

Major Elective-
BMS-EC-10
Cardiovascular Biology

ARTERIAL PULSE

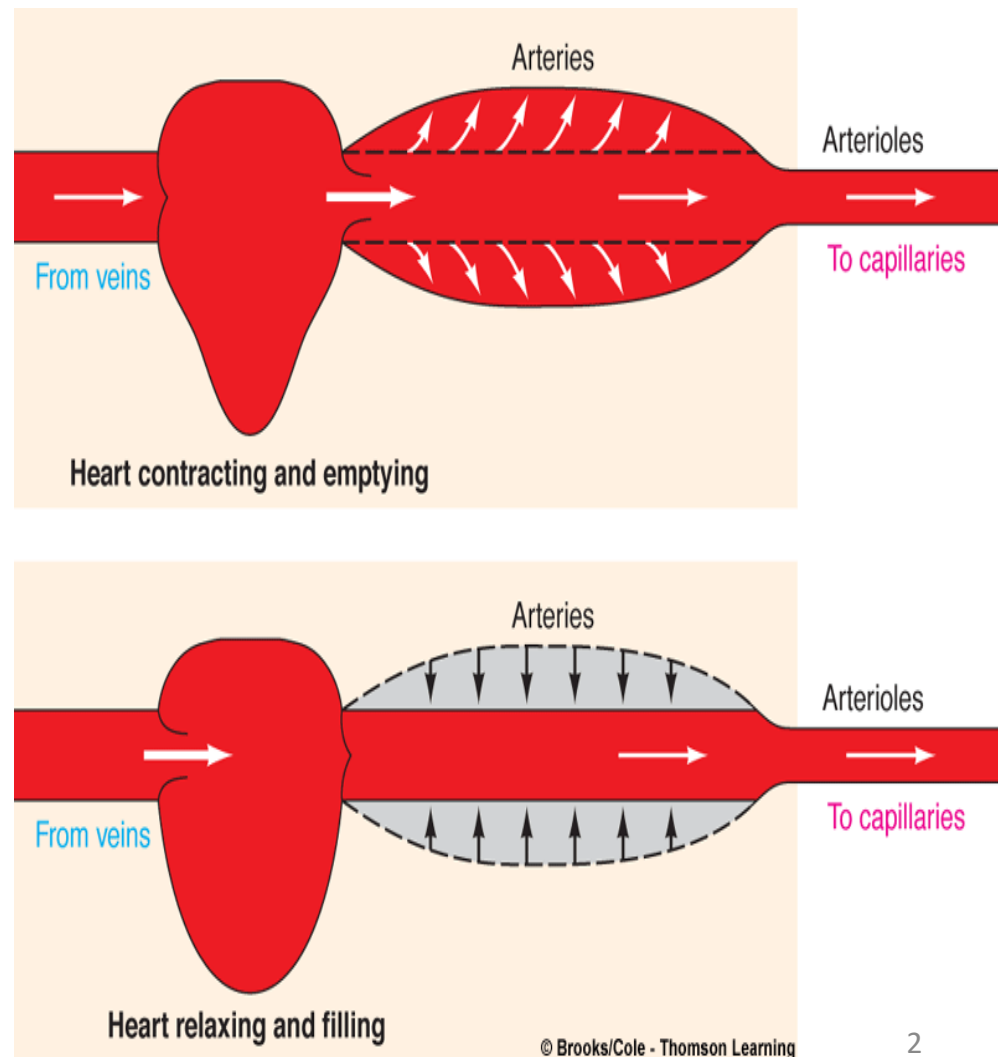
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ARTERIAL PULSE

What do u understand by term PULSE?

The alternate expansion and recoil of elastic arteries after each systole of the left ventricle creating a traveling pressure wave that is called the PULSE.



ARTERIAL PULSE

- The arterial pulse should be examined in all 4 limbs and both sides of the neck
 1. Radials
 2. Brachials
 3. Carotids
 4. Femorals
 5. Popliteals
 6. Peripheral arteries of the legs :Dorsalis pedis, Posterior tibial

ARTERIAL PULSE

Reading the PULSE

1. Pulses are manually palpated with fingers.
2. Two or three fingers should be used.
3. Fingers must be placed near an artery and pressed gently against a firm structure, usually a bone, in order to feel the pulse.

ARTERIAL PULSE

Common pulse sites

Radial Pulse



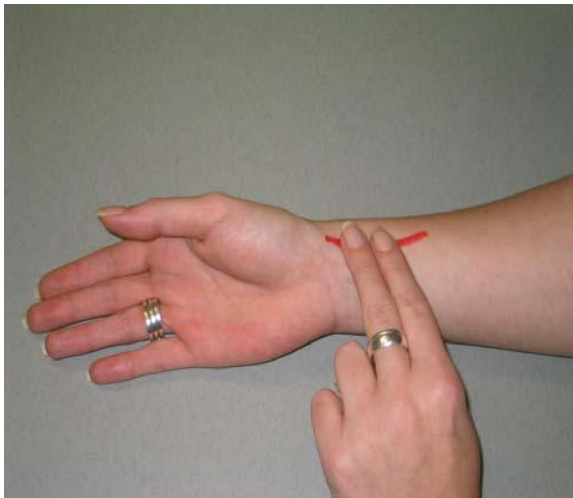
1. Lateral aspect of the lower forearm just proximal to the wrist joint

2. Feel the bony prominence

3. Move fingertips medially

4. Tips of fingers drop into a groove in which lies the artery

5. Examine the pulse by compressing the artery backwards against the bone, using the finger tips



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The brachial pulse



1. Medial aspect of the antecubital fossa at the line of the elbow joint.
2. The artery is felt by compressing backwards with fingers or thumb through the aponeurosis
3. Divides just below elbow to form radial and ulnar arteries

ARTERIAL PULSE

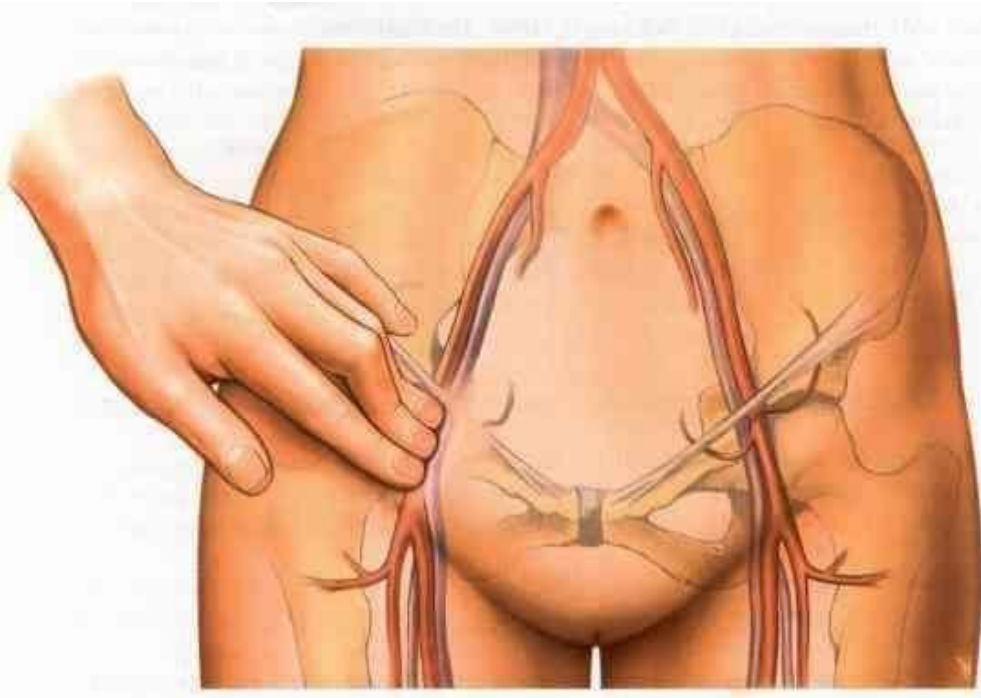
Carotid pulse



1. 1-1.5 cm lateral of the midline in the neck at the upper level of the thyroid cartilage
2. Readily palpable at anterior border of sternomastoid muscle
3. May be felt with finger tips or thumb which are used to push posteriorly

ARTERIAL PULSE

Femoral artery



1. The femoral artery enters the upper leg by passing under the inguinal ligament.
2. It enters the leg at the mid-inguinal point.
3. The femoral artery is usually easily palpated and is an important point of access to the arterial system.

ARTERIAL PULSE

Popliteal artery



1. The popliteal artery is palpable in the popliteal fossa.

2. The artery passes through the fossa slightly medially to laterally.

3. The popliteal artery can be palpated in about the midline of the fossa at the level of the femoral condyles.

4. Artery best felt with knee in slight flexion.



ARTERIAL PULSE

Tibialis posterior artery



1. The tibialis posterior artery is found on the medial aspect of the ankle.

2. It is palpable at a position midway between the prominence of the medial malleolus and the prominence of the calcaneus.



ARTERIAL PULSE

Dorsalis pedis artery



1. Dorsalis pedis a continuation of the tibialis anterior.
2. Tibialis anterior is often palpable at the ankle joint in a mid-malleolar position, medial to the extensor hallucis longus tendon.



Comment on the Pulse

1. Rate
2. Rhythm
3. Volume (amplitude)
4. Comparison of the two sides
5. Special character
6. Condition of the arterial wall

ARTERIAL PULSE

Rate

Rate of the pulse at radial artery

Normal at rest :60-90 beat / min

* if regular: count in 15 sec x 4

* if fast (tachycardia) or slow (bradycardia)
count in 1 min

*if irregular count at apex

weak beats may not be felt (pulsus deficit)

Rhythm

Is the rhythm regular or irregular?

1. Normally regular
2. Sinus arrhythmia: Phasic irregularity with respiration
3. Irregular:
 - Regularly irregular
 - PAT with Fixed AV block
 - Atrial Flutter
 - Ventricular bigeminy or trigeminy
 - Irregularly irregular:
 - APCs, VPCs
 - AF
 - PAT with varying degree of block

ARTERIAL PULSE

Volume

Degree of expansion between systole and diastole

Measurement of pulse pressure

1. Hyperdynamic:

2. Anxiety

3. Exercise

4. CHB

5. AR

6. Fever

7. Anemia

8. Thyrotoxicosis

9. AVF

10. Beriberi

1. Hypodynamic:

2. Shock

3. CHF

4. Chronic CP

5. Hypovolemia

6. Stenotic valvular disease

7. Myocarditis

8. Cardiomyopathy

Comparison of both sides

Causes of unequal pulse

1. Genetic absence or change in the course of the radial artery
2. Compression of the vessel
3. Atheromatous plaque
4. Embolus

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The End

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