

Vital Signs

Nursing decisions are based on assessment data.

One of the most frequent data collection interventions a nurse performs is taking vital signs.

These measurements indicate the physiological functioning of the circulatory, respiratory, neural, and endocrine systems.

Components

- | | | |
|-------------------------|---|-------|
| 1. Temperature. | } | T P R |
| 2. Pulse. | | |
| 3. Respiration. | | |
| 4. Blood Pressure. | | |
| 5. Pain. | | |
| 6. Height and Weight | | |
| 7. Oxygene Saturaration | | |

Factors influence the vital signs

Several factors can cause changes in one or more of the vital signs:

- | | |
|---------------------------|----------------|
| 1. Age. | 2. Gender. |
| 3. Heredity | 4. Race. |
| 5. Lifestyle. | 6.Environment. |
| 7. Medications, | 8. pain. |
| 9. Other factors such as: | |

Exercise , anxiety, stress, postural changes, & hormones

❖ Temperature

Sites for checking Temperature

- (1) Rectal temperature.
- (2) Oral temperature.
- (3) Axillary temperature.

(4) Tympanic (ear).

(5) Skin.

1. Mercury glass Thermometer.
2. Electronic and digital Thermometer.
3. Tympanic Thermometer.
4. Taping Thermometer.

Electronic Thermometer.
Disposable(chemical),single-use



Tympanic Thermometer.



The nurse usually determines the best site based on the client's age and physical and mental condition.

Traditional sites for measuring the body temperature are oral (OT), rectal (RT), and axillary (AT), using either glass or electronic thermometers.

❖ **Normal Range**

36.4-37.4 C°

❖ **Degrees of fever**

1. Mild fever: 37.8-38.4 C°.
2. Moderate fever: 38.5-39.5 C°.
3. High fever(pyrexia):39.6-41 C°.
4. Hyperpyrexia: above 41 C°.

- ❖ If one exposed to extremes of cold, heat loss may be increased (hypothermia) and the opposite (hyperthermia).
- ❖ Both hypothermia and hyperthermia may cause serious illness or death.

Indications

1. To determine the pt temperature on admission as a base for comparing future measurements.
2. To monitor fluctuation in temperature.

(1) Rectal temperature.

- ❖ Range: 37.0-37.8C°.
- ❖ Duration:2-3 M.
- ❖ Child: Newborn.

Advantages :

- ❖ Done once at birth to explore the imperforated anus.
- ❖ The choice if the pt has seizure or breathing difficulties or has chest surgery.

Disadvantages

- ❖ Damage to rectal mucosa.

(2) Oral temperature.

Range: 36.4-37.4C°.

Duration:3 M.

Child: more than 6 years.

Advantages

Respond more quickly.

Disadvantages

Reading influenced by drinking hot or cold fluids and O2 therapy.

It may cause mouth injury if the child bite the thermometer.

Did not use in mouth surgery

(3) Axillary temperature.

Range: 35.8-36.6C°.

Duration:5-10 Min.

All ages.

Advantages

- ❖ Safe and easily accessible.
- ❖ Avoid the danger of rectal.
- ❖ Reduce the infection.

Disadvantages

Requires a long period of time to obtain accurate reading.

❖ Pulse Rate

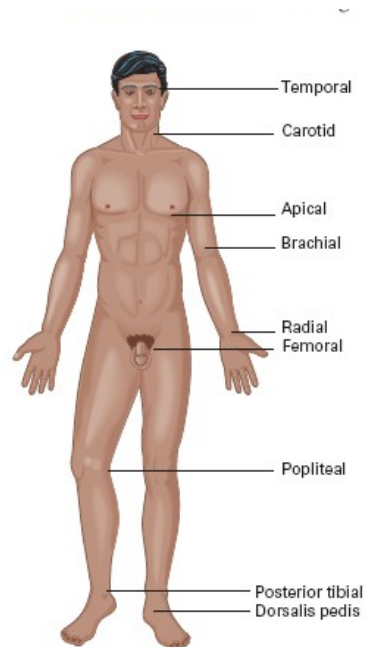
The pulse is the bounding of blood flow in an artery that is palpable at various points on the body.

Systole: phase in which the ventricles contract to eject blood.

Diastole phase in which ventricles are relaxed and no blood is being ejected.

Sites of measuring pulse

1. Temporal artery
2. Common carotid artery
3. Apex of the heart
4. Brachial artery
5. Radial artery
6. femoral artery
7. Popliteal. artery
8. Posterior tibial artery
9. Dorsalis pedis artery



Purpose:

- ❖ To determine the cardiac status of the patient.

- ❖ To determine the pt pulse on admission as a base for comparing future measurements.

Factor affecting plus rate

1. Age
2. Sex
3. Activity
4. Emotion
5. Postural change
6. Certain drugs
7. Fear , excitement , and anger
8. Infection

Characteristic of pulse

1. Rhythm
2. Rate
3. Volume

Note:

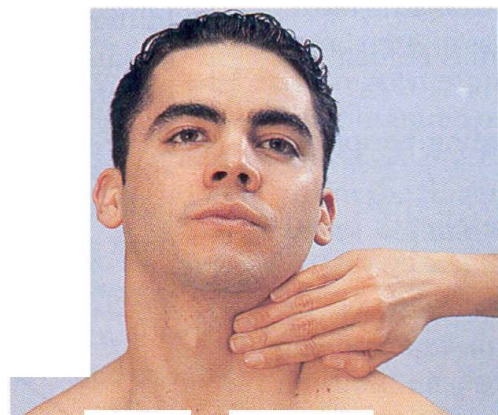
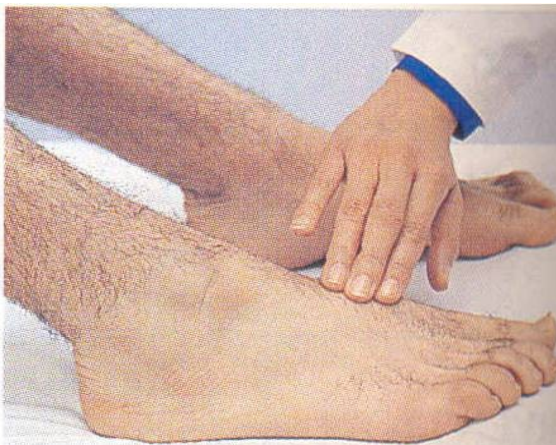
- ❖ Do not give more pressure
- ❖ Do not use thumb to feel pulse
- ❖ Use three finger tips for feeling (index -middle - ring)
- ❖ Normal pulse rate / minute at various age

Brachial artery

Radial artery



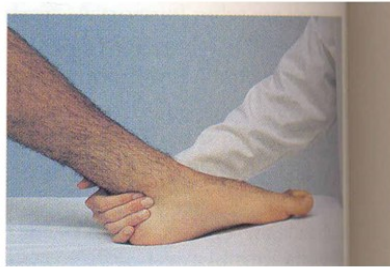
Dorsalis pedis artery
Common carotid artery



Popliteal. Artery
femoral artery



Posterior tibial artery
Apex of the heart



Respiration

Characteristics of the respiration

- ❖ Rhythm
- ❖ Depth
- ❖ Rate

Purpose:

1. To determine the respiratory status of the patient.
2. To maintain a base line for future comparison

Factors affecting RR

1. Excitement
2. exercise
3. pain
4. Fever
5. lung diseases
6. Heart disease
7. Hemorrhage
8. Some drugs.

Blood Pressure

Blood pressure is the measurement of pressure pulsations exerted against the blood vessel walls during systole and diastole.

Factor affecting BP

1. Age
2. Sex
3. Position
4. Some drugs
5. Some diseases
6. Exercises
7. Stress
8. Obesity

Types of sphygmomanometer

Aneroid manometer manometer



Mercury



Method of measuring BP:

- ❖ Palpation
- ❖ Auscultation

Measuring Blood Pressure

Sites:

1. The most common site for blood pressure measurement is the arm over the brachial artery.
2. Leg sites, the popliteal artery, located behind the knee.