

Loeys-Dietz Syndrome: Arterial System

Aneurysms, dissections and tortuosity can be found in the aorta and arterial system. Here is an anatomy primer to help you understand the vascular system.

ARTERIAL SYSTEM OF THE HEAD AND NECK

brachiocephalic trunk (innominate artery): artery that takes off of the beginning of the aortic arch to supply blood to the head, neck, shoulders and upper extremities.

left common carotid artery: artery that takes off of the aortic arch (between brachiocephalic and left subclavian) to supply blood to the left side of the head and neck.

left subclavian artery: artery that takes off of the aortic arch and brings blood to the neck and left arm.

right subclavian artery: artery that takes off of the brachiocephalic trunk to supply blood to the neck and right arm.

axillary, brachial, radial and ulnar arteries: Left and Right; arteries that branch from the subclavian arteries to supply blood to all portions of the arms.

right common carotid artery: artery that takes off of the brachiocephalic trunk to supply blood to the right side of the head and neck.

vertebral arteries: Left and Right; arteries that originate off of the subclavian arteries and supply blood up to the cervical spine, spinal cord into the brain.

external carotid artery: Left and Right; each common carotid artery divides into an internal and external artery at the carotid sinus. The external carotid arteries supply blood to the neck, pharynx, esophagus, larynx, lower jaw and face.

internal carotid artery: Left and Right; each common carotid artery divides into an internal and external artery at the carotid sinus. The internal carotid arteries supply blood to the brain.

From the internal carotid arteries, blood is supplied to the brain through three branch arteries:

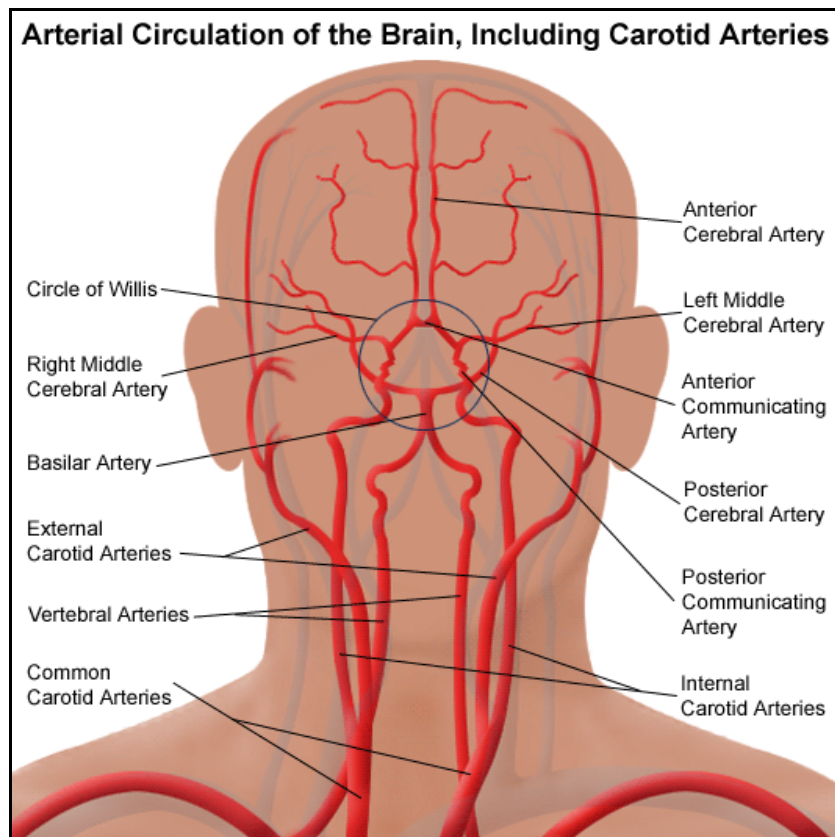
ophthalmic artery that supplies blood to the eyes

anterior cerebral artery which supplies the frontal and outer parts of the brain

middle cerebral artery which supplies blood to the midbrain and inner parts of the brain

basilar arteries: Left and Right; the fusion of the vertebral arteries after they enter the brain. It branches many times in the brain before dividing into the posterior cerebral arteries and then into the posterior communicating arteries.

cerebral arterial circle (Circle of Willis): Ring of artery that circles a portion of the pituitary gland and receives blood from the right and left internal carotid arteries and the basilar artery. With this arrangement the brain can receive blood from either the carotid or vertebral arteries, reducing the chance for serious interruption of blood flow to the brain if a block would occur in one of those branch arteries.



ARTERIAL SYSTEM OF THE CHEST, ABDOMEN and EXTREMITIES

aortic root: base of the aorta as it leaves the heart.

coronary arteries: Left and Right; arteries that originate off of the aortic root and supply the heart's muscle with blood.

ascending aorta: aorta above the root as it begins to curve to the left in the chest.

main pulmonary artery: artery that arises from the right ventricle of the heart and branches into the left and right pulmonary arteries and supply blood to the lungs.

aortic arch: aorta as it curves like a cane to the left in the chest.

descending aorta: aorta as it continues down in the chest after the aortic arch down to the diaphragm.

abdominal aorta: aorta as it continues downward in the abdomen. It and its branches supply blood to the organs in the stomach, to the pelvis and legs.

internal mammary artery: artery that supplies the anterior chest wall and the breasts.

celiac artery: artery that branches off of the abdominal aorta that divides into three branches to supply blood to the liver, stomach and spleen. These branches are:

left gastric artery that supplies blood to the stomach and esophagus

common hepatic artery that supplies blood to the arteries in the liver (hepatic), stomach (right gastric), gall bladder and portions of the intestines

splenic artery that supplies blood to the spleen and arteries to the stomach and pancreas

superior mesenteric artery: artery that branches off of the abdominal aorta about 2.5 cm below the celiac artery to supply blood to the arteries in the pancreas, small and large intestines.

inferior mesenteric artery: artery that arises from the abdominal aorta and supply blood to the end portion of the large intestines and rectum.

suprarenal arteries: Left and Right; arteries that arise from the abdominal aorta in the same area as the superior mesenteric artery and supply blood to the adrenal glands.

renal arteries: Left and Right; arteries that arise from the abdominal aorta, lower than the superior mesenteric arteries, and supply blood to the adrenal glands and kidneys.

lumbar arteries: arteries that arise from the back portion of the aorta and supply blood to the spinal cord and abdominal wall.

gonadal arteries: arteries that arise from the abdominal aorta between the superior mesenteric artery and inferior mesenteric artery to supply blood to the male or female reproductive systems.



common iliac arteries: Left and Right; arteries that arise at the point where the abdominal aorta ends. These arteries supply blood to the pelvis and lower extremities.

internal iliac arteries: Left and Right; each common iliac artery divides into an internal and external iliac artery. Internal iliac arteries supply blood to the bladder, walls of the pelvis, external genitalia, and inner thigh. (In females, they supply blood to the uterus and vagina)

external iliac arteries: Left and Right; each common iliac artery divides into an internal and external iliac artery. External iliac arteries supply blood to the legs.

femoral arteries: Left and Right; the external iliac arteries turn into the femoral arteries farther down in the thigh. As the femoral artery extends down the legs, they become the **popliteal** (behind the knee), **tibial and peroneal arteries** that supply blood to the lower legs and feet.

deep femoral arteries: Left and Right; arteries that branch off of the external iliac arteries before they become femoral arteries and that supply blood to the hip joint and deep muscles of the thigh.

