

VITA SIGNS

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Vital signs, what are they?

They measurements of the body's most basic functions

Four main ones routinely monitored by healthcare providers include:

- body temperature
- pulse rate
- respiration rate (rate of breathing)
- blood pressure

Why do we do vital signs?

- They are done to monitor or detect medical problems.
- They can be measured in a medical setting, at home, at medical emergency site, or elsewhere.

What is body temperature?

Body temp is how hot or cold the body is at a time

Normal body temperature of a person varies depending on:

- gender
- recent activity,
- food and fluid consumption
- time of day, and,
- in women, the stage of the menstrual cycle.

Normal body temperature ranges from 36.5° C, or Celsius to 37.2° C equivalent to 97.8° F (or Fahrenheit and 99° F (American Medical Association))

Sites for taking body temperatures

- Orally- temperatures taken by mouth using either the classical, glass, mercury-filled thermometer, or the modern, digital thermometers that use an electronic probe to measure body temperature.
- Rectally- taken temperatures (mercury or digital thermometer) tend to be **0.5 to 0.7° F** higher than when taken by mouth.
- Axillary-Temperatures taken under the arm. Axillary temperatures tend to be **0.3 to 0.4° F** lower than orally taken temperatures
- By ear- A special thermometer (digital) quickly measures the temperature of the ear drum, which reflects the body's temperature



Abnormal temperatures

- Body temperatures outside the accepted temperature range 36.5°C , or Celsius to 37.2°C equivalent to 97.8°F (or Fahrenheit and 99°F
- High temperature or **fever**
- Low temperature or **hypothermia**

Fever/Hypothermia

- Fever (pyrexia)- body temperature above normal limit for a person. It generally indicates that there is an abnormal process going on within the body.
- Note: The severity of a condition is not necessarily reflected by the degree of fever. Eg Malaria or influenza may cause a fever of 104° F, while pneumonia cause a very low-grade fever or no fever at all.
- Hypothermia is defined as a drop in body temperature below 95° F.

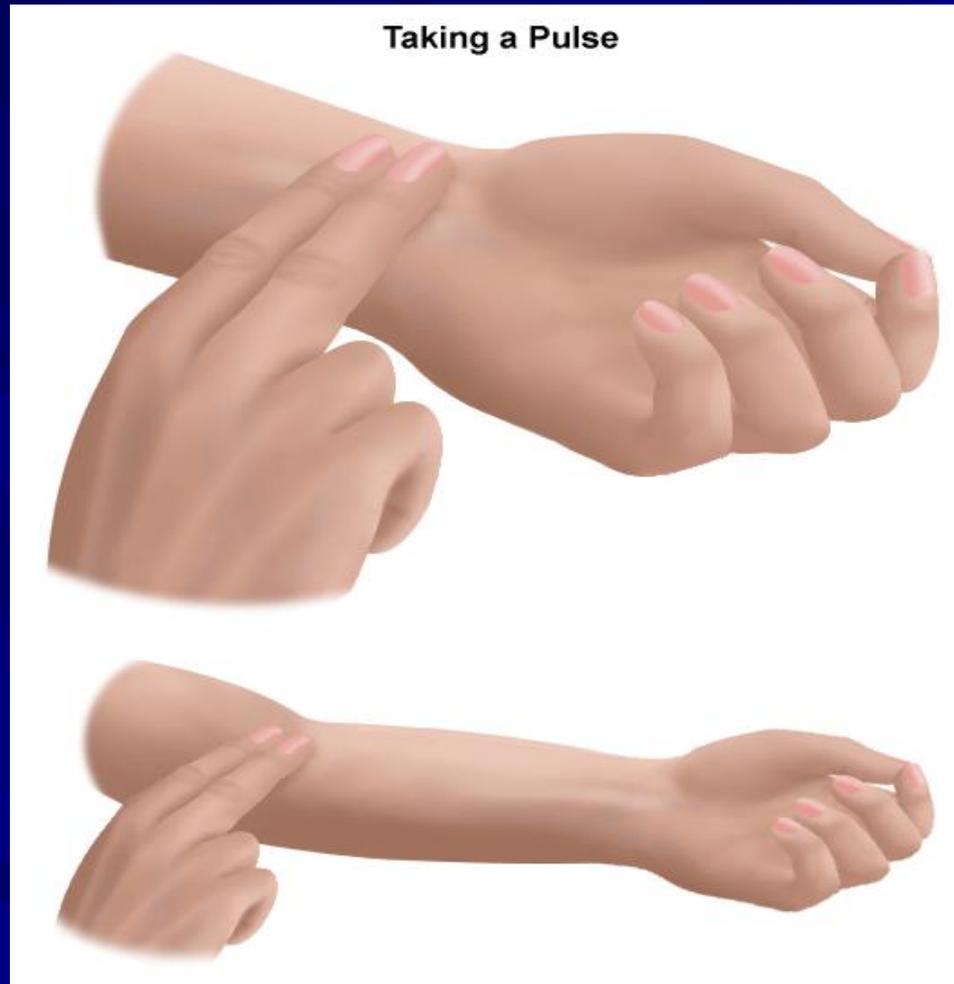
What is the pulse rate?

- Is a measurement of the rate, or number of times the heart beats per minute.
- As the heart pushes blood through the arteries, the arteries expand and contract with the flow of the blood.
- Taking a pulse not only measures the heart rate, but also can indicate the following:
 - heart rhythm
 - strength of the pulse

Pulse rate

- 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.

Taking pulse



How to check your pulse

- As the heart forces blood through the arteries, you feel the beats by firmly pressing on the arteries located close to the surface of the skin at certain points of the body :
- At the wrist
- the lower neck
- On the inside of the elbow

Taking pulse

- Using the first and second fingertips, press firmly but gently on the arteries until you feel a pulse.
- Begin counting the pulse when the clock's second hand is on the 12.
- Count your pulse for 60 seconds (or for 15 seconds and then multiply by four to calculate beats per minute).
- When counting, do not watch the clock continuously, but concentrate on the beats of the pulse.
- If unsure about your results, ask another person to check with you.

Respiration rate

- The number of breaths a person takes per minute.
- Usually measured when a person is at rest and simply involves counting the number of breaths for one minute by counting how many times the chest rises.
- Respiration rates may increase with:
 - Fever
 - Illness, and
 - with other medical conditions.
- NB: When checking respiration, it's important to note whether patient has any difficulty breathing.

Respiration rate

- Normal respiration rates for an adult person at rest range from 15 to 20 breaths per minute.
- Respiration rates over 25 breaths per minute or under 12 breaths per minute (when at rest) may be considered abnormal.

Blood Pressure (BP)

- Blood pressure is the force of the blood pushing against the artery walls.
- It is measured with sphygmomanometer (blood pressure cuff) and stethoscope by a health worker
- Each time the heart beats, it pumps blood into the arteries, resulting in the highest blood pressure as the heart contracts.

Note: One cannot take own blood pressure unless an electronic BP monitoring device is used. Electronic BP monitors may also measure the heart rate, or pulse.

Diastolic & Systolic Pressures

- Two numbers are recorded when measuring blood pressure.
- Systolic Pressure (The higher number)
- The pressure inside the artery when the heart contracts and pumps blood through the body.
- Diastolic Pressure (The lower number)
- The pressure inside the artery when the heart is at rest and is filling with blood.
- Both systolic and diastolic pressures are recorded as "mm Hg" (millimetres of mercury). This recording represents how high the mercury column is raised by the pressure of the blood.

Normal Blood Pressure

- Normal blood pressure is defined as follows:

- Less than 120 mm Hg systolic pressure **AND**

- Less than 80 mm Hg diastolic pressure

BP affected by age, activity, anxiety
drugs and disease

High BP (Hypertension)

- High BP or hypertension is BP above 140 mm Hg systolic and 90mm Hg diastolic and above
- Note: BP directly increases the risk of coronary heart disease (heart attack) and stroke (brain attack).
- With high blood pressure, the arteries may have an increased resistance against the flow of blood, causing the heart to pump harder to circulate the blood.

Taking BP

- BP readings are just a guide only. A single elevated blood pressure measurement is not necessarily an indication of a problem.
- A multiple blood pressure measurements over several days or weeks before making a diagnosis of hypertension and initiating treatment.
- **Note:** A person who normally runs a lower-than-usual blood pressure may be considered hypertensive with lower blood pressure measurements than 140/90.

Taking Blood Pressure

- Rest and relax for three to five minutes before taking a measurement.
- Sit in a comfortable chair, with back supported and your legs and ankles uncrossed.
- Sit still and place arm raised at level with heart, on a table or hard surface.
- Wrap the cuff smoothly around the upper part of the arm.
- The cuff should be sized to fit smoothly, while still allowing enough room for one fingertip to slip under it.
- Be sure the bottom edge of the cuff is at least one inch above the crease in your elbow.

Taking BP

- Palpate the radial artery and inflate the cuff until you cannot feel it any more
- Note the reading
- Deflate the cuff and note when you feel the pulse again
- This is the upper limit for the cuff inflation
- Inflate the cuff again to the upper limit and release
- Position the stethoscope appropriately

Taking BP

- Release the cuff gently and attentively listen to the “lub dub” sound
- Record sound as systolic and the last as diastolic

Note: If you cannot hear the sound call for help just to make sure

When using digital monitors check that batteries are ok

Taking Blood Pressure

- It is important when taking blood pressure readings to record:
 - date and time of day you are taking the reading
 - systolic and diastolic measurements.
- Ask a colleague to teach you if you are unfamiliar with the monitor.
- Have the monitor routinely checked for accuracy
- Make sure the tubing is not twisted when you store it and keep it away from heat, to prevent cracks and leaks.