated adjacent to a well-developed sphenoid sinus. Both the cerebral aqueduct and fourth ventricle are preserved, as are parts of the left vertebral artery, left posterior cerebral (in crosssection) and the branches of the anterior cerebral artery passing around the corpus callosum. The retention of the nasal septum in this specimen (and in contrast to other 3D models of the head and neck in the series) allows for an appreciation of the relationship between the septum and the hard and soft palates, the entrance of the auditory tube, and the overall nasopharynx relative to the nasal cavity and oropharyngeal region inferior to it. The muscular wall of the pharynx has been isolated to demonstrate the position relative to the cervical vertebral column. Inferiorly, the tracheal cartilages including the epiglottis, arytenoid and thyroid have been retained to demonstrate the position of these cartilages relative to the hyoid bone, as well as the vestibule, vestibular fold, and vocal fold in cross-section.

Sagittal Section of Head and Neck with Infratemporal Fossa and Carotid Sheath Dissection

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Product code: AM02691




This 3D model provides a complimentary specimen to the H 11 and H 12 head and neck specimens by providing a perspective of the endocranial cavity without the brain, and a lateral dissection inclusive of neck anatomy.

In the midsagittal section, the removal of the brain (and reflection of the medulla oblongata inferiorly) affords a full view of the dura mater lining the endocranial cavity, including the tentorium cerebelli spanning from the transverse sinus to the attachment to the clinoid process of the sphenoid. A series of cranial nerves, including the optic (CN II), oculomotor (CN III), trigeminal (CN V), the abducens (CN VI) and the combined facial (CN VII) and vestibulocochlear (CN VIII) nerves can be seen piercing the dura. The pituitary gland can be seen in cross-section within the sella turcica, and the left vertebral artery can be seen ascending in the posterior cranial fossa.

The lateral dissection to the face has retained some superficial structures while simultaneously exposing the anatomy within the infratemporal fossa. The facial vein and facial artery have been preserved but are dissected away from any superficial fascia or muscles of facial expression and lie across the corpus of the mandible and buccinator muscle. Most of the ascending ramus of the mandible and the zygomatic arch have been removed to demonstrate some of the infratemporal fossa anatomy, including the inferior alveolar artery and nerve and lingual nerve (resting on the medial pterygoid), the posterior deep temporal artery (resting on the lateral pterygoid), and the articulation of the mandibular condyle with the glenoid fossa. The terminal part of the external carotid artery is visible, as is the first part of the maxillary artery and the superficial temporal artery.

Posterior to the infratemporal region, the facial nerve (CN VII) can be seen briefly adjacent to the posterior belly of the digastic muscle. The posterior belly of the digastric angles superficially to obscure the internal and external carotid arteries and the internal jugular vein, which have been dissected from the carotid sheath (alongside the vagus nerve [CN X]). At the angle of the mandible, and along the inferior margin of the corpus, the hypoglossal nerve (CN XII) rests just adjacent to the central tendon of the digastric and the external carotid artery. Anteriorly, the facial artery is integrated into the submandibular gland before ascending across the mandibular corpus, where the lingual artery and anterior belly of the digastric can be observed. A set of superficial veins descend inferiorly into the neck as a presumptive external jugular vein (although displaced given the removal of the retromandibular vein and sternocleidomastoid muscle, it is too posterior to be an anterior jugular vein).

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In the neck region of the specimen, the hyoid bone is immediately deep to the submandibular gland and receives infrahyoid muscles just superficial to a robust thyroid gland. At the cut section of the dissection inferiorly, the underlying larynx can also be observed. Posterior to the carotid sheath structures, radiating cutaneous branches from the cervical plexus rest on the scalene muscles, and near the inferior margin of the specimen the upper roots of the brachial plexus are preserved adjacent to the exposed internal jugular vein.

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Superficial Face

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Product code: AM02688

This 3D model presents a superficial dissection of a left face anterior to the ear with false colouring highlighting a series of neurovascular structures alongside the superficial muscles of facial expression. This compliments the more expanded superficial dissection of the face and lateral head presented in our HW 45 model. The undissected regions of the model have been digitally removed. Starting just anterior to the ear, the opened window of dissection has exposed the parotid gland and associated duct transmitting anterior towards the oral cavity. Exiting from the margins of the parotid gland are terminal branches of the facial nerve (CN VII), including the cervical, mandibular, buccal, zygomatic and temporal. The cervical and mandibular branches at the inferior portion of the dissection window can be seen angling inferiorly and passing superficially relative to the facial vein (which ascends towards the medial canthus of the eye). The mandibular branch passes just deep to the facial artery, which runs in parallel with the facial vein. Tracing the pathway of these vessels from the mandible towards the nasal and orbital regions also provides a checklist of superficial and deep muscles that have been highlighted, from the masseter deep to the parotid through to the depressor anguli oris, depressor labii inferioris, the zygomaticus major and minor, the orbicularis oris, the nasalis and levator labii superioris alaeque, the procerus and the orbicularis oculi.

Along the superior margin of the parotid gland the base of the auriculotemporal nerve and the superficial temporal artery ascends anterior to the ear and rests on a partially dissected temporal fascia to expose part of the temporalis muscle. Moving anteriorly over the orbit, the supraorbital nerve and supraorbital and supratrochlear arteries have been highlighted and ascend on the epicranial aponeurosis. Within that layer the deeper frontalis muscle can be appreciated as a darker shadow within the layer.

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Sagittal Section of head with infratemporal Fossa Dissection

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Product code: AM02812

   

This 3D model provides a combined midsagittal section through the head and superior neck coupled with a deep dissection into the infratemporal fossa region and superficial dissection of the scalp.

In the preserved midsagittal section there is preservation of the endocranial contents, the nasal and oral cavities, and the pharynx to the level of the laryngeal cartilages. The nasal cavity is preserved nearly intact, except for a small window excised into the middle nasal concha to expose the ethmoid air cells. A very large sphenoid sinus exists in the individual just superior to the torus of the auditory tube in the nasopharynx. The oral cavity and laryngopharynx are undissected, with the larynx only preserve just distal to the level of the arytenoid cartilages and not including a clear set of vocal folds.
Within the endocranial cavity, the sectioned brain is slightly off the midagittal plane, such that neither the superior sagittal sinus nor the third ventricle are clearly defined - but the lateral ventricle is open and part of the fourth ventricle is preserved between the pons and cerebellum. The gyri and sulci of the cerebrum are not well separated, but the cingulate gyrus and corpus callosum can be separated. Cross-sectioned views of the optic tract, pituitary gland, superior and inferior colliculi, superior cerebellar peduncle, and transition between the medulla oblongata and spinal cord are all visible. The tentorium cerebelli and confluence/transverse sinus is positioned between the cerebellar hemisphere and occipital lobe. Small portions of the posterior inferior cerebellar artery, vertebral arteries, basilar artery, and posterior cerebral and anterior cerebral arteries are visible in section.
On the opposing side of the model, a superficial and deep dissection has opened a large window into the anatomy of the lateral scalp and infratemporal fossa. Across the scalp there is a well preserved posterior auricular nerve and superficial temporal artery highlighted on the superficial surface of the temporalis muscle. Anteriorly, the temporalis has been dissected to expose the deep temporal arteries arising from across the maxillary artery.

The deep level of dissection has exposed parts of the infratemporal fossa (through partial removal of the mandibular ramus and corpus) and dissection of retromandibular tissues. At the inferior margin of the dissection window, the cut edge of the retromandibular vein lies adjacent to the submandibular gland and the ascending path of the facial artery as it cross towards to angle of the mouth. Just superior to the cut retromandibular vein is the posterior belly of the digastric muscle, overlying a small exposure of the deeper internal jugular vein.
Just posterior to the retained ascending ramus of the mandible are the external carotid artery and the occipital artery (running in parallel prior to passing posteriorly). Tracing the external carotid artery superiorly, the posterior auricular artery, superficial temporal artery, and maxillary artery are all visible. The maxillary artery passes deep to the lateral pterygoid muscle and into the infratemporal fossa, reappearing superior to the lateral pterygoid as it passes into the pterygomaxillary fissure. Along its course, it gives rise to the posterior deep temporal artery, the inferior alveolar artery (which is exposed in the dissected mandibular corpus), the anterior deep temporal artery, and the posterior superior alveolar artery. Finally, the inferior alveolar nerve can be seen coursing within the opened mandibular corpus, and the lingual nerve resting on the medial pterygoid. The buccinator muscle is also retained, with the distal part of the parotid duct preserved as it enters the muscle towards the oral mucosa.

Temporal Bone Model

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Product code: AM01263




This 3 part 3D printed model derived from CT data highlights the complex anatomy of the temporal bone including bone ossicles, canals, chambers, foramina and air spaces. In addition, the spatial relations between temporal bone and other structures of otological importance, i.e. carotid artery, dural venous sinuses, related nerves and the dura mater are indicated. Internal casts (endocasts) of the bony chambers and canals have been created to aid visualisation of the internal anatomy of the temporal bone

Part 1 Skull Preparation

The specimen has been trimmed to reveal the posterior quadrant of the left side of the skull including the posterior (cerebellar part only) and middle cranial fossa. The model shows the location of the temporal bone and its relationship with the adjoining sphenoid, parietal and occipital bones.

The superior aspect of the petrous part of the temporal bone including the tegmen tympani has been removed to reveal its detailed internal architecture, and structure associated with the auditory and vestibular apparatus.

The middle ear (coloured orange) is revealed to show the tympanum, along with the aditus, antrum (laterally), and the ‘bone’ part of the pharangotympanic tube and the bony canal of the tensor tympani muscle (medially). Collectively, these form a direct anterior-posterior passage between the nasopharynx and the mastoid air cells (coloured blue). The anatomical position of the incus relative to the tympanic membrane can be seen via the external auditory meatus.

The bony labyrinth of the vestibular apparatus of the inner ear (green) is seen juxtaposed with the middle ear. The orthogonal arrangement of the anterior, lateral, and posterior semicircular canals and the spiral organisation of the cochlea can be clearly identified.

The passage of the facial nerve (CN VII) through the petrous part of the temporal bone and its intimate spatial relationship with the auditory and vestibular apparatus is shown in yellow. Proximad, the nerve courses in an anterolateral direction before descending distally to emerge from the bone via the stylomastoid foramen located between the mastoid and styloid processes.

The condyle of the mandible can be seen in the mandibular fossa at the origin of the zygomatic process of squamous part of the temporal bone. The temporomandibular joint has had the capsule removed to reveal the articular disc of the joint (indicated by a blue/grey colouration).

The anterior aspect of the mastoid process has been transected to show the extensive nature of the mastoid air cells.

The cervical part of the internal carotid artery can be seen ascending to enter into the carotid canal within the petrous part of the temporal bone. Its anteromedial course can be seen within the exposed aspect of the bone, and its s-shaped continuance within the cavernous sinus of the sphenoid bone, and its emergence into the neurocranium.

The model also shows the transverse dural venous sinus, its continuation into the sigmoidal sinus (located on the posterior internal aspect of the squamous part of the temporal bone), and passage through the jugular foramen to form the internal jugular vein. The inferior petrosal sinus is also seen leading into the jugular foramen.

The model also shows the foramen magnum and first three cervical vertebrae cut in parasagittal section. Note the sphenoid sinus located axially within the base of the sphenoid bone (coloured blue)

Part 2 The Petrous Part Of The Temporal Bone

This model is derived from the overall skull preparation and has been enlarged (x3) to further illustrate the detailed internal architecture of the petrous part of the temporal bone and the auditory and vestibular apparatus. As in Part 1 internal casts of the bony labyrinth of the inner ear, mastoid air cells, and the bony canal of the internal carotid artery are used to aid comprehension of this complex and important region.

The bony ossicles of the middle ear (incus, malleus and stapes) are shown within the middle ear cavity, and the bony prominence of the lateral semicircular canal of the vestibular apparatus can be seen protruding into the middle ear. The connection from the tympanum or middle ear to the mastoid aid cells (Blue) via the aditus and antrum is visible.

The model also shows the facial nerve entering the internal acoustic meatus on the anterior aspect of the petrous bone. The chorda tympani is seen branching from the facial nerve in its descending portion in the facial canal. This small nerve, which carries parasympathetic fibres and taste fibres to the anterior 2/3 of the tongue, can be seen passing through the tympanic cavity between the incus and malleus. The bone canal of the tensor tympani muscle can be seen extending away from the tympanic cavity of the middle ear.

Part 3 The Auditory And Vestibular Apparatus

As in Part 2, this model has been enlarged (x3) to highlight the detailed internal architecture of the auditory and vestibular apparatus and its relationship to anatomical features of otological importance. The petrous part of the temporal bone and tegmen tympani have been removed to expose the tympanum, aditus and antrum of the tympanic cavity of the middle ear. The model shows the direct connection between nasopharanx and mastoid air cells via the bony canal of the pharangotympanic tube. The ossicles of the middle ear are seen within the tympanum or middle ear.

The model also shows the bone labyrinth of the vestibular apparatus of the inner ear, and the tympanic prominence of the lateral semicircular canal can be seen within the tympanum of the middle ear.

The passage of the facial (CN VII) and vestibulocochlear (CN VIII) nerves through the petrous part of the temporal bone, and their intimate spatial relationship with the auditory and vestibular apparatus is shown in yellow. The cochlear nerve is seen entering the cochlear region of the bony labyrinth of the inner ear. The genu and geniculate ganglion of the facial nerve are shown immediately before the facial nerve descends within the facial canal, to emerge via the stylomastoid foramen located between the mastoid and styloid processes. The chorda tympani is seen within the tympanum of the middle ear, passing between the incus and malleus. The emergence of the chorda tympani is shown from the petrotympanic fissure, located medial to the mandibular fossa of the temporal bone.

Paranasal Sinus model

Price inquiry: +48 605999769, kontakt@openmedis.pl

Product code: AM01408




This unique 3D model has been created from CT imaging and segmentation of the internal spaces of the viscerocranium. Parts of the skull have been retained but sections or windows have been removed to expose the paranasal sinuses. The paired frontal sinuses, with the right being partially subdivided, are coloured blue. The left frontal sinus is largely surrounded by frontal bone, while the right is completely exposed and shows the frontonasal ostium which drain as a funnel shaped tube into the infundibuklum of the middle meatus of the nasal cavity. The ethmoid sinuses or air cells, coloured purple, are only shown on the left. The medial wall of the orbit composed of the orbital plate of the ethmoid bone is retained. The maxillary sinus (green) on the left has been partly exposed and partly left within the maxilla. The opening of the maxillary sinus into the lateral wall of the nose is barely discernable as a small green patch in the middle meatus. The left sphenoid sinus (pink) is also displayed, within the opened sphenoid bone.

Dural Skull anatomical model

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Product code: AM01130

   

This 3D print of a dissected and opened cranial cavity displays the dural folds and dural venous sinuses, including the falx cerebri (preserved by a retained midsagittal portion of the calvaria. The intact tentorium cerebelli demonstrates the tentorial notch which normally houses the midbrain. Across the dural folds the following sinuses are visible (light blue coloring): superior sagittal sinus, inferior sagittal sinus, straight sinus, transverse sinuses, superior and inferior petrosal sinuses, sphenoparietal sinuses and the cavernous sinuses. In the region of the sella turcica, the entry of the carotid arteries to the cranial cavity through the roof of the cavernous sinuses is also visible.

Deep Face

Price inquiry: +48 605999769, kontakt@openmedis.pl

Product code: AM01266

In this 3D printed specimen of a midsagittally-sectioned right face and neck, the ramus, coronoid process and head of the mandible have been removed to expose the deep part of the infratemporal fossa. The pterygoid muscles have also been removed to expose the lateral pteygoid plate and posterior surface of the maxilla. The buccinator has been retianed and can be seen originating from the external aspect of the maxilla, the pterygomandibular raphe and the external aspect of the (edentulous) mandible.The superior constrictor can also be seen arising from the posterior aspect of the pterygomandibular raphe. The internal laryngeal nerve has been preserved. Muscles in the neck that are identifiable include mylohyoid, the strap muscles and the inferior constrictor. The styloid muscles can be seen descending from the process to their insertions (not shown). The internal carotid artery can be seen deep to the styloid process which gives origin to stylohyoid, styloglossus and stylopharyngeus.

The sectioned surface preserves a series of midline head and neck structures, including: the lateral wall of the nasal cavity (superior, middle and inferior conchae and sphenoethmoidal recess, superior meatus, middle meatus and inferior meatus), the nasopharynx, the opening of the auditory tube, the hard palate, soft palate, the intrinsic tongue muscles, oropharynx, laryngopharynx, and hyoid bone. The parts of the laryngeal cartilages and the pharynx are clerly seen, as are the verterbral bodies of C2-C5, the anterior arch of C1(atlas), and the dens of C2 (axis).

Model of head and neck

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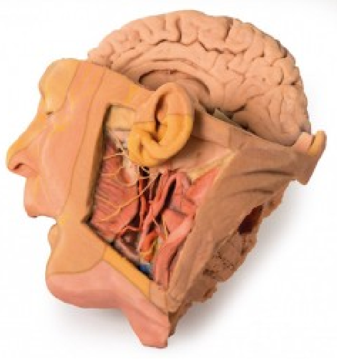
Product code: AM01056

Lateral aspect of the face: A window has been created to expose the parotid region. The pinna of the ear has been left intact, however the mastoid process has been exposed by reflection of the sternocleidomastoid (SCM) muscle. The parotid gland has been carefully removed to display structures which are normally embedded or hidden by the gland. The attachment of the posterior belly of digastric arising from the digastric groove medial to the mastoid process can be clearly seen. The masseter muscle is identifiable as it inserts into the lateral surface of the ramus and angle of the mandible. The condyle of the mandible can be seen in an opened temporomandibular joint (TMJ). The articular disc of the TMJ is indicated by a blue/grey colouration. The external carotid artery (ECA) can be seen passing deep to the digastic muscle and tendon. The branches of the ECA including facial artery, the maxillary artery, occipital artery and posterior auricular artery are preserved. At the inferior aspect of the dissected window one can see the cut remains of the internal jugular vein (IJV) and the cut upper surface of the submandibular gland and the hypoglossal nerve winding around the ECA on its lateral surface. The vagus nerve is just visible between the ECA/common carotid and the IJV. Emerging posterior to digastric one can see the spinal part of the accessory nerve superficial to the levator scapulae muscle (stretched due to the manner in which the SCM has been reflected).

The facial nerve can be seen emerging from the stylomastoid foramen immediately posterior to the styloid process and dividing into temporal, zygomatic, buccal and marginal mandibular branches on the face.

The branches of the trigeminal that supply the dermatomes of the face are illustrated diagramatically by painted nerves on the skin of the face.

Brain and cranial cavity: The medial surface of the cerebrum with the corpus collosum and thalamus are demonstrated. The septum pelucidum has been removed. The left hemisphere of the cerebellum and cerebral hemispheres have been removed to expose the floor of the left anterior, middle and posterior cranial fossa and the fourth ventricle. The anatomy around the cavernous sinus and sella turcica is well displayed. The intracranial course of cranial nerves II, III, V, VII, VIII, IX, X and spinal part of XI are also highlighted from their origin from the brainstem. The facial canal has been opened by removal of part of the temporal bone to expose the facial nerve, the geniculate ganglion and its course in the middle ear (due to removal of the tegmen tympani).

Medial surface: The parasagittal cut surface shows the lateral ventricle, the right cerebral peduncle, posterior cerebral artery, and the cut edge of the tentorium cerebelli. In the region of the sphenoid the internal carotid artery and the carotid siphon are visible in the cavernous sinus as it pierces the dural roof (pale green) to commence its intracranial course. Here it lies lateral to the right optic chiasm. The mouth, tongue, associated muscles, lateral aspect of the nasal cavity, nasopharynx, and cut muscles and vertebrae are also visible on the medial surface of this parasagittal section.

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Model of head and visceral column pf the neck

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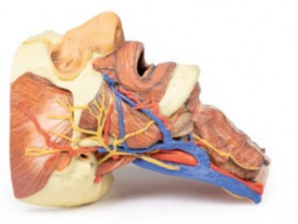
Product code: AM01285



This 3D print specimen preserves a series of features of the head and visceral column of the neck and face:

On the right side of the head the parotid gland has been removed to reveal the facial nerve and all its branches (temporal, zygomatic, buccal, marginal mandibular and cervical) and demonstrate the spatial relations of structures embedded in the gland from superficial to deep (facial nerve, retromandibular vein, external carotid artery). In the surrounding region the temporalis, masseter and posterior belly of digastric are exposed, as are and the facial artery, transverse facial artery and superficial temporal artery. The facial vein and transverse facial vein are clearly visible uniting to form the common facial vein which is joined by the retromandibular vein to form the external jugular vein. Viewed from the anterior aspect the face has been dissected to display some of the facial muscles around the mouth (buccinator [on the left], orbicularis oris and zygomaticus major).

On the ledt side of the infratemporal fossa has been open to expose the medial and lateral pterygoids. The lateral pterygoid is divided to show the mandibular division of the trigeminal nerve dividing into the lingual nerve and the inferior alveolar branch. Also on the left side the branches of the ophthalmic division of the trigeminal that supply the skin above the eyebrows and scalp (supraorbital [left only] and supratrochlear nerves [both sides]) are dissected. The submandibular gland is clearly visible below the mandible on both sides as are the facial arteries and veins as they course over the mandible.

The neck: The musculoskeletal portion of the neck have been removed to display the pharynx posteriorly, the larynx anteriorly, and the neurovascular bundles laterally. The suprahyoid and infrahyoid muscles can be seen on the neck, as well as the cricothyroid muscle. When looking up the length of the trachea from below, the vocal folds are visible. The hypoglossal nerve can be seen winding around the lateral surface of the external carotid artery and the external branch of superior laryngeal nerve is seen descending in the neck. The internal jugular vein, the common carotid artery and its bifurcation into external and internal carotid arteries are clearly seen on both left and right. The vagus nerve in the carotid sheath is also visible. The ansa cervicalis is visible emerging below the digastric muscle and descending on the surface of the internal jugular vein. The internal branch of the superior laryngeal nerve can be seen below the superior thyroid artery on the left. The superior thyroid artery branching from the external carotid artery is seen descending in the anterior neck. The internal branch of the superior laryngeal artery is visible on the left piercing the thyrohyoid membrane above the inferior constrictor where this muscle is attached to the hyoid bone. Posterior view of the pharynx: The superior, middle and inferior pharyngeal constrictors are indicated on the pharynx wall. The oesophagus can be identified emerging from the lower end of the pharynx. The posterior horn of the hyoid bone acts as a useful landmark. The carotid sheath seen from behind clearly shows the vagus nerve and its pharyngeal branches on the left. The recurrent laryngeal nerve is briefly visible on the left lying medial to the inferior thyroid artery. The occipital arteries are visible as they curve around the mastoid process. The vertebral arteries are seen either side of the brainstem as they enter the foramen magnum. The cerebellum has been removed to allow the fourth ventricle to be exposed. The cut surfaces of the cerebellar peduncles are clearly visible. A large portion of the posterior inferior cerebellar artery on the right is still visible as it winds around around the brainstem.

Cranial Cavity: The left and right orbits have been opened to reveal the orbital nerves and vessels along with the eyes and optic nerves. The optic chiasm, optic tracts and the lateral geniculate bodies are retained thus showing a large part of the visual pathways. The brainstem is cut at the level of the superior colliculi on the left and slightly lower on the right. The olfactory tracts and bulbs are also demonstrated. The origins of many of the cranial nerves from the brainstem are clearly visible.

Head, Neck, Shoulder with angiosomes

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Product code: MA01269

This large, multipart 3D printed specimen displays a great deal of anatomy spanning the head, neck, thorax, axillae and upper limbs. Head and neck: The head and neck of the specimen provides views of both superficial and deep structures in the region. The calotte has been removed ~2cm superior to the orbits to expose the brain in relation to the endocranial cavity. The transverse section through the cerebrum demonstrates the relation of the grey matter cortex to the white matter medulla, as well as the lateral ventricles with a small amount of choroid plexus visible in the base of both spaces. The skin and superficial fascia on the right side has been retained and false-coloured to display the angiosomes of the face and posterior neck. On the left side, the superficial tissues have been dissected to expose the muscles of facial expression, muscles of mastication, and deeper structures of the infratemporal fossa including the lingual nerve, terminal branches of the external carotid artery into the superficial temporal and maxillary arteries. The carotid sheath has been opened on both sides of the neck, and the internal jugular veins and sternocleidomastoid muscles largely removed, to expose the pathway of the common carotid arteries, internal and external carotid arteries, and the vagus nerves. On the right side, the great auricular nerve ascends towards the face, while the hypoglossal nerve can be seen adjacent to the exposed stylohyoid ligament and supra- and infrahyoid muscles. A large thyroid gland is present bilaterally inferior to the thyroid cartilage, with a well-preserved superior thyroid artery and inferior thyroid vein on the right side and across the midline. The root of the neck – axillary junction: The clavicle has been partially removed on the left side of the specimen (medial to the origin of the deltoid) to expose the first rib and the insertion of anterior scalene muscle. The roots of the brachial plexus (C5-T1) can be seen forming the trunks posterior to this muscle but anterior to middle and posterior scalene muscles they emerge from the interscalene plane. While the subclavian vein has been removed, the subclavian artery is also seen passing behind the scalenus anterior. The transition of the subclavian artery to the axillary artery is exposed, as is its position relative to the cords of the brachial plexus (medial, lateral and posterior). The left axilla has been dissected to expose the divisions and cords of the brachial plexus and its major and minor branches. The contributions from the medial and lateral cords coming together around the axillary artery to form the median nerve is very distinctive. The course of the medial cord, the ulnar nerve, is clearly visible as is the musculocutaneous nerve as the continuation of the lateral cord. The axillary nerve is seen wrapping posteriorly around the surgical neck of the humerus. The thoracodorsal nerve and artery are seen descending on the medial wall of the axilla to enter the latissimus dorsi muscle. The long thoracic nerve is seen just anterior to this upon the serratus anterior muscle which it supplies. The axilla/root of neck junction on the right is similar except the clavicle (and subclavius muscle) has been retained, which gives an appreciation of the dimensions of the cervico-axillary canal through which structures gain entry to the axilla. Also on the right side the pectoralis minor and major (that comprise the anterior axillary wall) have been reflected with only a small portion of their insertions being retained.

Thorax: The thorax has been opened via a ‘window’ on the left to display the internal thoracic wall and mediastinum. The left lung has been removed and the intercostal spaces are discernable deep to the parietal pleura although intercostal neurovascular bundles are only discernable posteriorly. The pericardium has been removed to expose the heart with its apex pointing inferiorly, anteriorly, and to the left. The left side of the heart is exposed as are the left pulmonary veins and arteries (above left main bronchus), ascending aorta, aortic arch and commencement of the descending thoracic aorta. The left vagus nerve and left recurrent laryngeal nerve are easily identified. The right half of the anterior and lateral thoracic wall are intact and display the muscles of the intercostal spaces and inserting hypaxial muscles from the right upper limb. If the specimen is viewed from below, the right lung and pleural spaces along with the diaphragmatic surface of the heart are all evident. While the skin and superficial fascia posterior thorax has been left intact, the distribution of cutaneous branches of dorsal rami have been illustrated along the left side of the specimen.

Model of The circle's Willis

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Product code: AM01251




This 3D printed specimen demonstrates the intracranial arteries that supply the brain relative to the inferior portions of the viscero- and neurocranium. This print was created by careful segmentation of angiographic data. The model shows the paired vertebral arteries entering the cranial cavity through the foramen magnum and uniting to form the basilar artery. The basilar can be seen dividing into their terminal posterior cerebral arteries. The superior cerebellar arteries arise just proximal to this termination.

The internal carotid arteries (ICAs) can be traced from the point where they enter the petrous portion of the temporal bone via the carotid canal and travel medially and anteriorly to emerge on the superior margin of the foramen lacerum. It is here that each ICA lies within the cavernous sinus (not shown). The S-shaped carotid siphon on both left and right sides are most beautifully demonstrated lateral to the sella turcica. The ICAs then pass medial to the anterior clinoid processes. We note that (as in up to 30% of individuals) there has been ossification of the ligamentous bridge between the middle clinoid processes and the anterior clinoid process to create a caroticoclinoid foramen. The ICAs then divide into anterior and middle cerebral arteries. The paired posterior communicating arteries are clearly visible connecting the posterior cerebral and middle cerebral arteries. The completion of the Circle of Willis, made by the single anterior communicating artery between the anterior cerebrals arteries is difficult to discern as the anterior cerebral arteries lie so close together.