Vital Signs Initial Training

For TBHS Staff and Provider Network Residential Staff

Revised 10/2024

Covered Topics

- Four main vital signs
  - Temperature
  - Pulse
  - Respirations
  - Blood Pressure
- Pulse Oximetry
- Pain
- Weight
- TBHS Individuals Served Exclusion Policy

Vital Signs

After completing this course on Vital Signs Update, you will be able to:

- Understand the correct procedure to measure temperature, pulse, respiration, and blood pressure.
- Recognize when to notify a licensed health care provider.

Vital Signs Refer to a Person's:

- _____
- _____
- _____
- _____

Why are Vital Signs Important?

Learning how to take accurate vital signs is an important responsibility for a healthcare worker because:

- Measuring vital signs accurately provides information about a person's health.
- Vital signs help check a person's level of physical functioning.
- Vital signs reflect essential body functions.

Your Assessment Helps Identify the Medical Needs of the Individuals Served

Recording accurate vital signs is important because it:

- Supports the nurse and physician in asking the appropriate questions
- Helps guide the nurse or physician in the physical exam
- Is crucial in reaching an accurate diagnosis and developing a treatment plan that will be effective for the individual

- You do _____ need to contact the nurse prior to obtaining a set of vital signs.
- If any vital sign is abnormal, you must _____.
- If one vital sign is abnormal, obtain a _____ of vital signs.
- When calling to report vital signs, you must have the individual's:
  - _____
  - _____

What are Baseline Vitals?

- The normal range for the individual served.
- Baseline vitals refer to the first set of vitals obtained on a person.
- Should be completed on the person's initial assessment and can be found in the individual's chart.
- When obtaining a set of vitals, you must compare the vitals to their baseline vitals _____ time.
- Trends in the individual's condition are identified using this information. Such as:
  - Stability or deterioration
  - Improvement

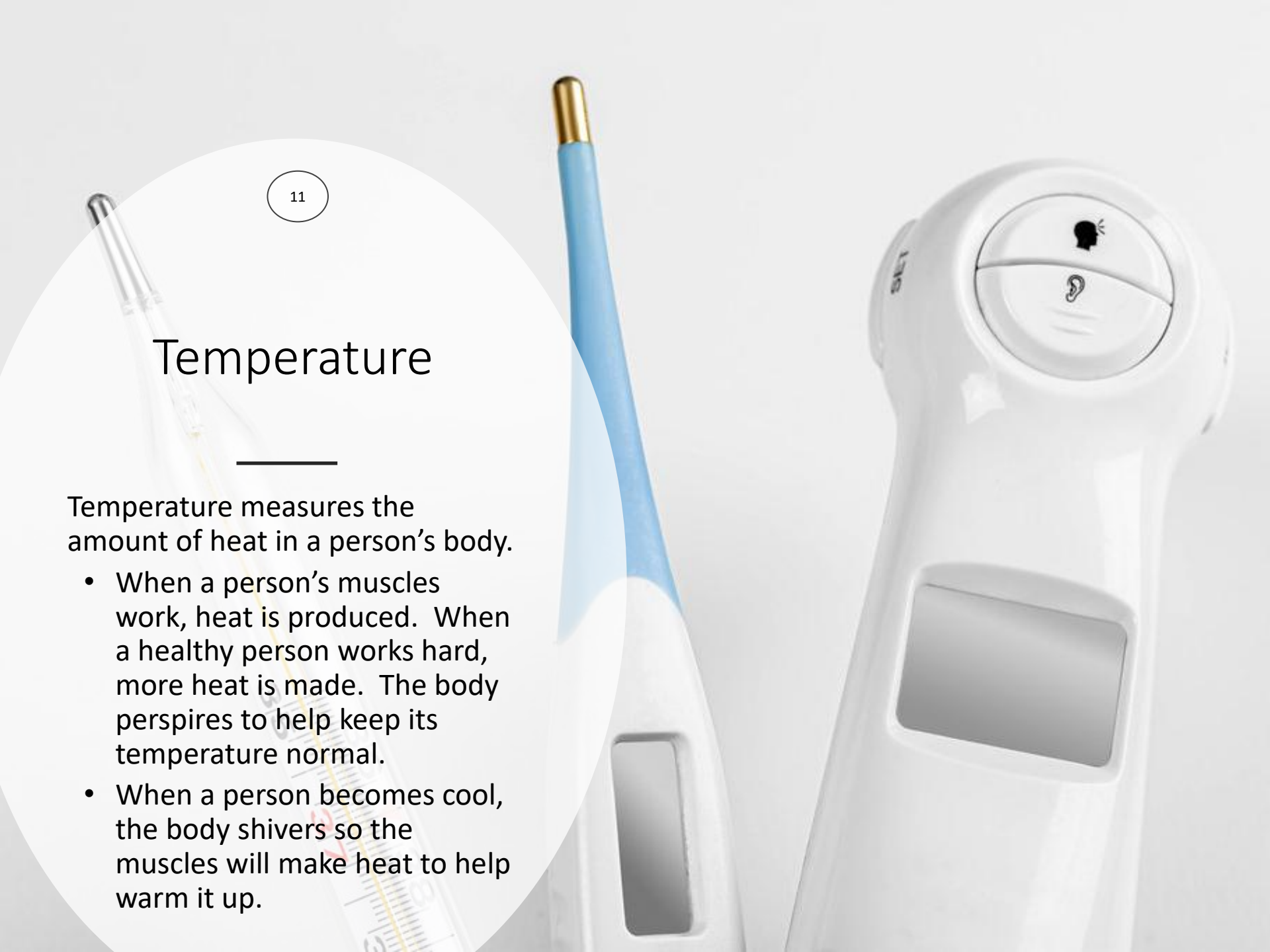
Factors that can Influence Vital Signs

- Age
- Gender
- Weight
- Exercise (always have the individual resting for 15 minutes prior to obtaining any vital signs).
- Lifestyle factors
- Medications
- Stress and anxiety

Temperature

Temperature measures the amount of heat in a person's body.

- When a person's muscles work, heat is produced. When a healthy person works hard, more heat is made. The body perspires to help keep its temperature normal.
- When a person becomes cool, the body shivers so the muscles will make heat to help warm it up.



Temperature

- When a person's health is abnormal, the body temperature may also be abnormal.
- Temperature may be taken with a thermometer placed in the:
  - Mouth (oral)
  - Under the arm (axillary)
  - Rectum (rectal)
  - Tympanic (ear) with a tympanic thermometer
  - Temporal artery (forehead)

Temperature

13

Normal Body Temperature Varies Depending on the Method Used to Measure Temperature

- The normal oral, forehead, and tympanic temperature is between 96 and 99 degrees Fahrenheit (F).
- The normal _____ temperature is between _____degrees F (one degree lower than oral and tympanic).
- The normal rectal temperature is between 97 and 100 degrees F (one degree higher than oral and tympanic).

What is a Fever?

- It is a temporary increase in the body temperature that is often caused by illness or infection.
- Is indicated by a temperature of 100.4 degrees F or higher.
- Fevers play an important role in helping the body fight off infections.

A fever may be accompanied by other symptoms such as:

- Chills
- Headache
- Muscle aches
- Loss of appetite
- Irritability
- Dehydration
- General weakness

There are several types of thermometers on the market today, but the most common are:

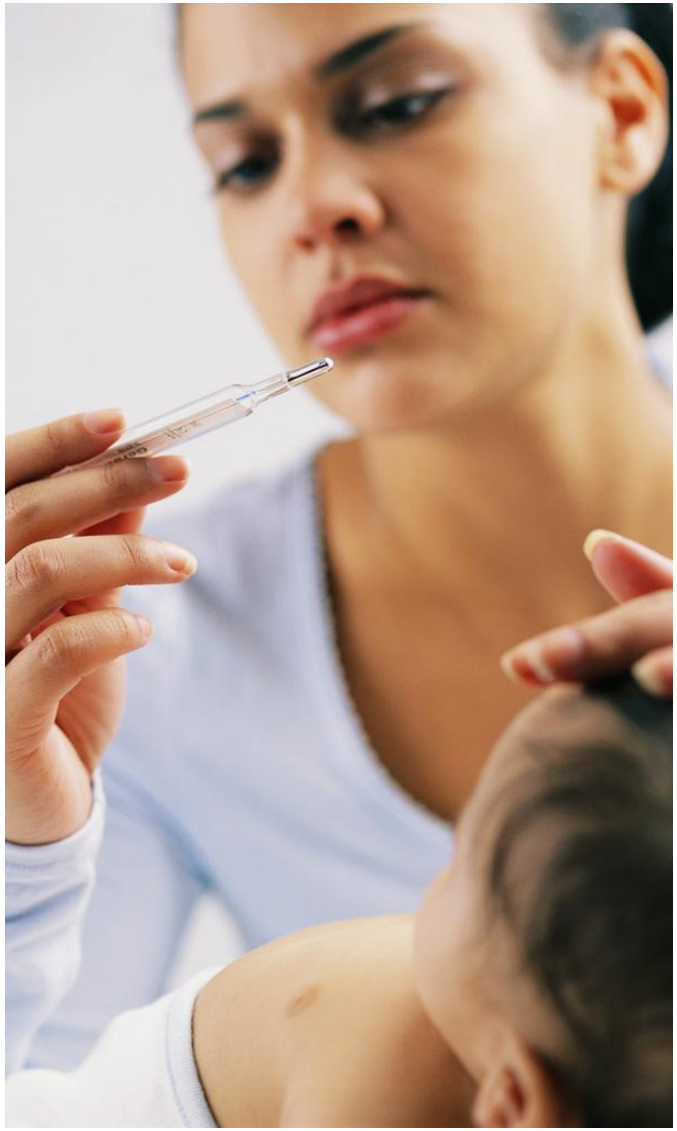
- **Digital** – Uses electronic heat sensors to record body temperature.
- **Tympanic** – reads the heat waves coming of the ear drum.
- **Temporal artery** (Forehead) – reads the heat waves coming of the temporal artery.

Glass Thermometers

- Are hollow glass tubes containing mercury.
- While in some areas they are still in use, they have mostly been phased out due to them posing an unnecessary risk of mercury poisoning.
- **NOTE**: Do NOT use mercury thermometers to assess temperature on an individual. If you have a mercury thermometer, don't throw it in the trash. Contact your local trash collection program to see if there's a hazardous waste collection site in your area.

Before Taking a Temperature Collect all Needed Equipment

- Person's chart.
- Vital sign sheet.
- Pen.
- Thermometer.
- Thermometer covers.
- Water-soluble lubricant (for rectal temperatures only).
- Alcohol wipes. (Clean thermometers with alcohol wipe in a circular motion from clean to dirty end of the thermometer prior to use, between routes (example: from axillary to oral), and after use.

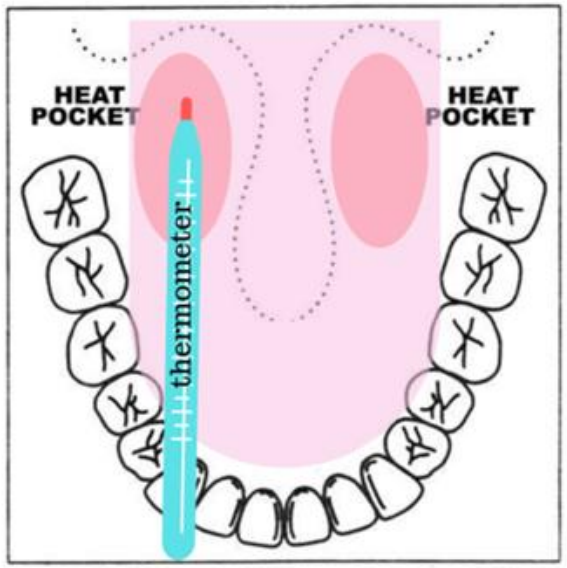


Procedure for Taking a Temperature:

- Wash hands
- Assemble equipment
- Verify person's identity
- Explain procedure
- Take temperature
- Wash hands
- Document
- Report, if necessary

How to take an Oral Temperature Using a Digital Thermometer

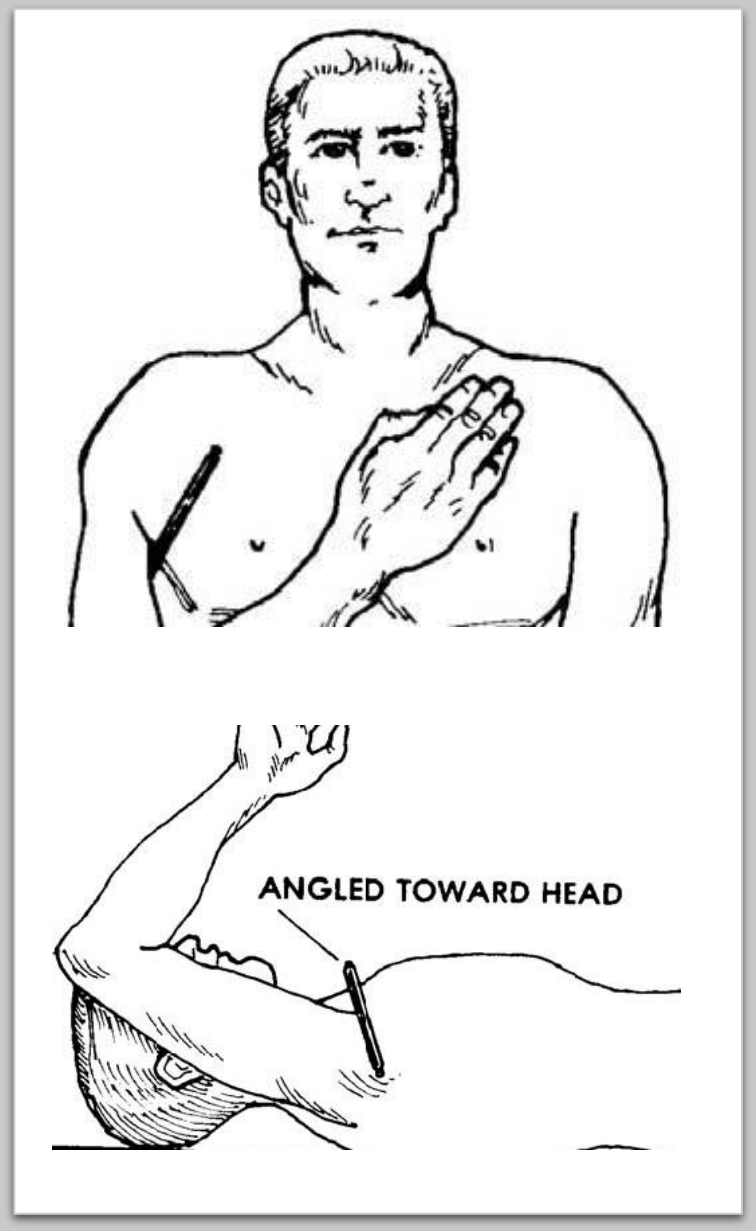
- Apply thermometer cover
- Turn on thermometer per instructions (may vary with brand).
- Carefully place the thermometer under the person's tongue and to one side
- With the person's mouth closed, assuring they are using their lips to hold the thermometer and not their teeth. Individuals should breathe through his or her nose.
- Leave the thermometer in place until you hear a beep (most thermometers will beep when complete – see instructions).
- Remove the thermometer, noting temperature.
- Dispose of thermometer cover.



PLACE THERMOMETER UNDER THE TONGUE IN ONE OF THE HEAT POCKETS

Before Taking an Oral Temperature

- Wait 15-30 minutes after eating drinking, chewing gum or smoking before taking an oral temperature
- Do not take an oral temperature if:
  - The individual is a mouth breather
  - The individual is confused, disturbed, heavily sedated, or has some condition (coughing, shaking, chills, ect) that makes it likely they may bite down on the thermometer
  - The individual is being administered oxygen by the mouth or nose
  - The individual has paralysis on one side of the body
  - The individual has a seizure disorder



How to take an Axillary Temperature Using a Digital Thermometer

- Apply thermometer cover
- Turn on thermometer per instructions (may vary with brand).
- Carefully place the tip of the thermometer into the center of the person's armpit (assuring you are against skin and not clothing).
- Tuck the person's arm closely against their body.
- Leave the thermometer in place until it beeps.
- Note temperature, dispose of thermometer cover
- **Add one degree to the axillary temperature reading**

How to take a Temperature Using a Tympanic Thermometer

- Clean thermometer with alcohol wipe prior to use.
- Apply thermometer cover.
- Turn on (may vary with brand).
- Make sure the ear canal is clean (the probe must be able to see the tympanic membrane in the ear).
- Insert ear probe into the ear canal (gently pulling ear lobe up and back in adults and back and down in children.
- Press scan button per instructions and wait for beep.
- Note temperature.
- Dispose of thermometer cover.

How to take a Temperature Using a Forehead Thermometer

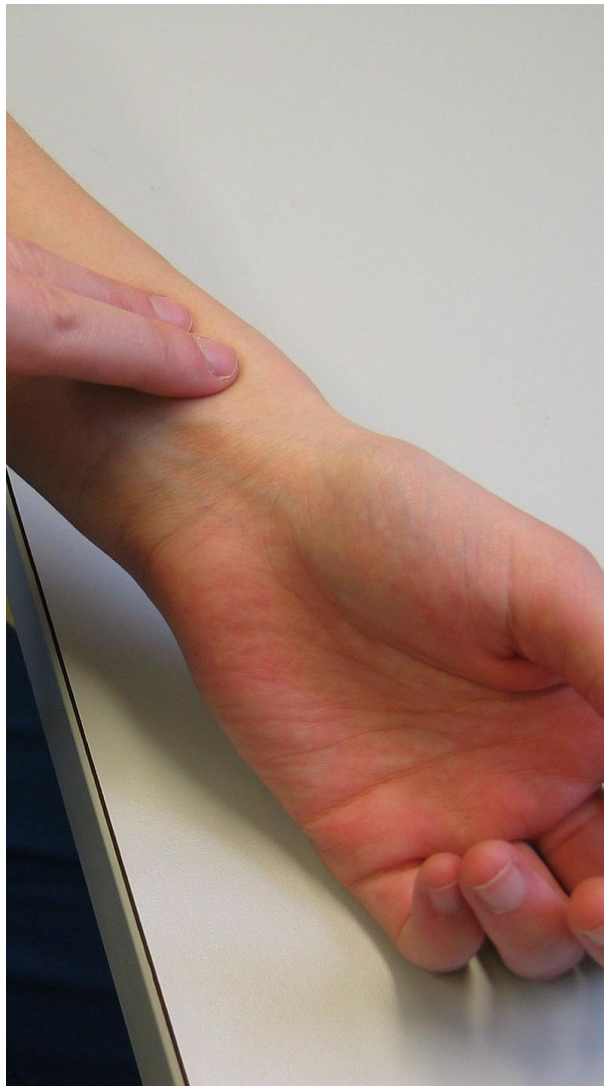
- Remove cover if necessary (if not removed you will get an abnormal low reading)
- Clean thermometer with alcohol wipe prior to use
- Place the sensor head at the center of the forehead
- Slowly slide the thermometer across the forehead toward the top of the ear
- Stop when you reach the hairline.
- Will beep when complete
- Note temperature
- Instructions may vary depending on brand – read instructions.

Always:

- Record temperature on vital sign sheet.
- Report any abnormal findings:
  - A temperature below 96 (unless it is axillary) or above 99 (unless it is rectal) to the home manager and the home nurse.
  - Signs or symptoms accompanying abnormal temperature

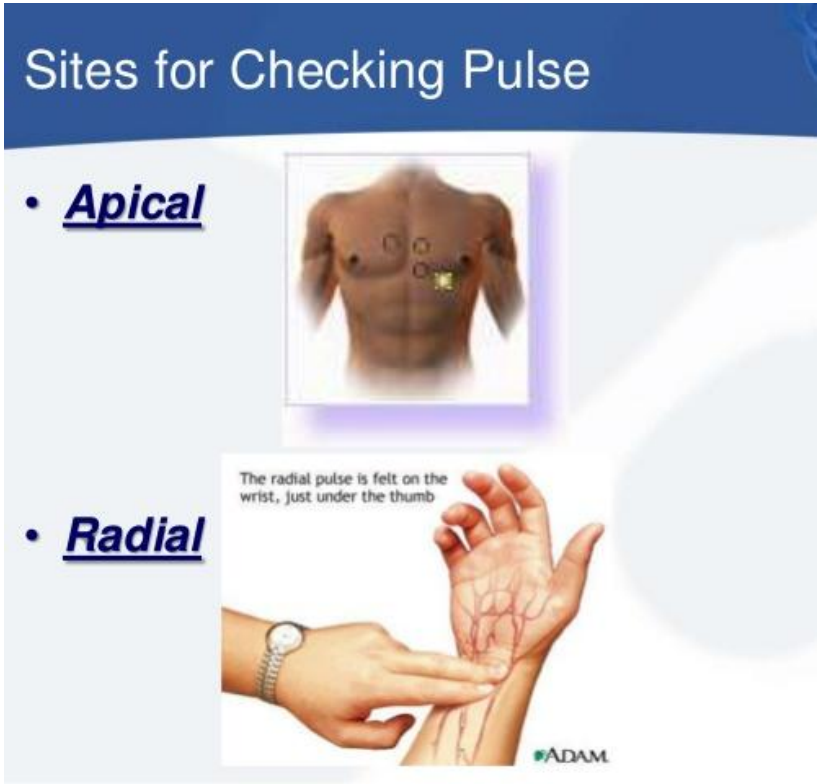
Pulse (Heart Rate)

- A pulse measures how fast the heart is beating.
- A normal heart beats 60-100 times per minute.
- Note: some people may normally have a heart rate below 60 and/or irregular beat.
  - **Always check their pulse against their baseline**



Sites for Checking Pulse

- Radial Pulse - The most common way to measure the pulse is to feel the radial artery in the wrist.
- Apical Pulse - Another way to measure the pulse is to place the bell of the stethoscope on the left side of the chest over the heart.



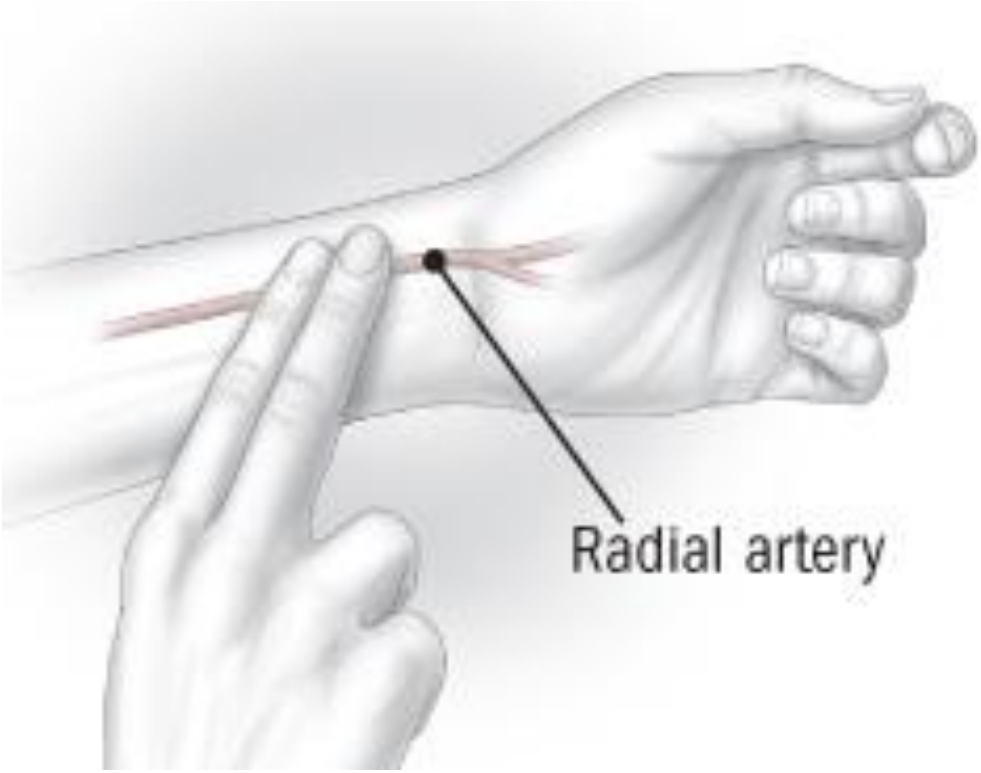
Equipment Needed:

- Person's chart
- Vital sign sheet
- Pen
- Watch with a second hand

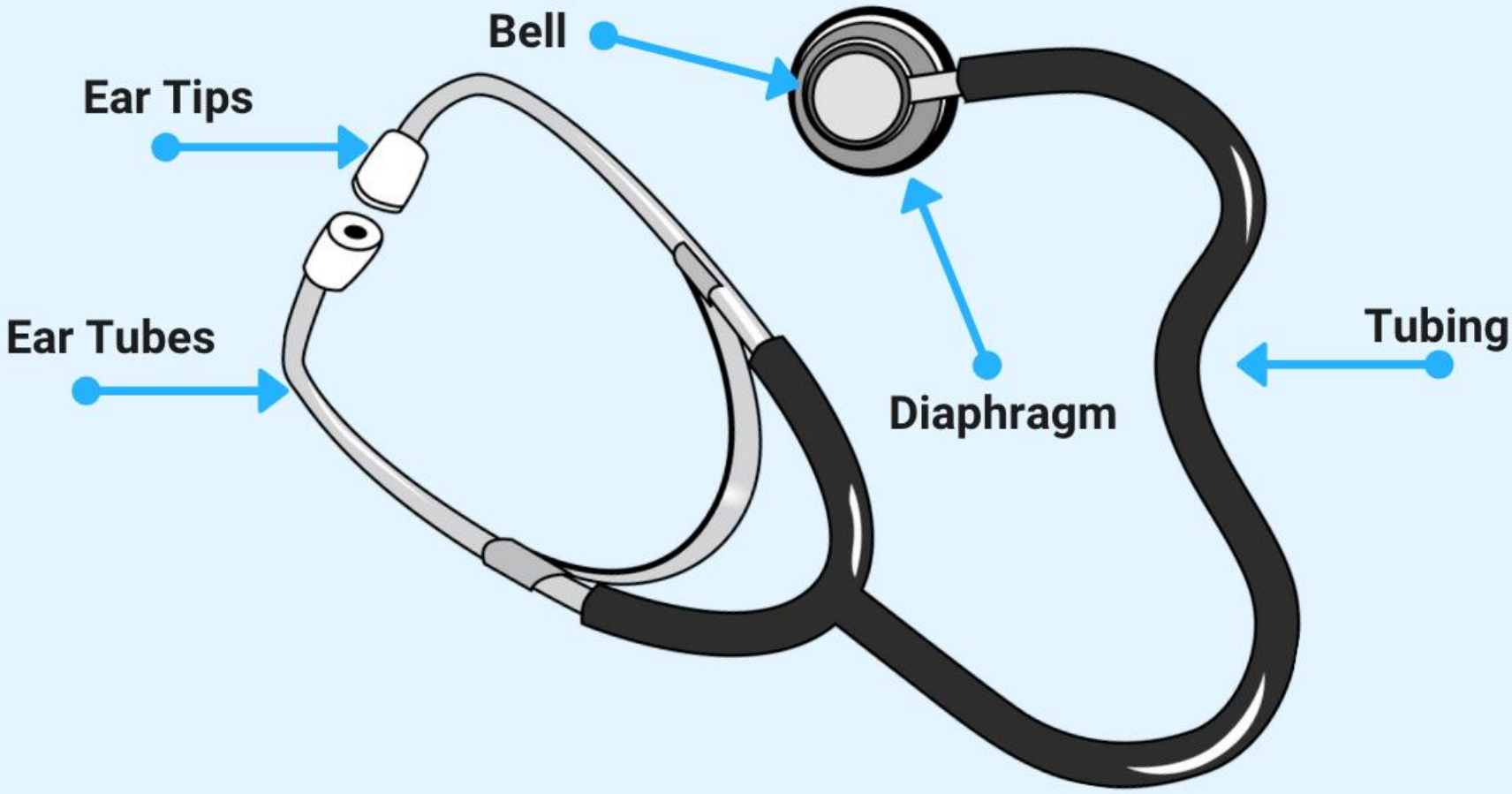
Procedure to Take A Pulse

- Wash hands
- Assemble equipment
- Person's identity
- Explain procedure
- Take the pulse

How to Take A Radial Pulse



- Place 2-3 fingers on inner wrist and locate the radial pulse (do not use thumb).
- Apply just enough pressure so you can feel each beat.
- Do not push too hard or you will obstruct the blood flow.


Bell
Ear Tips
Ear Tubes
Diaphragm
Tubing

How to Take an Apical Pulse

- Place the bell end of the stethoscope on the left side of the chest and locate the heartbeat.

How to Take A Pulse

Count the heartbeat for a full 60 seconds using the watch with a second hand.

If pulse is irregular (unsteady), retake the pulse.

- A regular pulse has an even tempo with equal intervals between pulsations
- Arrhythmia is an irregular or abnormal rhythm

Note the regularity and strength of the pulse.

- Rhythm refers to the spacing of the beats
- Volume or strength is the intensity or force of the pulse
  - "strong", "weak", "thready"

How to Take A Pulse

Write	Write the pulse on the vital sign sheet (if the pulse is irregular – write 'irr.' next to reading).
Wash	Wash hands.
Report	Report any abnormal findings - pulse below 60 or above 100 or irregularities, to the home manager and the home nurse.


EMT
Prep
Radial Pulse Palpation

Respirations

- A respiratory rate measures the number of breaths a person takes in one minute.
  - A normal respiratory rate is 16-24 breaths per minute.
  - NOTE: Some people may normally have a resting/ sleeping respiratory rate of 12 or some people who have been running or exercising may have a higher respiratory rate until their body has recovered from the increased activity.
  - People that have respiratory health problems such as COPD may also have a resting respiratory rate higher than normal.

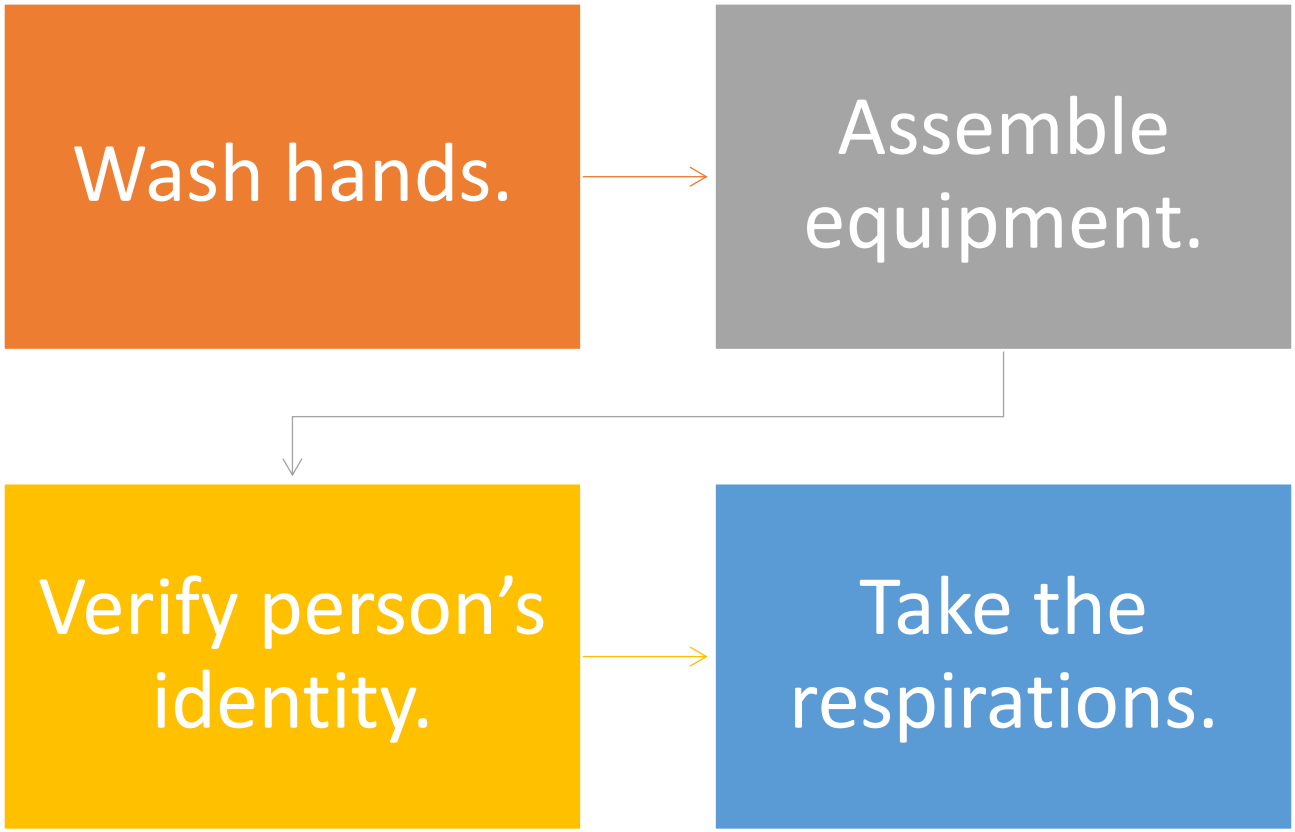
Respirations

- One respiration is equal to the chest rising when the lungs fill with air (inhalation) and the chest falling when the air leaves the lungs (exhalation) one time.
- Respirations may be counted by watching the number of times the chest rises and falls in one minute.
- They may also be measured by placing the hand on the chest or stomach and feeling the number of times the chest rises and falls in one minute.

How To Take Respirations

- **Equipment Needed:**
  - Person's chart.
  - Vital sign sheet.
  - Pen.
  - Watch with a second hand.

Procedure To Take Respirations



How To Take Respirations

Count

Count the person's respirations for 60 seconds

- You may want to place your fingers on the person's wrist while counting respirations – some people will control their breathing pattern when they know they are being watched.

Note

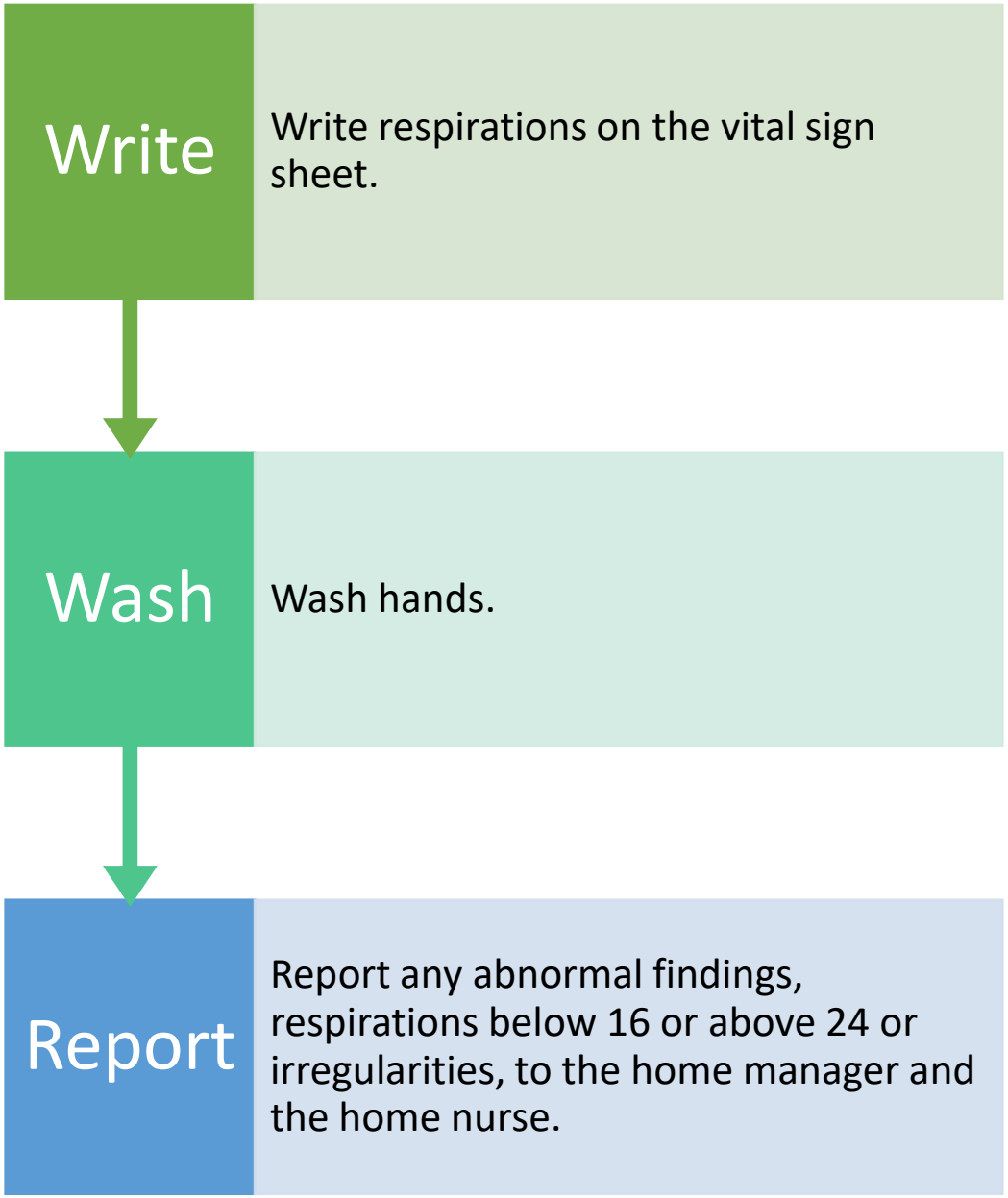
Note Depth (deep or shallow) and Rhythm (regular or irregular)

Note

Note any irregularity in the respirations.

- Shortness of breath, rapid breathing, unsteady breathing, wheezing, cracking (popping), bluish – lips, skin, hands, or feet.

How To Take Respirations



Blood Pressure

- Blood pressure measures the force of the blood on the inside of the blood vessel.
- A blood pressure has two numbers.
  - The higher number or systolic should be between 90 and 160.
  - The lower number or diastolic should be between 60 and 90.

How To Take Blood Pressure

- **Equipment Needed:**
  - Person's chart.
  - Vital sign sheet.
  - Pen.
  - Blood pressure cuff or digital blood pressure machine.
  - Stethoscope (if using regular cuff).
  - Alcohol wipes.

SIZE MATTERS

Cuff Size Wrong Results In Wrong Readings

Cuff Too Small

Falsely High Reading

Cuff Too Large

Falsely Low Reading

AQESO Wide- Range Cuffs Solution

Medium/ Standard

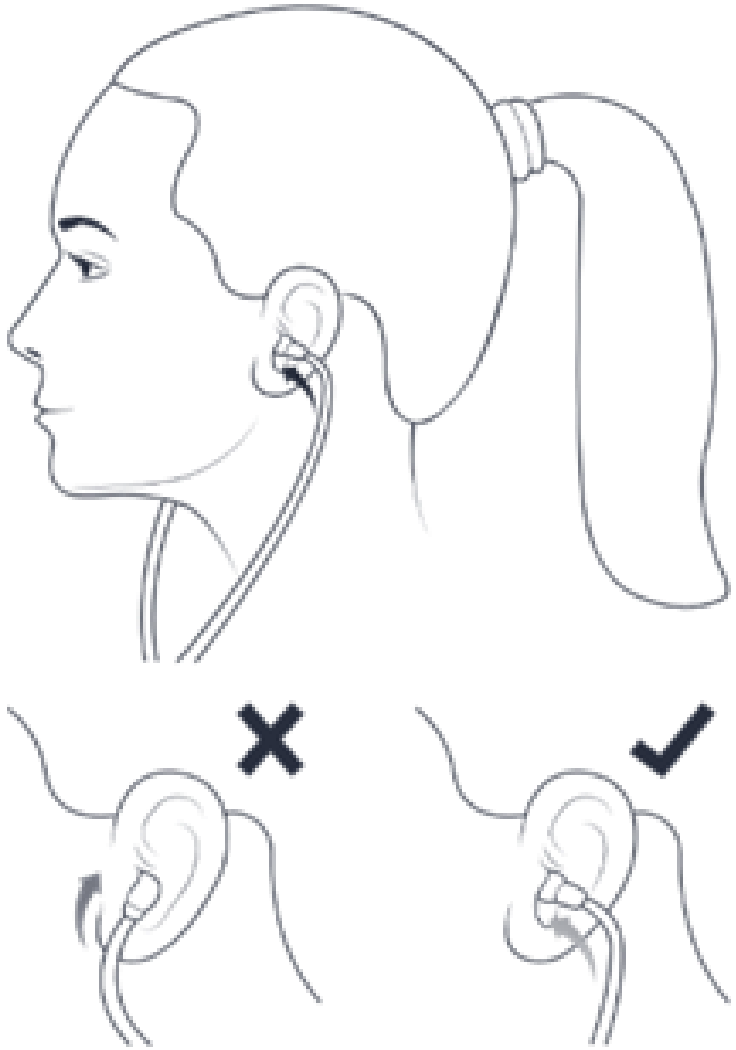
Large

Extra Large

How To Take Blood Pressure

Using a regular cuff:

- Clean the earpieces and diaphragm and/or bell of the stethoscope with alcohol wipes.
- Locate the brachial pulse on the inside of the elbow toward the body.
- Wrap and fasten the deflated blood pressure cuff smoothly and snugly around the person's upper arm
  - The cuff should be placed at least one inch above the elbow; make sure the arrow on cuff is pointing at the brachial pulse.
- Place the earpieces of stethoscope in your ears.



How To Take Blood Pressure

Using a regular cuff (continued):

- Place the diaphragm of the stethoscope over the brachial pulse.
- Close valve on air pump.
- Squeeze the air pump to inflate the cuff until the needle reaches 160 on the dial.
- Slowly and steady deflate the cuff, while watching the dial
- Listen carefully for the beginning and ending beats. Note the number of the **first beat and the last beat**.
- Repeat if necessary (always wait 5 minutes to re-inflate on same arm or switch to other arm).

How To Take Blood Pressure

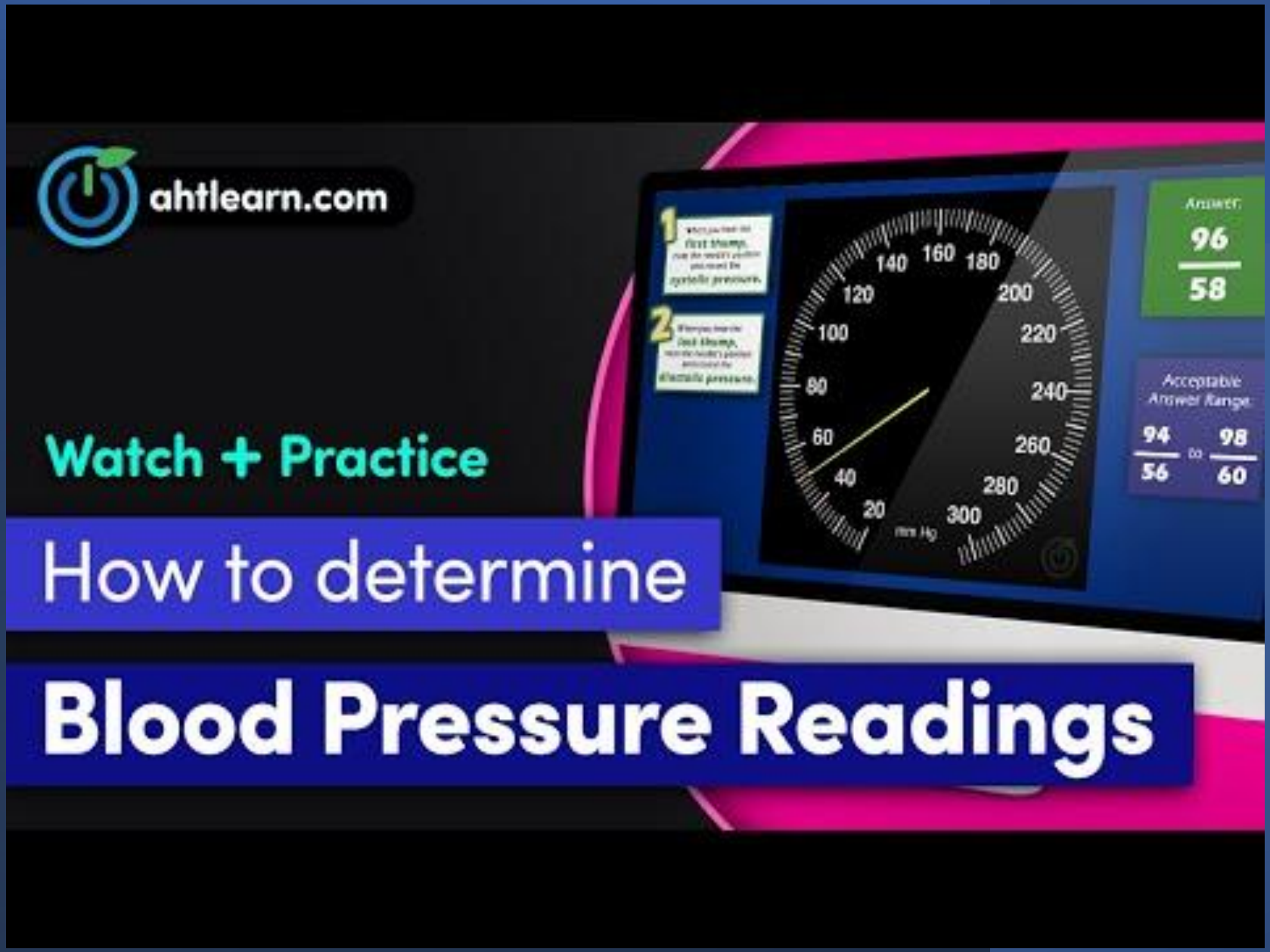
Using a digital cuff:

- Locate the brachial pulse on the inside of the elbow toward the body.
- Wrap and fasten the deflated blood pressure cuff smoothly and snugly around the person's upper arm (place the cuff sensor (inside the cuff) over the brachial pulse).

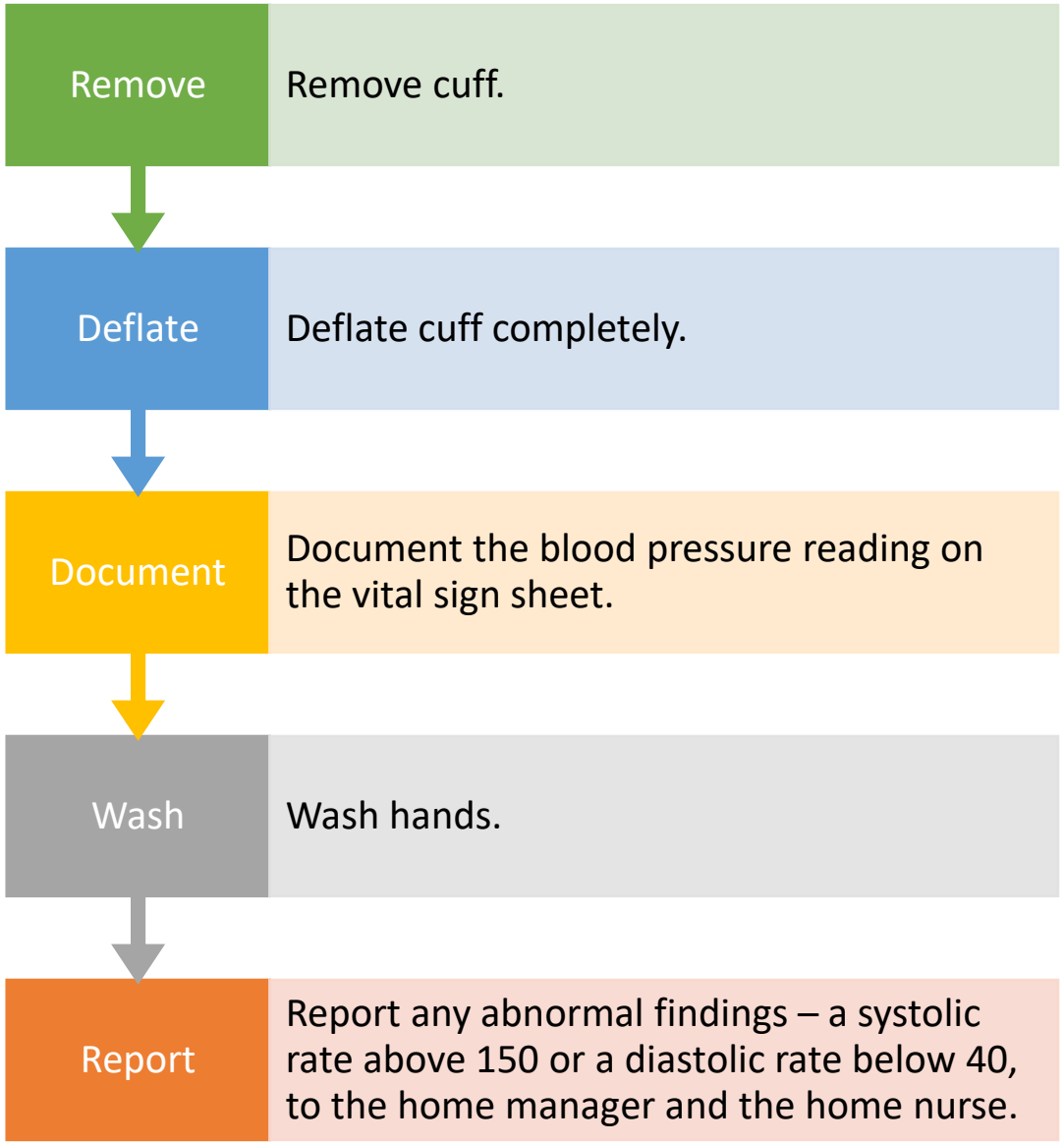
How To Take Blood Pressure

Using a digital cuff:

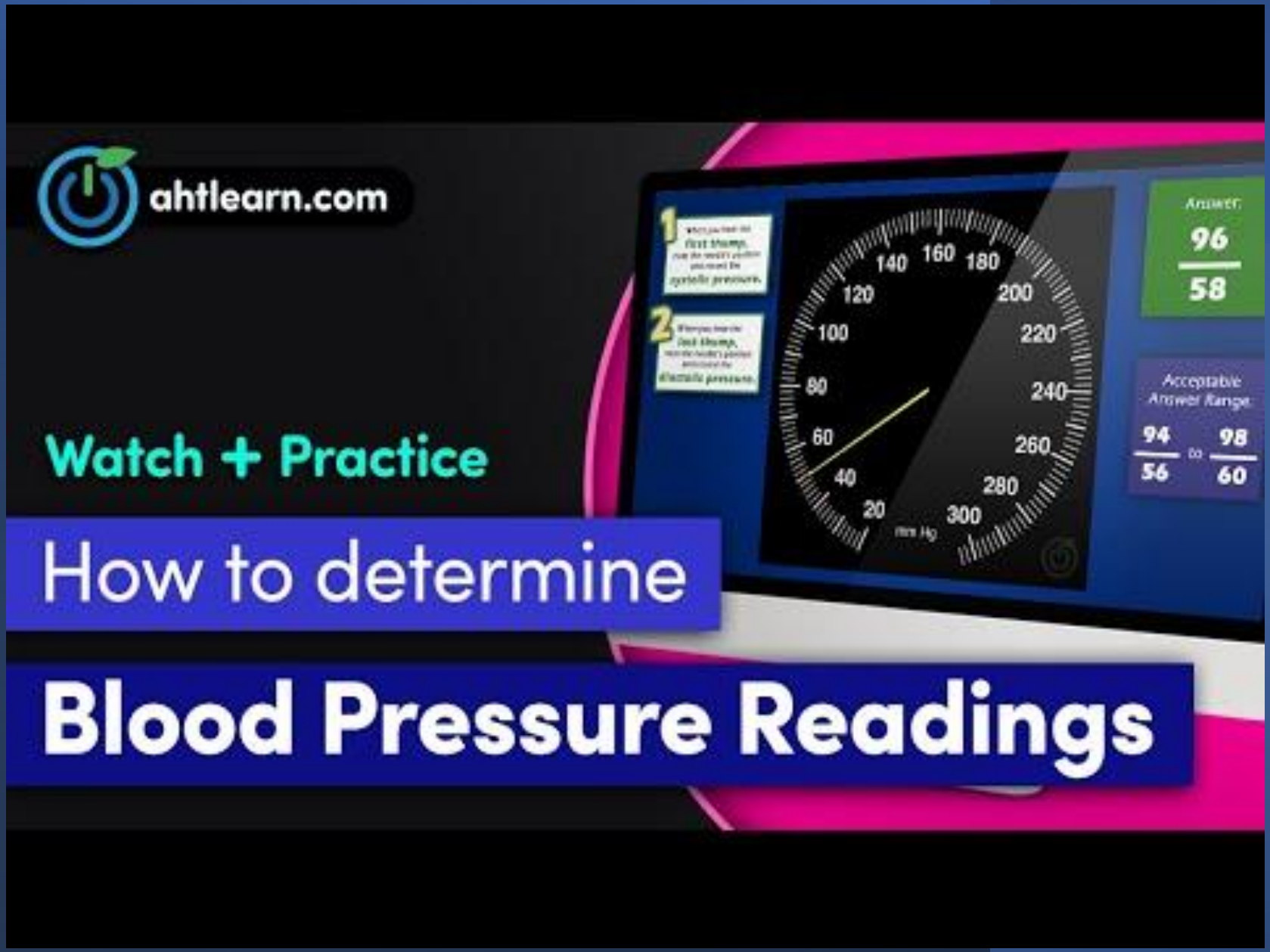
- Set systolic pressure switch on 150 unless blood pressure normally runs higher (the machine will automatically re-inflate if the blood systolic pressure is higher than 150)
- The machine will display the results on the screen - if an error message appears, recheck positioning and retake blood pressure. If error message still appears – take blood pressure with manual cuff.


ahtlearn.com
Watch + Practice
How to determine
Blood Pressure Readings
Answer:
96
58
Acceptable Answer Range
94
56
to
98
60

How To Take Blood Pressure




EMT
Prep
Auscultating a BP


ahtlearn.com
Watch + Practice
How to determine
Blood Pressure Readings
Answer:
96
58
Acceptable Answer Range
94
56
to
98
60

TBHS Vital Parameters

- Blood Pressure
  - Greater than 150/90 or less than 80/40 unless ordered differently.
- Pulse
  - 60-100 beats per minute
- Respirations
  - 16-24 breaths per minute
- Temperatures
  - Axillary Temperature – 95° to 98° F
  - Ear, Oral, Forehead Temperature - 96° to 99° F

Pulse Oximetry

- Considered the "5th" vital sign
- A test to measure oxygen level (oxygen saturation) of the blood
- Finger probes/ear probes
- Normal oxygen saturation is 94-100%
- Persons with COPD may have lower oxygen saturation levels (always compare against their baseline)
  - Breathing treatments
- Gently clean the probe with alcohol wipes before and after use
- Tips
  - When hands and fingers are cold, blood flow is impaired, and you may not get a good reading. Warm the hands by placing a warm blanket on them for a few minutes.
  - Nail polish can interfere with the oximeter

Pain Is…

"An unpleasant sensory and emotional experience associated with actual or potential tissue damage" IASP, 2018

"What the person says it is…" McCaffery & Pasero, 1999

Pain is subjective.

Pain Affects Quality of Life

Physical

- Functional Ability
- Sleep
- Appetite

Psychological

- Anxiety
- Depression
- Fear
- Cognition/Attention Span

Spiritual

- Suffering
- Meaning
- Hope

Social

- Appearance
- Personal Interactions
- Burden: Financial, Caregiver

Barriers to Pain Relief

- Reluctance to report pain
  - Patient's Attitude – "pain is a part of life; I just need to bear it."
- Beliefs
  - Fear of addiction – "I don't want to become an addict."
- Worries about adverse effects
- Cost/financial
- May consider pain a part of normal aging process

Mrs. Sue Peacock corresponding author1 and Mrs. Shilpa Patel2 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4589930/ Cultural Influences on Pain Rev Pain. 2008 Mar; 1(2): 6–9.doi: 10.1177/204946370800100203

Barriers to Pain Relief

- Culture
  - “Some cultural groups expect an extravagant display of emotion in the presence of pain, but others value stoicism, restraint and playing down the pain.”
- Meaning of pain
- Level of Knowledge – “I shouldn’t take my pain mediation until I really need it or else it won’t work later.”
- Previous Experience with Pain – “My family thinks I get confused on pain medication; I’d better not take it.”

Mrs. Sue Peacock corresponding author1 and Mrs. Shilpa Patel2 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4589930/ Cultural Influences on Pain Rev Pain. 2008 Mar; 1(2): 6–9.doi: 10.1177/204946370800100203

Pain Assessment

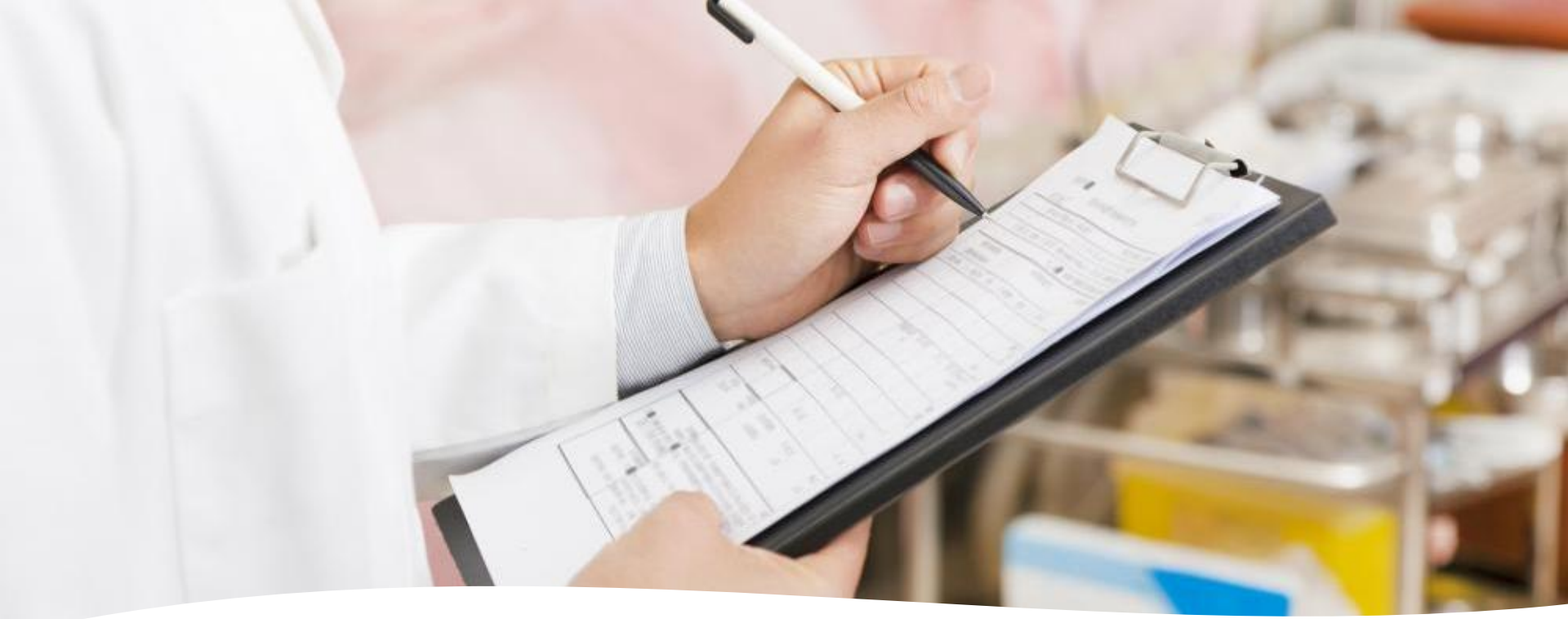
- Patient's self report is most valid
- Words to describe pain – "Tell me about your pain"
- Intensity – "How would you rate your pain now/last 24 hours?" Use pain scales (Baker, FLACC, 0-10)
- Location – "Where does it hurt?"
- Duration – "How often do you have this pain?'' (Baseline, intermittent, continuous, breakthrough pain)
- Aggravating and Alleviating Factors – "what makes it better/worse?"

Regina Fink, RN, PhD, AOCN; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1317046/Pain assessment: the cornerstone to optimal pain management Proc (Bayl Univ Med Cent). 2000 Jul; 13(3): 236–239

Communicating Assessment Findings

- Communication improves pain management
- Communicate with physician, team members, and patient/family
- Describe intensity, limitations, and response to treatments
- Documentation is key

Gordon et al, 2005: Pasero & McCaffery 2011

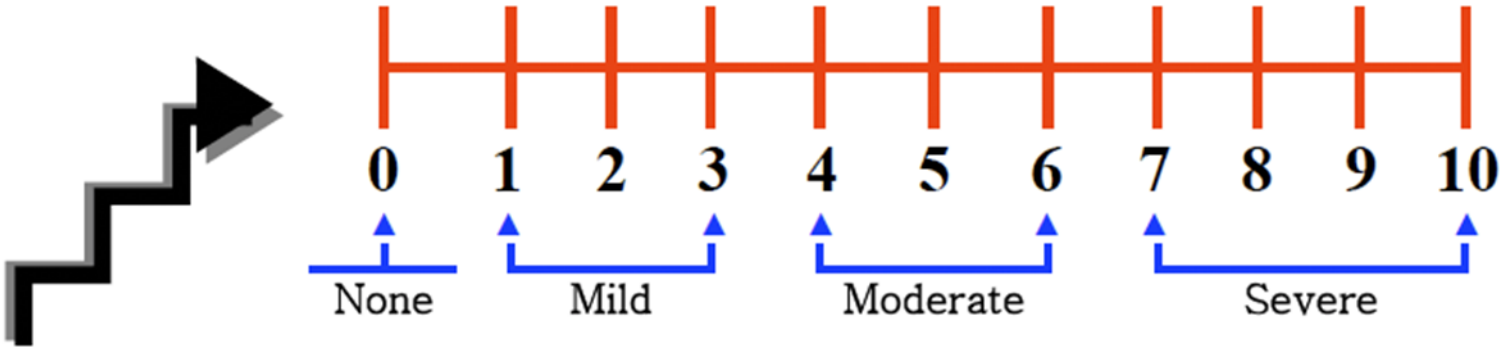


Documentation

- Pain assessment should be
  - Ongoing, occurring at regular intervals
  - Individualized
  - Documented so that all of those in care of individuals served understand the individual's condition.
- Purpose of documenting pain
  - Communication
  - Patient safety
  - Track outcomes

Regina Fink, RN, PhD, AOCN; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1317046/Pain assessment: the cornerstone to optimal pain management Proc (Bayl Univ Med Cent). 2000 Jul; 13(3): 236–239

Numerical Rating Pain Scale



Zero indicates the absence of pain, while 10 represents the most intense pain possible

Erica Jacques January 05, 2020 https://www.verywellhealth.com/pain-scales-assessment-tools-4020329 10 Common Types of Pain Scales

Wong-Baker FACES Pain Rating Scale

From Wong D.L., Hockenberry-Eaton M., Wilson D., Winkelstein M.L., Schwartz P.: Wong's Essentials of Pediatric Nursing, ed. 6, St. Louis, 2001, p. 1301. Copyrighted by Mosby, Inc. Reprinted by permission.

- Six faces depict different expressions, ranging from happy to extremely upset.
- Each is assigned a numerical rating between 0 (smiling) and 10 (crying).
- Individuals served's can point to the picture that best represents the degree and intensity of their pain.

Erica Jacques January 05, 2020 https://www.verywellhealth.com/pain-scales-assessment-tools-4020329 10 Common Types of Pain Scales

FLACC Scale

FLACC stands for face, legs, activity, crying, and consolability.

It can be used in adults who are unable to communicate.

The FLACC scale is based on observations, with zero to two points assigned for each of the five areas.

The overall score is recorded as follows:

0: Relaxed and comfortable
1 to 3: Mild discomfort
4 to 6: Moderate pain
7 to 10: Severe discomfort/pain

Erica Jacques January 05, 2020 https://www.verywellhealth.com/pain-scales-assessment-tools-4020329 10 Common Types of Pain Scales

DATE/TIME						
Face 0 - No particular expression or smile 1 - Occasional grimace or frown, withdrawn, disinterested 2 - Frequent to constant quivering chin, clenched jaw						
Legs 0 – Normal position or relaxed 1 – Uneasy, restless, tense 2 – Kicking, or legs drawn up						
Activity **0** – Lying quietly, normal position, moves easily **1** – Squirming, shifting back and forth, tense **2** – Arched, rigid or jerking						
Cry **0** – No cry (awake or asleep) **1** – Moans or whimpers; occasional complaint **2** - Crying steadily, screams or sobs, frequent complaints						
Consolability **0** – Content, relaxed **1** – Reassured by occasional touching, hugging or being talked to, distractible **2** – Difficult to console or comfort						
TOTAL SCORE						

NIH / Warren Grant Magnusen Clinical Center

Weight

Individuals served should be weighed with the same scale, at the same time of day, wearing similar clothing.

- The scale should be placed on a flat hard surface.

- Reasons for obtaining weight
  - Indicator of nutritional status
  - Indicator of change in medical condition
  - Used by doctor to order medications

* Significant changes in an individual's weight need to be reported.


VITAL
SIGNS
EXAM

TBHS Individuals Served Exclusion Policy

- TBHS has created guidelines for home staff to use if there is a question whether or not any individuals served should attend day program. This policy needs to be enforced to ensure the health and safety of all individuals served.

TBHS Individuals Served Exclusion Policy

- Temperature of 100 degrees or greater.
- Productive cough.
- Presence of colored sputum or mucus from the mouth/nose.
- Vomiting twice within 24-hour period.
- Lethargy persisting for 24-hours or greater.

TBHS Individuals Served Exclusion Policy

- Any seizure that requires individuals to receive rectal Valium/Ativan within the last 6 hours.
- Diarrhea persisting for 24-hours or greater.
- Undiagnosed rash.
- Suspected head lice.
- Any other suspected communicable disease (i.e. scabies, ringworm, pinworm, etc.)

Questions?

TUSCOLA
Behavioral Health Systems

This Concludes the Vital Signs Initial Training

Please proceed to the written exam.