

Nervous System Dissection (posterior view)

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Product code: AM01273



This 3D printed specimen presents a unique view of axial anatomy, presenting a dorsal deep dissection of the head, neck, axillae, thorax, abdomen, and gluteal regions. The removal of the posterior portions of the cranium and laminectomy from the cervical region to the opening of the sacral canal affords a continuous view of the central nervous system structures and origin of the segmental nerves relative to other axillary and appendicular structures. In the cranium the two cerebral hemispheres are exposed in coronal section, separated by a falx cerebri that preserves the superior sagittal sinus, and supported by a partial tentorium cerebelli. The cerebellum has been removed and along the lateral margins, the sigmoid sinus has been opened. This exposes the fourth ventricle, pons and medulla oblongata, posterior inferior cerebellar arteries, and cranial nerves (CN VII – XII) arising from these brainstem structures. Inferior to the cranium, the posterior cervical portion of the spinal cord is exposed through deep dissection and laminectomies (with the exception of the posterior arch of the atlas). At this level of dissection, the vertebral arteries can be observed ascending through the vertebral foramina and curving anteriorly on the superior surface of the atlas towards the foramen magnum. The roots of the cervical and brachial plexus are exposed, resting on the scalene musculature, cervical vasculature (common carotid artery on the right, internal jugular and common carotid on the left) and sternocleidomastoid muscles and can be traced anteriorly towards the margins of the dissection. Removal of the scapulae (fully on the right, partially on the left) the more distal portions of the brachial plexus can be followed passing superior to the first ribs and into the axilla, with the cords, divisions and terminal branches surrounding the axillary arteries. On the left side, the musculature is largely removed (with parts of the deltoid, infraspinatus, and teres minor muscles preserved) and the long thoracic nerve and lateral thoracic artery descend near the serratus anterior. The subscapular artery is shown dividing into the circumflex scapular artery (passing to the triangular space) and the root of the thoracodorsal artery.

On the right side, the more full removal of the scapula affords a view of the brachial plexus structures and the passage of the axillary nerve and posterior circumflex humeral artery laterally towards the surgical neck of the humerus. In the midline of the thorax the spinal cord is exposed through both laminectomy and dissection of the dura mater. The dorsal roots and rootlets of the mixed spinal nerves are exposed and pass laterally to the dorsal root ganglia (enclosed within dura). On the right side the thoracic mixed spinal nerves and the posterior thoracic musculoskeletal wall has been removed (from the 2nd rib to the level of the 11th and 12th ribs) to expose the posterior surface of the lung and the posterior diaphragm. On the left side, most of the posterior thoracic wall has been removed, but the 3rd-5th ribs are retained to demonstrate the external intercostal musculature and the position of the 5th intercostal nerve within the space. In addition, the full sequence of intercostal nerves has been retained. Inferiorly, the lumbar vertebrae and posterior dura mater have also been opened posteriorly to expose the conus medullaris and cauda equina through to the sacral region. On the right side, adjacent to the 12th ribs, the quadratus lumborum has been removed such that the subcostal and lumbar nerves rest against the perirenal fat



capsule and psoas muscle. On the left side, the subcostal nerve arcs across an opened peritoneal cavity and the exposed kidney and loops of the jejunum. The deep plane of dissection on both sides extends into the gluteal region, where the gluteus maximus muscle has been removed to expose the lateral rotators and neurovascular structures; as well as the musculature of the pelvic floor in the midline.

On the left side, the gluteus medius is intact and the superior gluteal artery and nerve pass into the region just superior to the piriformis muscle. Inferior to the piriformis muscle, parts of the inferior gluteal artery and nerve, and the internal pudendal artery and pudendal nerve are preserved near the sacrotuberous ligament. The sciatic nerve passes distally through the space across the surface of the lateral rotators (e.g., superior and inferior gemelli muscles, obturator internus, quadratus femoris) into the posterior compartment of the thigh near the hamstring group. On the right side, removal of the gluteus medius and a deeper dissection into the true pelvis has exposed the lumbar and sacral plexuses and derivative nerves. This body replica comes on a transparent plexiglass base.

Model of male torso, Posterior Abdominal wall

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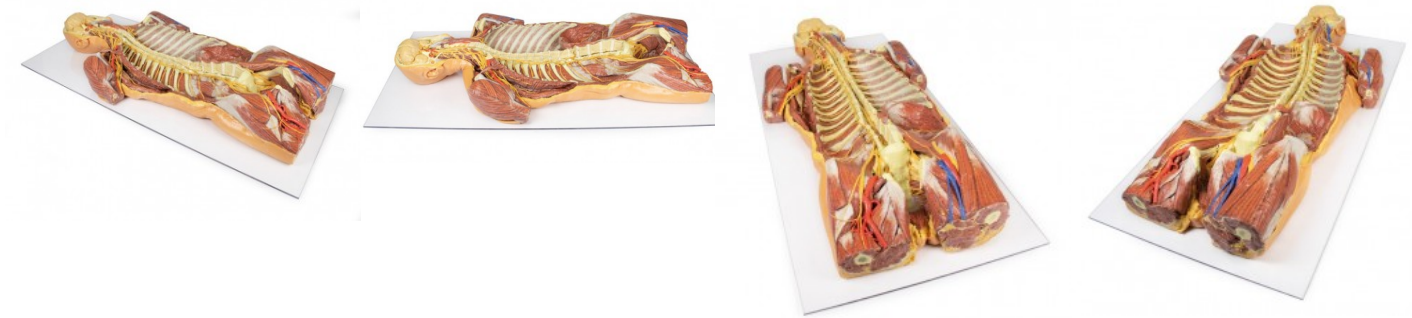


This large, multipart 3D printed specimen displays the entire male posterior abdominal wall from the diaphragm to the pelvic brim, as well as pelvic anatomy and to the proximal thigh. This same individual specimen is also available as a pelvic and proximal thigh specimen (AM01244). The parietal peritoneum has been removed from the posterior abdominal wall to expose the muscular wall including the psoas, the quadratus lumborum, transversus abdominis, and the iliacus below the iliac crest. The muscular portions of the dome shaped diaphragm are clearly distinct from the central tendon. The fibres originate from the circumference of the internal walls of the bony thorax at its margin (sternal fibres, costal portion, lumbar portion). The origins of the diaphragm and the left and right crura are clearly identifiable originating from the vertebral bodies (L1-L3 on the right and L1-L2 on the left). The crura are connected by a tendinous band, the median arcuate ligament, which arches in front of the aorta; however in this specimen the aorta has been removed. The fibres of the diaphragm arising from the tendinous arches over psoas and the lateral arcuate ligaments are partly hidden by the kidneys. The oesophageal opening through the arching fibres of the right crus is present above (level of T10) and to the left of the aortic opening (level of T12). The opening in the central tendon that transmits the inferior vena cava (level of T8/9 intervertebral disc). The somatic nerves of the posterior abdominal wall are clearly identifiable and consist of from above downwards - the subcostal, the iliohypogastric and ilioinguinal nerves lie on the quadratus lumborum (in this individual they arise together and- this can often occur and they split later in abdominal muscle layers), the lateral cutaneous nerve of thigh, the femoral lying in the groove between psoas and iliacus), and the genitofemoral nerve lying superficially upon psoas. The sympathetic trunks can be seen descending lateral to the lumbar vertebral bodies. The aorta and inferior cava are transected around the level of L3 vertebral body. The aortic bifurcation into the right and left common iliac arteries is slightly higher than normal. Finally, the kidneys have dissected from the peri- and pararenal fat of the posterior abdominal wall. The renal vessels (arteries anteriorly, veins posteriorly) have been preserved but as the aorta and inferior cava have been removed this does display the origin and arrangements of these vessels fully. The more inferior position of the right kidney is clearly visible and the ureters can be seen emerging from the hilum and descending initially lateral to psoas, then anterior to this muscle before crossing pelvic brim anterior to the bifurcation of the common iliac arteries to reach the true pelvis.

Posterior Body Wall / Ventral Deep Dissection

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This 3D printed specimen complements our dorsal dissection specimen (AM01273) by presenting a ventral deep dissection of axial anatomy from the head, neck, axillae, thorax, and abdomen to the proximal portion of the thighs. The removal of the anterior portions of the cranium and vertebral bodies from the cervical region to the 5th lumbar provides a continuous view of the central nervous system structures and origin of the segmental nerves relative to other axillary and appendicular structures. In the cranium the entire facial skeleton has been removed (to the level of the temporal bones at the styloid processes) to expose the two cerebral hemispheres separated by a partial falx cerebri resting within the neurocranium. On the ventral surface of the brain, the posterior parts of the Circle of Willis are preserved; the vertebral, basilar, and anterior inferior cerebellar arteries are visible, as are the two labyrinthine arteries. The right internal carotid artery is exposed within the dissected temporal bone, reappearing deep to a small flap of dura mater before re-emerging lateral to the pituitary gland. On either side of the pituitary gland the stumps of CN II, III, V, and VI are preserved. Inferior to the cranium, removal of the cervical vertebral bodies has exposed the course of the vertebral arteries (the right vertebral artery sectioned from C3-C5 to demonstrate ventral roots) and the anterior surface of the spinal cord, revealing the rootlets and roots of the cervical and brachial plexus; as well as the sympathetic trunks, CN X, CN XII, and the phrenic nerves. On the right side, a robust carotid nerve ascends from the superior cervical ganglion along the surface of the internal carotid artery. On the left side, part of the anterior scalene muscle and internal jugular vein have been preserved, with the internal jugular reflected posteriorly to afford a view of structures in the root of the neck. The clavicles and first ribs have been largely removed to expose the course of the axillary arteries and brachial plexus on both sides, with the removal of the anterior thoracic wall and musculature exposing both axillae and their contents. The proximal portions of both upper limbs are preserved to approximately the mid-arm, with the shoulder musculature retained (including part of the left cephalic vein in the lateral part of deltopectoral triangle). In the midline of the thorax the spinal cord is visible to its termination at the conus medullaris, and the ventral roots and rootlets of the mixed spinal nerves are exposed and pass laterally to the terminal nerves. The sympathetic trunks are continuous from the cervical region (including the superior cervical ganglia and stellate ganglia) to the lumbar region, and across several segments the rami communicans are retained. On the right side the origin of the greater and lesser splanchnic are visible against the lateral aspects of the thoracic vertebral bodies. On the left side the intercostal nerves pass deep to the retained parietal pleura to the lumbar region, where a portion of the diaphragm is retained obscuring the origin of the subcostal nerve (though the more distal portions are visible). Inferior to the diaphragm the ilioinguinal, iliohypogastric and lateral femoral cutaneous nerves are all preserved passing laterally across the muscular posterior wall and false pelvis (e.g., quadratus lumborum, transversus abdominus, and iliacus muscles), while the genitofemoral lies on the superficial surface of the psoas muscle and the femoral nerve just lateral to it. On the right side the pleura has been completely removed and in the lumbar region the same nerves are visible, however the absence of the diaphragm and removal of the psoas muscle affords a view of the roots of the lumbar plexus and origin of femoral nerve. The vasculature and viscera of the false and true pelvis have been completely removed excepting the termination of the rectum surrounded by the pelvic floor musculature. The lumbosacral trunk bridges the lumbar and sacral plexuses, and while most of the sacral plexus nerves are deep to the preserved obturator internus musculature, the obturator nerves are visible entering the obturator canals on both sides of the specimen. The pubic symphysis has been removed to display the longitudinal musculature of the distal rectum. Only a small portion of the proximal thighs are retained on the



specimen, but the femoral arteries and left femoral vein are retained within the femoral triangle. On the right side, removal of the sartorius muscle and dissection of the femoral triangle reveals the proximal branches of the femoral artery (medial and lateral circumflex femoral, deep artery of the thigh).

Thoracic cross section at T6

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This model is a cross-section of the thorax at the level of the T6 vertebra. Beginning posteromedially at the spinal cord within the vertebral canal, then moving radially, the costovertebral joints of the 6th ribs are visible, followed by several other ribs around the margin of the thoracic cavity, a pair of which unite anteriorly with the sternum via the costosternal joints. Additionally, the oesophagus and descending aorta are visible anterior and lateral to the T6 vertebral body, respectively. Inside the plural space, lined by the parietal pleura, reside the inferior and middle lobes of the right lung and the inferior lobe of the left lung. In the middle mediastinum the heart, within the pericardium, is transacted to reveal the left atrium posteriorly, then moving clockwise, the aortic valve, right ventricle and the right atrium