

## Chapter 9-14: Principal Arteries of the Body

The arteries of the circulatory system transport blood away from the heart. Their main purpose is to carry oxygen and nutrients to body tissues, but they also transport hormones, elements of the body's immune system, and metabolic waste. All of the arteries of the body branch from the aorta. Veins return the blood to the heart through the vena cava.

Note that many letters bear a subscript 1 or 2. Arteries that have the subscript 1 lie on the anatomical left side of the body (your visual right), while the arteries labeled with 2 lie on the anatomical right side (your visual left). It is often difficult to distinguish where one artery begins and another ends, so we have indicated the boundaries with short lines. When coloring, darker colors should be used for the large arteries, but as you reach smaller ones, light colors are recommended.

Arising from the left ventricle of the heart is the largest artery of the body, the **aorta (A)**. In the plate, the artery is seen curving to the right to become the **thoracic aorta (A<sub>1</sub>)**. The thoracic aorta passes down along the spine and through the diaphragm to become the **abdominal aorta (A<sub>2</sub>)**, which in turn splits to become the common iliac arteries.

A branch of the aorta at its first major arch is the **brachiocephalic trunk (B)**, which is also called the innominate artery. It branches into the common carotid artery, which in turn branches into the **left common carotid (C<sub>1</sub>)** and the **right common carotid artery (C<sub>2</sub>)**. The carotid arteries supply the neck and head with blood.

The third branch from the brachiocephalic trunk is the **right subclavian artery (E<sub>2</sub>)**. On the right side of the plate, the **left subclavian artery (E<sub>1</sub>)** arises from the arch of the aorta. The subclavian arteries supply the upper limbs with blood. Arising from the right subclavian artery is the **vertebral artery (D)**, which supplies the vertebrae, deep muscles of the neck, and spinal cord with blood.

Also arising from the subclavian arteries are the **left and right axillary arteries (F<sub>1</sub> and F<sub>2</sub>)**. Axillary arteries supply the muscles of the shoulder and the thoracic muscles, and give rise to the

**brachial arteries (G<sub>1</sub> and G<sub>2</sub>)**, which service the arm. The **radial arteries (H<sub>1</sub> and H<sub>2</sub>)** and **ulnar arteries (I<sub>1</sub> and I<sub>2</sub>)** arise from the brachial arteries and carry blood to muscles of the forearm.

To this point we have briefly surveyed the principal arteries of the head, neck, and upper extremity. Now we will return to the thoracic and abdominal regions and locate the other branches from the aorta. Continue your coloring, and continue to locate the arteries. Be careful to note the beginnings and endings of the arteries.

Arising from the aorta just as it leaves the left ventricle, the **coronary arteries (J)** pass into the heart muscle, where they supply this organ with oxygen and nutrients.

Another trunk emerges from the aorta after it has passed through the diaphragm. This is an unpaired artery called the **celiac trunk (K)**. Arteries from the celiac trunk branch to the liver, stomach, and spleen, as well as other regions of the upper abdomen. The **hepatic artery (L)** branches from the celiac trunk and extends to the liver. From the abdominal aorta, the **gastric artery (M)** supplies the stomach, and the **splenic artery (N)** moves in the direction of the spleen.

Also extending from the celiac trunk are the paired, renal arteries. The **left renal artery (O<sub>1</sub>)** supplies the left kidney, and the **right renal artery (O<sub>2</sub>)** extends to the right kidney. Next we see the unpaired **superior mesenteric artery (P)**. This artery carries blood to the small intestine, pancreas, and portions of the large intestine. The **gonadal artery (Q)** leads to arteries that supply the ovaries in females and the testes in males. Beyond the gonadal artery is the **inferior mesenteric artery (R)**. The diagram shows its numerous branches as it services portions of the transverse colon, descending colon, sigmoid colon, and rectum.

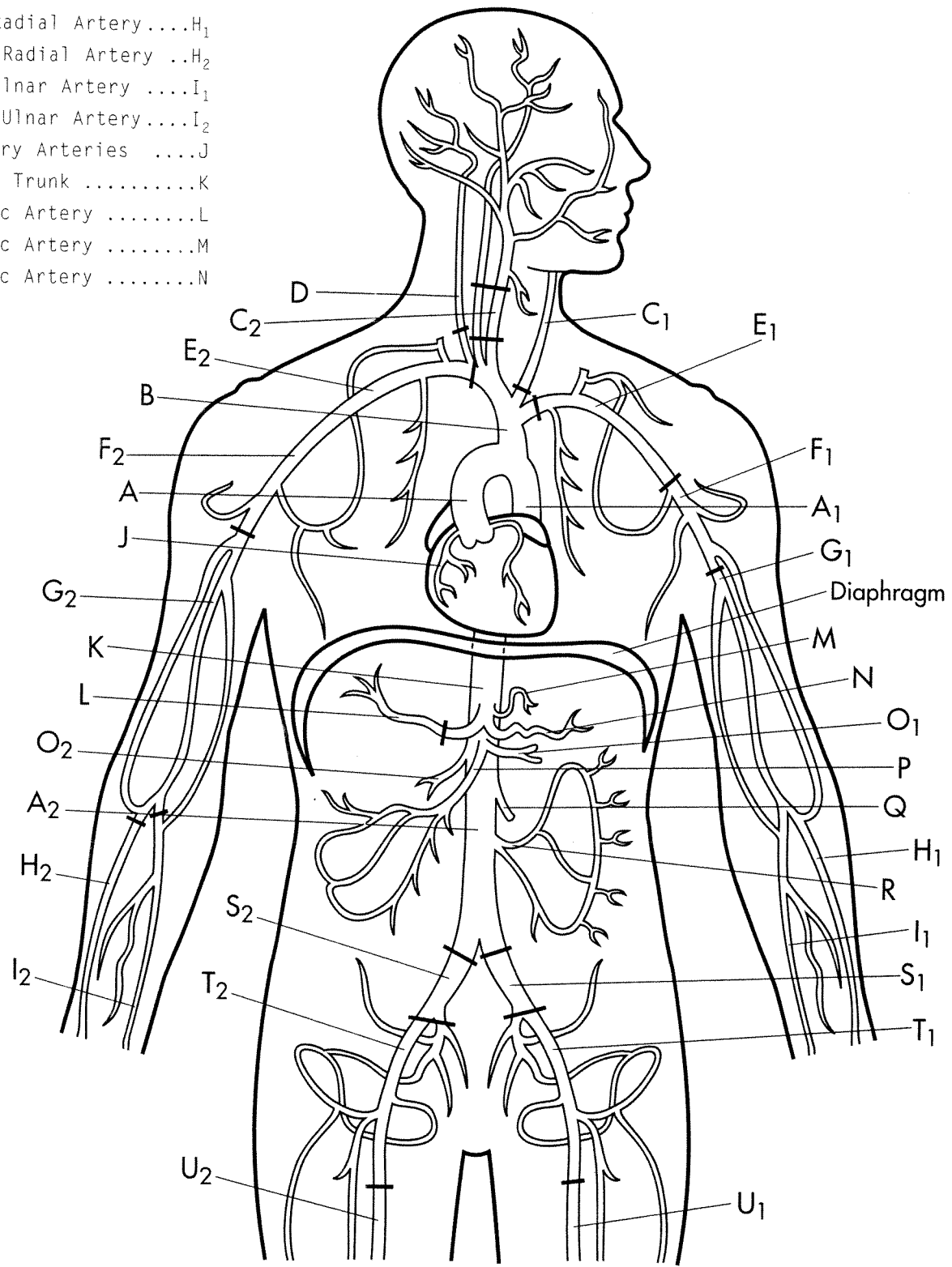
Further down the celiac trunk, two major arteries arise; the **common iliac arteries (S<sub>1</sub> and S<sub>2</sub>)**. They soon split to form the internal and external iliac arteries. Only the **external iliac arteries (T<sub>1</sub>, T<sub>2</sub>)** are shown. These arteries lead to the **left and right femoral arteries (U<sub>1</sub>, U<sub>2</sub>)**. Blood from these arteries services the leg muscles.

### Principal Arteries of the Body

- |   |  |  |
|---|--|--|
| <input type="radio"/> Aorta.....A                                   | <input type="radio"/> Right Common Carotid Artery.....C <sub>2</sub> | <input type="radio"/> Left Axillary Artery.....F <sub>1</sub>  |
| <input type="radio"/> Thoracic Aorta.....A <sub>1</sub>             | <input type="radio"/> Vertebral Artery.....D                         | <input type="radio"/> Right Axillary Artery.....F <sub>2</sub> |
| <input type="radio"/> Abdominal Aorta.....A <sub>2</sub>            | <input type="radio"/> Left Subclavian Artery.....E <sub>1</sub>      | <input type="radio"/> Left Brachial Artery.....G <sub>1</sub>  |
| <input type="radio"/> Brachiocephalic Trunk.....B                   | <input type="radio"/> Right Subclavian Artery.....E <sub>2</sub>     | <input type="radio"/> Right Brachial Artery.....G <sub>2</sub> |
| <input type="radio"/> Left Common Carotid Artery.....C <sub>1</sub> |  |  |

Principal Arteries of the Body

- Left Radial Artery ....H<sub>1</sub>
- Right Radial Artery ..H<sub>2</sub>
- Left Ulnar Artery ....I<sub>1</sub>
- Right Ulnar Artery....I<sub>2</sub>
- Coronary Arteries ....J
- Celiac Trunk .....K
- Hepatic Artery .....L
- Gastric Artery .....M
- Splenic Artery .....N



Anterior view

- |  |  |  |
|--|--|--|
| ○ Left Renal Artery ....O <sub>1</sub> | ○ Inferior Mesenteric Artery .....R            | ○ Left External Iliac Artery.....T <sub>1</sub>  |
| ○ Right Renal Artery....O <sub>2</sub> | ○ Left Common Iliac Artery.....S <sub>1</sub>  | ○ Right External Iliac Artery.....T <sub>2</sub> |
| ○ Superior Mesenteric Artery .....P    | ○ Right Common Iliac Artery.....S <sub>2</sub> | ○ Left Femoral Artery ..U <sub>1</sub>           |
| ○ Gonadal Artery .....Q                |  | ○ Right Femoral Artery..U <sub>2</sub>           |