



Worksheet: Vital Signs

Introduction to Vitals

- Measurements of body's basic functions
- Four main routines: body temperature, pulse rate, respiration rate, and blood pressure
- Crucial in detecting medical problems

Patient Assessment

- Process to learn about a patient's condition
- Involves history-taking paired with a physical exam
- Used by a variety of medical professionals (physicians, nurses, EMTs)

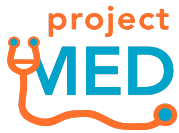
Temperature

- Determine someone's body temperature to see if they have a fever
- Depends on gender, recent activity, food and fluid consumption, and time of day
- Temperature can be taken four different ways:
 1. **Orally**
 - By mouth using a basic thermometer
 2. **Axillary**
 - Taken under the arm using a basic thermometer
 3. **Ear**
 - Special thermometer can take temperature in ear drum (reflects core body temperature)
 4. **By skin**
 - Special thermometer can take temperature of skin on forehead
- **Normal Body Temperature:** 97.8 to 99 degrees Fahrenheit
- **High Temperature:** Higher than 99 degrees Fahrenheit, indicates a fever, some time of illness or virus
- **Low Temperature:** Lower than 95 degrees Fahrenheit, indicates hypothermia, body losing heat faster than it is producing

Pulse & Respiration

Pulse

- **Pulse:** The number of times the heart beats within a certain time period, usually a minute. Also called... heart rate!
 - Pulse can be felt at the wrist, side of the neck, back of the knees, top of the foot, groin, and other places in the body where an artery is close to the skin.
- **Cardial Pulse (CP):** pressure signal acquired over the carotid artery as it passes near the surface of the body at the neck.
- **Radial Pulse (RP):** pressure signal acquired over the radial artery as it passes near the surface of the body at the wrist.
- **Method 1: Carotid Pulse**
 1. Place your pointer and middle fingers on the side of your windpipe just below the jawbone. You may need to shift your fingers until you can easily feel your heart beating.
 2. Count the pulses you feel for 15 seconds.
 3. Multiply this number by 4 to obtain your heart rate.
- **Method 2: Radial Pulse**
 1. Place your pointer and middle fingers on the inside of your opposite wrist just below the thumb.



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2. Don't use your thumb to check your pulse, as the artery in your thumb can make it harder to count accurately.
 3. Once you can feel your pulse, count how many beats you feel in 15 seconds.
 4. Multiply this number by 4 to get your hear
- **Stethoscope:**
 - Helps hear your heartbeat and your blood flow.
 - Put the diaphragm over the heart.
 - Try listening for a full minute.
 - **Interpretation of Results:**
 - The normal pulse for healthy adults ranges from 60 to 100 beats per minute. The pulse rate may fluctuate and increase with exercise, illness, injury, and emotions.
 - Females ages 12 and older, in general, tend to have faster heart rates than do males. Athletes, such as runners, who do a lot of cardiovascular conditioning, may have heart rates near 40 beats per minute and experience no problems.

Respiration

- **Respiration:** Person's breathing and the movement of air into and out of the lungs.
 - The respiratory system provides oxygen to body tissues for cellular respiration, removes the waste product carbon dioxide, and helps maintain acid-base balance
 - The number of breaths a person takes per minute.
 - Normal respiration rates for an adult person at rest range from 12 to 16 breaths per minute.
- **Measuring Respiration Rate:**
 - Clip the pulse oximeter on your index (pointer), middle or ring finger
 - Press the button on your pulse oximeter to start it. Keep your hand still.
 - A normal level of oxygen is usually 95% or higher. Some people with chronic lung disease or sleep apnea can have normal levels around 90%.

Blood Pressure

- **Blood Pressure:** The pressure that the blood exerts on the walls of the blood vessels
 - Caused by heart pumping blood through the circulatory system
 - **Systolic Blood Pressure**
 - Pressure exerted when blood is ejected into arteries
 - Normal systolic blood pressure is 120 mmHg or below
 - **Diastolic Blood Pressure**
 - Pressure blood exerts within arteries between heartbeats
 - Normal diastolic blood pressure is 80 mmHg or below
- **The Sphygmomanometer**
 - Sit comfortably with arm supported at heart level
 - Snugly wrap the sphygmomanometer cuff around the upper arm, one inch above the elbow
 - Place the stethoscope just above the crease of the elbow
 - Pump the cuff to around 180-200 mmHg
 - While listening with the stethoscope, slowly open the valve to let the pressure fall
 - When you first hear the beat of the blood flow, that is the systolic pressure
 - When you last hear the beat of the blood flow, that is the diastolic pressure