



MG22273 | HUMAN HEART WITH ESOPHAGUS AND TRACHEA (MEDIASTINUM), 6 PARTS



This life-size anatomical model of the human thorax is composed of 6 parts, including a detachable heart in two sections, which allows internal viewing of its chambers and valves. The sternum and thymus are removable, revealing in detail the pericardial sac, the large pulmonary vessels, and systemic circulation. The trachea and esophagus are represented entering the mediastinum through the superior thoracic aperture, with the inferior thoracic aperture delimited by the diaphragm musculature.

Applications:

Ideal for in-depth study of thoracic anatomy, this model is suitable for educational institutions, medical students, and healthcare professionals seeking an effective tool for comparative analysis of structures and continuing education in anatomy, physiology, and pathophysiology.

Technical Differentiators:



- * Detailed and life-size representation of the human thorax.
- * Composed of 6 parts, including a heart sectioned into 2 parts.
- * Removable sternum and thymus for access and visualization of internal structures.
- * Allows exploration of pulmonary and systemic circulation, trachea, esophagus, and diaphragm.
- * High anatomical accuracy for effective learning.

3D Technology and Augmented Reality:

Our anatomical models offer an innovative visual complement through information cards that activate 3D models viewable in augmented reality (A.R.). This exclusive interactive platform stimulates learning, allowing comparative analysis of anatomical structures and offering opportunities for continuing education in anatomy, physiology, and pathophysiology.

Technical Specifications:

- * Scale: Life-size
- * Components: 6 detachable parts (including heart in 2 parts)

Main Structures:

Sternum: Flat and elongated bone located in the anterior central portion of the thorax, to which the ribs articulate via costal cartilages. It is divided into the manubrium, body, and xiphoid process, forming the frontal part of the rib cage and protecting the mediastinal organs.

1st Rib: The first and most superior of the twelve ribs, characterized by being shorter, flatter, and more curved than the others. It articulates with the first thoracic vertebra and the manubrium of the sternum, being an important anatomical landmark in the cervical and upper thoracic region.

Diaphragm: Main muscle of respiration, dome-shaped, that separates the thoracic cavity from the abdominal cavity. Its contraction causes inspiration by increasing the volume of the thoracic cavity, and its relaxation, expiration. It has openings for the passage of the esophagus, aorta, and inferior vena cava.

Right Pulmonary Artery: Branch of the main pulmonary artery that goes to the right lung, transporting deoxygenated blood from the right ventricle to the pulmonary capillaries, where gas exchange occurs.

Right Pulmonary Vein: Vein that carries oxygenated blood from the right lungs back to the left atrium of the heart. There are generally two right pulmonary veins (superior and inferior).

Superior Vena Cava: Large vein that drains deoxygenated blood from the upper part of the body (head, neck, upper limbs, and thorax) to the right atrium of the heart.



Right Main Bronchus: Branch of the trachea that extends to the right lung, conducting air. It is shorter, wider, and more vertical than the left, which makes it more prone to the entry of foreign bodies.

Azygos Vein: Important vein located in the posterior part of the thorax, which drains blood from the thoracic and posterior abdominal wall, as well as from the bronchi and esophagus, and conducts it to the superior vena cava.

Vagus Nerve: The tenth pair of cranial nerves (CN X), with wide distribution in the thorax and abdomen. Main component of the parasympathetic nervous system, it innervates the heart, lungs, gastrointestinal tract, and other viscera, playing a crucial role in the regulation of autonomic functions.

Left Pulmonary Vein: Vein that carries oxygenated blood from the left lungs back to the left atrium of the heart. There are generally two left pulmonary veins (superior and inferior).

Left Main Bronchus: Branch of the trachea that extends to the left lung, conducting air. It is longer and more horizontal than the right.

Left Pulmonary Artery: Branch of the main pulmonary artery that goes to the left lung, transporting deoxygenated blood from the right ventricle to the pulmonary capillaries.

Greater Splanchnic Nerve: Visceral sympathetic nerve that originates from the thoracic ganglia of the sympathetic trunk (T5-T9/T10). It crosses the diaphragm to innervate pre-vertebral ganglia in the abdomen, contributing to the innervation of abdominal organs.

Hemiazygos Vein: Vein that drains the lower and left part of the thoracic and posterior abdominal wall. It ascends on the left side of the vertebral column and usually crosses to the right side to anastomose with the azygos vein.

Accessory Hemiazygos Vein: Vein that drains the upper and left part of the thoracic wall, usually the superior intercostal veins. It descends on the left side of the spine and may anastomose with the hemiazygos vein or the azygos vein.

Sympathetic Trunk: Chain of nerve ganglia located bilaterally and parallel to the vertebral column. Part of the autonomic nervous system, it is responsible for the sympathetic innervation of various body structures, regulating functions such as heart rate and vasoconstriction.

Descending Thoracic Aorta: Portion of the aorta that extends from the aortic arch to the diaphragm, where it becomes the abdominal aorta. It descends in the posterior mediastinum, giving rise to branches that irrigate the thoracic wall, bronchi, and esophagus.



Esophagus: Muscular tube that connects the pharynx to the stomach, located posteriorly to the trachea in the thorax. It transports food through peristaltic contractions.

Trachea: Cartilaginous and membranous tube that extends from the larynx to the main bronchi, conducting air to the lungs. It is located anteriorly to the esophagus in the mediastinum.

Common Carotid Artery: Large arteries located in the neck that supply oxygenated blood to the head and neck. Each divides into the internal and external carotid artery.

Internal Jugular Vein: Large vein located in the neck, which drains deoxygenated blood from the brain, face, and neck, joining the subclavian vein to form the brachiocephalic vein.

Left Atrium: One of the four chambers of the heart, located in the upper and posterior part of the heart. It receives oxygenated blood from the pulmonary veins and pumps it to the left ventricle.

Pulmonary Trunk: Large blood vessel that emerges from the right ventricle of the heart, transporting deoxygenated blood to the lungs. It divides into the right and left pulmonary arteries.

Right Atrium: One of the four chambers of the heart, located in the upper and anterior part of the heart. It receives deoxygenated blood from the superior and inferior vena cava, and the coronary sinus, pumping it to the right ventricle.

Ascending Aorta: Initial portion of the aorta that emerges from the left ventricle of the heart, ascending in the mediastinum. It gives rise to the coronary arteries and curves to form the aortic arch.

Other structures can be verified directly on the physical piece or in the interactive 3D model.

Customizable Skin Tones:

This anatomical model offers the option of choosing between three skin tones to better represent human diversity and meet different educational and clinical needs. It is possible to choose between light skin, intermediate tone, and dark skin, providing greater realism and inclusion during training and demonstrations.

Smart Tags:

Designed to provide complete training in the health area, with interactive simulations that cover Pulse and Heart exams. This solution helps in the development of diagnostic skills in different clinical scenarios, allowing professionals and students to explore and improve their skills with greater safety and accuracy.



Heart sound recognition: Recognize 23 unique heart sounds with different patient postures and tools.

- Apex, Normal S1 S2, Supine, Bell
- Apex, Split S1, Supine, Bell
- Apex, S4, LLD, Bell
- Apex, Mid Systolic Click, Supine, Bell
- Apex, S3, LLD, Bell
- Apex, Early Systolic Murmur, Supine, Bell
- Apex, Mid Systolic Murmur, Supine, Bell
- Apex, Late Systolic Murmur, Supine, Bell
- Apex, Holosystolic Murmur, Supine, Bell
- Apex, Systolic Click & Late Systolic Murmur, LLD, Bell
- Apex, S4 & Mid Systolic Murmur, LLD, Bell
- Apex, S3 & Holosystolic Murmur, LLD, Bell
- Apex, OS & Diastolic Murmur, LLD, Bell
- Aortic, Normal S1 S2, Sitting, Bell
- Aortic, Systolic Murmur & Absent S2, Sitting, Bell
- Aortic, Early Diastolic Murmur, Sitting, Bell
- Aortic, Systolic & Diastolic Murmur, Sitting, Bell
- Pulmonary, Single S2, Supine, Diaphragm
- Pulmonary, Split S2 Persistent, Supine, Diaphragm
- Pulmonary, Split S2 Transient, Supine, Diaphragm
- Pulmonary, Ejection Systolic Murmur & Transient Split S2, Supine, Diaphragm
- Pulmonary, Split S2 & Ejection Systolic Murmur, Supine, Diaphragm
- Pulmonary, Ejection Systolic Murmur & Single S2 & Ejection Click, Supine, Diaphragm

Virtual Patient Monitor: Provides an immersive and realistic training environment for healthcare students. It allows instructors to customize parameters for various vital signs, empowering students to interpret signals, develop critical thinking, and enhance their clinical reasoning skills through realistic scenarios.

Customizable Vital Signs

- Blood Pressure
- SpO2
- Heart Rate

ECG Interpretation: Train on 18 diverse ECG scenarios, including: Atrial Fibrillation, Ventricular Tachycardia and Heart Blocks. The monitor also simulates synchronized pulses with ECG for truly realistic cardiology training.

ECG Patterns

- Sinus Rhythm
- Atrial Extrasystole



- Atrial Flutter
- Atrial Fibrillation
- Paroxysmal Supraventricular Tachycardia (PSVT)
- Ventricular Extrasystole
- Ventricular Tachycardia (VT)
- Ventricular Fibrillation (VF)
- First-Degree Atrioventricular Block (AVB)
- Second-Degree Atrioventricular Block
- Third-Degree Atrioventricular Block (Complete Block)
- Long QT Syndrome
- ST Segment Elevation
- ST Segment Depression
- T Wave Inversion
- Left Ventricular Hypertrophy (LVH)
- Right Ventricular Hypertrophy (RVH)
- Wolff-Parkinson-White Syndrome (WPW)

Breathing Patterns

- Normal
- Dyspnea
- Apnea
- Cheyne-Stokes
- Biot
- Kussmaul

About Anatomical Models:

They are developed with resin replication technology, supplying the scarcity of natural anatomical pieces for teaching and research. They present all the essential morphological characteristics with excellent cost-benefit, resistance, manual painting and numbering for precise identification of structures.

List of all visible structures:

- Sternum
- 1st Rib
- Diaphragm
- Right Pulmonary Artery
- Right Pulmonary Vein
- Superior Vena Cava
- Right Main Bronchus
- Azygos Vein



- Vagus Nerve
- Left Pulmonary Vein
- Left Main Bronchus
- Left Pulmonary Artery
- Greater Splanchnic Nerve
- Hemiazygos Vein
- Accessory Hemiazygos Vein
- Sympathetic Trunk
- Descending Thoracic Aorta
- Esophagus
- Trachea
- Common Carotid Artery
- Internal Jugular Vein
- Left Atrium
- Pulmonary Trunk
- Right Atrium
- Ascending Aorta