# Vital signs Lec:4

**Definition:** information about patient's health status is obtained by taking his vital signs; it includes temperature, pulse, respiration and blood pressure.

## Times assess vital signs:

1. Change in health status.
2. Admission the patient to health care agency.
3. Nursing or medical order.
4. Before or after surgery or diagnostic procedure.
5. Before and after administration of medication.
6. Before and after any nursing intervention.

## The purpose of checking vital signs:

1- For making diagnosis.
2- Planning progressing of patient.
3- Seeing reactions of patient to the specific medications treatment and care.

## Body temperature:

**Definition:** is a balance between heat production and heat loss, the normal degree of body temperature is 37Cº (98.6 F)

## Methods for measuring body temperature:

1- Orally method.
2- axillary method.
3- Rectal method.

## Oral body temperature:

Measuring body temperature by putting thermometer under tongue for 3 -5 minute.

## Contraindication:

1- For unconscious patient.
2- Infant.
3- Patient who breathe from mouth.
4- Patient who has disease in the oral cavity or surgery of nose or mouth.

**Axillary method:** by putting thermometer in axilla place for 10 minute.

- Be ensuring that thermometer is contact with skin surface. ❖ Pluses 0.5 degree to the degree of checking temperature.

**Rectal method:** check temperature by rectal when you cannot take temperature by mouth or auxiliary.

- ❖ Put thermometer inside rectal by using especial thermometer with square bulb.
- ❖ Putting thermometer inside the rectal for 2 minute and minus 0.5 degree from the degree of checking temperature.

**Clinical thermometer:** is the instrument that used to measure the body temperature it constructed of the bulb and stem.

## Kind of thermometer:

1. Mercury thermometer
2. Electric thermometer
3. Electronic thermometer

- ❖ The normal degree of body temperature is 36 – 37 C$^{o}$ or 98.6 F

## Factors affecting body temperature:

1- Time of the day.
2- Physical exercise.
3- Gender
4- Age and growth hormone.

## Fever (pyrexia):

The body temperature is above usual range (37 C$^{o}$)

## The type of fever:

1. Intermittent fever.
2. Remittent fever.
3. Continued fever.

## Signs and symptoms of fever:

1. Increase heart rate.
2. High and depth of respiratory rate.
3. Flash face and sweating.
4. Back pain.
5. Fatigue.
6. Headache.
7. Nausea and vomiting.
8. Chilling and thirst.
9. Delirium.
10. Loss of appetite.

## Nursing care:

1. Check body temperature every 10 minute.
2. Cold compress made for patient.
3. Give good nutrition and fluid.
4. Change clothing if necessary.
5. Make bathing if necessary.
6. Reduced physical activity.
7. Giving anti pyrel drugs (paracetamol, aspe gic,….).
8. If cold compress is unless used alcohol bath (70% alcohol with water).
9. Make oral hygiene.
10. Good ventilation and circulation.

## Preparation of disinfecting solution:

To prepare (100cc) of disinfected solution you need to mixed (99cc) of alcohol 70% with (1cc) of iodine.

## Pulse:

**Definition:** is the expansion of the arterial wall occurring with each ventricular contraction.

- **The normal range of pulse is (60 -100) beat /minute.**

## <u>Notes when taking pulse</u>

## A- Pulse rate:

Is the number of heart beat in minute it is (60 -100) beat / minute.

## Factors affecting pulse rate:

1. **Sleeping:** pulse rate morning lowest than at afternoon.
2. **Sex:** female is faster about (7 -8) beat / minute than male.
3. **Age:** infant higher than adult.
   - Infant 120 - 130 beat /minute
   - Adult 60 - 100 beat /minute

4. **Body build:** body size and build may affect pulse rates.
   - Thin and long body …… low pulse
   - Fat and small body……high pulse

5. Other factors are **emotion**, **medication**, **activity**, **digestion of food and hormones**

**-Tachycardia:** pulse rate is over 100 beat /minute -
**Bradycardia:** pulse rate is below 60 beat /minute -
**Arrhythmia:** irregular pulse rhythm.

**B- Rhythm of pulse:** it means the time interval between heart beats is equal.
**Arrhythmia:** Irregularity of time interval between heart beats.

## C- Volume of pulse:

Is the degree of fullness of the artery and reflects the strength of the left ventricular contraction.

## D- Arterial wall condition:

The condition of wall artery and this become abnormal with old age

## Site of taking pulse:

1. Radial artery
2. Temporal artery.
3. Carotid artery.
4. Facial artery.
5. Femoral artery
6. Posterior tibia artery. 7. Dorsal pedis artery
8. Brachial artery.
9. Apical pulse rate.

# Respiration:

Is the process by which oxygen and carbon dioxide are interchanged. ❖
**The normal adult breath is (14 – 24) time in minute.**

## External respiration:

Is providing oxygen to the blood and removal carbon dioxide from the blood. **Internal respiration:**
Is providing oxygen that is in the blood to the cells in the body and removal of carbon dioxide from the tissue to the blood.

## Notes in observed respiration:

1. Respiratory rate.
2. Respiratory depth.
3. Pulse volume.
4. Nature of Respiration (ordinarily regular, or irregular).

Is the snoring sound resulting from secretion in trachea and large bronchi.

## Blood pressure:

**Definition**: the pressure is exerted on the wall of the arteries when the left ventricles of the heart push blood into the aorta.

- Systolic pressure: is the maximum of the pressure 100 – 140 mm /Hg.
- Diastolic pressure: is the minimum of the pressure 60 - 90 mm /Hg.
- The average of blood pressure $\frac{120}{80}$ mm /Hg.

## Factors maintaining normal arterial pressure:

1. Cardiac output.
2. Peripheral resistance.
3. The quantity of blood.
4. The viscosity of blood.
5. The elasticity of vessel walls.

- **Hypertension:** the pressure is above 140 mm /Hg.
- **Hypotension:** the pressure is below 60 mm /Hg.
- Blood pressure checked by **sphygmomanometer** and **stethoscope.**

## factor that affecting on blood pressure:

1. **Age** : the pressure rise with age because the elasticity of the arteries decrease 2.

**Stress** : stimulation of sympathetic nervous system , increase cardiac output and vasoconstriction of arteriole

3. **Exercise** : physical activity increase the cardiac output
4. **Race** : African American males over 35 years have higher B.P than europan of the same age
5. **Gender** : female have lower B.P than male in same age
6. **Medication** : many medication may increase or decrease B.P
7. **Disease Process** : any condition affecting the cardiac output