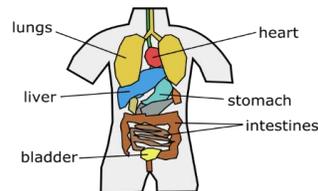


FEEL THE BEAT

Did you know that you have a mighty pump in your chest that beats about 100,000 times each day? That pump is an amazing **organ** (a part of your body that performs a specific function, or job) called the **heart**. The heart sits right in the middle of your chest between your lungs and controls the flow of blood in the body.



♥ The heart is about the size of your fist, and it can weigh 7 to 15 ounces - that's less than one pound! It is made of muscle and works constantly to pump blood throughout our bodies.

♥ Hearts pump about 100 gallons of blood through the body every hour. Think of 100 gallon cartons of milk! The body does not hold 100 gallons of blood though. Our blood is recirculated and replaced constantly. The amount of blood in a person's body varies with age, sex, weight, and even where they live.

♥ The heart is part of the body's **circulatory system**, also known as the **cardiovascular system**. As part of that system, the heart works with the lungs and blood vessels to carry oxygen and other nutrients throughout your body and to remove carbon dioxide and other waste.

♥ Have you noticed how your heart and breathing rates change depending on what you are doing?

Resting heart rate is the number of times a heart beats each minute while a body is completely at rest. Some things that can cause a heart rate to increase are exercise, stress, pain, illness, **dehydration** (not having enough fluids), and drinking a lot of **caffeine** (a substance found in tea, coffee, chocolate, and many soft drinks that causes the brain and nervous system to speed up).

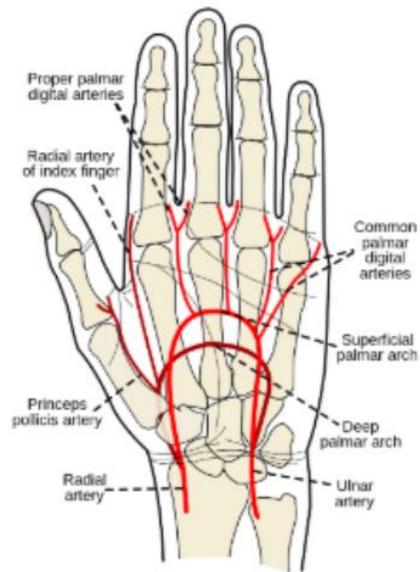
According to UCSF Benioff Children's Hospital, San Francisco, these are normal resting heart rates according to age:

- Newborns (0 - 3 months old): 100 - 150 beats per minute
- Infants (3 - 6 months old): 90 - 120 beats per minute
- Infants (6 - 12 months old): 80 - 120 beats per minute
- Children 1 - 10 years: 70 - 130 beats per minute
- Children over 10 and adults (including seniors): 60 - 100 beats per minute
- Well-trained athletes: 40 - 60 beats per minute



♥ It is easy to feel your **pulse** (also called your heartbeat, the throbbing of blood vessels as blood passes through them) and check your heart rate yourself. The pictures below show where to feel your **radial pulse**. This is one of several **pulse points** in the body where the **arteries** are close to the skin. At these points, you can feel your heartbeat as your heart pumps fresh oxygenated blood out around the body through the **arteries**. To feel your pulse, place the tip of your index and middle finger on the thumb side of your wrist with just enough gentle pressure to feel the beat.

Location of radial pulse



ACTIVITY: How does exercise affect your heart rate?



Supplies needed:

- Clock with a second hand, a minute timer, or a stopwatch to count seconds
 - Pencil and piece of paper to write down your results
1. Rest quietly for 15 minutes, then check your resting pulse at the radial pulse point.
 2. Use a timer, clock, or stopwatch to count the number of beats you feel for 30 seconds.
 3. Multiply that number X 2. That will tell you the number of heartbeats in one minute (60 seconds) while you are at rest. This is your resting heart rate.
 4. Write this number down.
 5. If you are healthy and know that you don't have any problems with your heart, spend the next 30 to 60 seconds exercising, longer if you like. You can run in place, jump rope, walk up and down a flight of stairs, or do some jumping jacks.



6. As soon as you stop exercising, check your pulse again. This time, count the number of beats for 6 seconds and multiple X 10. The reason for this change in method is that your heart rate may begin to slow down quite a bit in 30 seconds. Determining pulse rate right after exercise will be more accurate if done this way. How did it change?
7. After exercising, see how long it takes for your heart rate to return to your resting rate.

Do you know why your heart rate changes with exercise?

During exercise your body needs more oxygen, and your heart must beat faster and harder to deliver it. You may have noticed that you also began to breathe harder and faster. Getting out of breath during exercise is a sign that your muscles are working hard and need more oxygen. Regular exercise strengthens the heart so it doesn't have to work as hard when you exercise.

Keep moving, check your pulse, and stay healthy!

ADDITIONAL RESOURCES

Websites

<https://kidshealth.org/en/kids/heart.html>

<https://www.fi.edu/heart/whats-inside-your-heart>

Videos

https://www.youtube.com/watch?v=2PFWpd_pxm8

<https://www.youtube.com/watch?v=tF9-jLZNM10>

<https://www.youtube.com/watch?v=RiWr69OzfPo>

Books available from the Washoe County Library System

Hear Your Heart by Paul Showers, Holly Keller

Inside the Heart by Karin Halvorson

The Circulatory System by Christine Taylor-Butler

The Heart: Our Circulatory System by Seymour Simon

Blood and Heart by Jen Green

