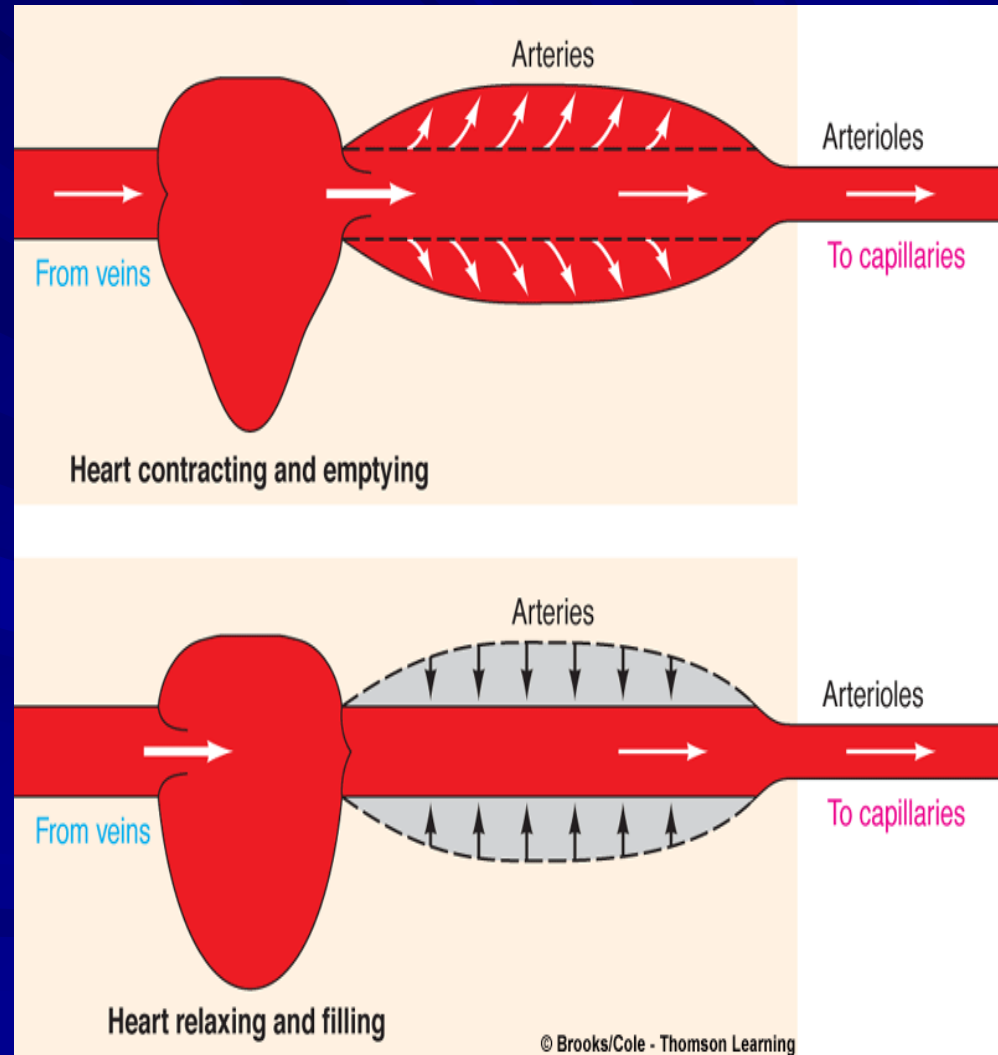


Arterial Pulse

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**.



Pulse

- Pulse – pressure wave of blood
- Monitored at “pressure points” where pulse is easily palpated

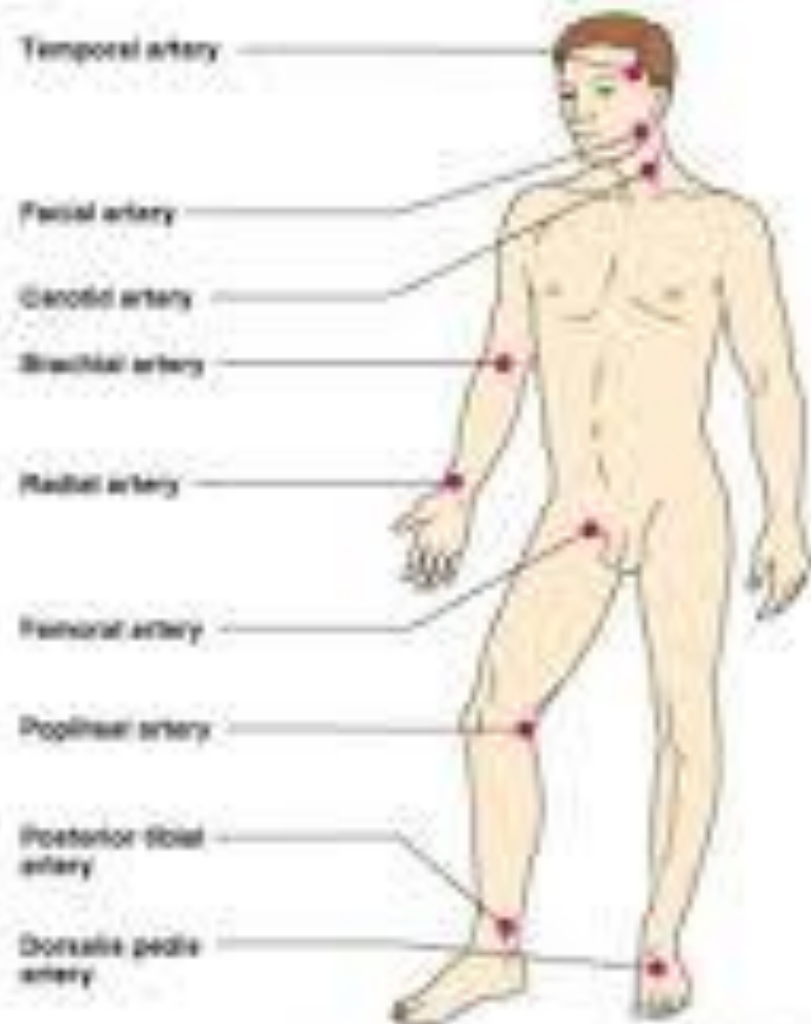


Figure 11.35

Reading the PULSE

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

PULSE SITE

Pulse Points over Major Arteries

Superficial temporal artery

Common carotid artery

Brachial artery

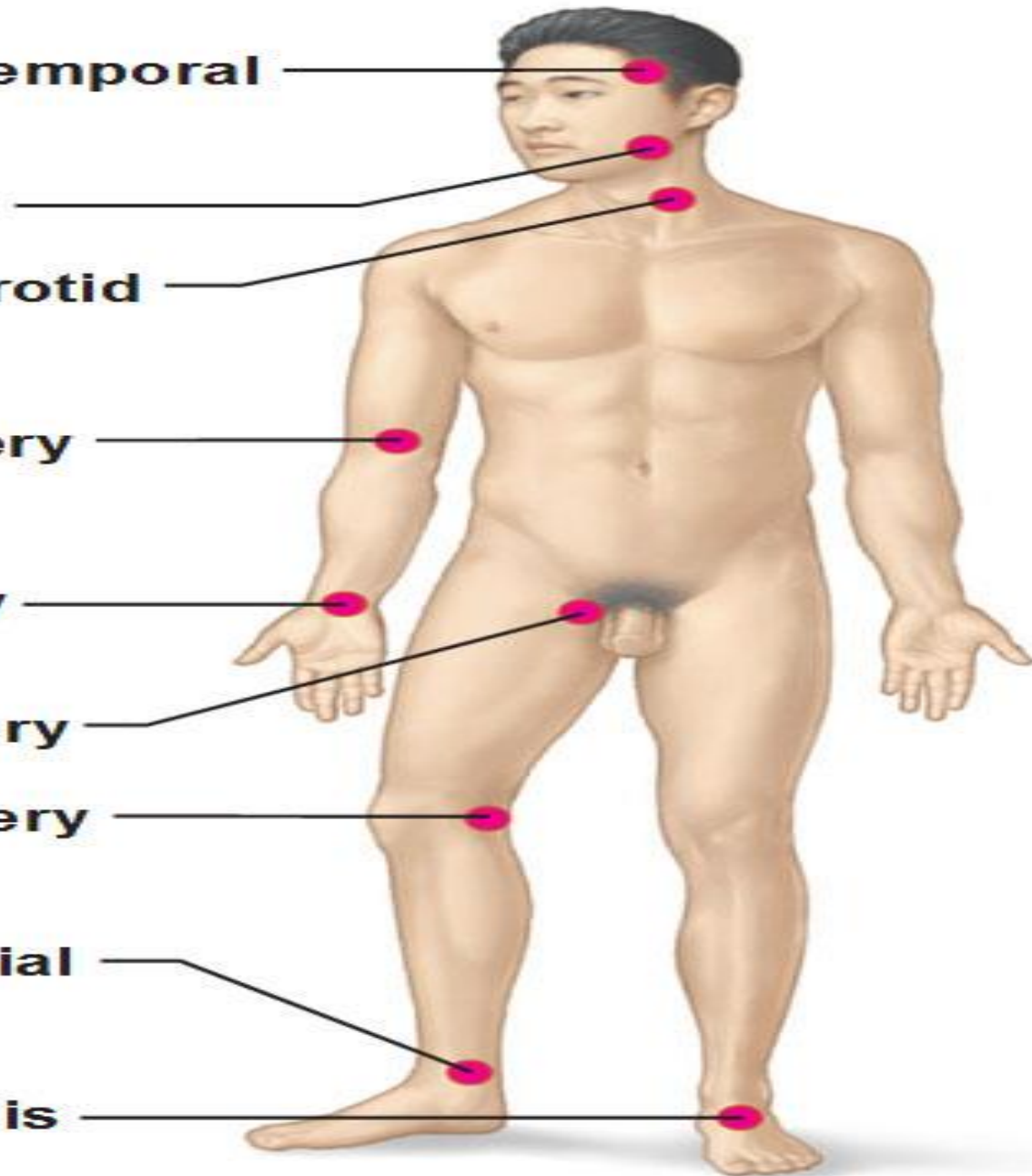
Radial artery

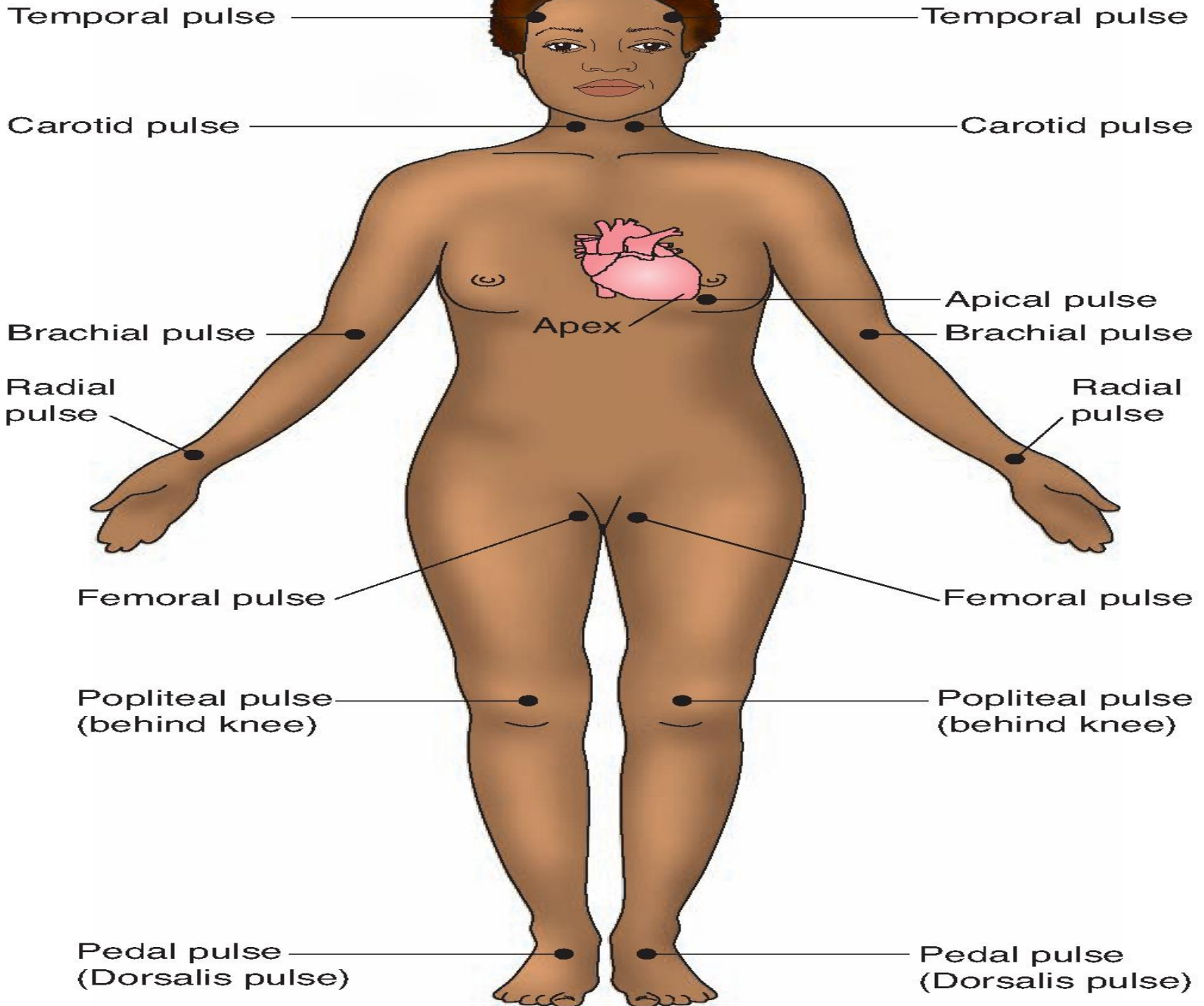
Femoral artery

Popliteal artery

Posterior tibial artery

Dorsalis pedis artery

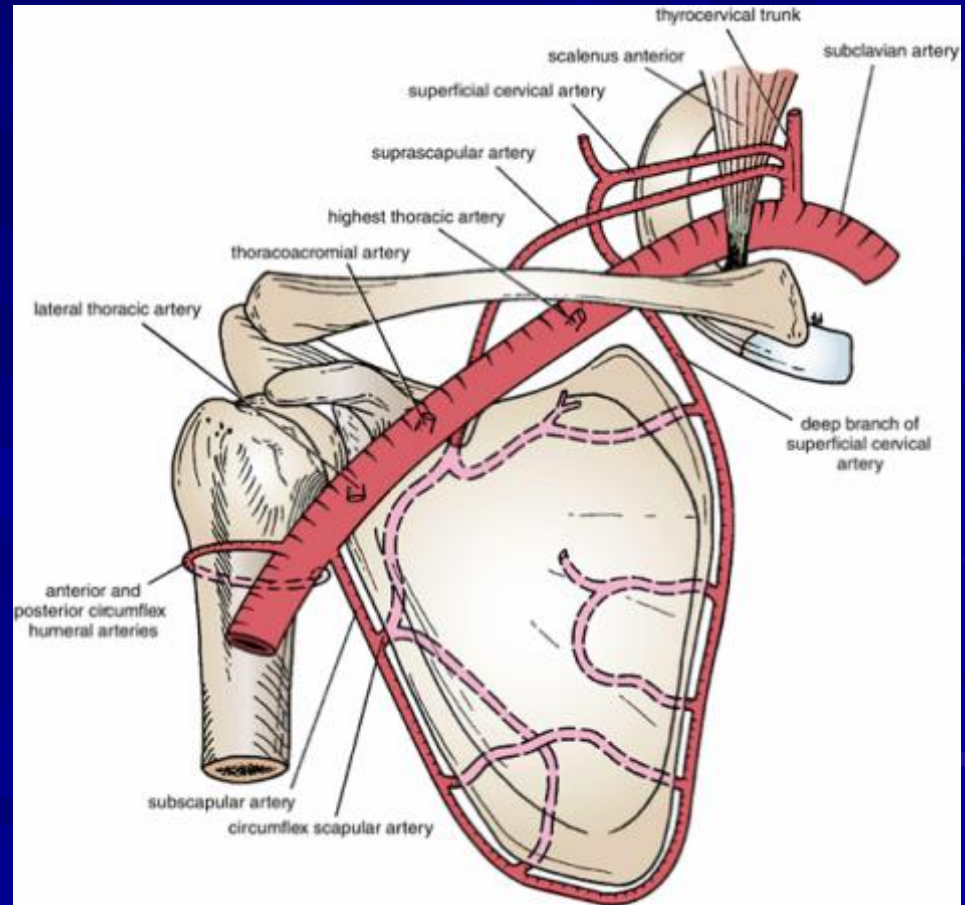




- A clinician must know where the arteries of the upper limb can be palpated or compressed in an emergency

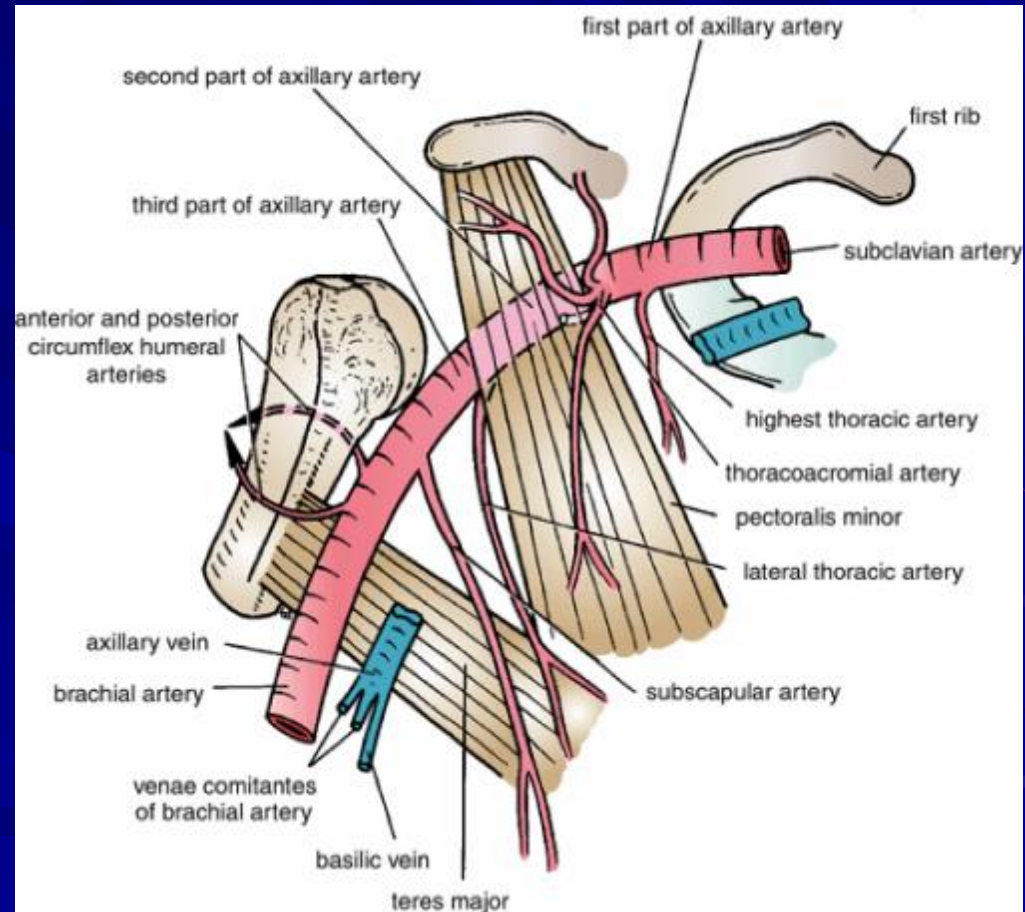
The subclavian artery

- as it crosses the first rib to become the axillary artery, can be palpated in the root of the posterior triangle of the neck.



axillary artery

- The third part of the axillary artery can be felt in the axilla as it lies in front of the teres major muscle

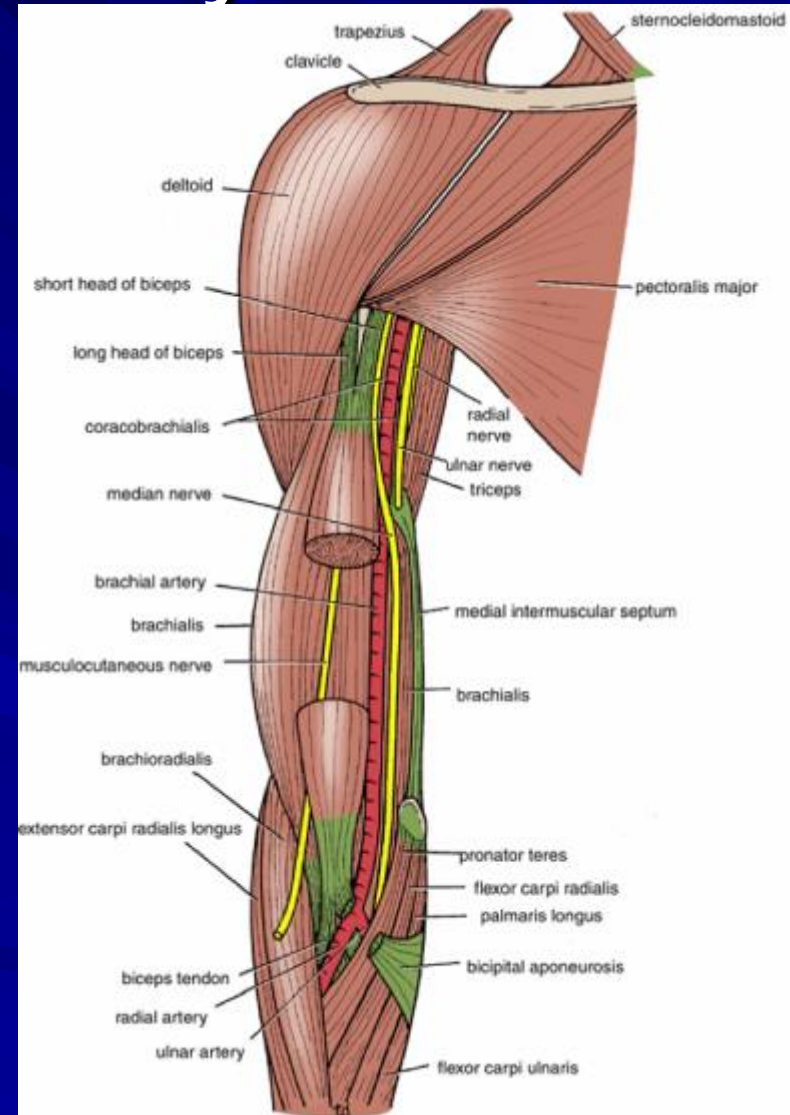


brachial artery

- The brachial artery can be palpated in the arm as it lies on the brachialis and is overlapped from the lateral side by the biceps brachii



Brachial Artery



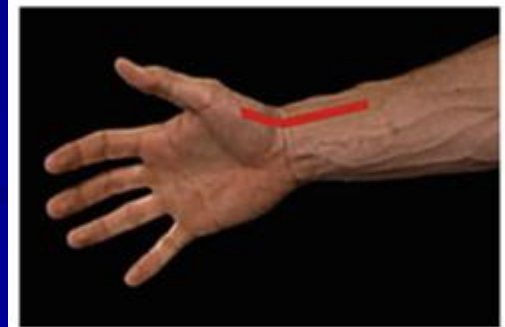
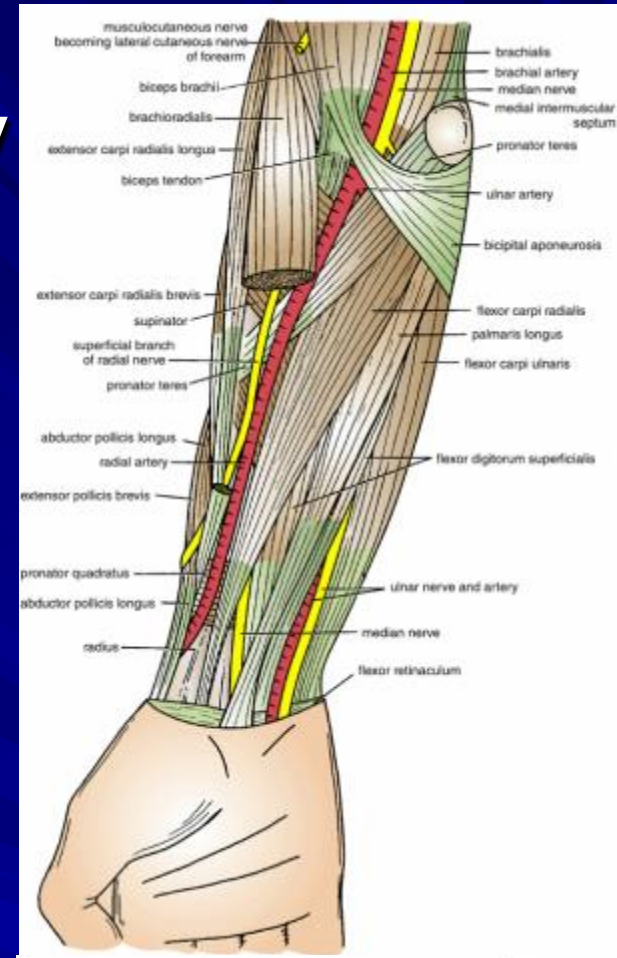
The brachial pulse



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

radial artery

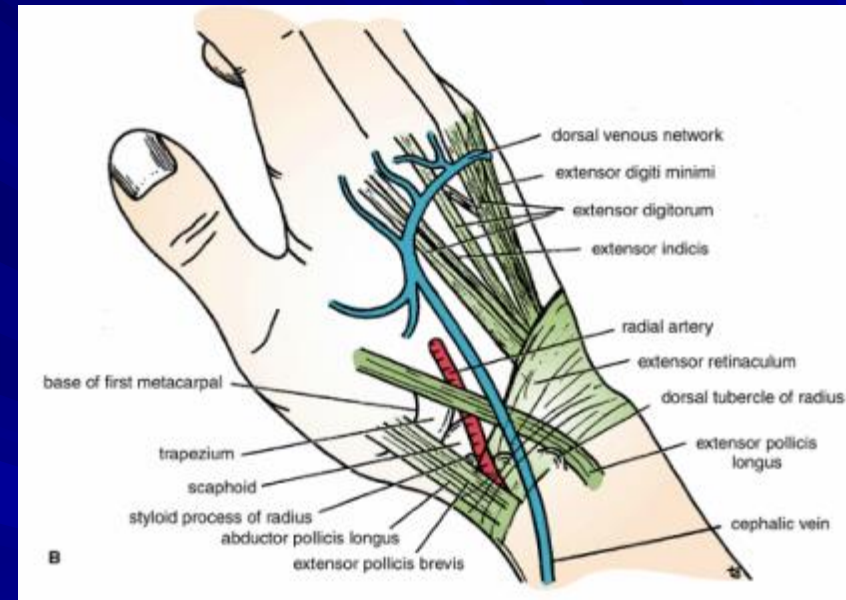
- The radial artery lies superficially in front of the distal end of the radius, between the tendons of the brachioradialis and flexor carpi radialis; it is here that the clinician takes the radial pulse.



Radial Artery

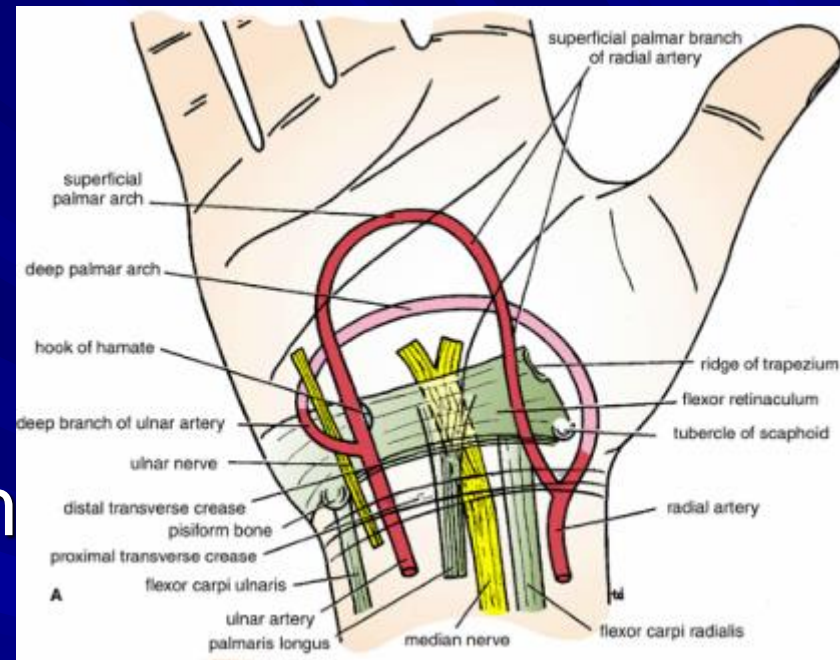
radial artery

- If the pulse cannot be felt, try feeling for the radial artery on the other wrist; occasionally a congenitally abnormal radial artery can be difficult to feel. The radial artery can be less easily felt as it crosses the anatomic snuffbox .



ulnar artery

- can be palpated as it crosses anterior to the flexor retinaculum in company with the ulnar nerve.
- lies lateral to the pisiform bone, separated from it by the ulnar nerve.
- is commonly damaged here in laceration wounds in front of the wrist.



Common pulse sites

Radial Pulse



- ❑ Lateral aspect of the lower forearm just proximal to the wrist joint
- ❑ Feel the bony prominence
- ❑ Move fingertips medially
- ❑ Tips of fingers drop into a groove in which lies the artery
- ❑ Examine the pulse by compressing the artery backwards against the bone, using the finger tips

- Every health professional should know the precise position of the main arteries within the lower limb, for he or she may be called on to arrest a severe hemorrhage or palpate different parts of the arterial tree in patients with arterial occlusion.

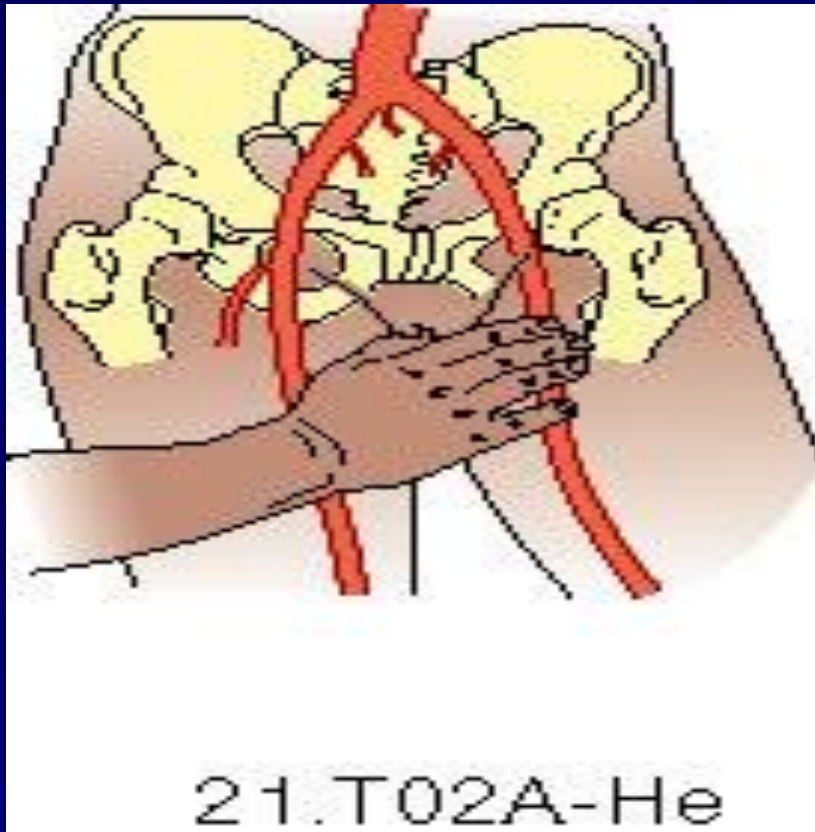
The femoral artery

- enters the thigh behind the inguinal ligament at a point midway between the anterior superior iliac spine and the symphysis pubis. The artery is easily palpated here because it can be pressed backward against the pectineus and the superior ramus of the pubis.



Femoral Artery

Femoral artery

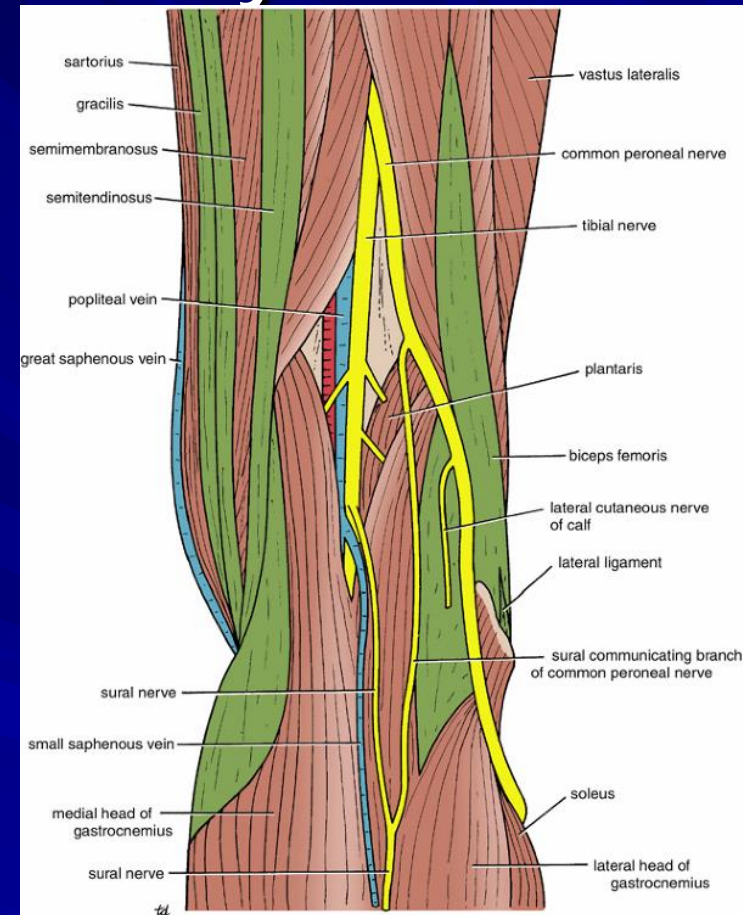


- ❑ The femoral artery enters the upper leg by passing under the inguinal ligament.
- ❑ It enters the leg at the mid-inguinal point.
- ❑ The femoral artery is usually easily palpated and is an important point of access to the arterial system.

The popliteal artery



- can be felt by gentle palpation in the depths of the popliteal space provided that the deep fascia is fully relaxed by passively flexing the knee joint



Popliteal artery



❑ The popliteal artery is palpable in the popliteal fossa.

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

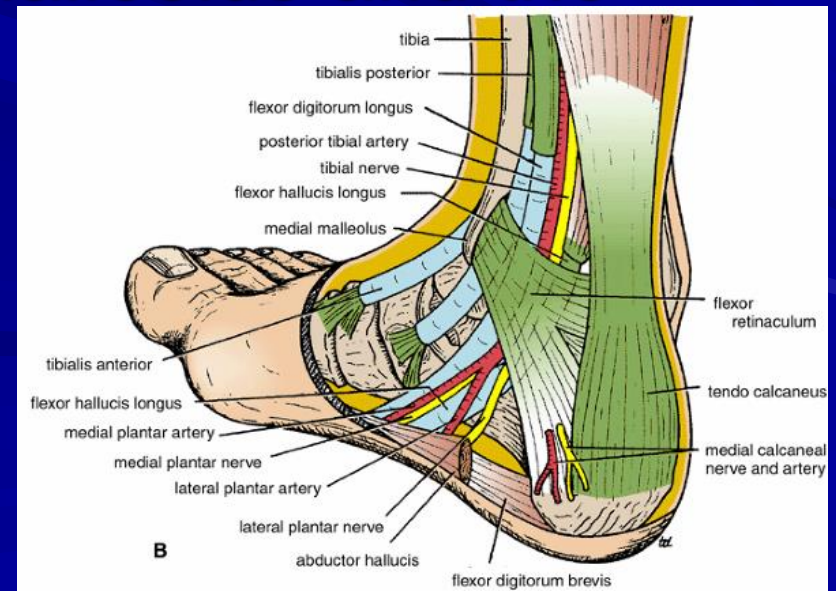


❑ The popliteal artery can be palpated in about the midline of the fossa at the level of the femoral condyles.

❑ Artery best felt with knee in slight flexion.

The posterior tibial artery

- passes behind the medial malleolus, and beneath the flexor retinaculum; it lies between the tendons of flexor digitorum longus and flexor hallucis longus. The pulsations of the artery can be felt midway between the medial malleolus and the heel.

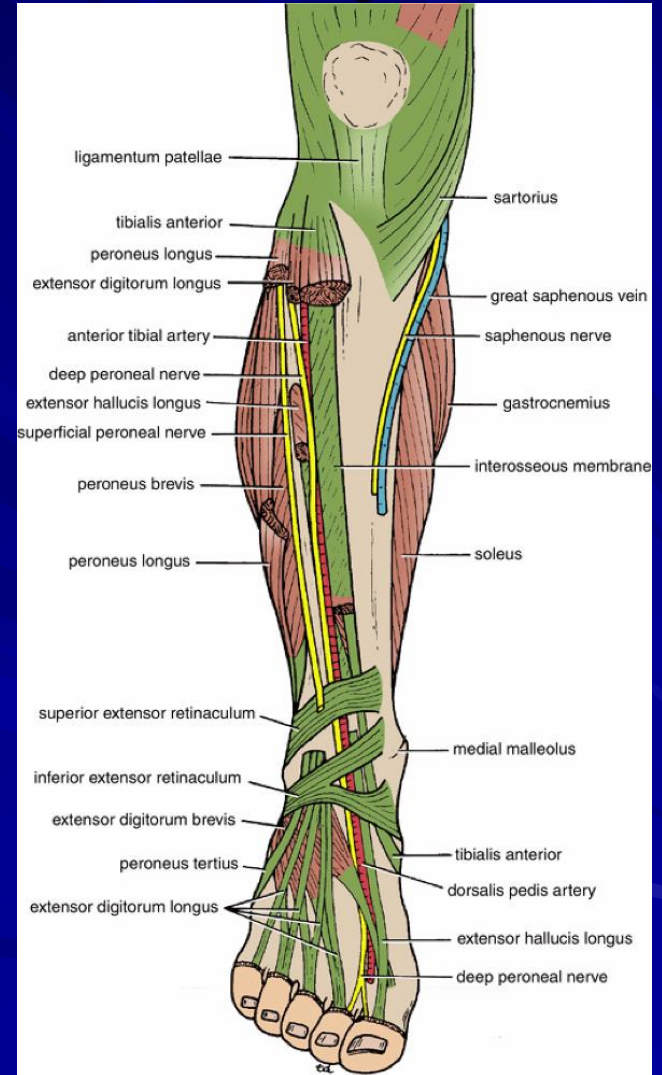


Tibialis posterior artery



The dorsalis pedis artery

- lies between the tendons of extensor hallucis longus and extensor digitorum longus, midway between the medial and lateral malleoli on the front of the ankle.



Dorsalis pedis artery



- It should be remembered that the dorsalis pedis artery is sometimes absent and is replaced by a large perforating branch of the peroneal artery. In the same manner, the peroneal artery may be larger than normal and replace the posterior tibial artery in the lower part of the leg.

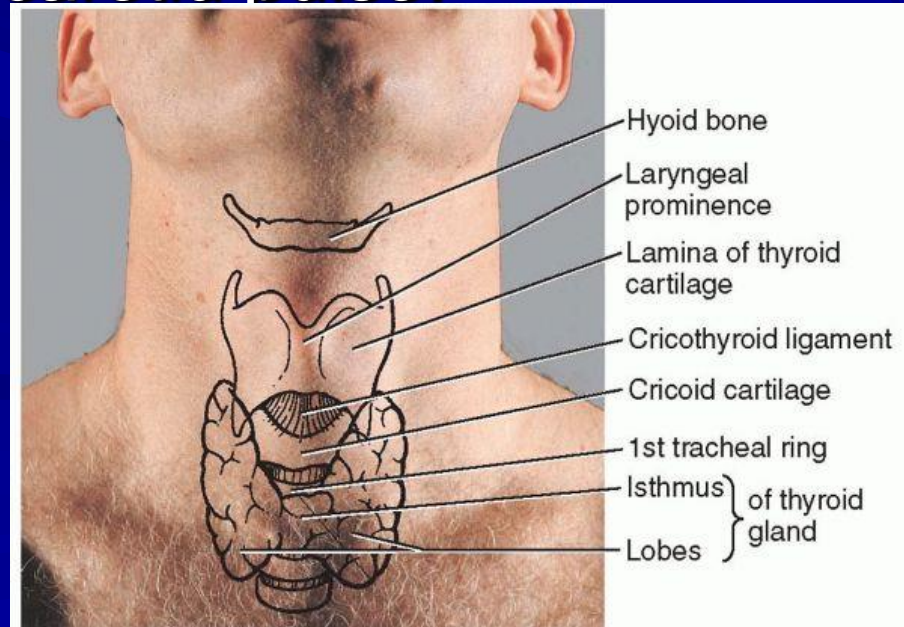
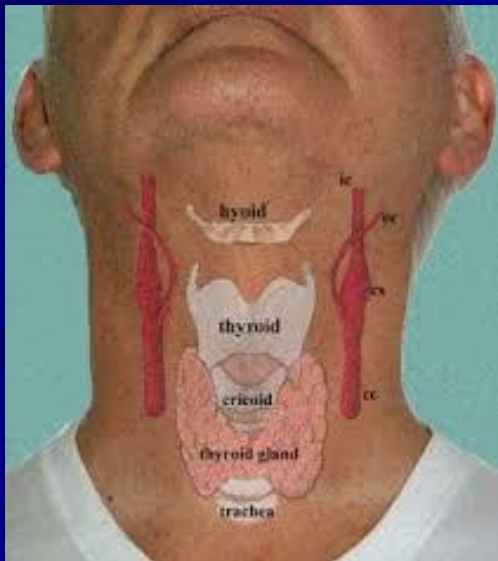
■ Pulse points

Arterial pulses can be felt at four locations in the head and neck:

the Carotid Pulse

■ Taking the Carotid Pulse

- The bifurcation of the common carotid artery into the internal and external carotid arteries can be easily palpated just beneath the anterior border of the sternocleidomastoid muscle at the level of the superior border of the thyroid cartilage. This is a convenient site to take the carotid pulse.



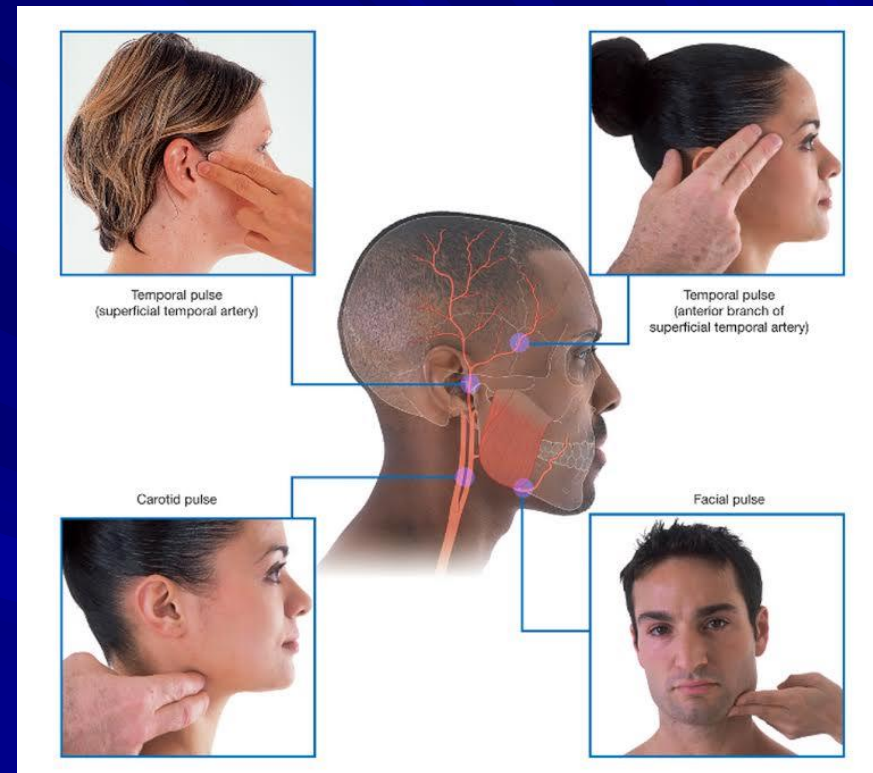
Carotid pulse



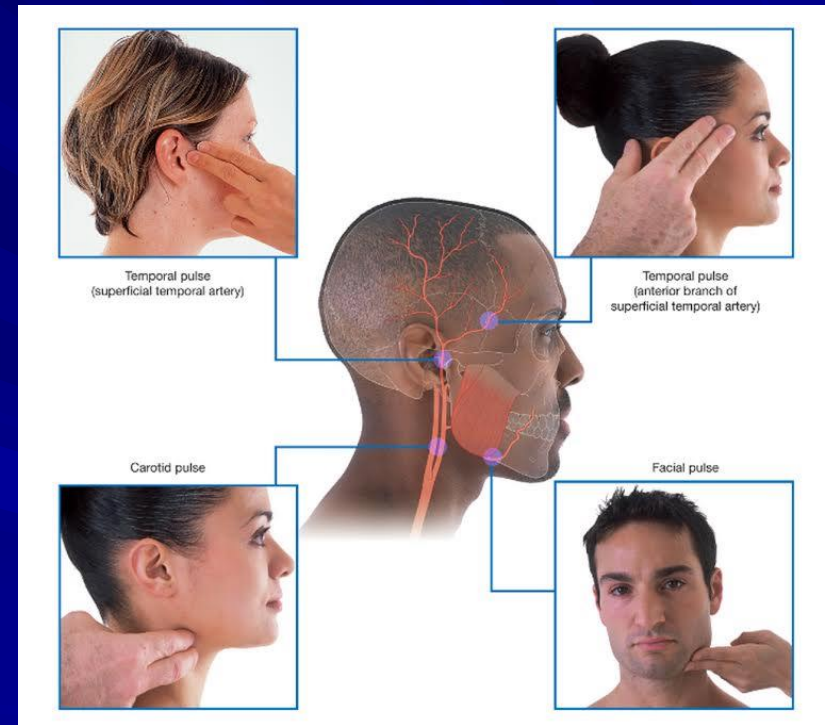
- ❑ 1-1.5 cm lateral of the midline in the neck at the upper level of the thyroid cartilage
- ❑ Readily palpable at anterior border of sternomastoid muscle
- ❑ May be felt with finger tips or thumb which are used to push posteriorly

facial artery

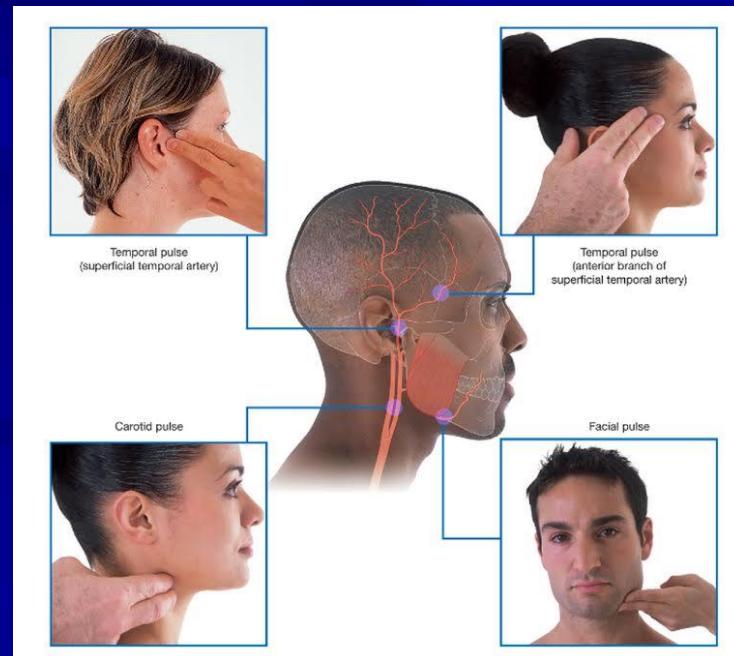
- *Facial pulse:* the facial artery can be palpated as it crosses the inferior border of the mandible immediately adjacent to the anterior margin of the masseter muscle.



- *Temporal pulse (1)*: the superficial temporal artery can be palpated anterior to the ear and immediately posterosuperior to the position of the temporomandibular joint (TMJ).



■ *Temporal pulse (2)*: the anterior branch of the superficial artery can be palpated posterior to the zygomatic process of the frontal bone as it passes lateral to the temporal fascia and into anterolateral regions of the scalp. In some individuals pulsations of the superficial temporary artery can be seen through the skin.





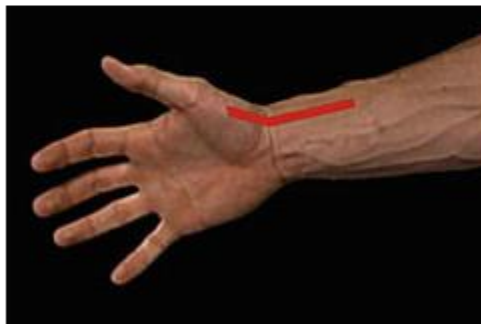
Superficial Temporal Artery



Carotid Artery



Brachial Artery



Radial Artery



Femoral Artery



Popliteal Artery

Thank you

