

The Circulatory System:  
A Good Guide

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April 1, 2015

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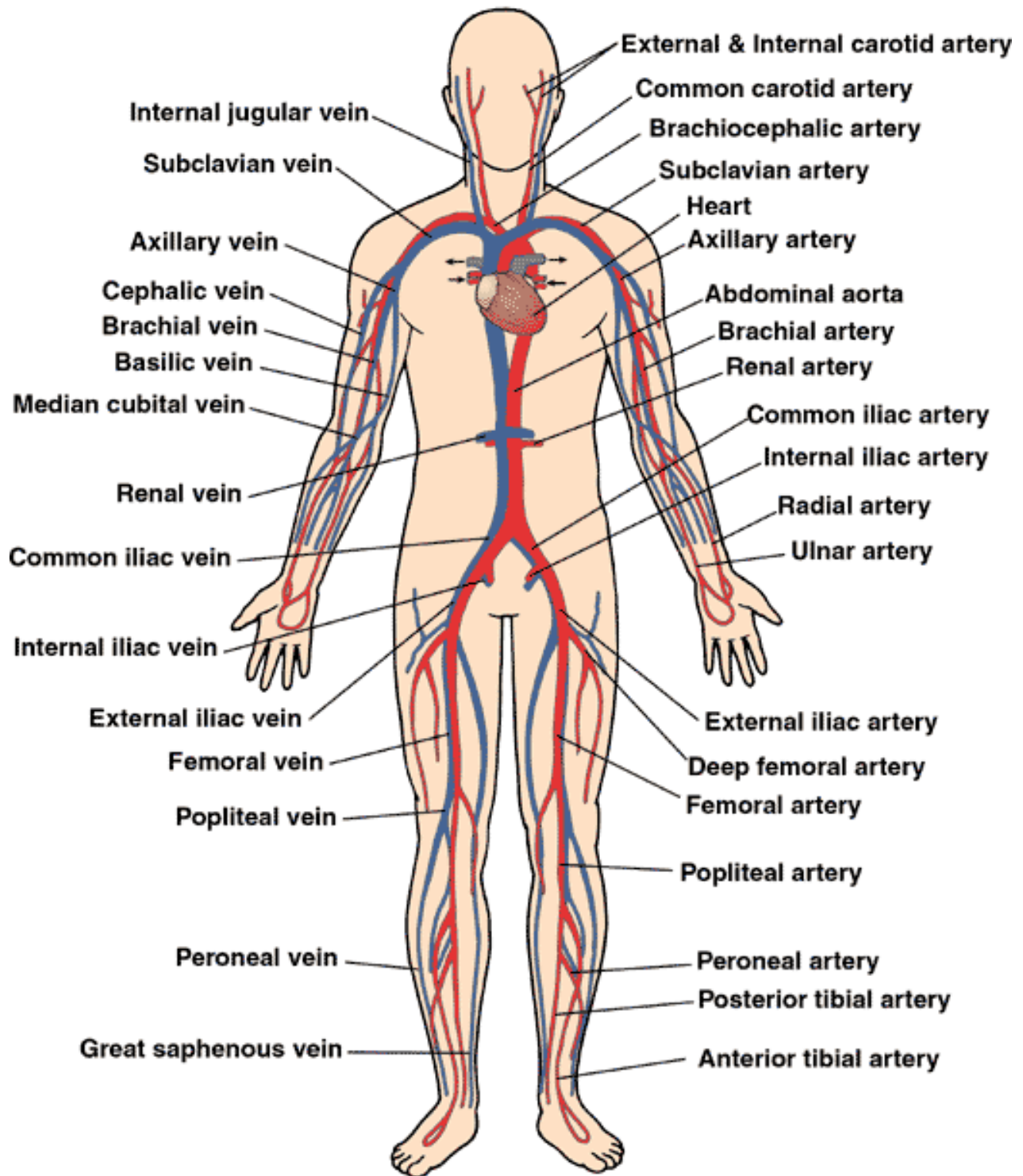
## Introduction

First you will be taken on a step by step journey throughout the circulatory system with the process description, then you will see a full page diagram of the circulatory system. Following that you will see pictures and a description about all the major parts of the circulatory system. After that you will see a review and a screenshot of the main site that we used to get our info from. Next you will see the quiz that we made, our quiz key, and pictures of our completed quizzes. Then we will show images of our PowerPoint that Anderson made. And lastly you will see the sites that we got all that info from.

## Process Description

The circulatory system is important because it provides oxygen to the muscles and pumps blood to the rest of the body. The circulatory system also needs the respiratory system to function. The heart is an involuntary muscle which means you can't choose when to use it. Your brain does. Now we will go through the adventure called the circulatory system. First low oxygenated blood enters the right atrium through a vein called the vena cava. Then the blood goes through the tricuspid valve into the right ventricle. Now the blood is pumped through the pulmonary artery up to the lung where the gas exchange occurs. That means that the CO<sub>2</sub> is exchanged with oxygen by when it goes up to the alveoli. But how did it get there? It first starts when the oxygen is breathed through the nose or mouth. Then it goes down the windpipe to the lungs where it goes to the bronchioles which then branch off to the alveoli. And it is then sent down to the left atrium through the pulmonary vein. Oxygenated blood then goes down to the left ventricle through the bicuspid valve then goes to a large artery called the aorta which then branches off to different arteries until it gets to the muscles where the muscles trade oxygen for CO<sub>2</sub>. Then the blood goes through the veins to the kidneys to filter out the waste in the blood then it goes through the veins back to the heart and then the process starts over again when the heart beats.

## Full Page Diagram Circulatory System



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Figure 1. "Circulatory System: Definition, Cardiovascular System Explained, How It Works, Diagrams, Pulmonary And Systemic Circulation," n.d.

## Parts Description

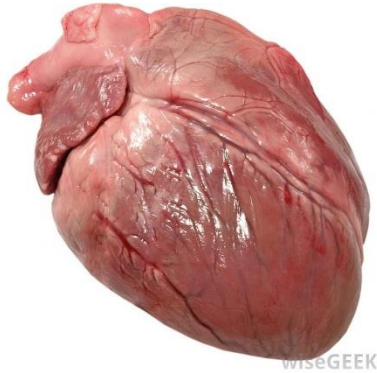


Figure 2. Heart ("the human heart pumps blood through the circulatory system | the body of the eye model human model anatomy,medical use human organ Anatomy,anatomy of female reproductive system,the human anatomy,anatomy of the organs of the human body,anatomy human body organs,human body male anatomy,anatomy and physiology of the body,organ in the human body,the body of human eyes,- www.harvard-wm.org," n.d.)

### The Heart

The heart is a critical part of the circulatory system. There are four chambers in the heart. The left/right atrium and the left/right ventricle. The right atrium collects deoxygenated blood and sends it to the right ventricle that transports blood to the lungs. The left atrium collects oxygenated blood from the lung and sends it to the left ventricle which sends the blood to the arteries. An average heart weighs about 9.75 ounces



Figure 3. Kidney ("Renal Pathology," n.d.)

### The Kidneys

The kidneys are made up of millions of cleaning units called nephrons. The kidneys filter waste out of blood. If they did not filter waste than you would get waste in your heart and that would kill you. The average weight of an adult kidney is about a quarter pound. The average size of a kidney is about 4 inches long 2.5 inches wide and 1.5 inches thick. Kidneys are brown and squishy.

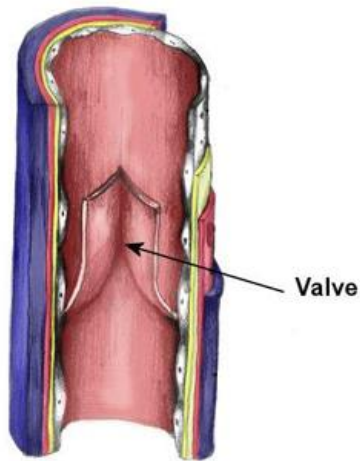


Figure 4 Vein.(TeachPE.Com,

### The Veins

Veins transport deoxygenated blood to the heart. They have valves to keep blood from flowing down. It feels like a thin squishy hose.

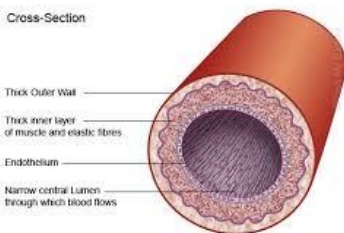


Figure 5 Arteries.("Arteries - Pass My Exams: Easy exam revision notes for GCSE Biology," n.d.)

### The Arteries

Arteries transport oxygenated blood to the body. They lack valves because the blood has better pumping force. The artery feels like a vein.

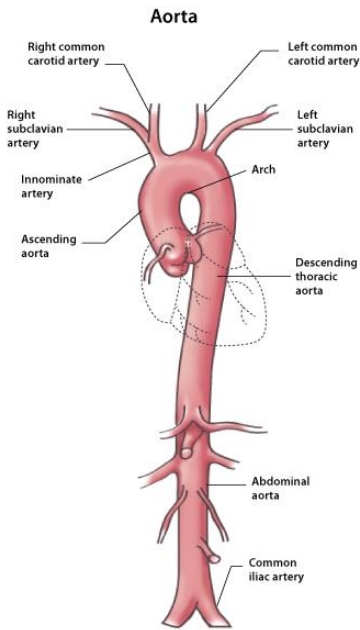


Figure 6 Aorta. (Lee Memorial Health System, 2014)

### The Aorta

The Aorta is a large artery that connects to the heart. Any blood that is pumped out of the heart goes through the Aorta.

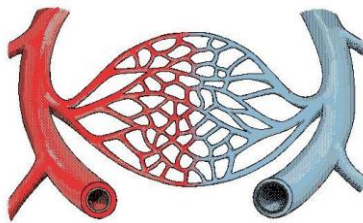


Figure 7 Capillaries. (Hinzie Media Inc., 2012)

### The Capillaries

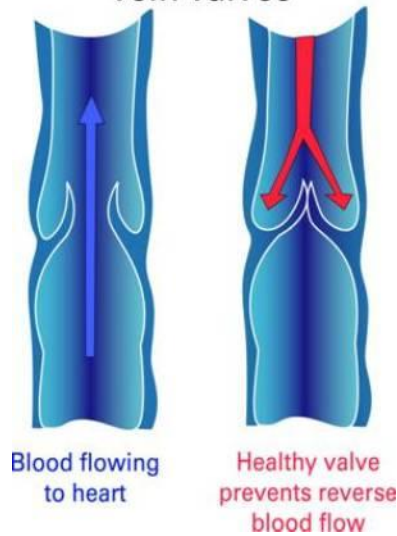
The Capillaries receive blood from the arteries and distribute the oxygen to the muscles and gives the blood with CO<sub>2</sub> back to the veins.

Capillaries are veins and arteries that branch off bigger arteries.

Capillaries are so thin they can only transport a single line of blood cells at once.



## Normal One-Way Vein Valves



## Valves

Prevents the blood from flowing backward in the veins and are pink.

They are like to pieces of paper that come together.

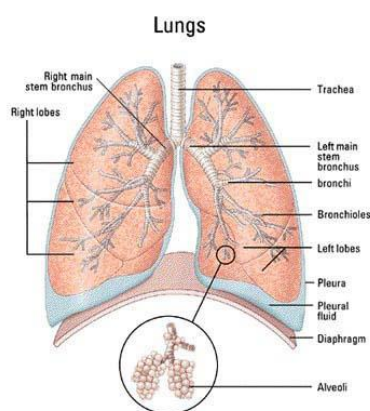
Figure 8 Valves. (St. Thomas Radiology Associates, LLC, n.d.)



## Vessels

Blood vessels circulate blood in the body. Blood vessels are veins and arteries. They feel like thin squishy tubes.

Figure 9 Vessels. (LookForDiagnosis.com, 2014)



## Lungs

I am only going to talk about how the lungs are important to the circulatory system. First air goes down the trachea. After that it goes down to the bronchioles and exchanges gas with the blood. Then the  $\text{CO}_2$  leaves the lungs and is exhaled.

Figure 10 Lungs. (Buurma, 2009)

## Blood Cells

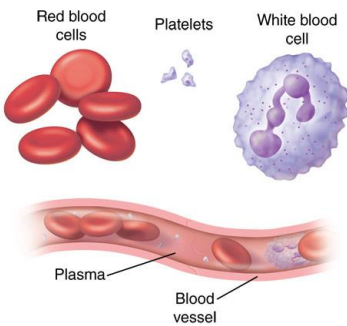


Figure 11 Blood Cells. (University of Rochester Medical Center, 2015)

### Red Blood Cells

Red blood cells carry oxygen and are red.

### White Blood Cells

White blood cells fight infections. They are kind of like the body's

bodyguard

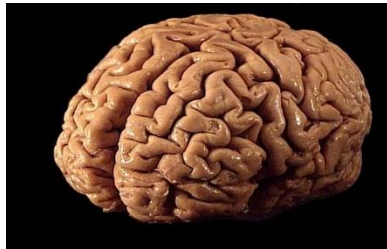


Figure 12 Brain. (Rogers, 2015)

### The Brain

This organ has 100 billion neurons with close to a quadrillion

connections and controls everything the body does.

The brain is whitish pink and has a consistency of a jelly like substance.

### Some Major Voluntary Muscles

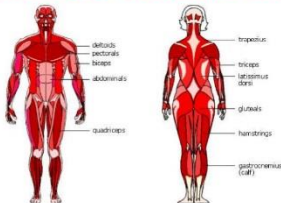


Figure 13 Voluntary Muscles. (Study.com, 2015)

### Voluntary Muscles

These are muscles that you can choose to move. (Like your arms, legs, etc.)

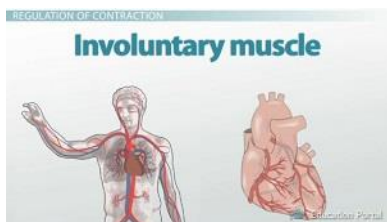


Figure 14 Involuntary Muscles. ("Upload, Share, and Discover Content on

### Involuntary Muscles

These are muscles that you can't choose to move. (Heart, lungs, liver, etc.)

## Informational Website Review

The screenshot shows a web browser window displaying a National Geographic article titled "Heart". The browser's address bar shows the URL: `science.nationalgeographic.com/science/health-and-human-body/human-body/heart-article.html`. The page features a dark header with the National Geographic logo, social media links, and a search bar. Below the header is a navigation menu with categories like Home, Video, Photography, Animals, Environment, Travel, Adventure, Television, Kids, Subscribe, and Shop. The main content area is titled "Heart" and includes a sub-menu with options like "HEALTHY HEART", "HEART ATTACK", and "PRINTABLE ITEMS". A large, interactive image of a human torso with a glowing heart and circulatory system is the central focus. Text to the left of the image describes the heart's function: "The rhythmic beat of your muscular heart keeps blood flowing through the body, bringing nutrients and oxygen to every cell. Get to know the inner workings of your heart with this interactive feature." A "CONTINUE" button is visible below the text. At the bottom of the article, there is a "Share" button and a paragraph of text: "The heart is the body's engine room, responsible for pumping life-sustaining blood via a 60,000-mile-long (97,000-kilometer-long) network of vessels. The organ works ceaselessly, beating 100,000 times a day, 40 million times a year—in total clocking up three billion heartbeats over an average lifetime. It keeps the..." To the right of this text is a "CELEBRATING 125 YEARS" banner. The browser's taskbar at the bottom shows several open files: `artery.png`, `vein.JPG`, `kidney.jpg`, and `humanheart.png`. The system clock in the bottom right corner indicates the time is 12:16 PM on 3/27/2015.

Figure 15. ("Human Bodv. Human Body Information. Facts. News. Photos -- National Geoaographic." n.d.)

This website was good for information about the heart. It has facts, examples and is interactive. The only thing I have against it is that if you are looking for the circulatory system you can't learn about anything other than the heart. Other than that it is a good website and recommend it.

## Quiz

Name: \_\_\_\_\_

1. The circulatory system makes air. (true)(false)
2. Your heart pumps blood. (true)(false)
3. Blood carry's oxygen. (true)(false)
4. Blood gets oxygen from lungs (true)(false)
5. Arteries carry only oxygenated blood (true)(false)
6. Veins carry only deoxygenated blood (true)(false)
7. Veins have valves in them (true)(false)
8. The heart has 4 chambers in it (true)(false)
9. Red blood cells make blood red (true)(false)
10. Kidneys help you breathe (true)(false)

## Quiz Key

Name: \_\_\_\_\_

1. The circulatory system makes air. (false)
2. Your heart pumps blood. (true)
3. Blood carry's oxygen. (true)
4. Blood gets oxygen from lungs (true)
5. Arteries carry only oxygenated blood (true)
6. Veins carry only deoxygenated blood (true)
7. Veins have valves in them (true)
8. The heart has 4 chambers in it (true)
9. Red blood cells make blood red (true)
10. Kidneys help you breathe (false)

## Completed Quiz

9/10

Name: ISAAC


1. The circulatory system makes air.  (true)  (false)
2. Your heart pumps blood.  (true)  (false)
3. Blood carry's oxygen.  (true)  (false)
4. Blood gets oxygen from lungs  (true)  (false)
5. Arteries carry only oxygenated blood  (true)  (false)
6. Veins carry only deoxygenated blood  (true)  (false)
7. Veins have valves in them  (true)  (false)
8. The heart has 4 chambers in it  (true)  (false)
9. Red blood cells make blood red  (true)  (false)
10. Kidneys help you breathe  (true)  (false)

9/10

Name: TYLER

1. The circulatory system makes air. (true)(false)
2. Your heart pumps blood. (true)(false)
3. Blood carry's oxygen. (true)(false)
4. Blood gets oxygen from lungs (true)(false)
5. Arteries carry only oxygenated blood (true)(false)
6. Veins carry only deoxygenated blood (true)(false)
7. Veins have valves in them (true)(false)
8. The heart has 4 chambers in it (true)(false)
9. Red blood cells make blood red (true)(false)
10. Kidneys help you breathe (true)(false)

## Presentation Images




heart

# Intro

# Circulatory system

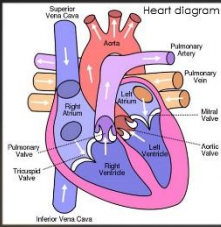
BY: ANDERSON AND ETHAN



Circulatory system

The circulatory system transports oxygen in blood. The circulatory systems core function is to transport nutrients oxygen etc. It is made up of 4 core elements heart, arteries/veins, kidneys, and lungs. Every part plays its own role for example kidneys don't help you breathe and lungs will never pump blood.


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Heart diagram

# The Heart

# Blood cells

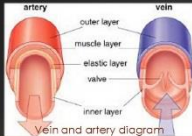


Red blood cell

The red blood cell is a blood cell that contains oxygen and Gives blood a red tint. Inside a red blood cell is the Hemo-globin. The Hemo-globin has a Base made of iron which joins with oxygen In high oxygen environments like your lungs.

The heart is an organ that circulates blood through your body. The heart is the most Critical part of the circulatory system. The heart pumps oxygenated blood through Arteries. Deoxygenated blood is pumped back up through veins into the heart. Then the Heart pumps blood to the lungs to exchange carbon-dioxide with fresh oxygen. Then The process repeats.


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Vein and artery diagram

# Veins and arteries

# Kidneys



Kidneys

Arteries and veins transport blood throughout your body. Arteries transport oxygenated blood and lack a valve because they push blood downward. Veins carry deoxygenated blood back to the heart. Veins have valves to keep blood from flowing in the wrong direction.

The kidneys play a few critical roles. They keep blood pressure from getting to high. Kidneys also filter waste out of blood. If waste isn't filtered out of blood. Your body would fill with waste then die.

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## resources

References

Bush, R., Bush, P., & VEN EXPERTS. (2015). How Do Veins Work? Retrieved from <http://www.veinexperts.org/veins/how-do-veins-work.asp>

Circulatory System Models - Category (in 4). Retrieved from <http://www.golmulators.com/Anatomy-Models-Circulatory-System-Models-3/ARF.htm>

Galik, S. (2011). Mammalian Red Blood Cells | cell biology oim. Retrieved from <http://cellbiology.com/thevgalik.org/0096/73>

Science Kids. (2015, February 6). Human Heart Diagram - Human Body Pictures - Science for Kids. Retrieved from <http://www.sciencekids.co.nz/pictures/humanbody/heartdiagram.html>

Teachpe. (2015). The Human Heart. Retrieved from <http://www.teachpe.com/anatomy/heart.php>

THE CIRCULATORY SYSTEM (in 4). Retrieved from <http://teachingbiology.net/circulatory%20system/circulatory%20system.htm>

The Franklin Institute. (2015). Blood Vessels - Veins - The Human Heart: An Online Exploration from The Franklin Institute, made possible by Unlvis. Retrieved from <http://team-ft.edu/eam/heart/vessels/veins.html>

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## References

Arteries - Pass My Exams: Easy exam revision notes for GCSE Biology. (n.d.). Retrieved from

<http://www.passmyexams.co.uk/GCSE/biology/arteries.html>

Buurma, S. (2009, August 24). How to: breathe up & fill your lungs | Team Sharkbait. Retrieved

from <http://shark-bait.com/2009/08/24/how-to-breathe-up-fill-your-lungs/>

Circulatory System: Definition, Cardiovascular System Explained, How It Works, Diagrams,

Pulmonary And Systemic Circulation. (n.d.). Retrieved from [http://www.womens-](http://www.womens-health-advice.com/circulatory-system.html)

[health-advice.com/circulatory-system.html](http://www.womens-health-advice.com/circulatory-system.html)

Hinzie Media Inc. (2012, May 2). The Capillaries of the Body - InfoBarrel. Retrieved from

[http://www.infobarrel.com/The\\_Capillaries\\_of\\_the\\_Body](http://www.infobarrel.com/The_Capillaries_of_the_Body)

Human Body, Human Body Information, Facts, News, Photos -- National Geographic. (n.d.).

Retrieved from [http://science.nationalgeographic.com/science/health-and-human-](http://science.nationalgeographic.com/science/health-and-human-body/human-body/)

[body/human-body/](http://science.nationalgeographic.com/science/health-and-human-body/human-body/)

Lee Memorial Health System. (2014). About Your Heart > Your Aorta - Cardiac Care Services

- Lee Memorial Health System. Retrieved from

<http://www.leememorial.org/cardiaccare/about/aorta.asp>

LookForDiagnosis.com. (2014, September). Blood vessels. Retrieved from

[https://lookfordiagnosis.com/mesh\\_info.php?term=blood+vessels&lang=1](https://lookfordiagnosis.com/mesh_info.php?term=blood+vessels&lang=1)

Psychology Today. (2015). Neuroscience | Psychology Today. Retrieved from

<https://www.psychologytoday.com/basics/neuroscience>

Renal Pathology. (n.d.). Retrieved from

<http://library.med.utah.edu/WebPath/RENAHTML/RENAL001.html>

Rogers, P. (2015, March 31). Children Of Rich Parents Have Bigger Brains - Forbes. Retrieved from <http://www.forbes.com/sites/paulrogers/2015/03/31/children-of-rich-parents-have-bigger-brains/>

St. Thomas Radiology Associates, LLC. (n.d.). St. Thomas Radiology Associates - Varicose Vein - Basic. Retrieved from <http://www.radiology.vi/Pages/STR-SvcVV-Basics.html>

Study.com. (2015). Types of Muscle Tissue: Skeletal, Cardiac & Smooth - Video & Lesson Transcript | Study.com. Retrieved from <http://study.com/academy/lesson/types-of-muscle-tissue-skeletal-cardiac-smooth.html>

TeachPE.Com. (2015). Veins. Retrieved from <http://www.teachpe.com/anatomy/veins.php>  
the human heart pumps blood through the circulatory system | the body of the eye model human model anatomy,medical use human organ Anatomy,anatomy of female reproductive system,the human anatomy,anatomy of the organs of the human body,anatomy human body organs,human body male anatomy,anatomy and physiology of the body,organ in the human body,the body of human,the body of human eyes,- [www.harvard-wm.org](http://www.harvard-wm.org). (n.d.). Retrieved from <http://www.harvard-wm.org/organ-in-the-human-body-heart/the-human-heart-pumps-blood-through-the-circulatory-system/>

University of Rochester Medical Center. (2015). What Are White Blood Cells? - Online Medical Encyclopedia - University of Rochester Medical Center. Retrieved from <http://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=160&ContentID=35>

Upload, Share, and Discover Content on SlideShare. (n.d.). Retrieved from <http://www.slideshare.net>