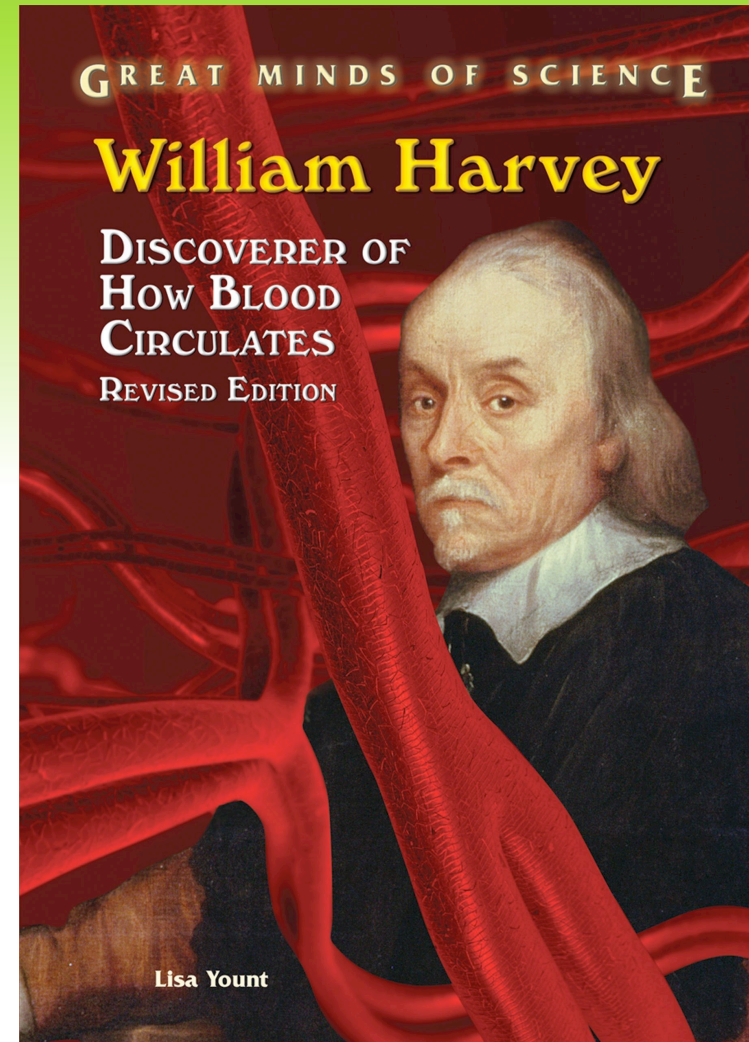


## 9 Basic Function of the Heart

# History on the heart discoveries

- In Medicine's 10 Greatest Discoveries, William Harvey's discovery of the function of the heart and the circulation of blood was the greatest medical discovery of all time. Not only did it initiate the field of physiology, but it also introduced the principle of experimentation in medicine.

- "For the concept of a circuit of the blood does not destroy, but rather advances traditional medicine." -- William Harvey, 1649



- The heart has played an important role in understanding the body since antiquity.
- In the fourth century B. C., the Greek philosopher Aristotle identified the heart as the most important organ of the body, the first to form according to his observations of chick embryos.
- It was the seat of intelligence, motion, and sensation -- a hot, dry organ. Aristotle described it as a three-chambered organ that was the center of vitality in the body. Other organs surrounding it (e.g. brain and lungs) simply existed to cool the heart.



[heartintelligencecoach.com](http://heartintelligencecoach.com)

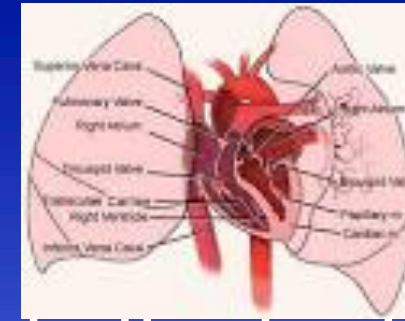
Educating the mind  
without educating  
the heart is no  
education at all.

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*~ Aristotle*



# The Heart Muscle



- The heart is the most important muscle in the body.
- You cannot live without a heart.
- The heart is really a pump or two pumps in one. The right side receives blood from the body and pumps it to the lungs. The left side does the opposite: it receives blood from the lungs and pumps it around the body.



# Amazing Facts About the Human Heart

- The heart is about the same size as your fist.
- The heart beats on average 70 times per minute; 4,200 beats per hour; 100,000 beats per day; 365 million beats per year; 30 billion beats in an average life time of 80 years.
- An adult heart pumps 7,500 liters of blood daily.



## More Amazing Facts About the Human Heart

- It takes about 20 seconds to pump blood to every cell in your body.
- Blood is cleaned in the kidneys.



- If you lined up all the blood vessels in your body end-to-end, they would wrap around the earth twice.





# Responsibilities of the Heart



- The heart is responsible for two things:
  1. Through the blood it pumps, the heart provides oxygen and nutrients to our cells to keep us alive.
  2. It also carries away wastes from these active cells to special organs (such as the kidneys) that rid them from our bodies.

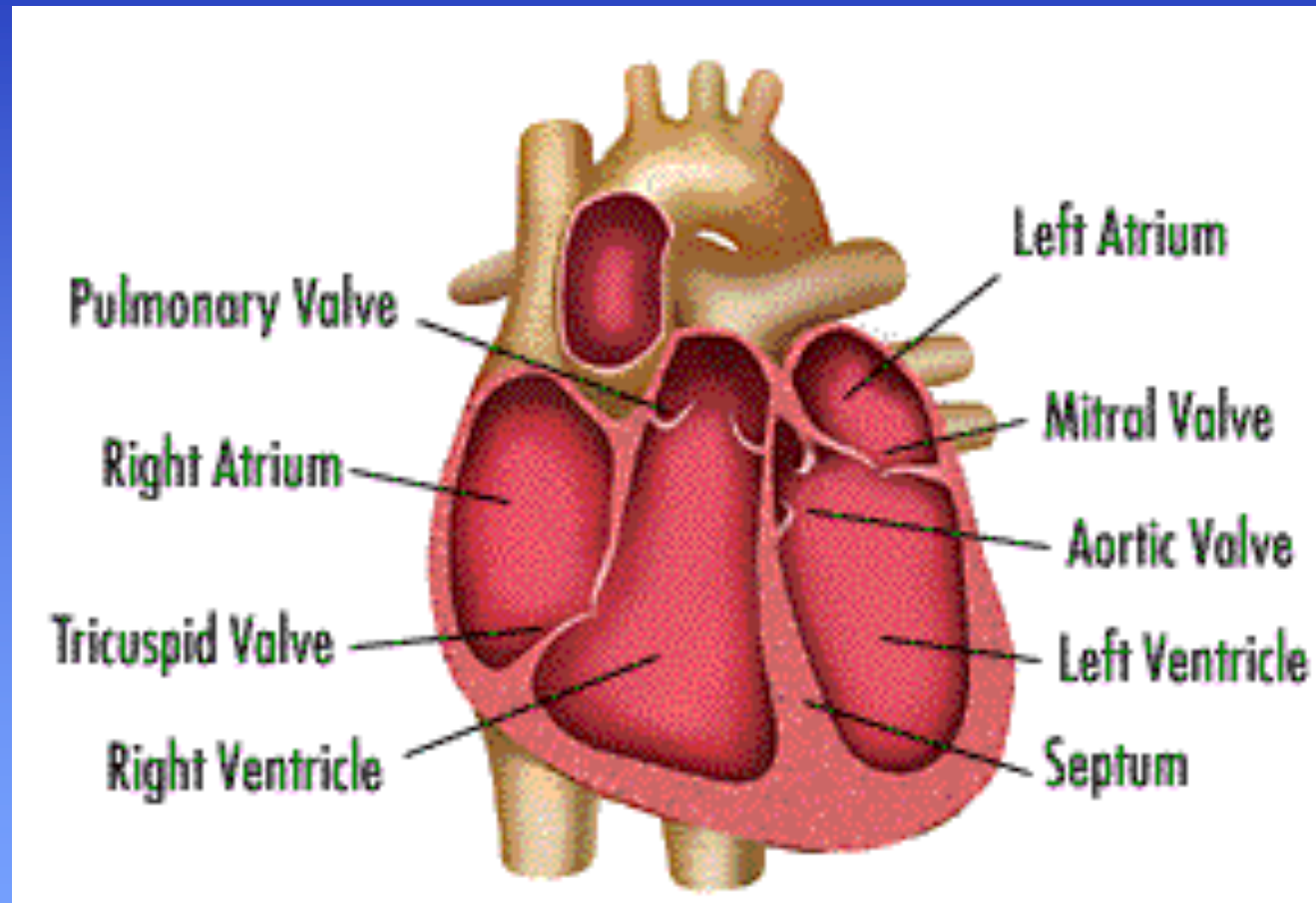


# More About the Heart Muscle

- The heart is an involuntary muscle.
- The human heart averages one hundred thousand beats daily.
- With each beat, your heart fills with blood.
- Then it contracts to pump the blood through the body.



# Parts of the Heart



# Parts of the Heart

- The heart has four different hollow areas called chambers.
- There are two chambers on each side of the heart.
- Each chamber is separated by a valve, which is a flap of tissue that opens and closes to keep blood flowing in the right direction.



# Parts of the Heart

- The two chambers on top are called the atria. The atria are the chambers that fill with blood.
- The two chambers on the bottom are called the ventricles. They pump the blood out of the heart, first to the lungs and later to the rest of the body.
- The septum is a thick wall of muscle that separates the two sets of chambers. It separates the left and right sides of the heart.



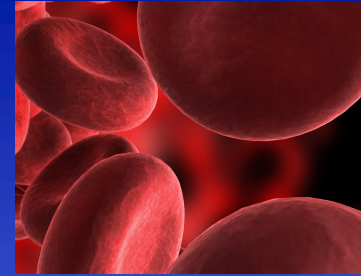
# Parts of the Heart

- The atria, ventricles, and valves work together to pump blood.
- The atria fill with blood, then pump it into the ventricles.
- The ventricles pump the blood out of the heart.





# The Cycle of the Heart



- The blood in our bodies is used over and over again.
- Its movement through the heart and around the body is called circulation and can be viewed as a cycle.
- Beginning at the left side of your heart, fresh, clean oxygen-rich blood is pumped around our bodies. The cells throughout our bodies take the oxygen from the blood and use it as fuel to work and grow.



# The Cycle of the Heart

- The cells create carbon dioxide and other wastes that must be removed to keep the cells healthy.
- The blood is responsible for picking up the waste, delivering it to the kidneys where, except for the carbon dioxide, it is removed from the body.



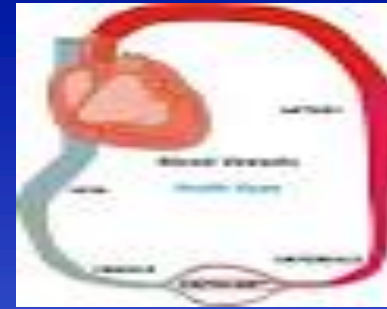
# The Cycle of the Heart



- Then the blood, with its load of carbon dioxide, returns to the right side of the heart.
- The right side of the heart pumps the blood to the lungs to get rid of the carbon dioxide and to pick up fresh oxygen.
- The oxygen-rich blood goes back to the left side of the heart and is then pumped around the body to complete the cycle.
- This all happens in less than a minute!!



# Blood Vessels

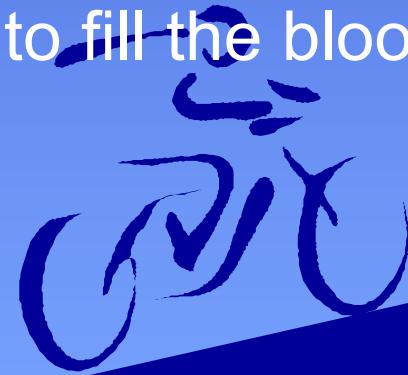


- The heart uses a network of tubes to get blood throughout the body.
- These tubes are called blood vessels.
- The blood vessels that carry the fresh blood away from the heart are called arteries.
- The ones that carry the blood that contains wastes back to the heart are called veins.



# The Heart Beat

- When you go to visit the doctor, the doctor uses a stethoscope to listen to your heart.
- A healthy heart makes a “lub-dub” sound, which comes from the valves shutting inside the heart.
- The “Lub” sound happens when the blood hits valves between the atria and ventricles.
- The “Dub” sound happens when the blood hits the aortic and pulmonic valves the close up as the heart relaxes to fill the blood for the next beat.



# Your Pulse

- You can feel your heart beating in several different areas of the body.
- The most common place used is the wrist, just below your thumb.
- You'll know that you've found your pulse when you can feel a small beat under your skin.
- Each beat is caused by the contraction of the heart.





# Keep Your Heart in Shape

- Most children are born with a healthy heart.
- Just like you need to exercise your leg and arm muscles, you need to exercise your heart muscle. At least 15 to 20 minutes of exercise each day will give you heart a good workout.
- Remember to eat a variety of healthy foods, avoiding a lot of fatty foods.
- Stay away from smoking!!

