

Vital Signs Lab

TEMPERATURE

Glass Thermometer

- Prepare the client
 - Assess which method of taking temperature is appropriate
 - Rectal is red
 - Oral is blue
 - For oral temperature
 - Determine time client last ate, drank, or smoked. Wait at least 15-30 minutes from that time
 - For rectal temperature
 - Assist client to assume a lateral position. Place newborn in lateral or prone position. Place a young child in lateral position with knees flexed, or prone across lap.
 - Provide privacy before folding bedclothes back to expose buttocks
 - For axillary temperature
 - Expose client's axilla. If moist, dry it with towel, using patting motion
- Prepare the equipment
 - Remove thermometer from package & check reading
 - Shake down mercury by holding thermometer between thumb & forefinger at end farthest from bulb. Snap the wrist downward. Repeat until mercury is below 35C (95F)
 - Place the thermometer in plastic sheath according to agency policy
- Take the temperature
 - ORAL
 - Place thermometer or probe at base of tongue to right or left of frenulum, in sublingual pocket.
 - Ask client to close lips, not teeth, around thermometer
 - Leave thermometer in place 2-3 minutes
 - RECTAL
 - Place lubricant on a piece of tissue, then apply lubricant to thermometer.
 - Don disposable gloves
 - Raise client's upper buttock to expose anus
 - Ask client to take a deep breath, and insert thermometer into anus. Depth depends on age and size. General guidelines:
 - 1.5cm (0.5 in) infant
 - 2.5cm (0.9 in) child
 - 3.7cm (1.5 in) adult
 - do not force insertion of thermometer
 - hold thermometer in place ~3mins for adults, ~5mins for neonates
 - continue to hold thermometer firmly
 - AXILLARY
 - Place thermometer in center of axilla
 - Leave thermometer in place ~9 minutes. For infants & children, ~5 minutes
 - Remain with client and hold thermometer in place if client irrational or very young

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- Remove the thermometer
 - Remove plastic sheath, or if sheath not used, wipe thermometer with tissue using rotating manner toward the bulb (least contamination to most contamination)
 - Discard sheath or tissue
- Read the temperature
 - Hold thermometer at eye level & rotate it until the mercury column is clearly visible. Upper end of mercury column registers client's body temperature.
- Clean & shake down thermometer
 - Wash thermometer in tepid, soapy water.
 - Rinse thermometer in cold water, dry it, and store it.
 - Shake down the thermometer & return to its container, or discard
 - Follow disinfectant policy of agency or disinfecting thermometer
- Document the thermometer
 - Record temperature to nearest indicated tenth on designated flowsheet

ELECTRONIC THERMOMETER

- Remove unit from battery charging area
- Remove temperature probe. If probe is not attached, attach to appropriate circuit in models that have separate circuits for each
- Place a disposable cover securely on probe
- Warm up machine by switching it on if removal of probe does not automatically prepare the machine for functioning
- Take temperature as indicated under "glass thermometer" section
- Listen for a sound indicating the maximum measurement has been reached, and read the temperature on the dial or readout
- Remove the thermometer
- Record the temperature
- Remove & discard the probe cover
- Return unit to charging base

INFRARED THERMOMETER (tympanic)

- Apply disposable sheath to probe.
- Select ear opposite the side on which the client may have been laying
- Use right hand to hold thermometer when using right ear, left hand for left ear
- Gently pull pinna upward & back for children over age 3 and adults; straight back for children under age 3
- Place probe tip into outer position of ear canal just at opening. Probe tip should seal opening of canal
- Press button on electronic thermometer. Do not wait too long to do this
- Remove the thermometer
- Read the temperature on the screen
- Remove & discard the probe cover. Covers can be ejected without being touched
- Return the unit to charging base

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PERIPHERAL PULSE

- Prepare the client
 - Select the pulse point. Normally radial is taken
 - Assist client to a comfortable resting position. When radial pulse is assessed, the client's arm can rest alongside the body or rested across the chest (or across the thigh when sitting).
- Palpate & count pulse
 - Place 2 or 3 middle fingers tips lightly & squarely over the pulse point. (do not use thumb)
 - If pulse is regular, count for 30 seconds and multiply x 2. If irregular, count for 1 minute. Count for one full minute when checking for the first time or when obtaining baseline data
- Assess the pulse rhythm & volume
 - Assess rhythm by noting pattern of intervals b/t beats. Normal pulse has equal time periods b/t beats.
 - Assess pulse volume. Normal pulse can be felt with moderate pressure, & the pressure is equal with each beat. A forceful pulse is full; an easily obliterated pulse is weak
- Document and report pertinent assessment data
 - Record the pulse rate, rhythm, volume on appropriate forms

APICAL PULSE

- Position client appropriately
 - Assist adult or child to comfortable supine or sitting position
 - Place baby in supine position & offer pacifier. Demonstrate procedure to child using stuffed animal or doll
 - Expose area of chest over apex of heart
- Locate apical pulse
 - This is the point over the apex of heart where apical pulse can be heard most clearly. Also referred to as point of maximal impulse (PMI)
 - Palpate angle of Louis (angle b/t top of sternum & body of sternum). It is palpated just below the suprasternal notch & is felt as a prominence
 - Slide your index fingers just to the left of the client's sternum, and palpate the second intercostals space.
 - Place your middle or next finger in the third intercostals space, and continue palpating downward until you locate the apical impulse, usually about the 5th intercostals space in adult or child over 7 years. In young child, located around the 4th intercostals space
 - Palpate the apical impulse. If client is adult, move your index finger laterally along the 5th intercostals space to the MCL. Normally, apical impulse is palpable at or just medial to the MCL.
- Auscultate & count heartbeats
 - Use antiseptic wipes to clean earpieces & diaphragm of stethoscope.
 - Warm diaphragm of stethoscope by holding it in palm of hand
 - Insert earpieces of stethoscope into your ears in direction of ear canals
 - Tap your finger lightly on diaphragm to be sure it is active side
 - Place diaphragm of stethoscope over apical impulse & listen for normal S1 & S2 heart sounds – lub dub. Each “lub dub” is a heartbeat
 - If the rhythm is regular, count heartbeats for 30 seconds & multiply x 2. If irregular or being taken in child or adult, count for 60 seconds
- Assess rhythm & strength of heartbeat
 - Assess rhythm by noting pattern of intervals b/t beats. A normal pulse has equal time periods b/t beats
 - Assess strength (volume) of heartbeat. Normally, the heartbeats are equal in strength & can be described as strong or weak.
- Document & report pertinent assessment data
 - Record pulse site & rate, rhythm, & volume on appropriate forms

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APICAL-RADIAL PULSE

- Position client appropriately
 - Assist client to assume position described in “apical pulse” section
 - Try to use same position as when previous BP taken
- Locate the apical & radial pulse sites
 - In 2 nurse method, one nurse locates apical impulse while the other nurse palpates radial pulse.
- Count the apical & radial pulse rates
 - 2 nurse method
 - place watch where both nurses can see it. The nurse who is taking the radial pulse may hold watch
 - decide on time to begin. The nurse taking radial pulse says “start”
 - each nurse counts the pulse rate for 60 seconds. Both nurses end when the nurse taking radial pulse says “stop”
 - both nurses assess criteria noted above for the pulse
 - in the one nurse method, the nurse must assess each pulse separately
- document & report pertinent assessment data

RESPIRATIONS

- determine client’s activity schedule
- observe or palpate & count respiratory rate
 - place hand against client’s chest movements OR
 - assess chest movements while appearing to take radial pulse
 - count respiratory rate for 30 seconds if regular; 60 seconds if irregular
- observe the depth, rhythm, & character of respirations
 - observe for depth by watching movement of chest
 - observe for regularity
 - observe for character – the sound they produce & effort they require.
- Document & report pertinent assessment data
 - Document rate, depth, rhythm, character

BLOOD PRESSURE

- Prepare & position client appropriately
 - Make sure client has not smoked or ingested caffeine within 30 minutes prior
 - Make sure bladder of cuff encircles at least 2/3 of arm and that width of cuff is ~40 % of arm circumference
 - Position client in sitting position unless otherwise specified. The elbow should be slightly flexed with the palm of hand facing up & forearm supported at heart level.
 - Expose the upper arm
- Wrap the deflated cuff evenly around upper arm
 - Locate brachial artery
 - Apply center of bladder directly over artery
 - For adult, place lower border of cuff approx. 2.5cm (1 in) above antecubital space
 - If this is client’s initial exam, perform a preliminary palpatory determination of systolic pressure
 - Palpate the brachial artery with fingertips
 - Close valve on pump turning knob clockwise
 - Pump up cuff until you no longer feel brachial pulse.
 - Note the pressure on the sphygmomanometer at which the pulse is no longer felt
 - release the pressure completely in the cuff, & wait 1-2 minutes before making further assessment.

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- Position stethoscope appropriately
 - Clean earpieces if needed
 - Insert ear attachments of stethoscope into your ears
 - Ensure the stethoscope hangs freely from ears to diaphragm.
 - Place the stethoscope over the brachial pulse. (note: the AHA recommends using the bell side since BP sounds are low in frequency, but either side may be used)
- Auscultate client's blood pressure
 - Pump up cuff until sphygmomanometer registers about 30 mmHg above the point where the brachial pulse disappeared
 - Release valve on cuff carefully so that pressure decreases at rate of 2-3mm Hg per second.
 - As pressure falls, note the first sound auscultated as the systolic reading, and last sound auscultated as diastolic reading
 - After disappearance of last sound, deflate cuff rapidly.
 - Wait 1-2 minutes before repeating BP
- Remove the cuff
 - Wipe cuff with approved disinfectant
- If first BP exam, repeat BP in opposite arm.
 - There should be a difference of no more than 5-10 mmHg between arms.
 - Use the arm with the higher pressure for subsequent exams
- Document & report pertinent assessment data
 - Document BP, note which arm and position of client at time of reading