

Assessing a casualty

Best method for assessing a casualty

- The best method for assessing a casualty in an emergency situation is to perform a quick primary survey followed by a more thorough secondary survey.

Assessment of Casualty (History Taking)

- Name
- Age
- Sex
- Occupation
- Address
- Present history
- Past history
- Family history

Best method for assessing a casualty

- **A primary survey** is a **quick** assessment of a casualty to find and correct any life-threatening issues. It often follows a structure such as DR ABC (or DRSABC). This involves checking the following things:
 - **Danger**- any hazards to yourself or bystanders?
 - **Response** – is the casualty unconscious?
 - **Shout for help** – if they are unconscious, shout for further help but do not leave their side
 - **Airway** – open the airway by tilting the head back and lifting the chin
 - **Breathing** – check for normal breathing for up to 10 seconds
 - **Circulation** – perform CPR and use a defibrillator if the victim isn't breathing

Visit <http://www.sja.org.uk/sja/first-aid-advice/what-to-do-as-a-first-aider/how-to-assess-a-casualty/the-primary-survey.aspx>

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1. **A primary survey-** should be carried out to assess all casualties.
- Once a primary survey has been performed, you can move onto a more **thorough secondary survey**. It may not be possible to perform a secondary survey if there are problems with the primary survey. For example, performing CPR takes priority over performing a secondary survey.

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2. The secondary survey involves:

- **History** – finding out the history of the incident / illness from the casualty or bystanders
- **Examination** – looking for visual clues
- **Vital signs / observations** – if trained, recording relevant observations

The primary and secondary survey provide a structure for you to assess each casualty in a logical way.

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- **The Secondary Survey**
- Only move onto the Secondary Survey if you've already done the Primary Survey and succeeded in dealing with any life-threatening conditions.
- Then you can start questioning the casualty about what's happened and carefully check someone for any other injuries or illnesses. If you can, jot down everything you find out and give all this information to the emergency services or whoever takes responsibility for the child, like a parent.

You need to find out:

- A. History:** Question them about what happened leading up to them injuring themselves or feeling unwell? Ask those around them too and write everything down if they can.
- B. Symptoms:** What symptoms do they tell you they have?
- C. Signs:** Check them over from head to toe. What signs do you find on their body?
- D. Head to toe examination**

Best method for assessing a casualty

A. History

1. Event history

- Ask them to describe exactly what happened leading up to them feeling unwell or injuring themselves.
- You can ask other people near the scene too and also look for clues. For example, if they've had a car accident the impact on the car will help you work out what type of injury they could have.

2. Medical history

- Then, ask them to tell you their medical history. Use the word **AMPLE** to remember all the things you need to ask them:
- **A**llergy – do they have any allergies?
- **M**edication – are they taking any regular or prescribed medication?
- **P**revious medical history – did they already have any conditions?
- **L**ast meal – when did they last eat something?
- **E**vent history – what happened?

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B. Symptoms

- Ask them to give you as much detail as possible about how they feel. Listen carefully to what they say and make notes, if possible.
- Here are the key questions to ask them:
 - Can they feel any pain?
 - Can they describe the pain, e.g. is it constant or irregular, sharp or dull?
- What makes the pain better or worse?
- When did the pain start?

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C. Signs

- Check the casualty over from head to toe, using all your senses – look, listen, feel and smell.
- You may have to loosen, open, cut away or remove clothing. Ask their permission to do this and make sure you're sensitive and discreet.
- Make a note of any minor injuries as you go. Only return to these when you have finished checking the whole body, to make sure you don't miss any more serious injuries.

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D. Head to toe examination

- **Breathing and pulse:** How fast and strong is their breathing and pulse?
- **Bleeding:** Check the body from head-to-toe for any [bleeding](#).
- **Head and neck:** Is there any bleeding, swelling, sensitivity or a dent in the bone, which could mean a [fracture](#)?
- **Ear:** Do they respond when you talk to them? Is there any blood or clear fluid coming from either ear? If so, this could mean a serious [head injury](#).
- **Eyes:** Are they open? What size are their pupils (the black bit)? If they're different sizes this could mean a [head injury](#).
- **Nose:** Is there any blood or clear fluid coming from the nostrils? This could mean a serious [head injury](#).
- **Mouth:** Check their mouth for anything which could block their airway. Look for mouth injuries or burns in their mouth and anything unusual in the line of their teeth.

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- **Skin:** Note the colour and temperature of their skin. Pale, cold, clammy skin suggests [shock](#). A flushed, hot face suggests [fever](#) or [heatstroke](#). A blue tinge suggests lack of oxygen from an obstructed airway, poor circulation, or [asthma](#).
- **Neck:** Loosen any clothing around their neck to look for signs like a medical warning medallion or a hole in their windpipe. Run your fingers down their spine without moving it to check for any swelling, sensitivity or deformity.
- **Chest:** Check if the chest rises easily and evenly on each side as they breathe. Feel the ribcage to check for any deformity or sensitivity. Note if breathing is difficult for them or painful in any way.
- **Collar bone, arms and fingers:** Feel all the way along the collar bones to the fingers for any swelling, sensitivity or deformity. Check they can move their elbows, wrists and fingers.

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- **Arms and fingers:** Check they don't have any unusual feeling in their arms or fingers. If their fingertips are pale or greyish-blue this could suggest their blood isn't circulating properly. Also look for any needle marks on the forearms, which suggest drug use. See if they have a medical warning bracelet.
- **Spine:** If they've lost any movement or sensation in their legs or arms. Don't move them to check their spine as they may have a spinal injury. Otherwise, gently put your hand under their back and check for any swelling or soreness
- **Abdomen:** Gently feel their abdomen to check for any signs of internal bleeding, like stiffness or soreness, on each side.

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- **Hips and pelvis:** Feel both hips and the pelvis for signs of a fracture. Check their clothing for any signs of incontinence, which may suggest a [spinal injury](#) or bladder injury, or bleeding from body openings, which may suggest a pelvic fracture.
- **Legs:** Check the legs for any bleeding, swelling, deformity or soreness. Ask them to raise one leg and then the other, and to move their ankles and knees.
- **Toes:** Check their movement and feeling in their toes. Compare both feet and note the colour of the skin: greyish-blue skin could suggest a problem with their circulation or an injury due to cold, like hypothermia.

Patient examination

It is a part of secondary survey. It can be assess under the following headings also-

- Inspection
- Palpation
- Percussion
- auscultation

Vital Signs

- Vital signs are physical signs that indicate an individual is alive, such as heart beat, breathing rate, temperature, blood pressures and recently oxygen saturation.

Vital sign

- Normal vital signs change with age, sex, weight, exercise tolerance, and condition.



Vital Signs

Vital signs are measurements of the body's most basic functions. The four main vital signs routinely monitored by medical professionals and health care providers include the following-

1. Pulse rate
2. Body temperature
3. Respiration rate (rate of breathing)
4. Blood pressure (Blood pressure is not considered a vital sign, but is often measured along with the vital signs.)

Vital sign

- All measurements are made while the patient is seated.



Vital sign

- Prior to measuring vital signs, the patient should have had the opportunity to sit for approximately five minutes.



Pulse

- As the heart forces blood through the arteries, you feel the beats by firmly pressing on the arteries, which are located close to the surface of the skin at certain points of the body.

Pulse

- Site-
 - Temporal artery
 - Neck ([carotid artery](#)),
 - On the inside of the [elbow](#) ([brachial artery](#)),
 - At the [wrist](#) ([radial artery](#)),
 - At the [groin](#) ([femoral artery](#)),
 - Behind the [knee](#) ([popliteal artery](#)),
 - Near the [ankle joint](#) ([posterior tibial artery](#)),
and
 - on foot ([dorsalis pedis artery](#)).

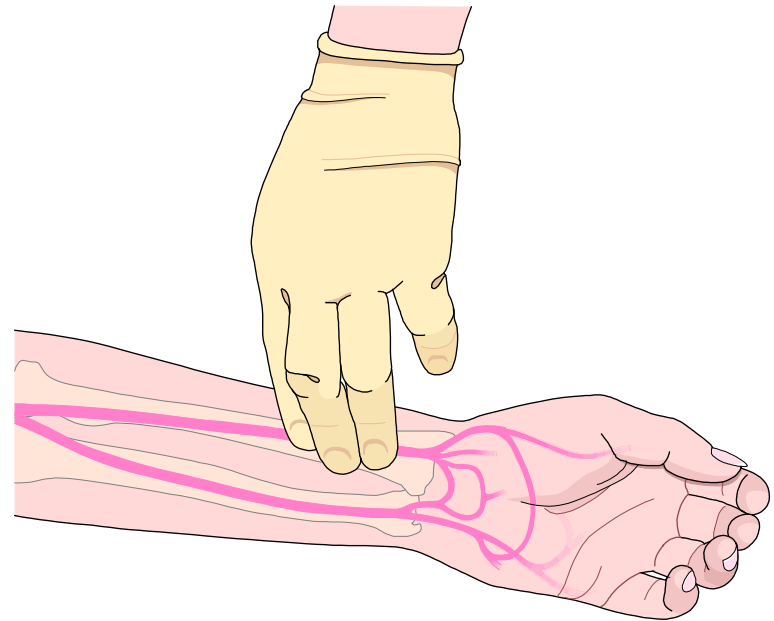
Pulse Taking Procedure

1. Wash hands & put on gloves, if appropriate
2. Provide privacy
3. Assist patient to a comfortable & relaxed position



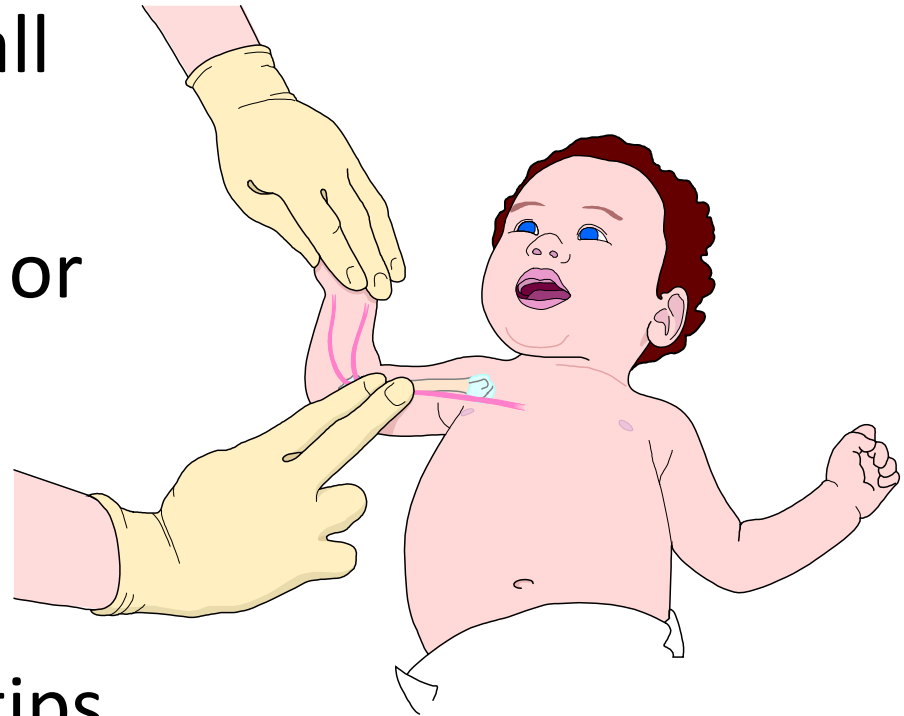
Pulse Taking Procedure- Radial

4. Do NOT use your thumb
 - Thumbs have a pulse, which can be mistaken for a patient's pulse
5. Place fingertips of first 2 or middle 3 fingers over the radial pulse area
 - Thumb side of patient's forearm at the wrist
6. Lightly press your fingertips on the pulse area



Pulse Taking Procedure- Brachial

4. Used for infants and small children
5. Place fingertips of first 2 or middle 3 fingers over the brachial pulse area
 - Inside of the elbow
6. Lightly press your fingertips on the pulse area



Pulse Taking Procedure

7. Begin to count rate when pulse is felt regularly

8. Count for 60 sec

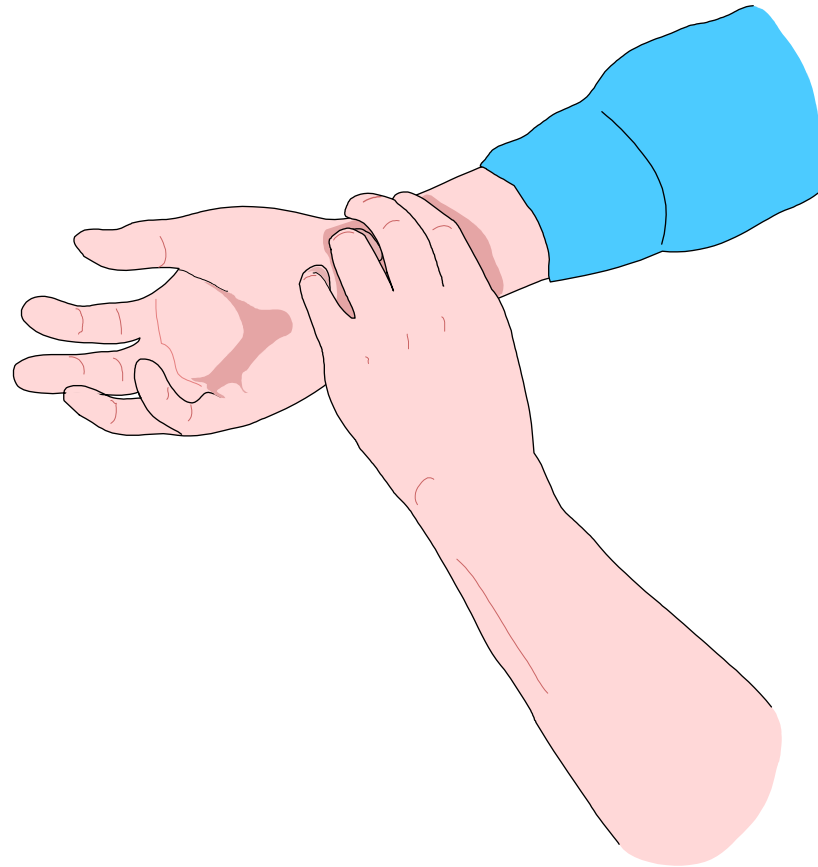
9. Count for 30 sec and multiply X2

Shorter time counts = inaccurate data



Pulse Taking Procedure

- If pulse irregular or skipping, count for 60 sec



Pulse Taking Procedure– Apical (Optional)

- Listen to the heart with a stethoscope to count the pulse if:
 - Pulse is difficult to feel or count
 - Pulse is very fast or very slow



Pulse Taking Procedure - Summary

- When taking your pulse:
 - Using the first and second fingertips, press firmly but gently on the arteries until you feel a pulse.
 - Begin counting the pulse when the clock's second hand.
 - Count your pulse for 60 seconds (or for 15 seconds and then multiply by four to calculate beats per minute).
 - When counting, do not watch the clock continuously, but concentrate on the beats of the pulse.
 - If unsure about your results, ask another person to count for you.

Normal pulse rates at rest, in BPM

Newborn (0–3 months old)	100-150
Infants (3 – 6 months)	90–120
Infants (6 – 12 months)	80-120
Children (1 – 10 years)	70–130
children over 10 years & adults, including seniors	60–100
well-trained adult athletes	40–60

Temperature

- Old people, people with disabilities, babies and young children typically feel more comfortable at higher temperatures.



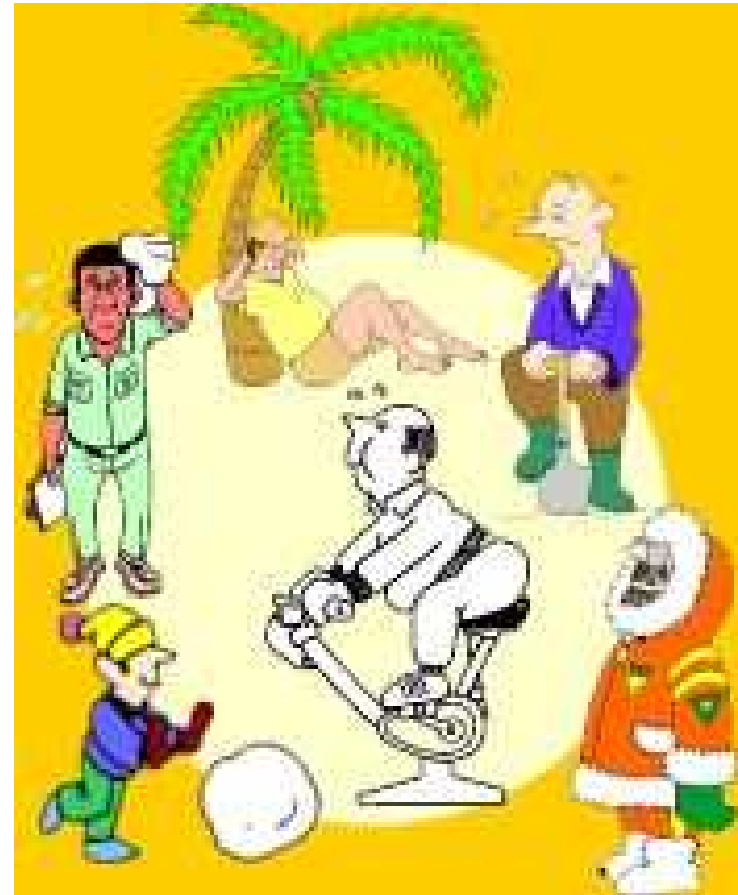
Temperature

- Women notice that they are feeling cool quicker than men, which may be related to their different body size.



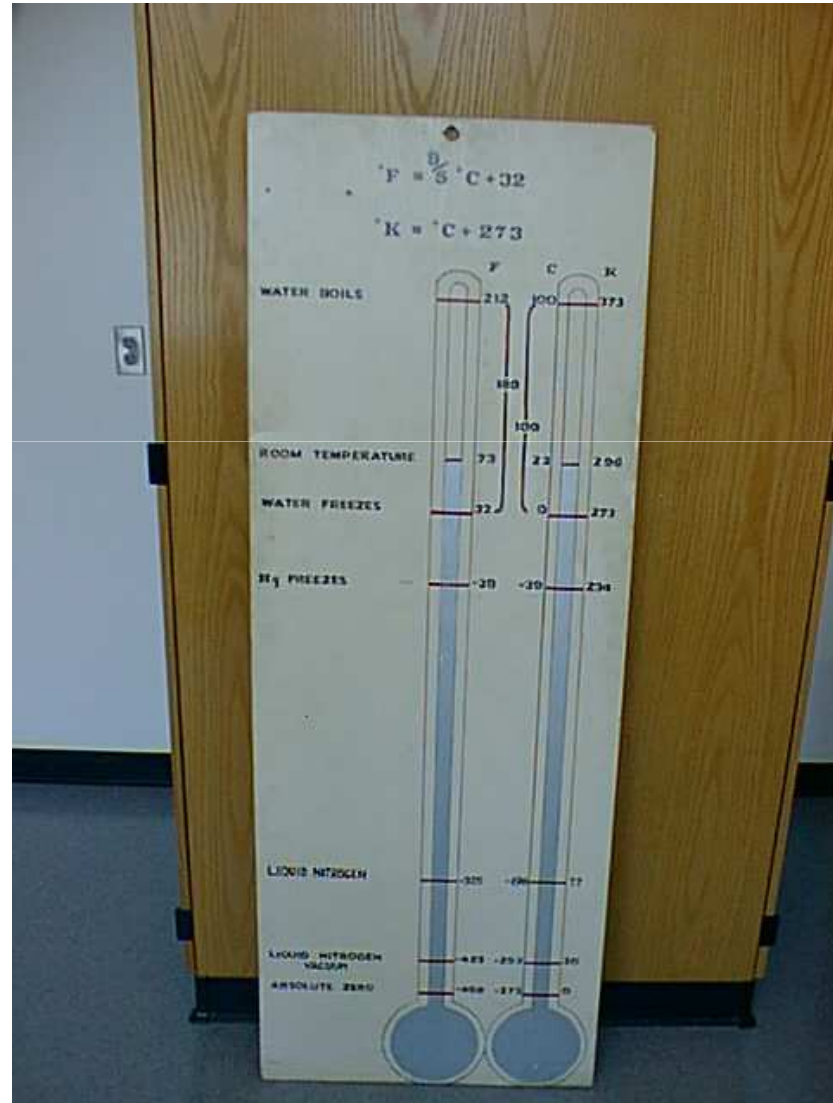
Temperature

- The normal body temperature of a person varies depending on gender, recent activity, food and fluid consumption, time of day, and, in women, the stage of the menstrual cycle.



Temperature

- Temperature is measured in either Celcius or Farenheit, with a fever defined as greater then 38-38.5 C or 101-101.5 F.



Temperature

- **Rectally** temperatures taken rectally (using a mercury or digital thermometer) tend to be 0.5 to 0.7° (Fahrenheit) higher than when taken by mouth.

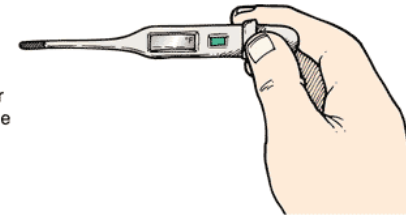


Temperature

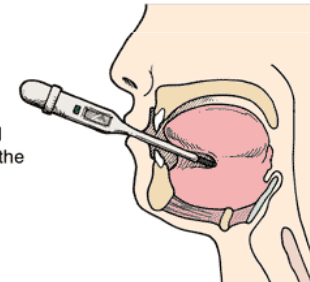
- **Oral** temperature can be taken by mouth using classic glass mercury-filled or digital thermometers.

How to Measure Body Temperature: Oral

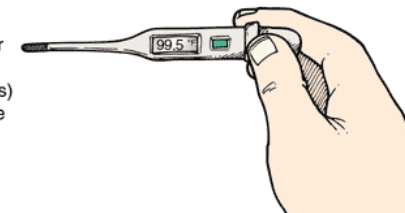
1. Turn on thermometer according to package directions.



2. Place the tip of the thermometer under one side of tongue toward the back. Close mouth and breathe through nose.



3. Remove the thermometer after you hear the signal (usually a series of beeps) and read the temperature on the screen.



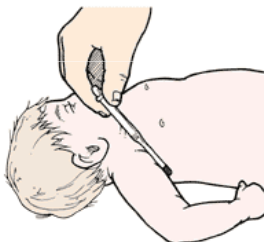
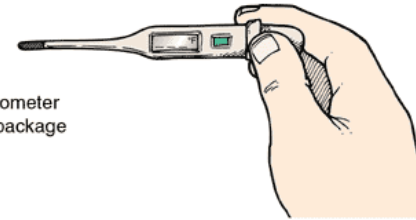
A fever is a temperature over 99.5 °F.

Temperature

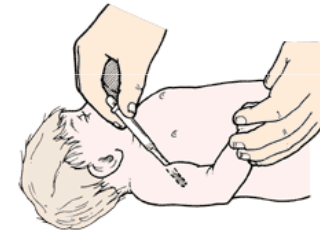
- **Axillary** temperatures can be taken under the arm. Temperatures taken by this route tend to be 0.3 to 0.4° (Fahrenheit) lower than those temperatures taken by mouth.

How to Measure Body Temperature: Axillary

1. Turn on thermometer according to package directions.

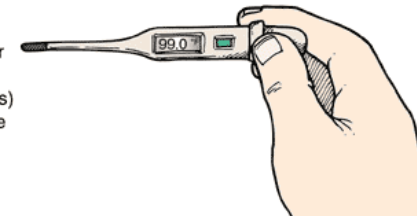


2. Place the thermometer in a dry armpit.



3. Close the armpit by holding the elbow against the chest.

4. Remove the thermometer after you hear the signal (usually a series of beeps) and read the temperature on the screen.



A fever is a temperature over 99.0 °F.

Temperature

- **By ear** a special thermometer can quickly measure the temperature of the ear drum, which reflects the body's core temperature.



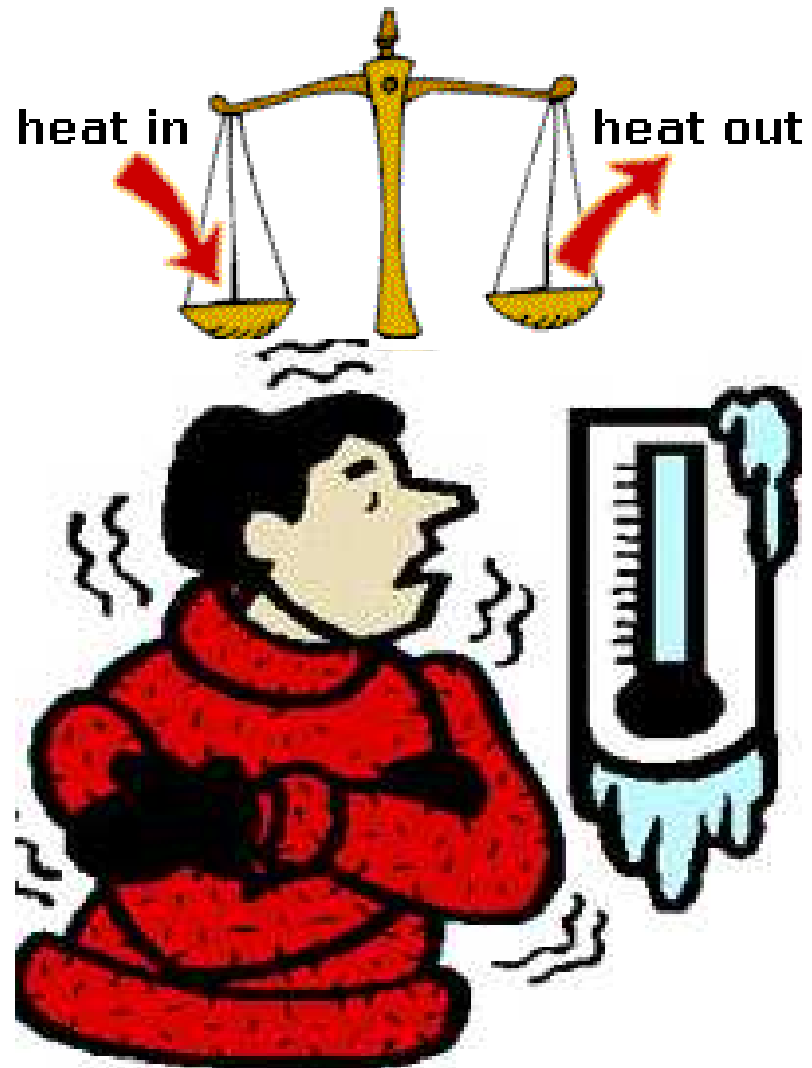
Hyperthermia-Fever

- A fever is indicated when body temperature rises above 98.6° F orally or 99.8° F rectally.



Hypothermia

- Hypothermia is defined as a drop in body temperature below 95° F.



Body temperature

- A person's body temperature can be taken in any of the following ways:
 - **Orally.** Temperature can be taken by mouth using either the classic glass thermometer, or the more modern digital thermometers that use an electronic probe to measure body temperature.
 - **Rectally.** Temperatures taken rectally (using a glass or digital thermometer) tend to be 0.5 to 0.7 degrees F higher than when taken by mouth.
 - **Axillary.** Temperatures can be taken under the arm using a glass or digital thermometer. Temperatures taken by this route tend to be 0.3 to 0.4 degrees F lower than those temperatures taken by mouth.
 - **By ear.** A special thermometer can quickly measure the temperature of the ear drum, which reflects the body's core temperature (the temperature of the internal organs).
 - **By skin.** A special thermometer can quickly measure the temperature of the skin on the forehead.

What is the respiration rate?

- The respiration rate is the number of breaths a person takes per minute.



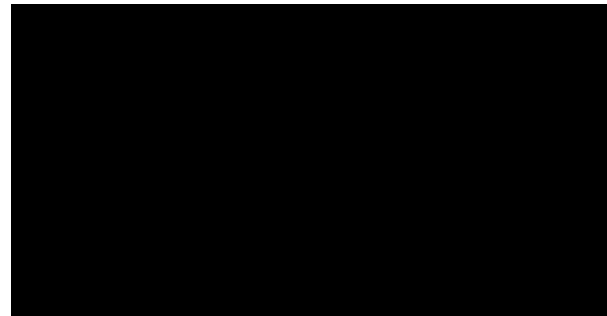
Respiratory Rate

- Try to do this as surreptitiously as possible. Observing the rise and fall of the patient's hospital gown while you appear to be taking their pulse.



Respiratory Rate

- They should be counted for at least 30 seconds 15 second period is rather small and any miscounting can result in rather large errors when multiplied by 4.



Respiratory Rate

- Respiration rates may increase with fever, illness,.... When checking respiration, also note whether a person has any difficulty breathing.



Abnormal Respiratory Rate

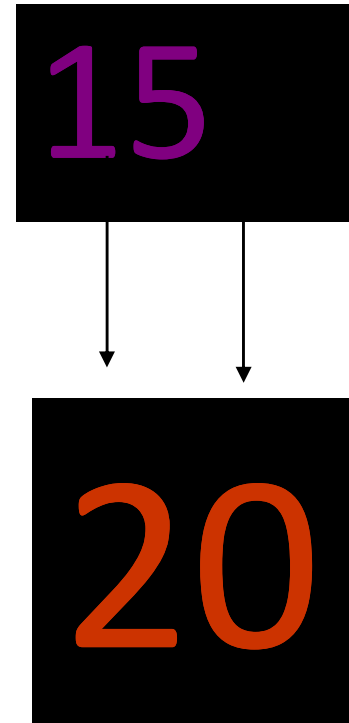
- Respiration rates over 25 or under 12 breaths per minute (when at rest) may be considered abnormal

under 12 breaths

over 25 breaths

Respiratory Rate

- Normal respiration rates at rest range from 15 to 20 breaths per minute. In the cardio-pulmonary illness, it can be a very reliable marker of disease activity.



Preparation for BP measurement

- Patient should abstain from eating, drinking, smoking and taking drugs that affect the blood pressure one hour before measurement.



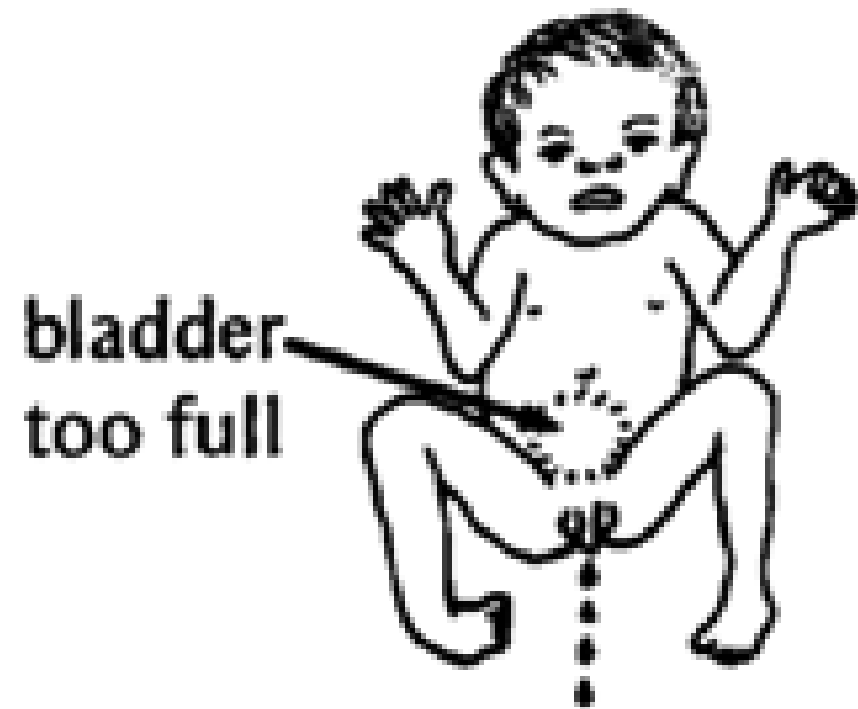
Remember the following for accuracy of BP readings

- Instruct your patients to avoid coffee, smoking or any other unprescribed drug with sympathomimetic activity on the day of the measurement



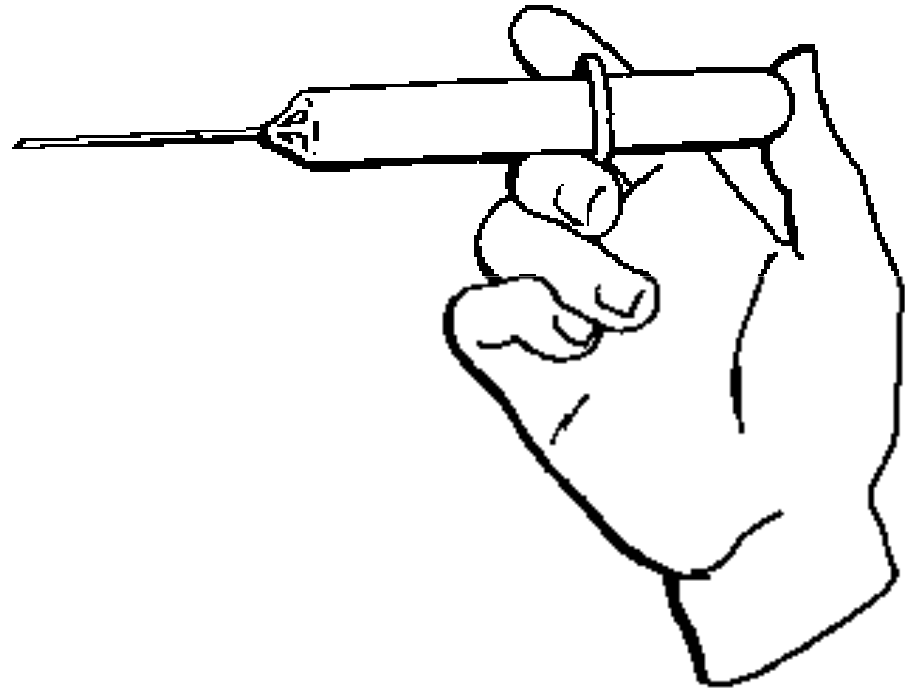
Preparation for BP measurement

- Because a full bladder affects the blood pressure it should have been emptied.



Preparation for BP measurement

- Painful procedures and exercise should not have occurred within one hour.
- Patient should have been sitting quietly for about 5 minutes.



Preparation for BP measurement

- BP take in quiet room and comfortable temperature, must record room temperature and time of day.



Position of the Patient

- Sitting position
- Arm and back are supported.
- Feet should be resting firmly on the floor
- Feet not dangling.



Position of the arm



- The measurements should be made on the right arm whenever possible.
- Patient arm should be resting on the desk and raised (by using a pillow)

Position of the arm



- Raise patient arm so that the brachial artery is roughly at the same height as the heart. If the arm is held too high, the reading will be artifactually lowered, and vice versa.

Position of the arm



- Palm is facing up.
- The arm should remain somewhat bent and completely relaxed

Position of the Patient

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In order to measure the Blood Pressure (Cuff Position)

- Patient's arm slightly flexed at elbow
- Push the sleeve up, wrap the cuff around the bare arm



In order to measure the Blood Pressure (Cuff Position)

- Cuff applied directly over skin (Clothes artificially raises blood pressure)
- Position lower cuff border 2.5 cm above antecubital
- Center inflatable bladder over brachial artery



Measurement of the pulse rate

- The manometer scale should be at eye level, and the column vertical. The patient should not be able to see the column of the manometer



Technique of BP measurement

In order to measure the BP

- Feel for a pulse from the artery coursing through the inside of the elbow (antecubital fossa).



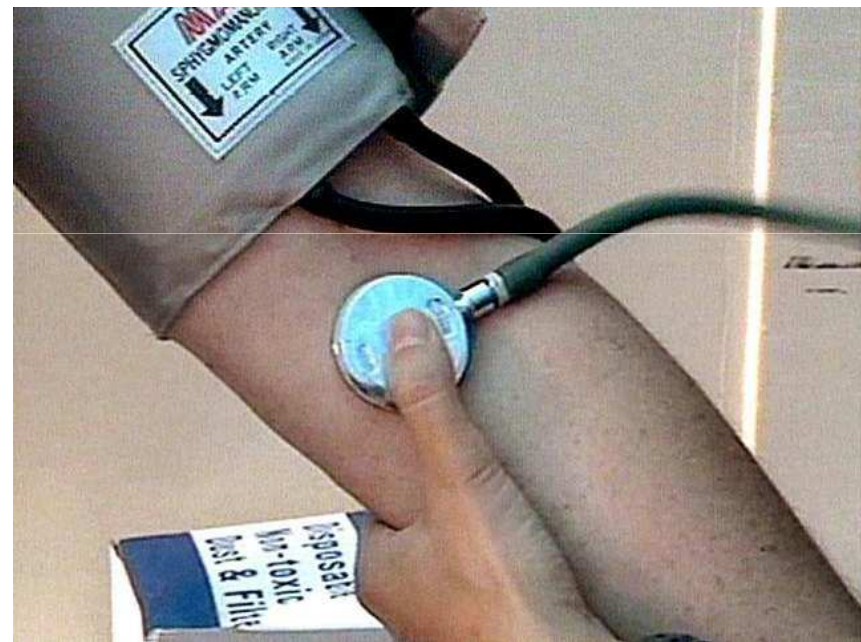
In order to measure the BP

- Wrap the cuff around the patient's upper arm
- Close the thumb-screw.



In order to measure the BP

- With your left hand place the stethoscope head directly over the artery you found. Press in firmly but not so hard that you block the artery.



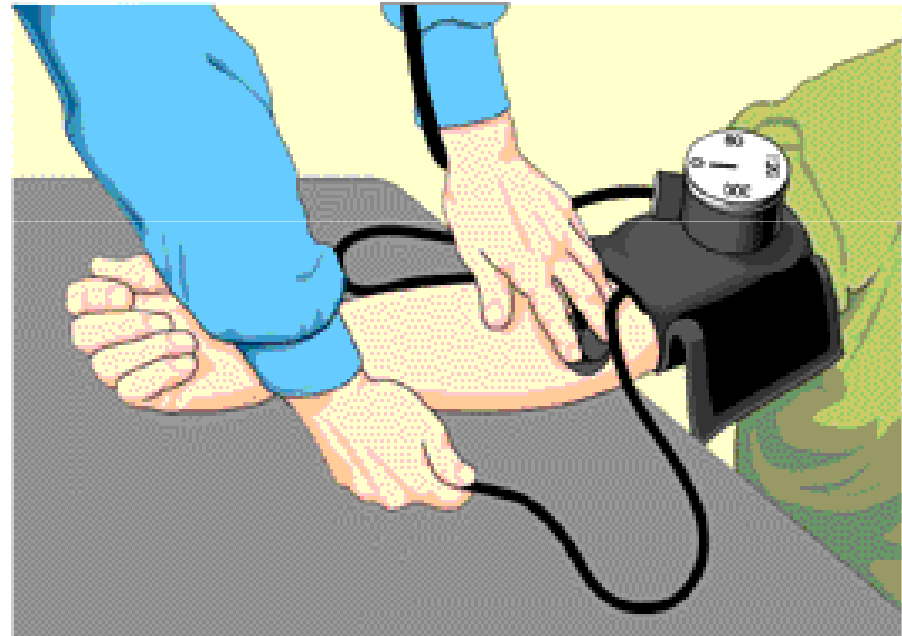
Technique of BP measurement

- Use your right hand to pump the squeeze bulb several times and Inflate the cuff until you can no longer feel the pulse to level above suspected SBP



Technique of BP measurement

- If you immediately hear sound, pump up an additional 20 mmHg and repeat



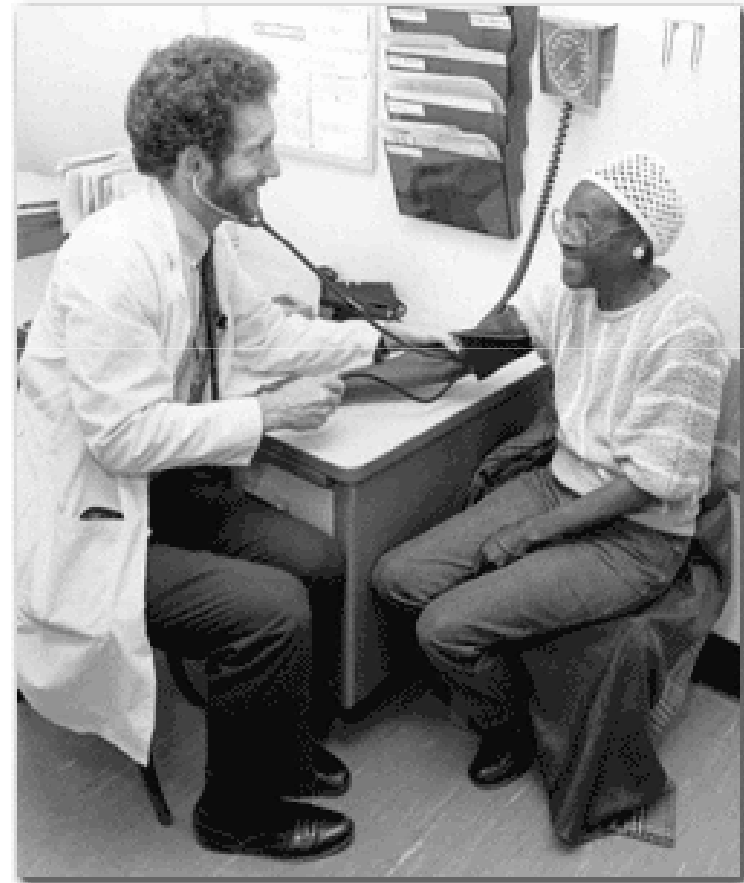
Technique of BP measurement

- Deflate cuff slowly at a rate of 2-3 mmHg per second until you can again detect a radial pulse



Technique of BP measurement

- Listen for auditory vibrations from artery "bump, bump, bump" (Korotkoff)

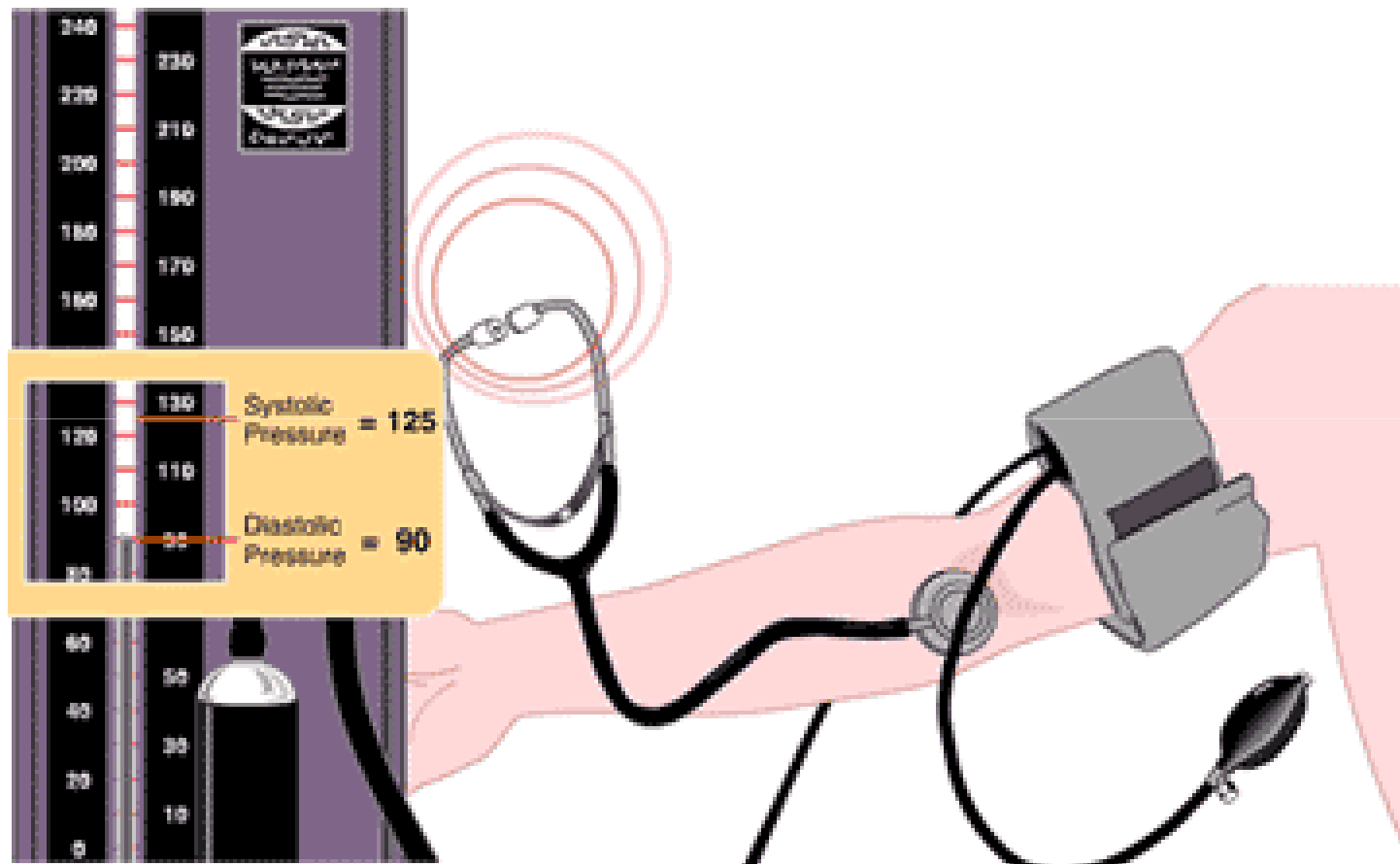


In order to measure the BP

- Systolic blood pressure is the pressure at which you can first hear the pulse.



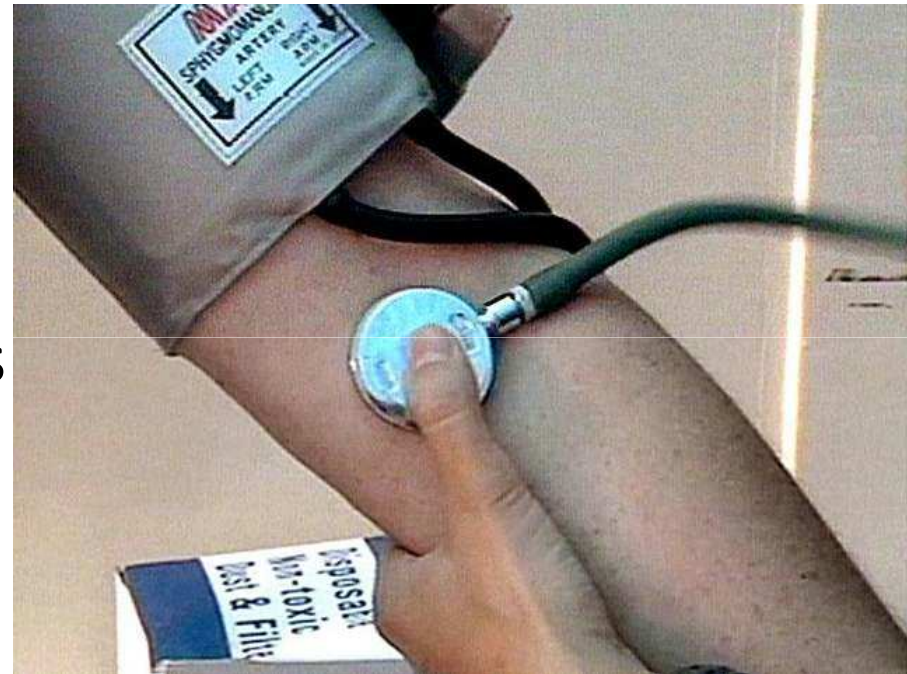
In order to measure the BP



- Diastolic blood pressure is the last pressure at which you can still hear the pulse

In order to measure the BP

- Avoid moving your hands or the head of the stethoscope while you are taking readings as this may produce noise that can obscure the Sounds of Koratkoff.



Technique of BP measurement

- BP must take in both arms and one lower extremity.



In order to measure the BP

- The two arm readings should be within 10-15 mm Hg. Differences greater than 10-15 imply differential blood flow.



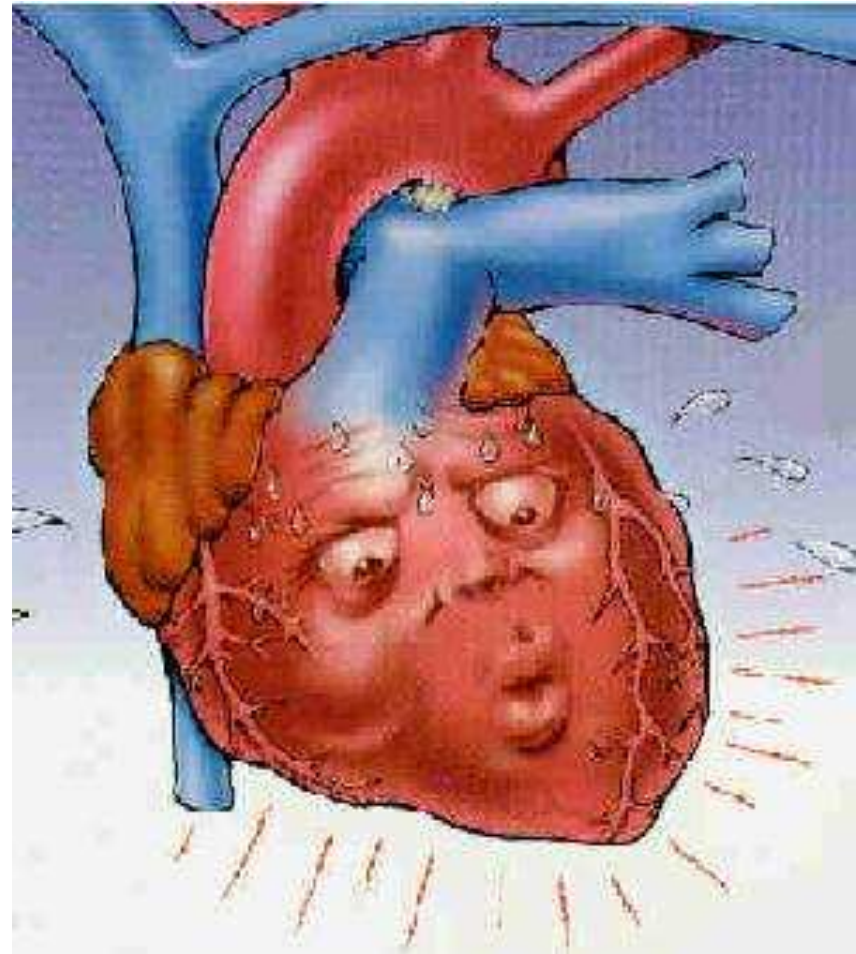
In order to measure the BP

- If you wish to repeat the BP measurement you should allow the cuff to completely deflate, permit any venous congestion in the arm to resolve and then repeat a minute or so later.



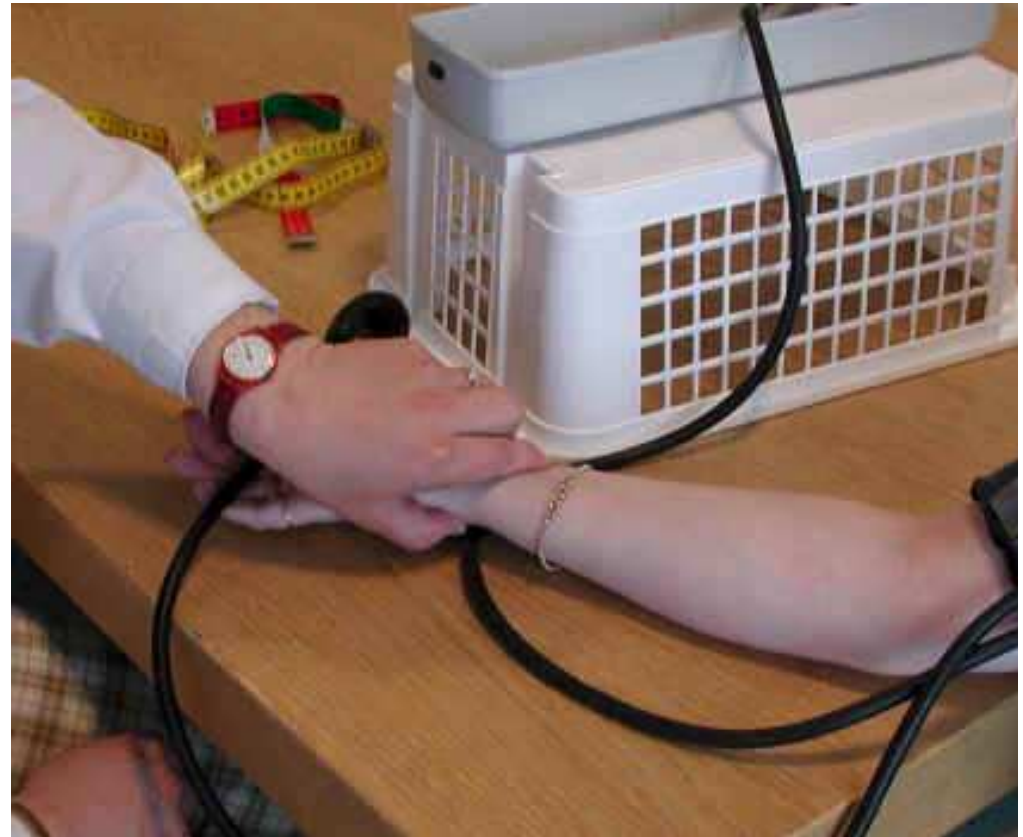
Remember the following for accuracy of your readings

- If the BP is surprisingly high or low, repeat the measurement towards the end of your exam (Repeated blood pressure measurement can be uncomfortable).



In order to measure the BP

- You can verify the SBP by palpation. Place the index and middle fingers of your right hand over the radial artery.



Remember the following for accuracy of your readings

- Orthostatic (postural) measurements of pulse and blood pressure are part of the assessment for hypovolemia.



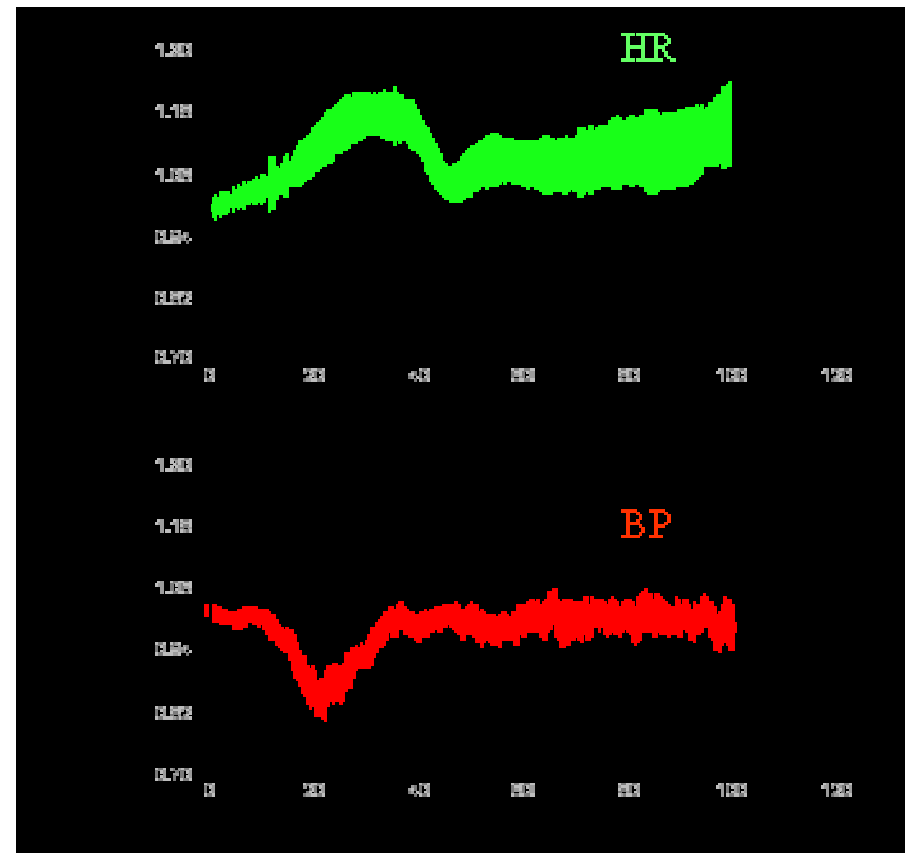
Remember the following for accuracy of your readings

- First measuring BP when the patient is supine and then repeating them after they have stood for 2 minutes, which allows for equilibration.



Remember the following for accuracy of your readings

- Systolic blood pressure does not vary by more than 20 points when a patient moves from lying to standing.



Remember the following for accuracy of your readings

- Orthostatic measurements may also be used to determine if postural dizziness (diabetic autonomic nervous system dysfunction) is the result of a fall in blood pressure.



FIGURE 19-3. Hallpike maneuver. Each position is held for at least 10 seconds.

Oxygen Saturation

- Over the past decade, **Oxygen Saturation** measurement of gas exchange and red blood cell oxygen carrying capacity has become available in all hospitals and many clinics.



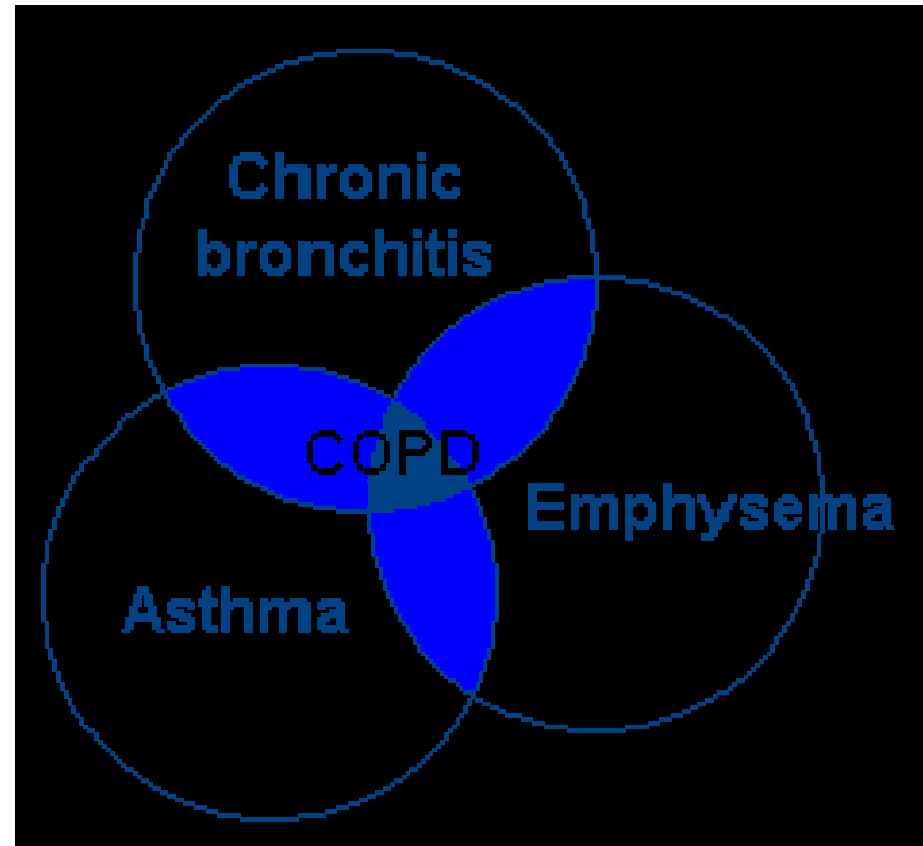
Oxygen Saturation

- **Oxygen Saturation** provide important information about cardio-pulmonary dysfunction and is considered by many to be a fifth vital sign.



Oxygen Saturation

- For those suffering from either acute or chronic cardio-pulmonary disorders, **Oxygen Saturation** can help quantify the degree of impairment.



Thank You