

وسهلا

أهلا



الأستاذ الدكتور يوسف حسين

أستاذ التشريح وعلم الأجنة - كلية الطب - جامعة الزقازيق - مصر

رئيس قسم التشريح و الأنسجة و الأجنة - كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

Dr. Youssef Hussein Anatomy اليوتيوب

جروب الفيس د. يوسف حسين (استاذ التشريح)

Female Breast (Mammary gland)

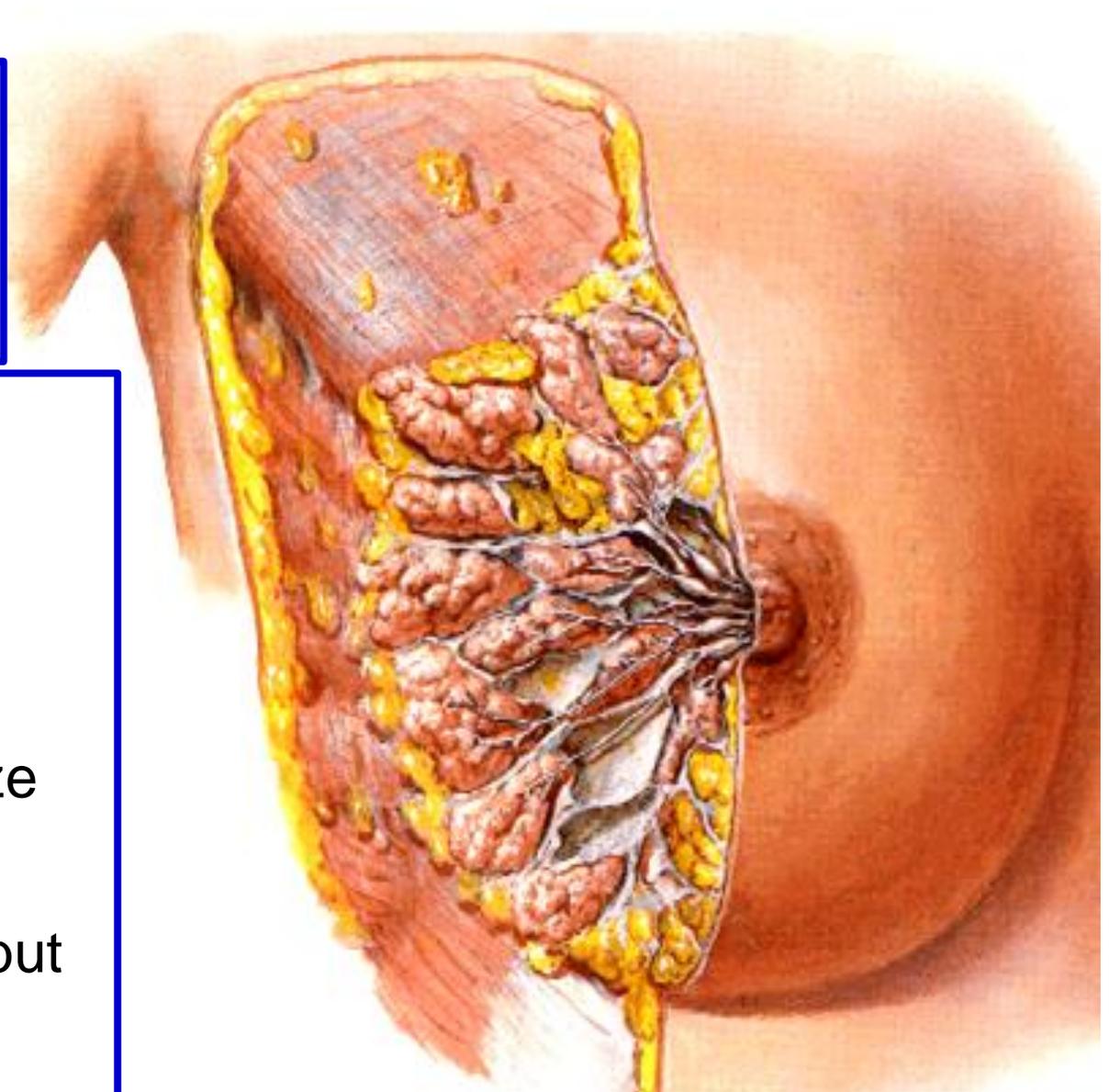
dr_youssefhussein@yahoo.com

وَإِنَّ لَكُمْ فِي الْأَنْعَامِ لَعِبْرَةً ۖ نُسْقِيكُمْ مِمَّا فِي بُطُونِهِ مِنْ
بَيْنِ فَرْثٍ وَدَمٍ لَبَنًا خَالِصًا سَائِغًا لِلشَّارِبِينَ (النحل 66)

- **The breasts (mammary glands)** are modified sweat glands
- It lies in the **superficial fascia** of the pectoral region

* **Development and Sex differences;**

- The breast is found in both sexes.
- **Before puberty**, it is rudimentary in males and females.
- **At puberty female**, it increases in size under the effect of sex hormone.
- **During pregnancy**, increase in size but does not contain milk.
- **After labor**: the glandular tissues are filled by milk.

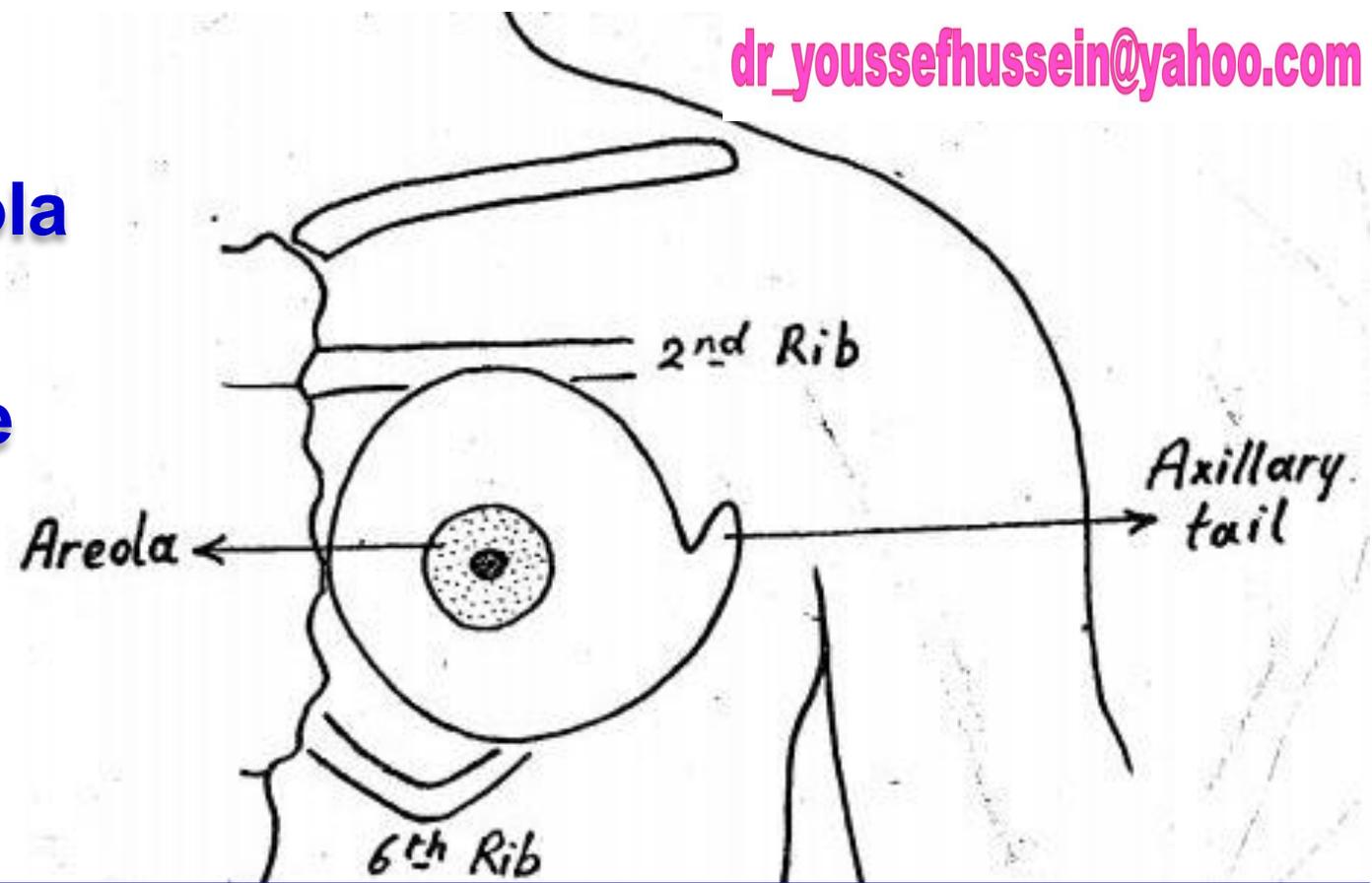


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Areola

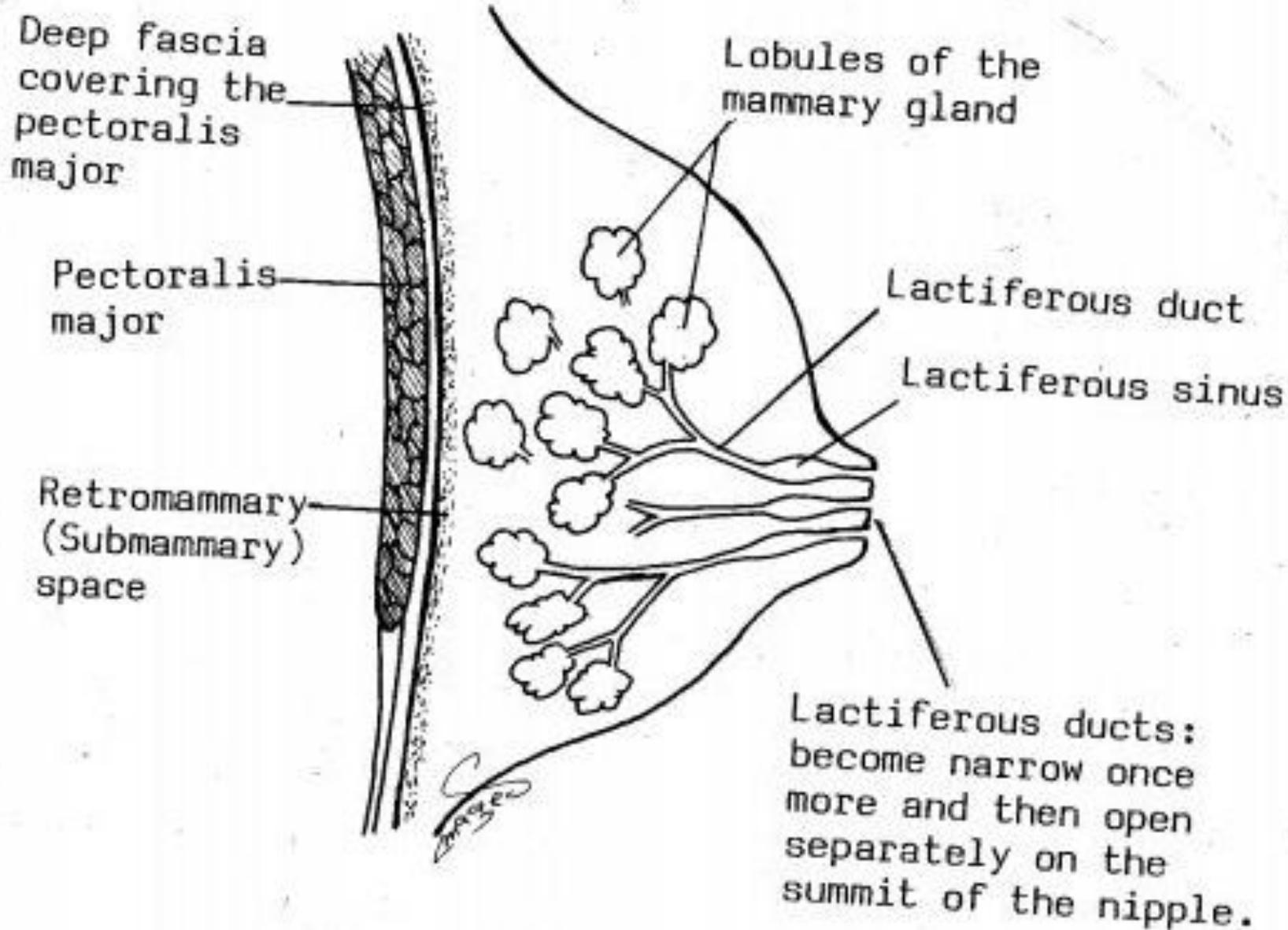
Nipple



*** Extension:**

- The breast is conical in virgin
- Pendulous in old age and multipara due to atrophy of **ligament of Cooper**.

- 1- The 2nd rib (**above**) to the 6th rib (**below**).
 - 2- From the sternum (**medially**) to the midaxillary line (**laterally**).
- The **nipple** lies in the **4th intercostals space**.



**** Deep relations (breast bed)**

1- Retromammary or submammary space.

- It contains loose areolar tissue that allows freely mobility of the breast.

2- Deep fascia.

3- Muscles (pectoralis major; serratus anterior and external abdominal oblique).

- **Structure of the breast**

- **Skin:** has the same colour of body **except** :

1) Nipple: lies in the 4th intercostals space in the midclavicular line.

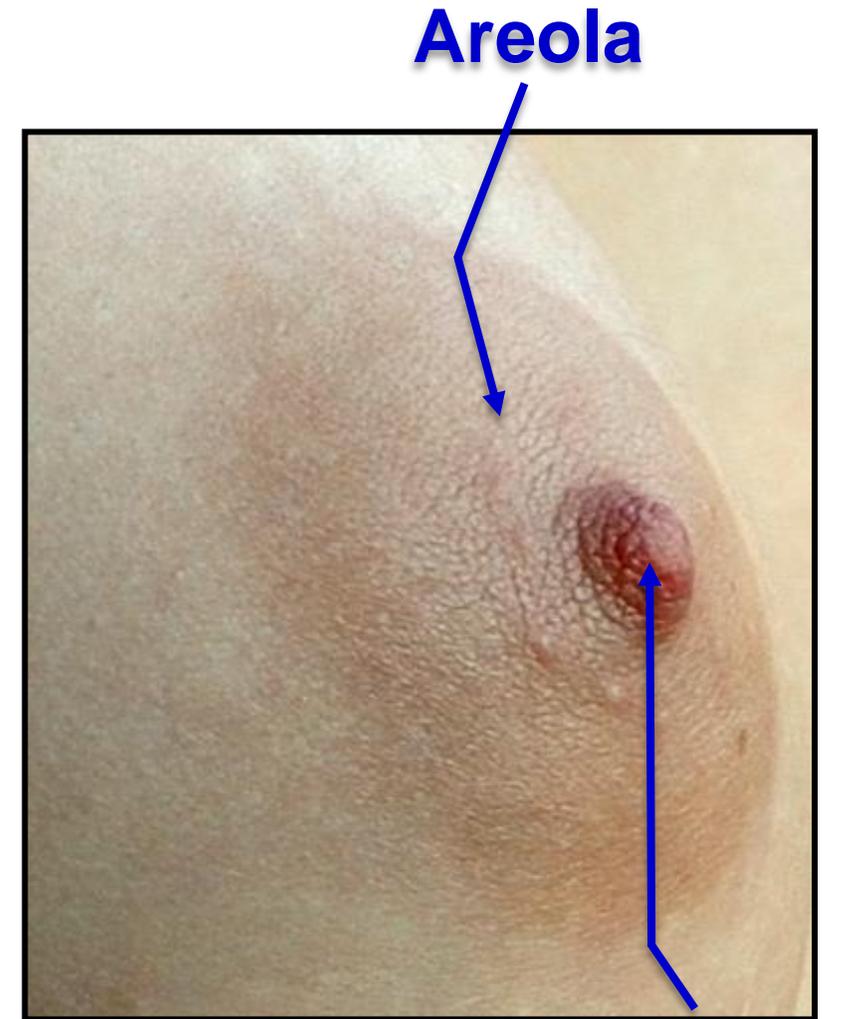
- It carries **15 to 20** narrow openings of the **lactiferous ducts**.

- It is **devoid of fat and hair** but rich in nerve supply (highly sensitive).

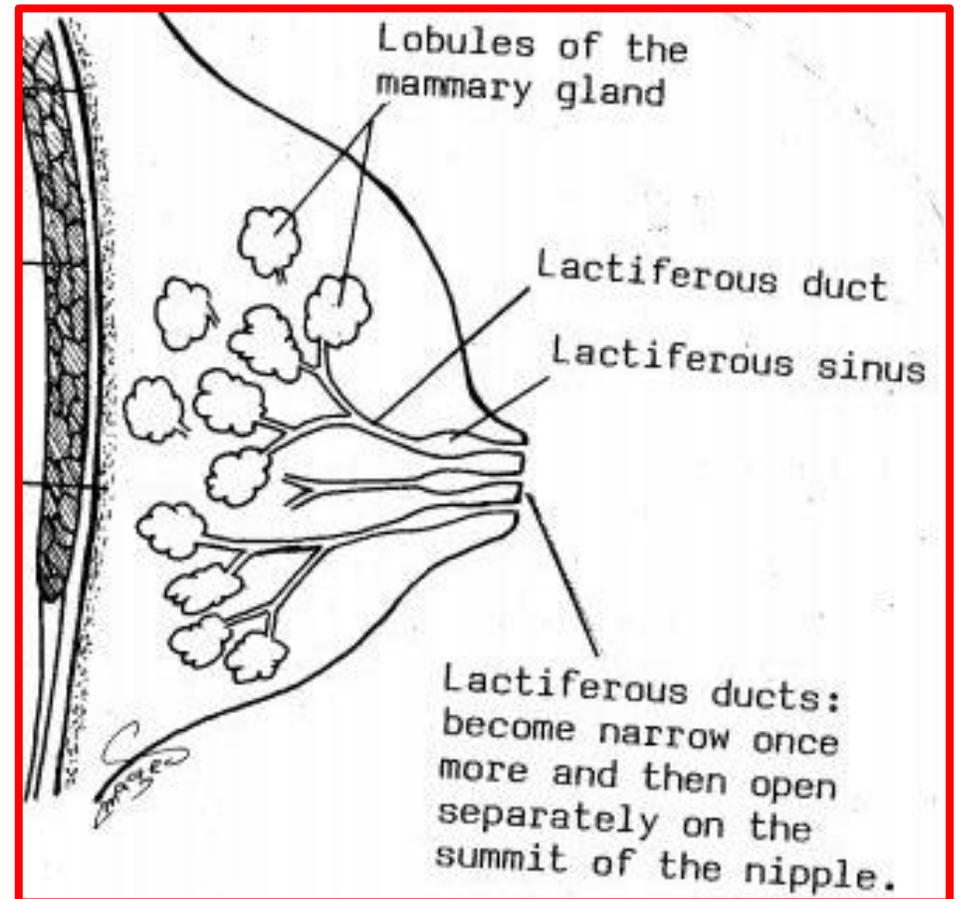
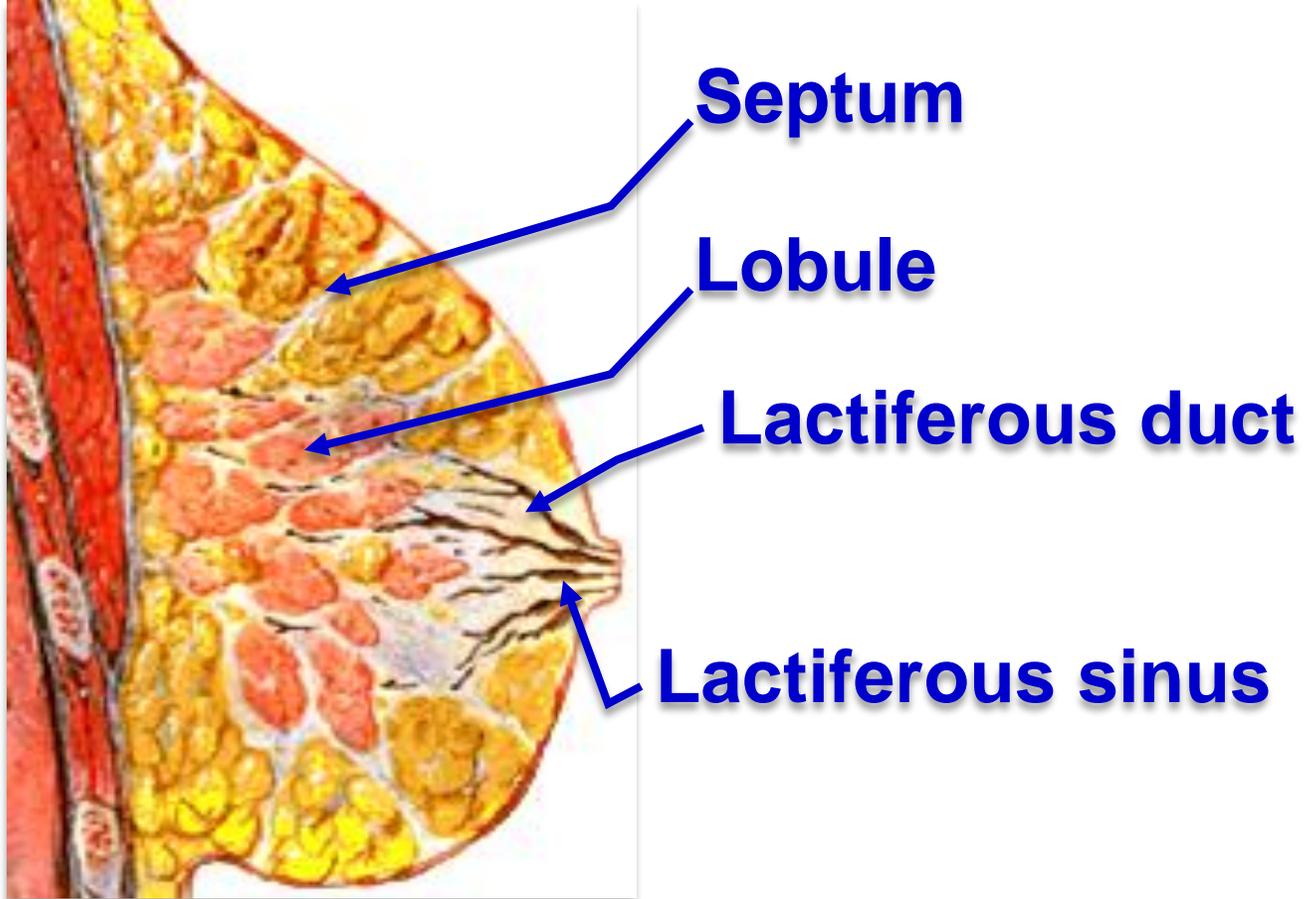
- It contains smooth muscle fibers that erect the nipple during suckling.

2) Areola; is a pigmented circular area surrounding the nipple.

- **Its colour** is pink in nullipara, during the first pregnancy, its colour changes to a permanent dark.



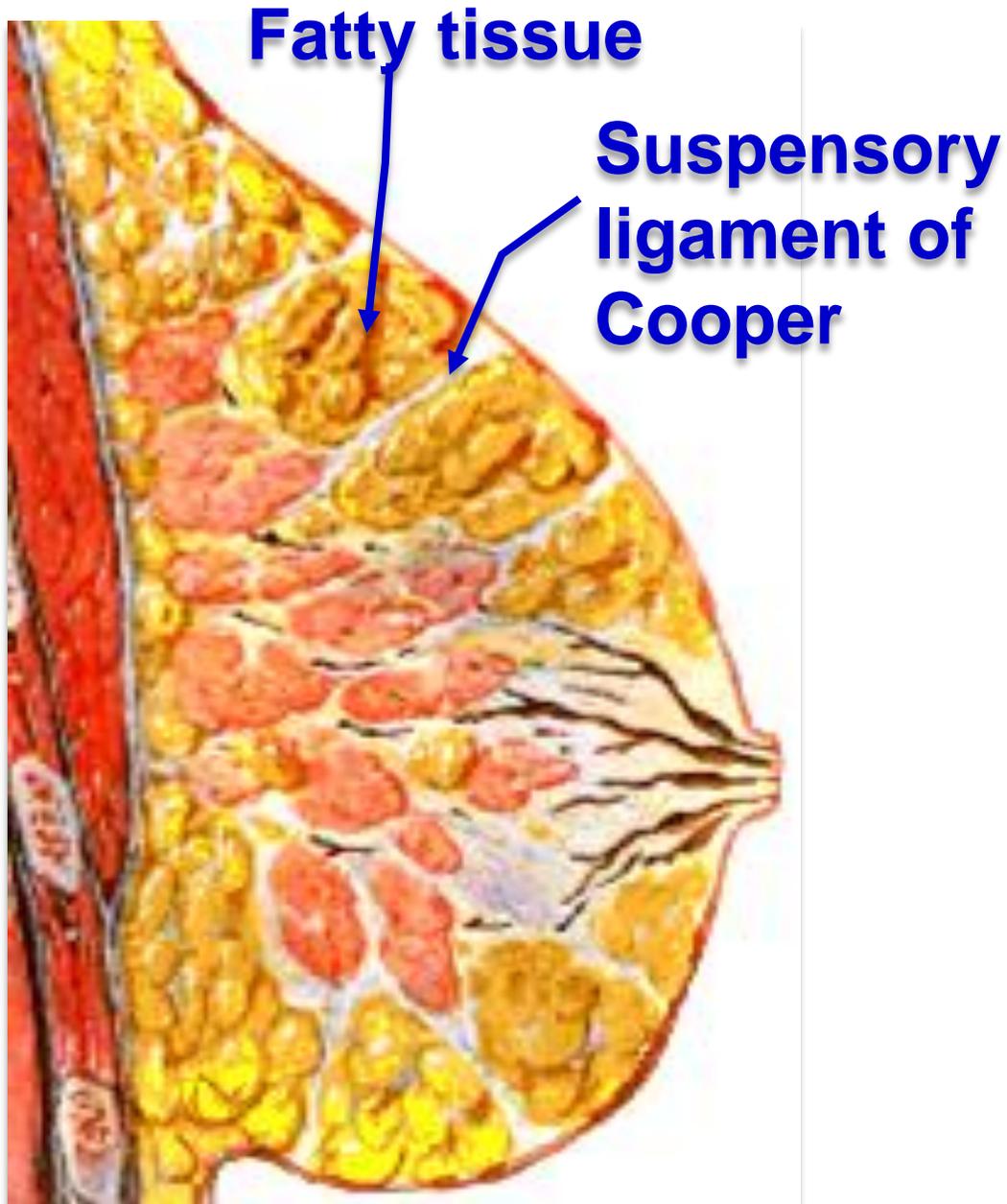
Nipple



Parenchyma (Internal structure) of the breast

❖ Glandular tissue:

- It is formed of 15 to 20 lobules (secretory part) separated from each others by septa
- Each one drains into lactiferous duct (excretory part) which opens into the nipple.
- Each lactiferous duct dilates to form a **lactiferous sinus** under the areola.



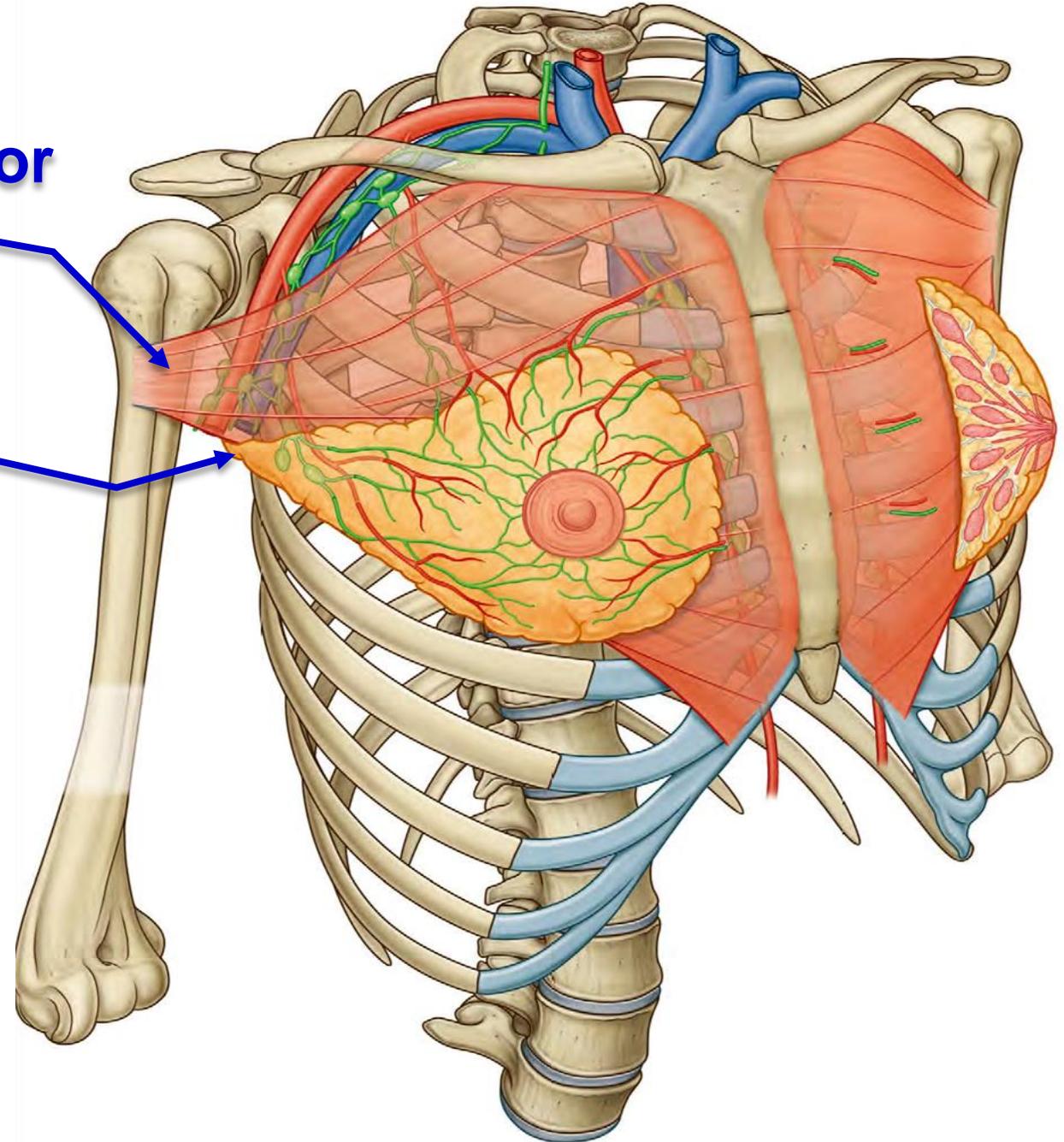
❖ Non glandular

- a- Fatty tissue;** forms the main bulk of the breast and gives its normal contour and its soft consistency
- b- Fibrous tissue** is formed of fibrous septa which connect the skin with the deep fascia.
- These fibrous strands called **suspensory ligaments of Cooper** that responsible for
 - a- Fixation of the breast.
 - b- The rounded shape of the breast.
 - c- It separates the lobes from each other.

dr_youssefhussein@yahoo.com

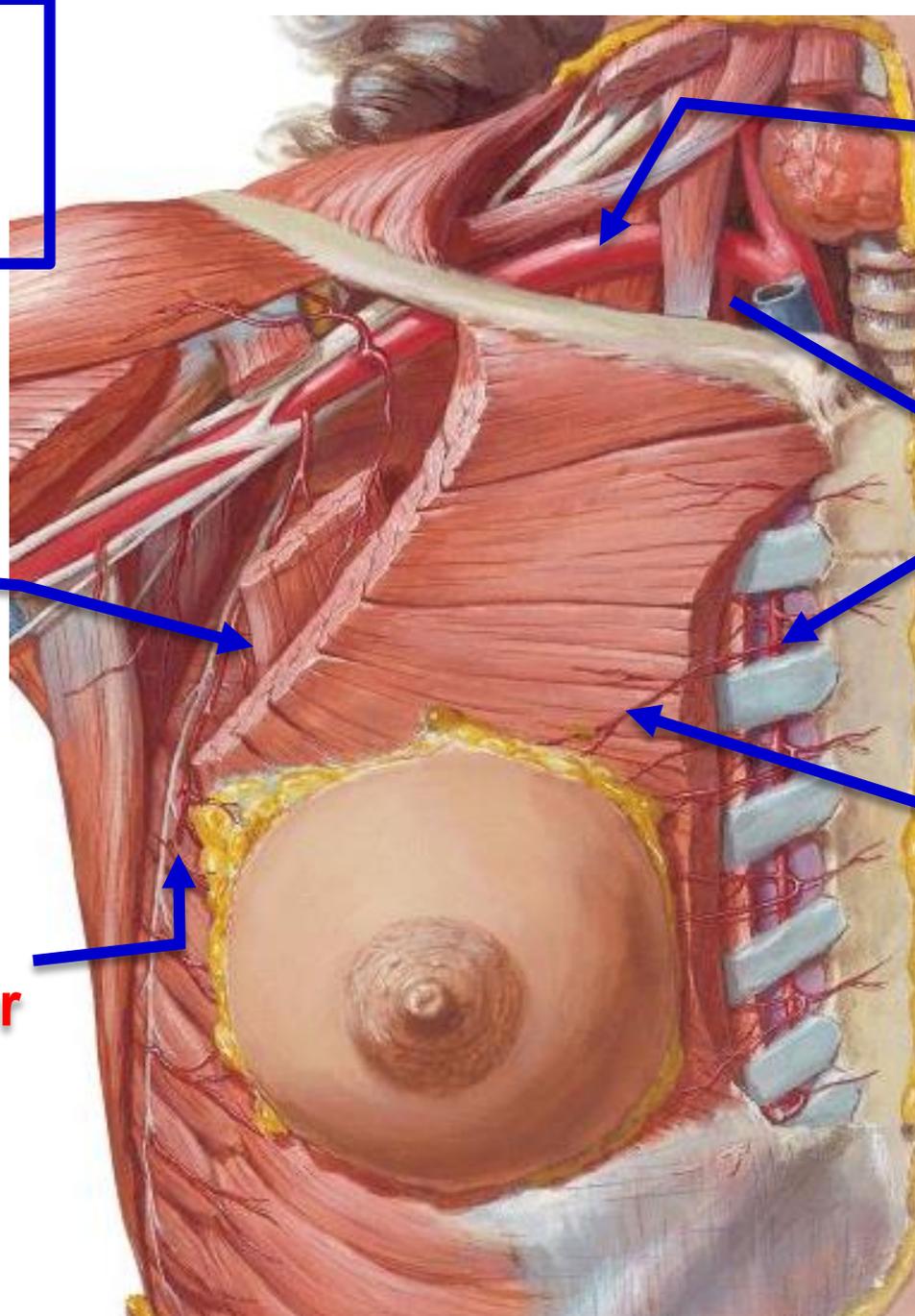
Pectoralis major

Axillary tail



- **Axillary tail of Spence**, glandular tissue prolongation from the upper and lateral quadrant of the breast.
- It passes to the axilla along anterior fold of axilla (lower border of pectoralis major) **through foramen of Langer**.

Blood supply of the breast



Subclavian artery

Internal thoracic artery and its perforating branches

Lateral mammary branches of Lateral thoracic artery

Lateral mammary branches of posterior and anterior intercostal arteries

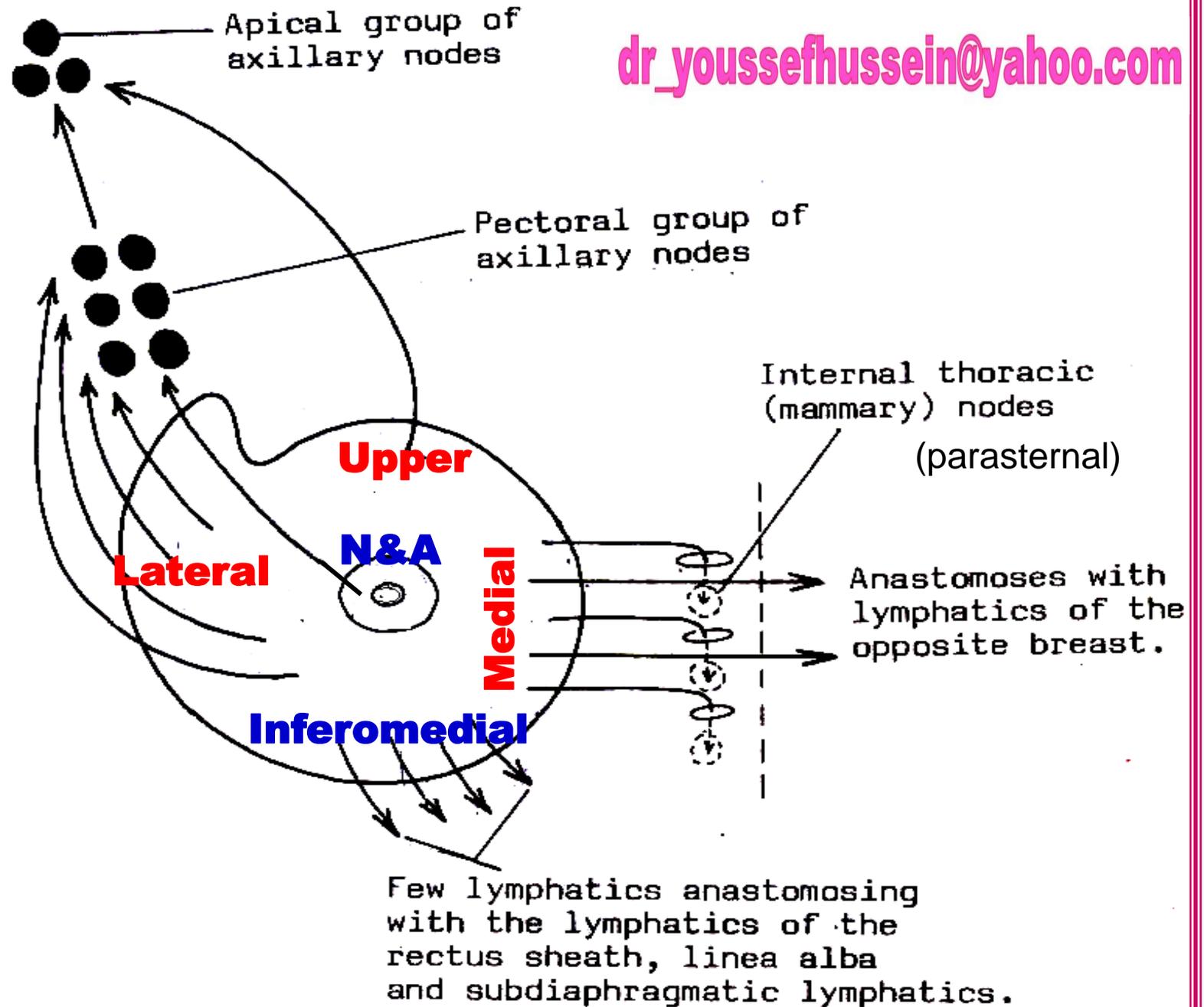
Medial mammary branches of internal thoracic artery

dr_youssefhussein@yahoo.com

Lymphatic drainage of breast

The nipple and areola; drained by subareolar plexus of Sappo that pass to the anterior (pectoral) axillary lymph nodes.

The axillary tail of Spence; to the posterior (subscapular) axillary lymph nodes



**** Lymphatic drainage of the breast**

1) The nipple and areola; drained by **subareolar plexus of Sappo** that pass to the anterior (pectoral) axillary lymph nodes.

2) Deep parts of the breast; drained by the **deep lymphatic plexus**

a) Lateral and central parts to the anterior (pectoral) axillary lymph nodes.

b) Medial part pass through intercostal spaces to the parasternal (internal thoracic) lymph nodes of the same and opposite sides along the internal thoracic artery.

c) Upper part, to the apical axillary lymph nodes and subclavicular lymph nodes.

d) inferomedial part drains to the lymph vessels of the rectus sheath of anterior abdominal wall and sub-diaphragmatic lymph nodes.

- Some vessels pass deeply through the falciform ligament to the liver.

e) The axillary tail of Spence; to the posterior (subscapular) axillary lymph nodes.

N.B: 75 % of the lymph drains into the axillary lymph nodes.

- 25 % of the lymph drains into the para-sternal and other lymph nodes.

❖ Spread of the breast cancer cells to

1- The lymph vessels leading to edema of the breast and dimpling (pitting) of the skin (Peu De Orange).

2- The lactiferous ducts leading to retraction of the nipple.

3- The retromammary (submammary) space leading to fixation of breast into the underlying deep fascia and pectoralis major muscle.

4- Invasion of the suspensory ligament of Cooper leading to contracted puckering of overlying skin.

5- The opposite side.

❖ **During pregnancy:** maternal hormones cross the placental barrier to the fetus leading to proliferation of the breast.

- In some cases there is a minimal of **milk secretion** from the nipple of the neonate.
- This condition resolves spontaneously when level of maternal hormones falls in child blood.

❖ **The lactiferous ducts** run in a radial direction away from the nipple, so **incision** of the breast should be done in a radial direction to avoid cutting of the ducts.

Axillary lymph nodes

Subclavian lymph trunk

subclavian lymph trunk which ends in the thoracic duct (left side) and right lymph duct (right side).

Few vessels run with cephalic vein

Upper part of the breast

Anterior (Pectoral) group

Lateral (brachial) group

Posterior (subscapular) group

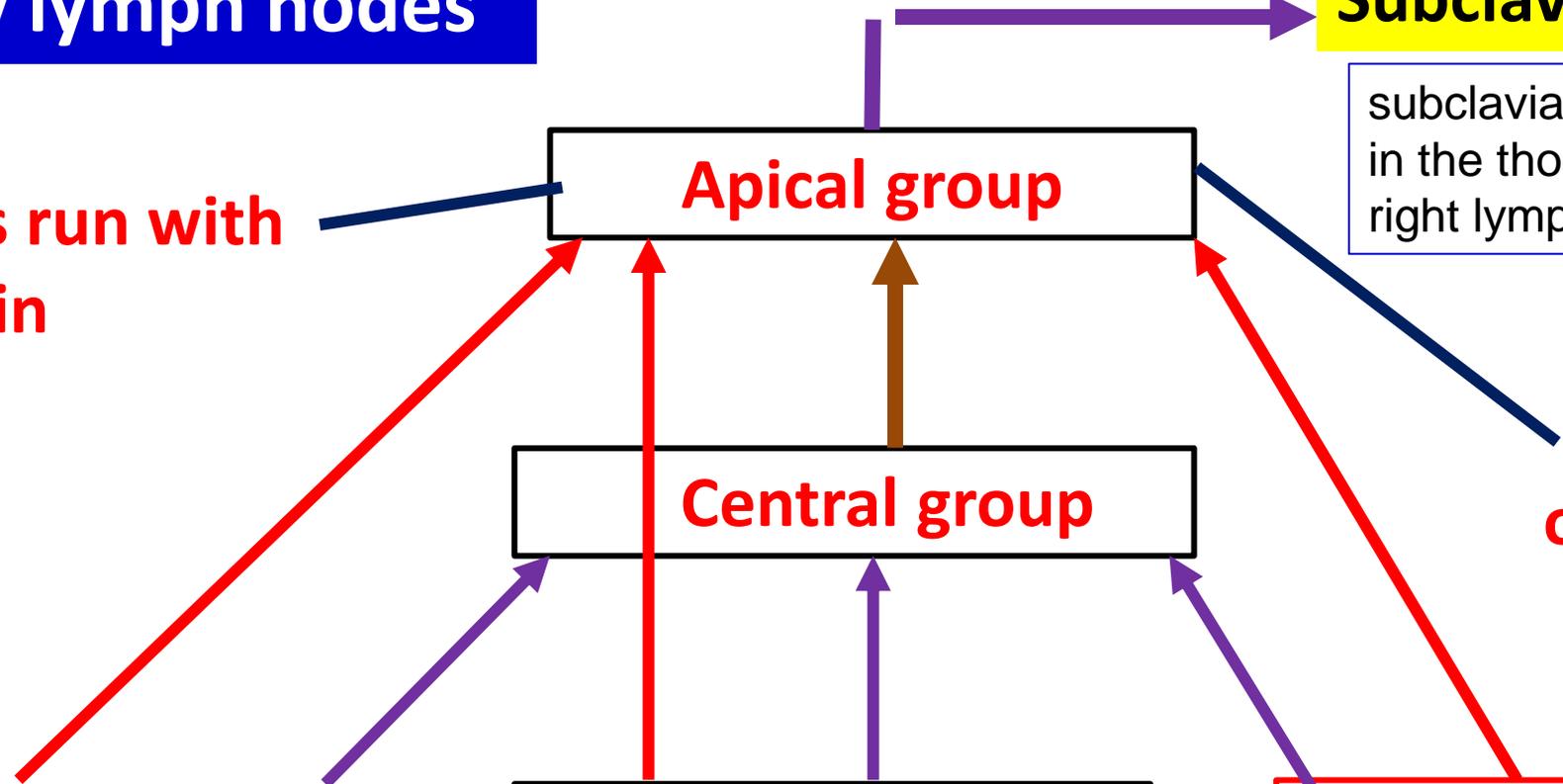
Apical group

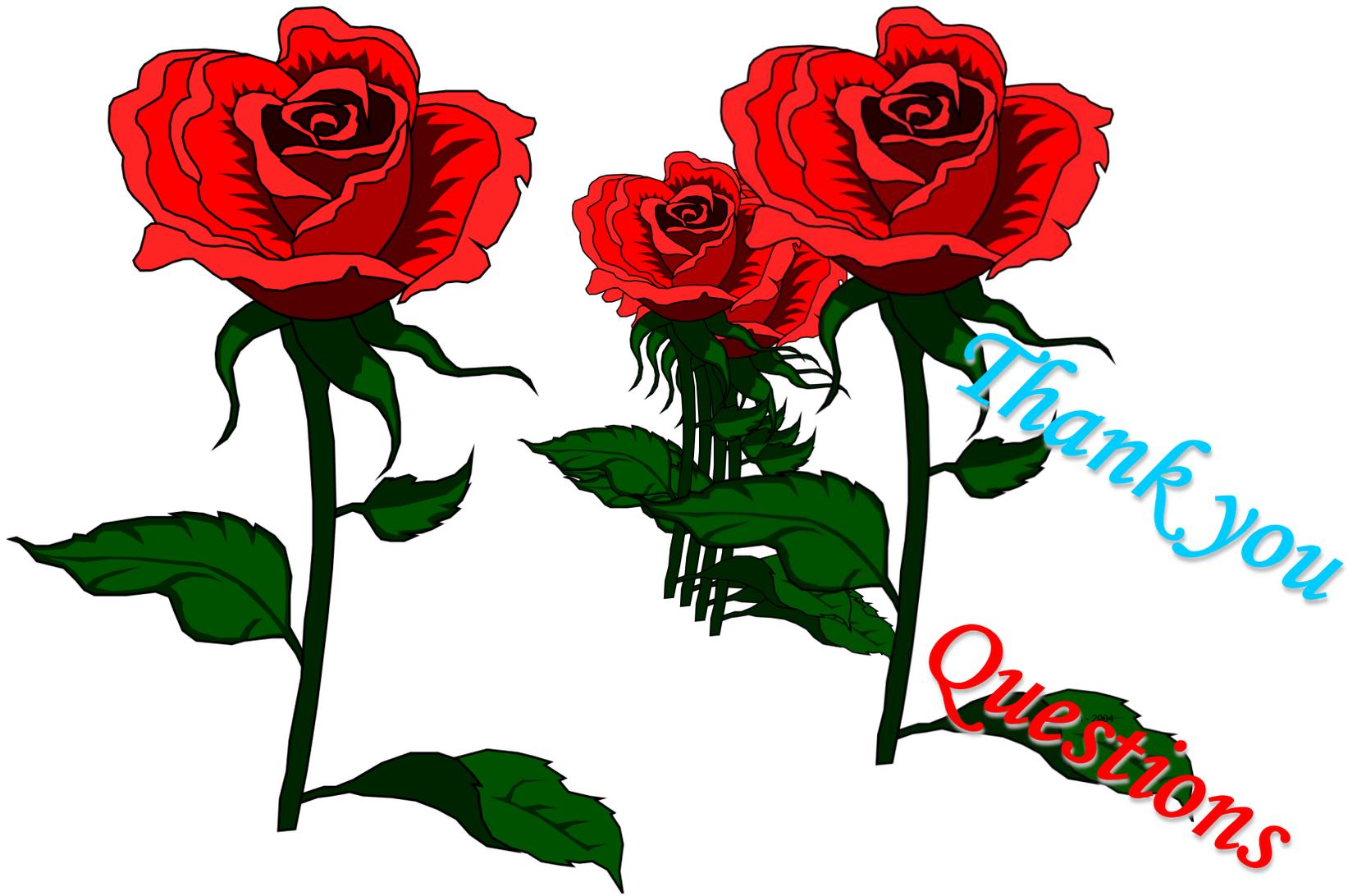
Central group

1- Central and lateral part of breast
2- Anterior and lateral wall of the trunk above the umbilicus

Lymph of the upper limb except few vessels pass to the apical group

1- from the lower part of neck
2- from the back above the level of iliac crest
3- tail of the breast





Thank You

Questions