

Anatomy of the heart and blood vessels

You are responsible for the following circulatory system structures: human models, sheep heart dissection, cat dissection. Some vessels are only visible in the models. In addition to identifying these anatomical structures, you should be familiar with their functions (such as the path of blood flow, area of body that is supplied).

The heart: human heart models; pig/cat heart dissection.

pericardium	left atrium
superior/inferior vena cavae	bicuspid (mitral) valve
right atrium	chordae tendinae
pectinate muscles	atrioventricular groove
tricuspid valve	papillary muscles
right ventricle	left ventricle
trabeculae carneae	interventricular sulcus
pulmonary semilunar valve	aortic semilunar valve
pulmonary trunk	aorta
right/left pulmonary arteries	brachiocephalic artery
pulmonary veins (4)	left common carotid artery
left subclavian artery	left coronary artery
right coronary artery	anterior interventricular artery
circumflex artery	coronary sinus

The vessels: human torso models.

1. Arteries

- aortic arch

- brachiocephalic artery

- right common carotid

- right external carotid artery

- facial artery

- maxillary artery

- ophthalmic artery

- occipital artery

- superficial temporal artery

- right internal carotid artery

- right subclavian artery

- right vertebral artery

- axillary artery

- brachial artery

- radial artery

- ulnar artery

- deep brachial artery

- left common carotid

- left external carotid artery

- facial artery

- maxillary artery

- ophthalmic artery

- occipital artery

- superficial temporal artery

- left internal carotid artery (see right side, above)
- left subclavian artery
 - left vertebral artery
 - axillary artery
 - brachial artery
 - radial artery
 - ulnar artery
- thoracic aorta
- abdominal aorta
 - celiac artery (trunk)
 - superior mesenteric artery
 - right and left renal arteries
 - inferior mesenteric artery
 - right/left common iliac arteries
 - right/left internal iliac arteries
 - right/left external iliac arteries
 - right/left deep femoral arteries
 - right/left femoral arteries
 - right/left popliteal arteries
 - right/left anterior tibial arteries
 - right/left posterior tibial arteries

2. Veins

a. from head and neck:

- right/left ophthalmic, superficial right/left temporal, right/left facial veins empty into right/left internal jugular vein
 - right/left internal jugular empty into right/left subclavian veins

- right/left occipital vein empty into right/left external jugular vein
 - right left external jugular empty into right/left brachiocephalic veins
- right/left vertebral veins empty into right/left brachiocephalic veins
- thus on both right and left sides, subclavian, external jugular, vertebral, and internal jugular veins give rise to brachiocephalic veins
 - the two brachiocephalics unite to form the superior vena cava

b. from upper limbs:

- ulnar and radial veins of forearm empty into brachial vein
- medial cubital vein connects cephalic vein and basilic vein on anterior aspect of elbow
- brachial vein and basilic vein give rise to axillary vein
- cephalic vein and axillary vein fuse into subclavian vein, empties into brachiocephalic as described above.

c. from lower limbs:

- anterior and posterior tibial veins unite at knee to form popliteal vein
- popliteal vein at knee becomes femoral vein
- great saphenous vein empties into femoral vein
- as it enters pelvis the femoral vein becomes external iliac vein which unites with internal iliac vein to form common iliac vein
- right/left common iliac veins unite to form inferior vena cava

d. from abdomen:

- renal veins, gonadal veins and hepatic veins empty into inferior vena cava
- note hepatic portal vein (from GI tract organs to liver)