



Human Body Systems

Virtual Learning

9-12th PLTW[®] HBS

PLTW[®] 4.3.3 Go with the Flow

April 22, 2020



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Lesson: April 22, 2020

Objective/Learning Target:

Students will be able to identify the major arteries and veins of the upper torso including the arteries and veins of the arm and neck. (*Reference: PLTW[®] 4.3.3 Go with the Flow*)



Let's Get Started/Warm Up Activities:

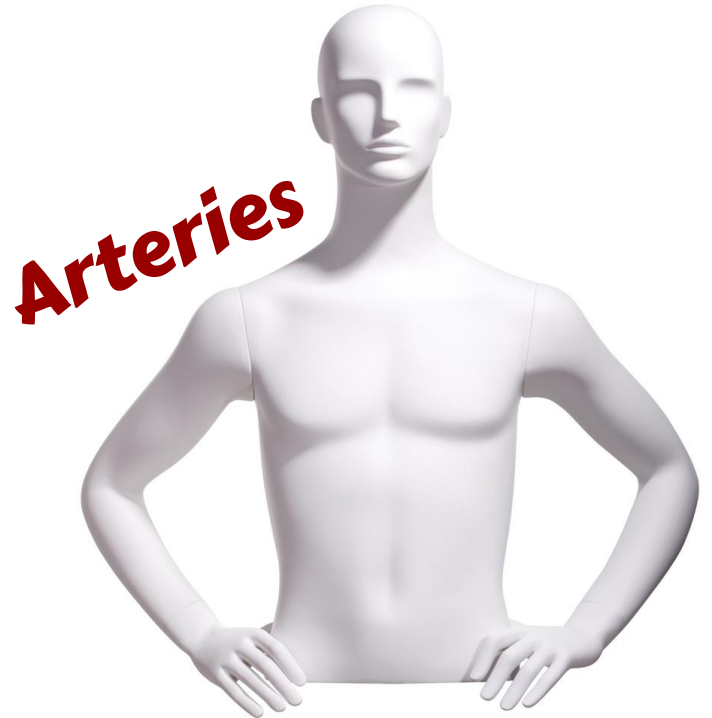
Before we start our lesson today, watch the following videos:

- [Arteries of the Trunk \(Upper Torso\)](#)
- [Veins of the Cardiovascular System](#)

Lesson/Activity:

Activity #1:

- Draw a rough sketch of the upper torso of the human body in your notebook or on a piece of paper.
- Click [HERE](#) and draw and label the **major arteries of the upper torso**.
- If available, differentiate the different arteries using colored pencils, pens, markers or crayons.



Lesson/Activity continued:

Activity #2:

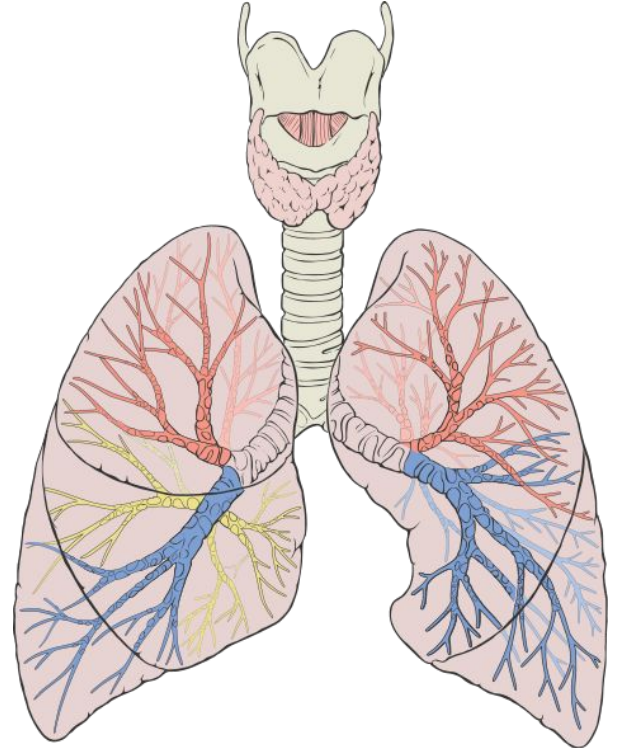
- Draw a *different* rough sketch of the upper torso of the human body in your notebook or on a piece of paper.
- Click [HERE](#) and draw and label the **major veins of the upper torso**.
- If available, differentiate the different veins using colored pencils, pens, markers or crayons.



Lesson/Activity continued:

Activity #3:

- Click [HERE](#) to view the **pulmonary system blood vessels**.
- Answer the following questions in your notebook or on your piece of paper:
 - a. What are arterioles?
 - b. What are venules?
 - c. Summarize the path of blood through the pulmonary system. Use the diagram in the link above as a helpful guide.



Lesson/Activity Answers:

Activity #1 Answer(s):

Click [HERE](#) to see the diagram for Activity #1.

(Needed a Code to access all of these)

Activity #2 Answer(s):

Click [HERE](#) to see the diagram for Activity #2.



Activity #3 Answer(s):

Click [HERE](#) to see the diagram for Activity #3.

- Arterioles: a small branch of an artery leading into capillaries
- Venules: a very small vein, especially one collecting blood from the capillaries



Practice:

Practice #1: Draw a rough sketch of the body in your notebook or on a piece of paper. Using what you know about the anatomy of the body, draw and label the following blood vessels. Try not to use the internet for help; use your anatomy memory instead!

- Superior Vena Cava
- Inferior Vena Cava
- Renal Vein
- Common Iliac Vein
- Femoral Vein
- Posterior Tibial Vein
- Internal Jugular Vein

Practice continued:

Read the Article:

[Are Veiny Arms Really a Sign You're Super Fit?](#)

Practice #2: Answer the following questions after reading the article:

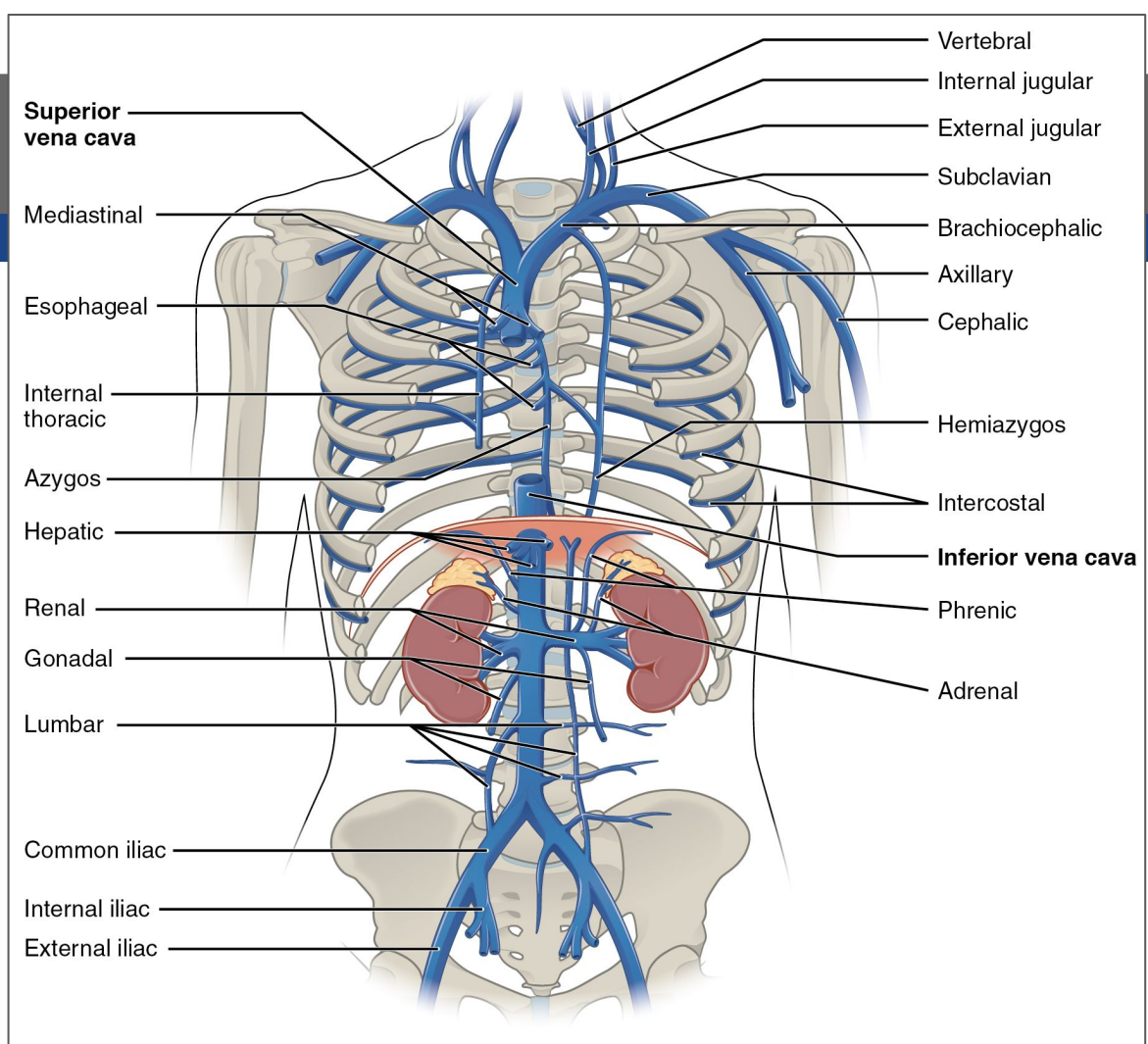
1. What is vascularity?
2. List two reasons from the article that a bodybuilder's veins may "pop out" during or after a workout.
3. Suggest a reason why the veins of a bodybuilder "pop out" more than a person who does not lift weights. Why don't we see arteries "pop out"?



Practice #1 Answer(s):

Locate the following terms on the diagram to the right:

- Superior Vena Cava
- Inferior Vena Cava
- Renal Vein
- Common Iliac Vein
- Femoral Vein
- Posterior Tibial Vein
- Internal Jugular Vein



Practice Answer(s):

Practice #2 Answer(s): Click [HERE](#) to see the article link.

1. What is vascularity? In bodybuilding, vascularity is the condition of having many highly-visible, prominent, and often extensively-ramified superficial veins.
2. List two reasons from the article that a bodybuilder's veins may "pop out" during or after a workout. Several answers possible: 1) the venous outflow is slower than the arterial inflow, causing a backup of venous blood; 2) increased secretion of the stress-hormone cortisol, or over-production of the hormone aldosterone, which causes your body to hang on to sodium. As a result, your body retains water and makes your veins swell.
3. Suggest a reason why the veins of a bodybuilder "pop out" more than a person who does not lift weights. Why don't we see arteries "pop out"? Veins are closer to the skin's surface than arteries. In addition, arteries are able to withstand an increase of pressure due to their thicker outer wall.



Additional Practice and/or Resources:

Learn More:

[HBS Unit 4.3.3 Flashcards](#)

Test your knowledge of major arteries & veins by clicking on the link above.

[Major Arteries of the Body](#)

Want to know more arteries of the body? Explore this 3D animation of the major arteries of the body.

[Veins of the Body](#)

Check out this 3D animation that illustrates additional veins of the body.