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# Heart Rate Measuring Techniques–Taking Your Pulse Manually

Your **heartbeat** is the sound of the valves in your heart closing as they push blood from one chamber to another. **Heart rate** is the number of times the heart beats per minute (**BPM**), and the **pulse** is the beat of the heart that can be felt in any artery that lies close to the skin.

The heart beats at different rates depending on whether your body is at rest or at work. When resting, the heart rate beats an average of 72 times per minute for high school students and an average of 85 BPM for middle school students. During strenuous physical activity, your heart rate or pulse increases, sometimes to twice or more its resting rate. Your **stroke volume**, the amount of blood pumped for each heartbeat, also increases. This is because the muscles that are working demand more blood to supply them with oxygen and other nutrients.

Heart rate is measured by counting the number of times your heart beats in one minute. One way to determine your heart rate is to manually take your pulse.

The two most common locations used to take a pulse are at the **radial artery** in the wrist and the **carotid artery** in the neck. It is best to practice locating and counting your pulse when you are at rest and again during physical activity.

Measuring the radial pulse. Place the tips of the index and second fingers of one hand on the inside wrist of the other hand. Position the fingers just below the base of the thumb to take the radial pulse at the wrist.
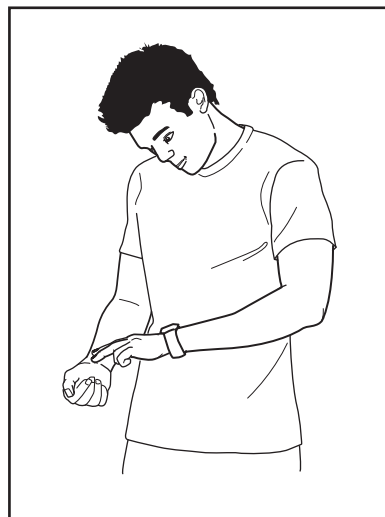
One way to manually take your pulse is to measure your radial pulse.

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Measuring the carotid pulse. Place the tips of the index and second fingers of one hand on the side of the neck just beside the windpipe.

Measuring your resting heart rate. Your pulse fluctuates during the day due to activity, stress, caffeine, medications, and other factors that might influence your heart rate. A **resting pulse** is the lowest your heart rate would go during the day. You can get your best reading when you first wake up in the morning, before any activity. Relax your body, and follow the steps below for measuring your pulse.

The following are steps to take when measuring your pulse:

Measuring the carotid pulse is another way to manually measure your pulse.

- **Step One:** Apply light to moderate pressure with the fingers until the blood pulsing beneath the fingers is felt. If no pulse is felt, move the fingers around slightly, up or down, until a pulse is felt. Do not apply excessive pressure. This may compress the artery and distort the measurement. Once the pulse is felt, move to step two.

- **Step Two:** Using a watch or clock with a second hand, count the number of beats felt in 30 seconds, then multiply that number by two to compute a heart rate, expressed in **BPM** (beats per minute).

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Heart Rate Activity

An Example of a Resting Heart Rate

Pulse Rate (in 30 seconds) : _____ × 2 = _____ *(beats per minute)*	Example of Resting Heart Rate: Number of beats in 30 seconds = 43 Multiply by two = 86 Resting pulse rate = 86 BPM

Take your own pulse for 30 seconds, and multiply by two.

Take your pulse six different times.

Try it three times at the carotid artery and three times at the radial artery.

Trial	Carotid Pulse	Radial Pulse
1		
2		
3		

Add all six numbers together, and divide by 6 to come up with your average.

_____ + _____ + _____ + _____ + _____ + _____ = _____ (average)

_____ divided by 6 = _____ (your average resting heart rate)

Remember this number so that you may use it later as your resting heart rate.

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Evaluation

1. What does *pulse* mean?

_____

_____

2. Why does your pulse fluctuate during the day?

_____

_____

3. What does *stroke volume* mean?

_____

_____