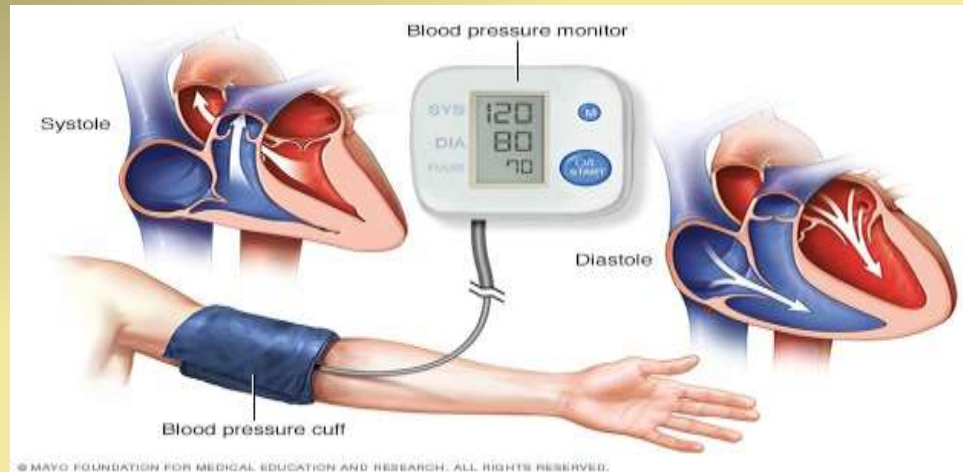


VITAL SIGNS (BLOOD PRESSURE)



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OUTLINES:

1-Definition of

Blood pressure and normal range

Systolic pressure

Diastolic pressure

Pulse Pressure

2-Purposes for assessing Blood pressure

3-Sites for measurement of Blood Pressure

4-Factors that affect blood pressure

5-Alterations in blood pressure

6-Common Mistakes in Blood Pressure Assessments

7-Equipment and procedure for Assessing Blood Pressure

8- Definition of pain

9-Factors affecting pain

10-Scales for assessing pain



Definition of blood pressure (BP)

- Is the force required by the heart to pump blood from the ventricles of the heart into the arteries. It is measured in systolic and diastolic pressure.

Definition of Systolic pressure

- Peak and maximum pressure of ejection of blood from the heart into the aorta. This is the top number.




Definition of Diastolic pressure

- The minimal pressure remaining the heart when the heart relaxes. This is the bottom number.

Definition of Pulse Pressure

Pulse pressure is the numeric difference between the systolic and diastolic blood pressure

- ❖ Measured in millimeters of mercury (mm /Hg)
 - ❖ Recorded as systolic over diastolic, it recorded as a fraction
 - ❖ The normal range of BP is 120/ 80 mmHg. OR $120 \pm 20 / 80 \pm 15$
- 

PURPOSES FOR ASSESSING BLOOD PRESSURE:

- 1- To obtain a baseline measure of arterial blood pressure for subsequent evaluation
- 2- To determine the client's hemodynamic status such as blood volume, cardiac output and vascular system .
- 3- To identify and monitor changes in blood pressure resulting from a disease processes



SITES FOR MEASUREMENT OF BLOOD

PRESSURE:

- - The most common site for indirect blood pressure measurement is the client's arm over the brachial artery
 - When the client's condition prevents auscultation of the brachial artery, the nurse should assess the blood pressure in the forearm or leg sites .
 - When pressure measurements in the upper extremities are not accessible, the popliteal artery, located behind the knee, becomes the site of choice.
 - The nurse can also assess the blood pressure in other sites, such as the radial artery in the forearm and the posterior tibial or dorsalis pedis artery in the lower leg.



FACTORS THAT AFFECT BLOOD PRESSURE:

1-Age

2. Exercise

3. Stress

4-severe pain.

5. Obesity

6. Sex:

7. Medications

8-Hemorrhage

9-Low hematocrit

10-External heat



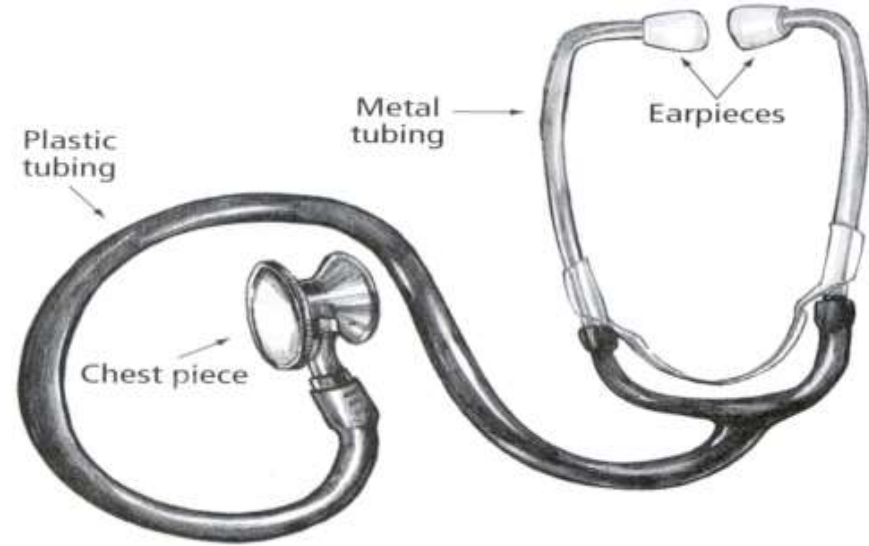
ALTERATIONS IN BLOOD PRESSURE

- **1-Hypertension:** when blood pressure above normal range $\geq 140/90$ mm hg
- **2-Hypotension:** when blood pressure below normal range $< 100/60$ mm hg



EQUIPMENT FOR ASSESSING BLOOD PRESSURE

1-Stethoscope



2-Alcohol cotton swap.

3-Sponge towel

4-Record form

5-point pen

6-Steel tray: to set all materials

7-appropriate cuff size



2-There are 2types

1-Sphygmomanometer



2-Electronic or digital devices



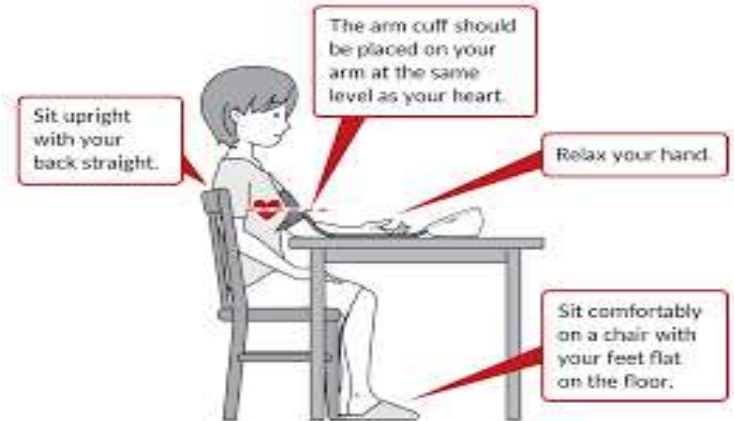
PROCEDURE FOR ASSESSING BLOOD PRESSURE

- 1-Review medical record for baseline data factors that influence BP
2. Gather all equipment.
3. Check the client's identification. Explain the purpose and procedure to the client.
4. Wash your hands and wear gloves
5. Cleanse the stethoscope's ear pieces and diaphragm with a spirit swab wipe.
6. Identify factors likely to interfere with accuracy of blood pressure measurement : exercise, coffee and smoking



7. Setting the position:

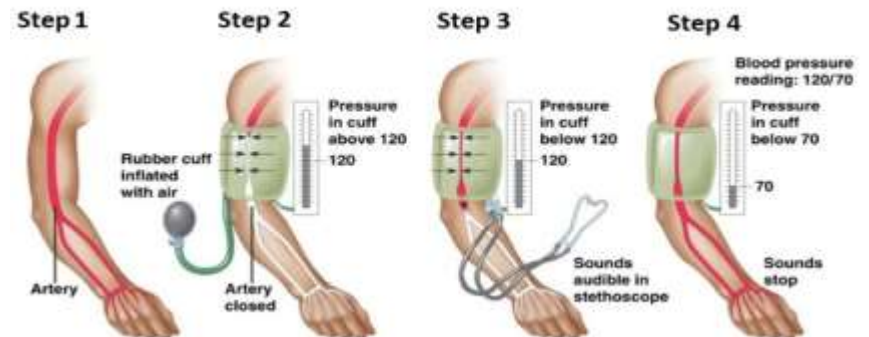
- 1) Assist the client to a comfortable position. Be sure room is warm, quiet and relaxing.
- 2) Support the selected arm. Turn the palm upward.
- 3) Remove any constrictive clothing



8. Checking brachial artery and wrapping the cuff:

- 1) Palpate brachial artery.
- 2) Center the cuff's bladder approximately 2.5 cm (1 inch) above the site where you palpated the brachial pulse
- 3) Wrap the cuff snugly around the client's arm and secure the end approximately)
- 4) Check the manometer whether if it is at level with the client's heart

Measurement of blood pressure



9. Measure blood pressure by two step method:

(A) Palpatory method

- 1) Palpate brachial pulse distal to the cuff with fingertips of non-dominant hand.
- 2) Close the screw clamp on the bulb.
- 3) Inflate the cuff while still checking the pulse with other hand.
- 4) Observe the point where pulse is no longer palpable
- 5) Inflate cuff to pressure 20-30 mmHg above point at which pulse disappears
- 6) Open the screw clamp, deflate the cuff fully and wait 30 seconds.

(B) Auscultation

- 1) Position the stethoscope's earpieces comfortably in your ears(turn tips slightly forward). Be sure sounds are clear, not muffled.
- 2) Place the diaphragm over the client's brachial artery. Do not allow chest piece to touch cuff or clothing.
- 3) Close the screw clamp on the bulb and inflate the cuff to a pressure 30 mmHg above the point where the pulse had disappeared
- 4) Open the clamp and allow the aneroid dial to fall at rate of 2 to 3 mmHg per second.



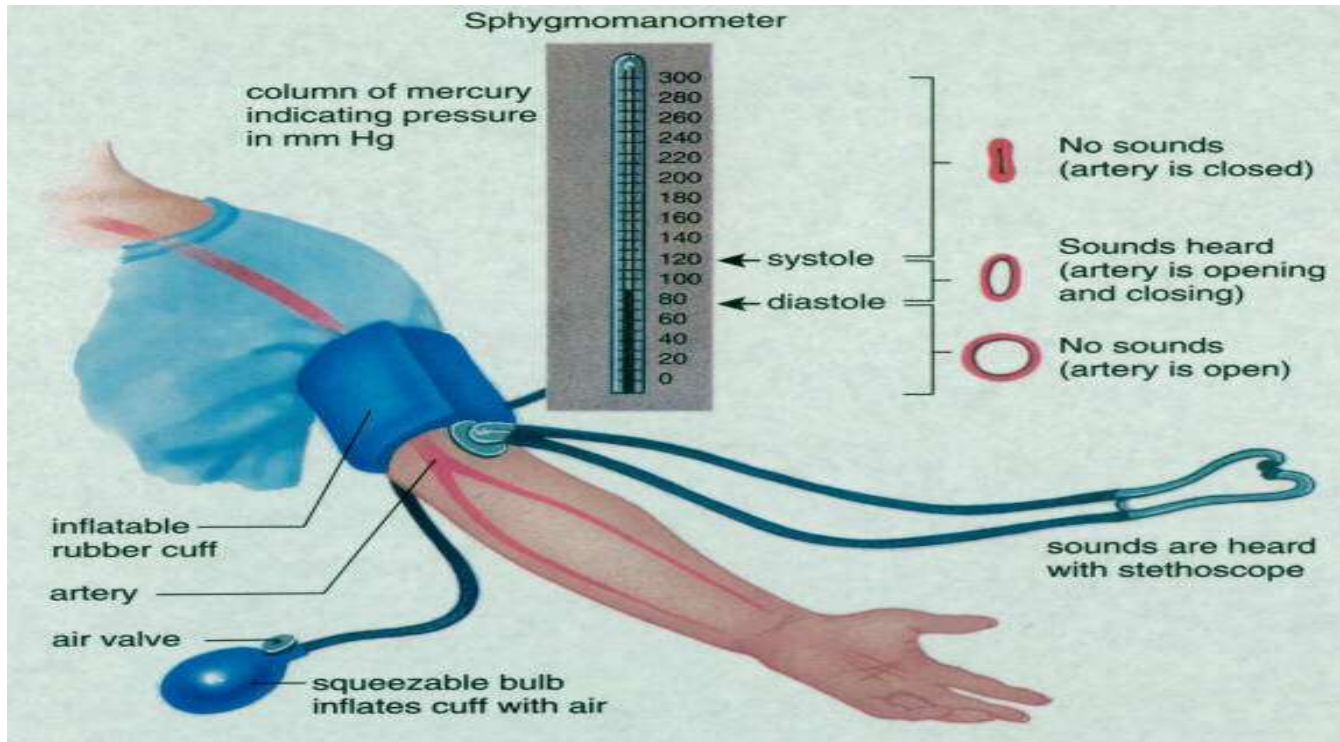
9. (B) Auscultation

5) Note the point on the dial when first clear sound is heard. The sound will slowly increase in intensity.

6) Continue deflating the cuff and note the point where the sound disappears. Listen for 10 to 20 mmHg after the last sound.

7) Release any remaining air quickly in the cuff and remove it.

8) If you must recheck the reading for any reason, allow a 1 minute interval before taking blood pressure again.



10. Assist the client to a comfortable position.
Advise the client of the reading.

11. Replace the instruments to proper place and
discard

12. Wash your hands

13. Record blood pressure on the
client's chart. Sign on the chart.
Report any findings to senior staffs.



PRECAUTIONS OF BLOOD PRESSURE MEASUREMENT

Before measurement

- Do not take tea, coffee, or caffeinated drink within 30 min
- Do not smoke within 30 min
- Do not exercise within 30 min
- Do not wear constricting clothes
- Void bladder before measurement
- Sit with your back straight and supported
- Keep feet flat on floor, legs uncrossed
- Support arm on flat surface, at the level of heart
- Take rest for 5 min
- Keep mobile phone and electronic devices away

During measurement

- Do not talk or move
- Do not measure over clothes
- Measure 3 times with ≥ 1 min gap between measurements
- Calculate average of 3 readings

After measurement

- Store readings on a log sheet

DEFINITION OF PAIN

(CONSIDERED THE 5TH VITAL SIGN)

- Pain An unpleasant sensory and emotional experience associated with actual or potential damage.
- *Pain is subjective and two patients may report severity differently from each other.
- *Despite the fact that pain is specific to each person, patients can usually accurately and reproducibly indicate the severity of their symptom by using a scale

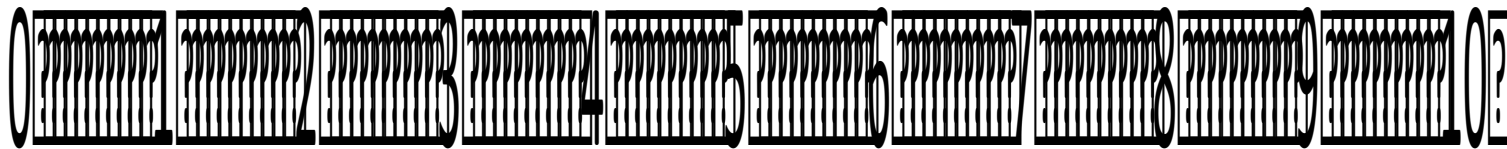
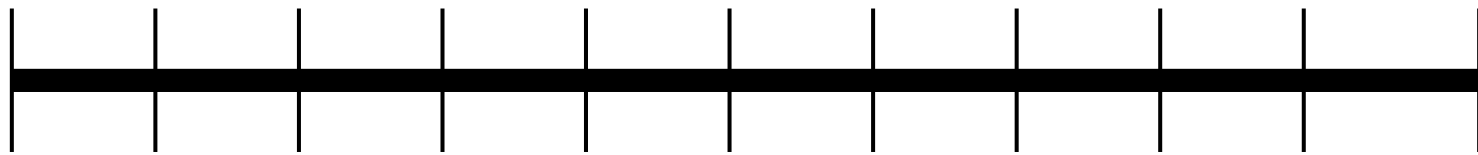
SCALES FOR ASSESSING PAIN

- Pain scales a variety of scales can be used to describe the intensity of pain:
 - Numeric: From 0-10
 - Word labels: “No pain” to “worst possible pain“
 - Cartoons: A series of facial expressions



1-NUMERIC PAIN RATING SCALE

No pain Mild pain Moderate pain Severe pain Very severe pain Worst possible pain



2-WONG-BAKER FACES SCALE

Wong-Baker FACES® Pain Rating Scale



0

No
Hurt



2

Hurts
Little Bit



4

Hurts
Little More



6

Hurts
Even More



8

Hurts
Whole Lot



10

Hurts
Worst

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Instructions for Usage

Explain to the person that each face represents a person who has no pain (hurt), or some, or a lot of pain.

Face 0 doesn't hurt at all. Face 2 hurts just a little bit. Face 4 hurts a little bit more. Face 6 hurts even more. Face 8 hurt a whole lot. Face 10 hurts as much as you can imagine, although you don't have to be crying to have this worst pain.

Ask the person to choose the face that best depicts the pain they are experiencing.

3-PQRST SCALE

- ❖ **P**recipitating and relieving factors
 - What makes the pain worse? What makes the pain better?
- ❖ **Q**uality
 - How would you describe the pain? What does it feel like?
- **R**adiation
 - Is the pain in one place or does it move around your body?
- ❖ **S**ite and **S**everity
 - Where is your pain? On a scale of 0-10, how bad is your pain?
- ❖ **T**iming and **T**reatment history
 - When did pain start? How often do you get it?
 - What are the patterns of the pain? Is it constant, or does it come and go?
 - Are you or have you been on treatment for the pain? Does it help?



SO ... DO YOU HAVE ANY
QUESTIONS FOR ME?

