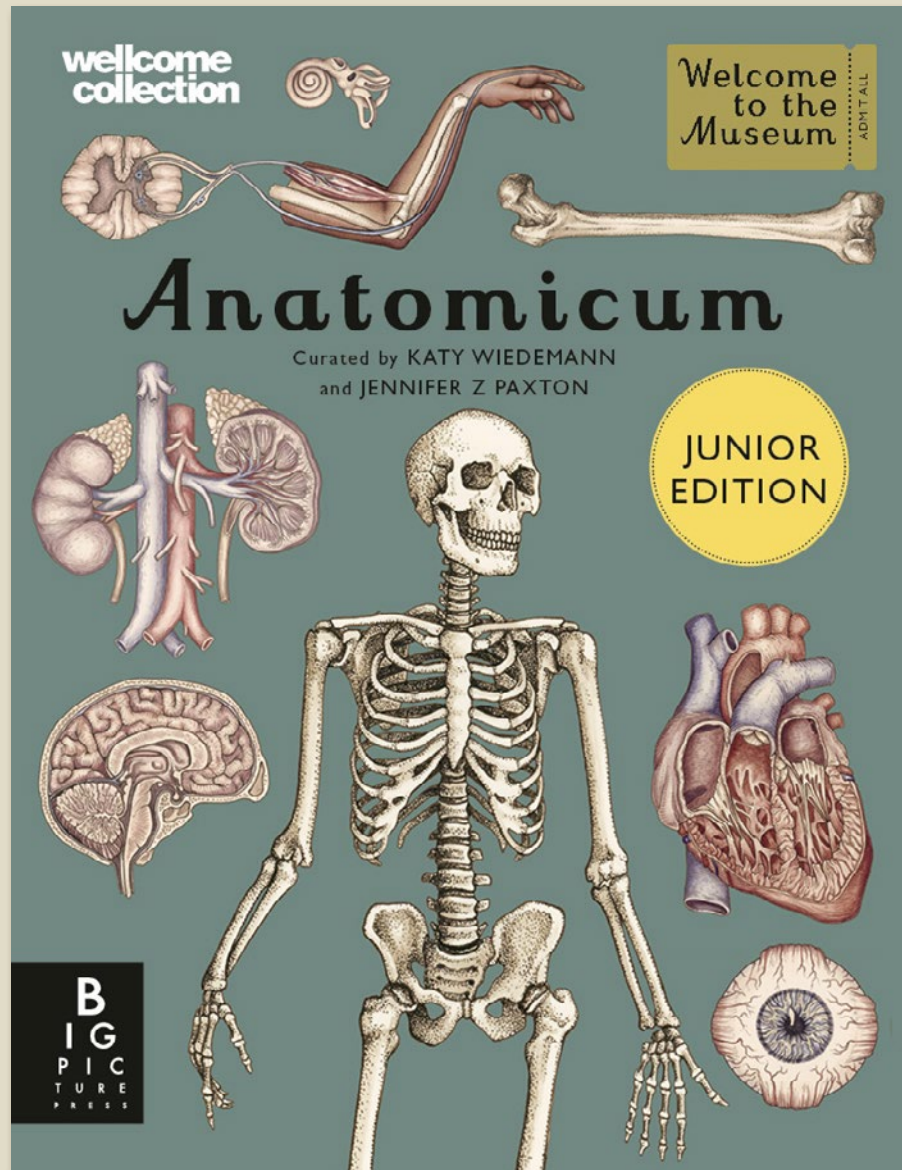


Anatomicum Junior

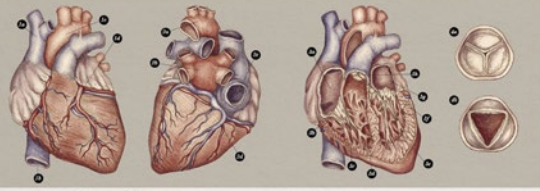


Explore the incredible human body with specially written text for younger readers.

- *Anatomicum* has sold over 100,000 copies worldwide (as of July 2022)
- The core *Welcome to the Museum* books have sold a combined quantity of over 1 million copies in 48 languages (as of July 2022)
- Written by Jennifer Z Paxton, Professor of Anatomy at Edinburgh University, and two-time winner of the Wellcome 'I'm a Scientist' competition
- Abridged format makes the perfect alternative to the large-format *Anatomicum*, and offers an alternative price point for consumers
- The Junior edition opens the series up to a younger age group and features a reworked text in a smaller format
- Illustrated by anatomy specialist and tattoo artist Katy Wiedemann

Anatomicum Junior

The Heart



The heart is the hardest working muscle in the body, beating over 100,000 times a day. It is only about the size of a fist and weighs like two pumpkins. The right hand side pumps blood towards the lungs, where it picks up oxygen. Oxygenated blood returns to the heart and the left hand side pumps it out to the rest of the body. A thick wall called the septum divides the right and left sides and keeps the blood separate.


The pumping action of the heart is produced by cardiac muscle in its walls, which contracts to push blood from one side to the other. There are four chambers (atria) of the heart, which are split into two ventricles at the bottom and two atria at the top.

With each heartbeat, the two atria contract to push the blood into...

Key to plate

1. Heart, front view a) Aortic arch b) Coronary artery c) Right ventricle d) Left ventricle e) Right atrium f) Left atrium	2. Heart, back view a) Superior vena cava b) Inferior vena cava c) Right atrium d) Left atrium	3. Heart, cross-section a) Right ventricle b) Left ventricle c) Septum d) Right atrium e) Left atrium	4. Heart, side view a) Right ventricle b) Left ventricle c) Septum d) Right atrium e) Left atrium
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Immune & Lymphatic Systems



The immune system is a collection of organs, tissues and cells that defend the body from harmful things. A key feature is the lymphatic system (blood only) which attacks viruses and bacteria. It is found in the blood and in immune organs like the spleen, thymus, tonsils and lymph nodes. The largest of these organs is the spleen, which filters blood and makes antibodies.

The lymphatic system is a large network of tubes, known as lymphatic vessels, and the lymph nodes. These are an organ of immune tissue in the neck, armpits and groin that act like sieves to filter out harmful things. The lymphatic vessels also trap up lymph, a watery substance that is squeezed out of the body's cells. Too much lymph would make parts of the body swell up, so the lymphatic vessels suck up any excess, clean it and empty it into large veins near the heart to be mixed with blood and pumped round the body.

Key to plate

1. Throat These are the main parts of the throat: a) Larynx b) Pharynx c) Esophagus	2. Thymus gland The thymus gland is a small, pea-sized organ in the upper chest area. It is part of the immune system and produces T-cells.	3. Spleen A soft, spongy organ that filters blood and stores red blood cells and platelets.	4. Tonsils These are small pieces of tissue in the throat that help fight off infections.
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The Eyes



The eyes are a pair of ball-shaped organs set within the skull in two spherical bony sockets called orbits. Their job is to receive light and turn the information into electrical signals that the brain can understand as images.

Light enters the eye through a small hole called the pupil and is focused by the cornea, a clear shield that also protects the eye. Around the pupil is the iris, a ring of coloured muscle that gives eyes their colour and adjust the size of the pupil to bright light, it makes the pupil smaller, reducing the amount of light that can pass through. In low light, the pupil expands to let more light in. After light has entered the eye it passes through the lens, which bends the light and focuses it onto the back of the eyeball.

The back of the eye is called the retina. It has millions of light detecting sensor cells which produce light messages (electrical signals) for the brain. These electrical signals are sent to the brain via an optic nerve at the back of each eye. The whole process happens in a fraction of a second.

Key to plate

1. Back of the eye The sensory part of the eye is the retina. It is covered in light sensitive cells called rods and cones.	2. Eye muscles The eye muscles are the muscles that move the eye around.	3. Eye The eye is a ball-shaped organ that is covered in a protective layer called the sclera.	4. Eye The eye is a ball-shaped organ that is covered in a protective layer called the sclera.
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The Skull

Underneath the skin and muscles of our head lies the skull, a protective home for the brain and sensory organs (the eyes, ears, nose and tongue). It is formed of 22 individual bones. The top part, or vault, is formed of eight bones and acts like a helmet, shielding the delicate brain inside from injury. The other 14 bones provide shape for the face and jaw. Only one of these, the mandible, or jawbone, can move. This bone is joined to the skull by a hinge joint (see page 16), which lets us open and close the jaw during chewing and talking.

Most of the skull bones have air-filled spaces inside them called sinuses. These make the skull lighter and make our voices clearer by allowing air to vibrate within them. There are also holes called foramina running right through the skull bones. These let the brain connect with other parts of the body via nerves, and allow blood vessels to pass to and from the brain and face.

You might notice that the ears and nose aren't visible. This is because the structure of the nose and ear is made from cartilage. This material is softer and decays more quickly than bone.

After a person dies, their skull might give us clues about them. We can guess the age, sex and ethnicity by studying the skull's size and features. Some scientists study bones to find out about ancient cultures, while others study bones to uncover clues about the cause of death in criminal cases.

Key to plate

1. Adult skull a) From the front b) From the back c) From the base (without jaw): The large central hole in the base of the skull is called the foramen magnum. This is where the spinal cord comes out of the skull to travel down the vertebral column. d) From the side	2. Newborn skull The bones of an adult skull are fused together and cannot move, but in babies, these joints are made of more flexible material. These 'soft spots' mean the skull can cope with the rapid growth of a baby's brain, from only about 350g at birth to nearly 600g in the first three months. a) From the top: The diamond-shaped area is the 'soft spot'. b) From the front: Infant skulls have a bigger forehead and a smaller jaw than adults' skulls. c) From the side: Note the large forehead and small jaw.
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