

**Clinical Skills Course I**  
**Clinical Procedures**  
**lecture 1**

**Hand Washing, Vital Signs,  
Blood Pressure**

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# Hand washing

- **Hand hygiene must be performed:**

- a) immediately before every patient contact

- b) after touching anything in the bed space area i.e. within the bed curtain area

There are many products that we can use to perform good hand hygiene such as:

# Liquid Soap

Will remove most micro-organisms but  
not all



# Hibiscrub

Will remove most micro-organisms

Contains an antimicrobial agent which,  
with continual use, has a cumulative effect  
Will remove organic matter from the hands



# Spirigel

Quick and easy way to decontaminate socially clean hands, 99% effective in thirty seconds

Cannot be used if hands are visibly soiled

Do not use if you have dealt with organic matter, e.g. body fluids

Should NOT be used in cases of Clostridium Difficile-associated diarrhoea or viral diarrhoea and vomiting – use water and Hibiscrub in these cases





**1. Palm to palm**



**2. Backs of hands**



**3. Interdigital spaces**



**4. Fingertips**



**5. Thumbs and wrists**



**6. Nails**

# Points to remember:

Nails should be kept short

Avoid wearing rings with ridges or stones

Remove wrist watches and wrist jewelry. If you are wearing long sleeves roll them up before hand washing and at all times in clinical areas. Tuck in ties/no tie or bow tie, tie hair back

Nail brushes are not used for routine hand hygiene

Hands must be wet before applying the recommended amount of soap and water and rinsed thoroughly before drying

If hands are not rinsed or dried adequately there is a potential for skin damage to occur

The use of gloves is not a substitute for hand hygiene

Keep your hands healthy; cover any cuts with a water proof dressing

Gloved hands should not be washed or cleaned with alcohol hand-rubs

**Barrier Nursing:** Look for barrier nursing signs; leave notes outside; wear apron, gloves and wash hands, speak to the nurse for advice

# Steps before examine patient

- Introduce yourself
- Gain consent and co-operation
- Perform hand hygiene
- Roll up sleeves, remove watch
- Provide privacy



# Vital sign

- **PULSES ( cardiac rate )**
- **RESPIRATORY RATE**
- **TEMPERATURE**

# PULSES ( cardiac rate )

## Radial pulse

- *Palpate the radial pulse with the pads of your fingers on the flexor surface of the wrist laterally.*
- Partially flexing the patient's wrist may help you feel this pulse.
- Compare the pulses in both arms



# Brachial pulse

Flex the patient's elbow slightly, and with the thumb of your opposite hand palpate the artery just medial to the biceps tendon at the antecubital crease.

The brachial artery can also be felt higher in the arm in the groove between the biceps and triceps muscles.



## Carotid Artery

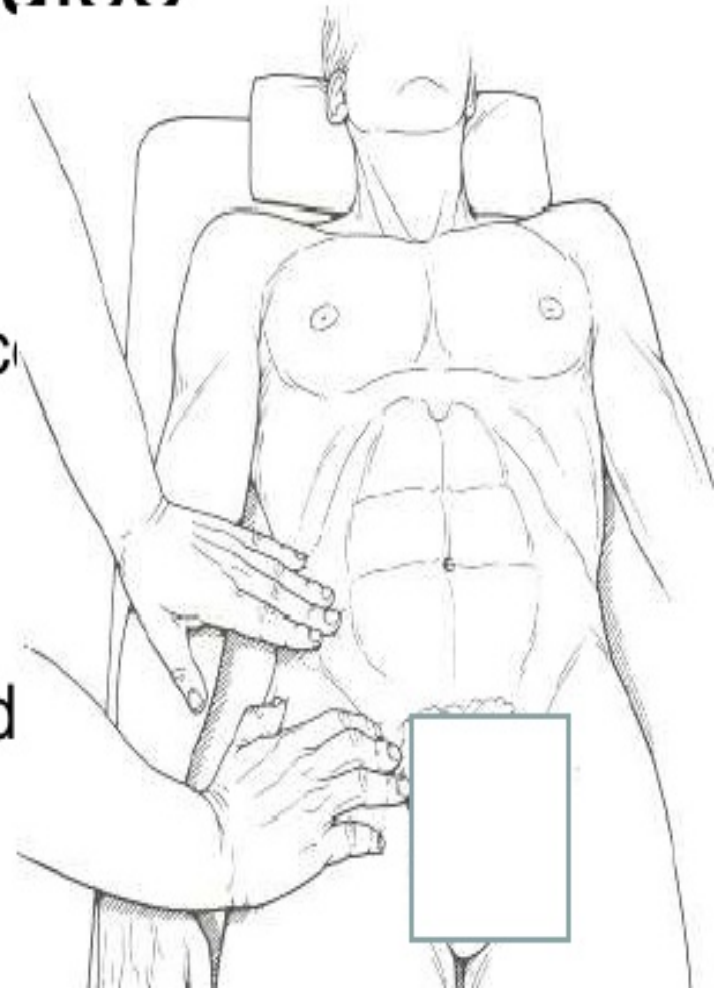
- At level of thyroid cartilage
- Lateral to trachea



# Femoral pulse

The *common femoral artery* emerges into the upper thigh from beneath the inguinal ligament one-third of the distance from the pubis to the anterior superior iliac spine.

It is best palpated with the examiner standing on the ipsilateral side of the patient and the fingertips of the examining hand pressed firmly into the groin.



# Popliteal Artery

- *The popliteal artery* passes vertically through the deep portion of the popliteal space just lateral to the midplane.
- It may be difficult or impossible to palpate in obese or very muscular individuals.
- Generally this pulse is felt most conveniently with the patient in the supine position and the examiner's hands encircling and supporting the knee from each side.
- The pulse is detected by pressing deeply into the popliteal space with the supporting fingertips. Since complete relaxation of the muscles is essential to this examination, the patient should be instructed to let the leg "go limp" and to allow the examiner to provide all the support needed.



# *The posterior tibial pulse.*

- The *posterior tibial artery* lies just posterior to the medial malleolus.
- It can be felt most readily by curling the fingers of the examining hand anteriorly around the ankle, indenting the soft tissues in the space between the medial malleolus and the Achilles tendon, above the calcaneus.
- The thumb is applied to the opposite side of the ankle in a grasping fashion to provide stability.
- Again, obesity or edema may prevent successful detection of the pulse at the location.



# The *dorsalis pedis* artery

- Is examined with the patient in the recumbent position and the ankle relaxed.
- The examiner stands at the foot of the examining table and places the fingertips transversely across the dorsum of the forefoot near the ankle.
- The artery usually lies near the center of the long axis of the foot, lateral to the extensor hallucis tendon but it may be aberrant in location and often requires some searching.
- This pulse is congenitally absent in approximately 10% of individuals.





# IMPORTANT SITE OF PULSES

**Radial artery:** lies at the base of the thumb proximal to the 'bracelet' of wrist skin creases

**Brachial artery:** lies in the antecubital fossa medial to the biceps tendon.

**Carotid artery:** lies in the neck next to the thyroid cartilage

**Femoral artery:** felt in the groin below the inguinal ligament.

**Popliteal artery:** lies between the heads of the gastrocnemius

**Posterior tibial artery:** felt right down behind the medial malleolus.

**Dorsalis pedis artery:** felt between the heads of the first and second metatarsals.

Observe

**rate** (number of beats per minute)

- <60: bradycardia
- >100: tachycardia

**rhythm** (regular, irregular)

**volume** (force) of the pulse (weak, strong )

Record the pulse on to the observation chart and report any abnormal results to the doctor/nurse in charge

Leave clinical area tidy and perform hand hygiene

Normal pulse rate: **60 – 100** beats per minute, regular rhythm

# RESPIRATORY RATE

- Be aware that if a patient is aware that you are checking their respiratory rate, their breathing pattern may change. If possible, record respirations while the patient is unaware. Palpate radial artery as if taking the pulse to prevent patient knowing respiratory rate is being assessed.

Respiration should be observed for **rate, depth and pattern of breathing**

**Rate:** the normal rate for an adult at rest is 12-20 breaths per minute

**Depth:** the depth of respiration is the volume of air moving in and out with each respiration. The normal tidal volume for an adult is about 500ml and should be constant with each breath. A spirometer can be used to measure the precise amount

**Pattern:** changes in the pattern of respiration are often found in disorders of the respiratory control centre. Some causes for a change in pattern are anxiety, ketoacidosis, extreme exertion, fear, fever and midbrain lesions

Normal respiratory rate: **12 – 20** breath per minute:

- **<12: Brady apnea**
- **>20: Tachypnea**

Count for one minute



# 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. Normal body temperature can range from 36.5 degrees to 37.2 degrees C for a healthy adult.

- **< 36.5 : Hypothermia**
- **> 37.2 : Hyperthermia**



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.

# BLOOD PRESSURE





# Equipment



**sphygmomanometer**



**stethoscope**

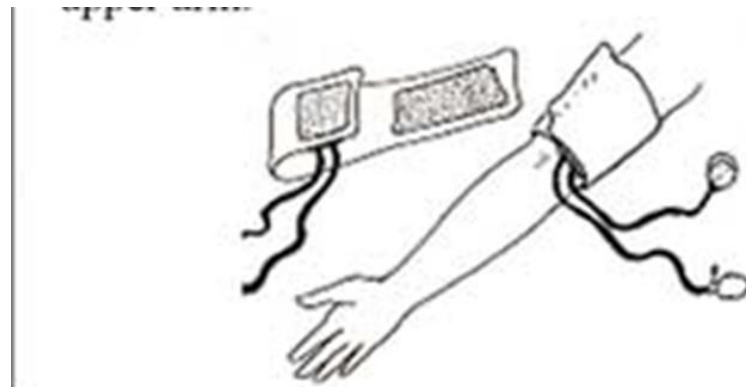
Introduce self, gain consent and co-operation

Perform hand hygiene, roll up sleeves, remove watch

**Ask patient if they have had any tea, coffee, been smoking or exercised in the last half an hour**

Assess which **arm would be the most suitable** (i.e. presence of dialysis fistula, PICC line, residual arm paraesthesia or oedema)

Choose correct sized cuff and place it on correctly ensuring the cuff is placed **2-3 cm** above the antecubital fossa



Correct position of arm (**antecubital fossa in line with heart, arm slightly flexed and well supported on table or pillow**)

Inflate cuff and note when pulse can no longer be felt then release cuff

Place stethoscope over the brachial artery on the medial aspect of the antecubital fossa using diaphragm side

Inflate cuff to 20-30 mmHg above level noted previously and drop the dial/pressure gauge slowly no faster than 2-3mmHg per second

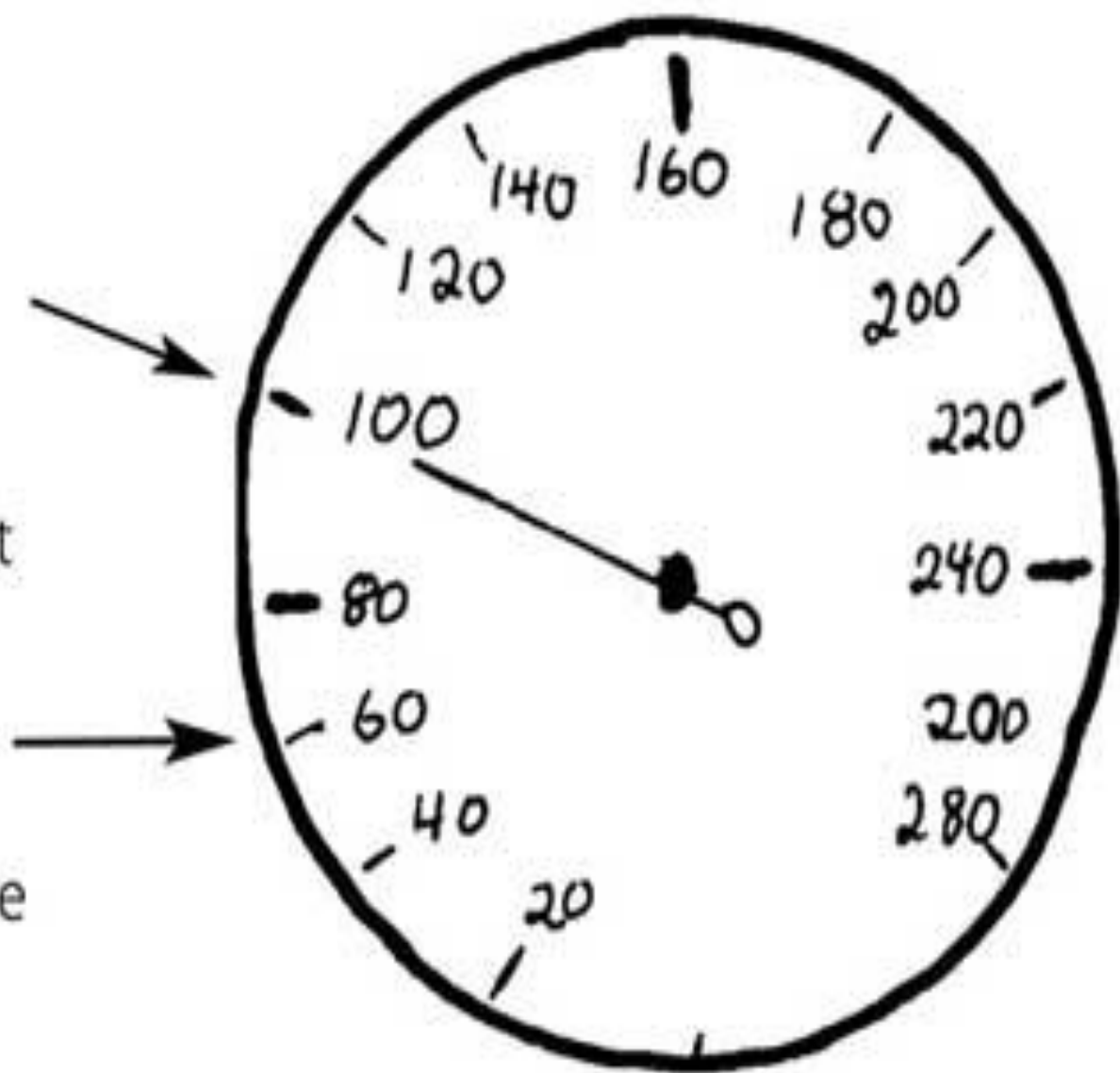
Listen and record correctly **Korotkoff sounds**. The appearance of audible sounds is called the **1st Korotkoff** sound and the pressure at which it appears on the sphygmomanometer is called the **systolic pressure**

Listen then for the disappearance of sounds. This is the **5th Korotkoff** sound. The pressure at which they disappear on the sphygmomanometer is the **diastolic pressure**

If you start to hear a pulse here,

and then cannot hear it anymore when the needle is here,

then the blood pressure is: 100/60.



Record blood pressure as the systolic value over the diastolic value to the nearest 2mmHg

Record the blood pressure

Leave clinical area tidy and perform hand hygiene

Normal blood pressure:

Depends upon age and gender of patient

- **>140/90 mmHg: Hypertension**
- **< 90/60 mmHg: Hypotension**

The pressure of blood  
in the vessels when  
the heart beats:  
**systolic pressure**

The pressure  
between beats when  
the heart relaxes:  
**diastolic pressure**

less than  
**120/80** mmHg

The diagram features a central light green rectangular box containing the text 'less than 120/80 mmHg'. The numbers '120/80' are in a large, bold, dark red font, while the words 'less than' and 'mmHg' are in a smaller black font. Three grey arrows point towards this box: one from the top left (systolic pressure), one from the top right (diastolic pressure), and one from the bottom right (units).

millimeters of mercury

**ANY QUESTIONS**

**???**

Thank You