

FEMALE BREAST

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FEMALE BREAST

It is conical in shape.	It has <u>no capsule</u> . (it's a problem in case of cancer)	
It lies in <u>superficial fascia</u> of the front of chest (pectoral region) It has a <u>base</u> , <u>apex</u> (nipple) and <u>tail</u> *.	2/3 of its base lies on the <u>pectoralis major</u> muscle, while its <u>inferolateral</u> 1/3 lies on:	
	1-Serratus anterior	2-External oblique muscles. one of the anterior abdominal wall muscles
Its base extends (longitudinal) from <u>2nd</u> to <u>6th ribs</u> .	Its <u>superolateral</u> part sends a process into the axilla called the <u>axillary tail</u> or <u>axillary process</u> (the tail of spence)*.	
It extends (transverse) from the <u>sternum</u> to the <u>midaxillary</u> line laterally.		

***NOTE:** (AXILLARY TAIL) is the deepest part of the breast. It enters into the axilla passing deep to the deep fascia (the whole breast is above this deep fascia except the tail)

Nipple (smooth muscle covered by skin)	Areola (area of skin)
It is a conical eminence that projects forwards from the anterior surface of the breast.	It is a dark pink brownish (pigmented) circular area of skin that surrounds the nipple.
The nipple lies opposite <u>4th intercostal space</u> .	
It carries <u>15-20</u> narrow pores of the lactiferous ducts.	
The subcutaneous tissues of nipple & areola are devoid of fat.	

STRUCTURE OF MAMMARY GLAND

(a modified sweat gland → to synthesis the milk)

It is non capsulated gland.	It is formed of 15-20 lobes .
It consists of lobes and lobules which are embedded in the subcutaneous fatty tissue of superficial fascia .	Each lobe is formed of a number of lobules.
It has fibrous strands (ligaments of cooper)* which connect the skin with deep fascia of pectoralis major.	The lobes and lobules are separated by interlobar and interlobular fibrous & fatty tissue, called ligaments of Cooper . (Importance)? These ligaments give the breasts support by connecting the skin of the breasts to the deep fascia of pectoralis muscles below them.
It is separated from the deep fascia covering the underlying muscles by a layer of loose areolar tissue which forms the retromammary space (bursa) .? What is its Importance? (allows the breast to move freely)**.	It has from 15-20 lactiferous ducts (it dilates to form the lactiferous sinus) which open by the same number of openings on the summit of the nipple.

***NOTE:** also known as the suspensory ligaments & it runs radially

****NOTE:** if the breast is fixed → a sign of cancer

Blood Supply

ARTERIAL SUPPLY			VENOUS SUPPLY
1. <u>Perforating</u> branches and <u>medial mammary</u> branches of <u>internal thoracic</u> (internal mammary) artery.(behind the costal cartilage)	2. <u>Lateral mammary</u> branches of lateral thoracic artery.	3. <u>Lateral mammary</u> branches of posterior Intercostal arteries.	-Veins are corresponding to the arteries.
			-Circular venous plexus are found at the base of nipple.
			-Finally, veins of this plexus drain into axillary & internal thoracic veins.

AXILLARY LYMPH NODES They are arranged into 5 groups which lie in axillary fat:	Pectoral (Anterior)	Subscapular (Posterior)	Brachial (Lateral)	Central	Apical
	which lies on the pectoralis minor along lateral thoracic vessels. (in the anterior axillary fold)	which lies on posterior wall of axilla on lower border of subscapularis along subscapular vessels.	lies on lateral wall of axilla along 3rd part of axillary vessels.	lies in axillary fat at the base of axilla	lies at apex of axilla (all the previous group end up here)

Subclavian lymph trunk:

It is formed by union of efferent lymph vessels of apical group.
 (Lymphatic vessels of the apical group drain from right & left breast)

- On the **right** side, It usually opens in **subclavian vein**.
- On the **left** side it usually opens into **thoracic duct**.

LYMPHATIC DRAINAGE

1-Subareolar lymphatic plexus :
Lies beneath the areola.

Both plexuses radiate in many directions and drain into different lymph nodes.

(Axillary lymph nodes(mainly) & internal thoracic lymph nodes)

2-Deep lymphatic plexus :
Lies on the deep fascia covering pectoralis major.

-**Central** (around the areola) & **lateral** parts of the gland (75%) drain into **pectoral** group of axillary lymph nodes, (& finally into the apical group)

-**Upper** part of the gland drains into **apical** group of axillary lymph nodes. (directly)

-**Medial** part drains into **internal thoracic** (parasternal) lymph nodes, forming a chain along the internal thoracic vessels.

-Some lymphatics from the **medial** part of the gland pass across the front of sternum to **anastomose** with that of **opposite** side.

-Lymphatics from the **inferomedial** part anastomose with lymphatics of **rectus sheath** & **linea alba**, and some vessels pass deeply to anastomose with the sub **diaphragmatic** lymphatics.

NOTE:

Central + lateral + upper → apical group of axillary lymph nodes(75%)
Medial → internal thoracic lymph nodes

APPLIED ANATOMY- CANCER BREAST

-It is a common surgical condition.

-60% of carcinomas of breast occur in the **upper lateral** quadrant.

-75% of lymph from the breast drains into the **axillary** lymph nodes.

-In case of carcinoma of one breast, the other breast and the opposite axillary lymph nodes are **affected** because of the anastomosing lymphatics between both breasts.(parasternal)

-In patients with **localized cancer** breast, a **simple mastectomy**, followed by **radiotherapy** to the axillary lymph nodes is the **treatment of choice**.

-The lactiferous ducts are **radially** arranged from the nipple, so incision of the gland should be made in a **radial** direction to avoid cutting through the ducts.

-Infiltration of the **ligaments of Cooper** by breast cancer leads to its shortening giving **peau d'orange** (orange peel skin) appearance of the breast. (dimpling)

NOTE: if there is a lump (a swelling or small palpable mass) then we have to rush immediately to the hospital

Mammary ridge (lactiferous line)

-Mammary ridge extends from the **axilla**(pectoral) to the **inguinal** region.(groin)

-In human, the ridge **disappears** EXCEPT for a small part in the **pectoral** region.

-In animals, several mammary glands are formed along this

MCQ's

Q1-Which is correct regarding the mammary gland?

- A. It extends from the 2nd to 8th ribs.
- B. Its base lies on the pectoralis major muscle.
- C. It has 4-8 lactiferous ducts.
- D. Its most lymph drains into the parasternal lymph nodes.

Q2-The lymphatics from upper part of mammary gland drain into:

- A. The parasternal lymph nodes.
- B. Subdiaphragmatic lymph nodes.
- C. Apical group of axillary lymph nodes.
- D. Pectoral group of axillary lymph nodes.

Q3-The lactiferous ducts of mammary gland are:

- A. Less than 10.
- B. From 10-15.
- C. From 15-20.
- D. More than 20.

Q4- the base of the breast extends from ... to ..?

- A. 1st to 6th.
- B. 2nd to 6th.
- C. 2nd to 7th.
- D. 3rd to 7th.

Q5-the 2/3 of the breast's base lies in which one of the following muscles??

- A. Serratus anterior
- B. External oblique
- C. Pectoralis minor
- D. Pectoralis major

Q6-The nipple of the breast lies opposite of?

- A. 3rd costal cartilage
- B. 3rd intercostal space
- C. 4th intercostal space
- D. 4th costal cartilage

Q7- 45 years old female treated from breast cancer of her right breast, unfortunately we found the left breast was affected. Which one of the following lymph nodes anastomose with opposite breast?

- A. Subdiaphragmatic lymph nodes.
- B. Apical group of axillary lymph nodes.
- C. Central group of axillary lymph nodes
- D. Internal thoracic (parasternal) lymph nodes

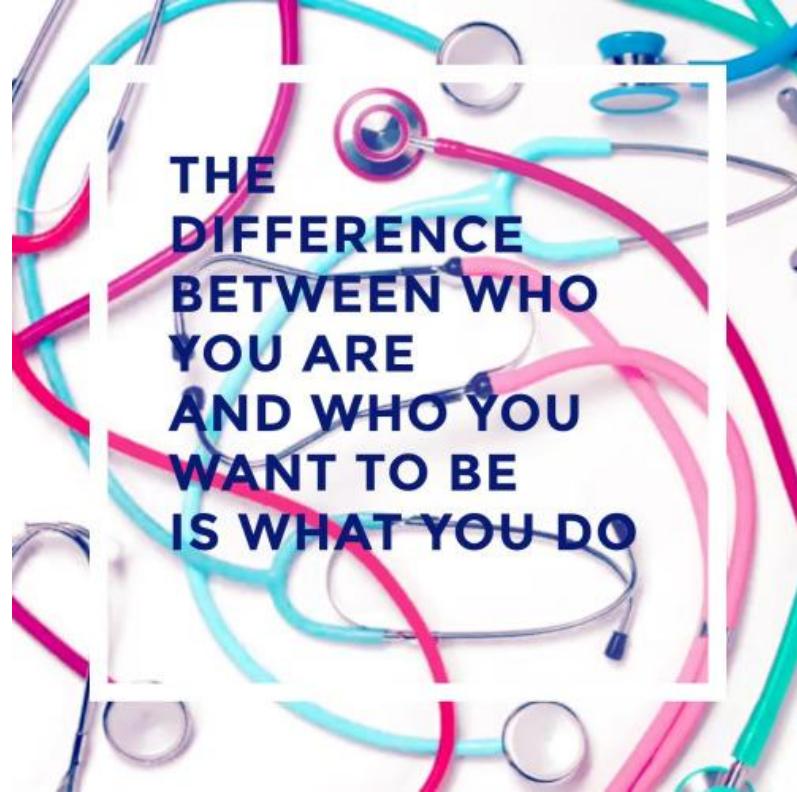
Q8- 75% of lymph from the breast drains into the ...?

- A. Cervical lymph nodes
- B. Axillary lymph nodes.
- C. Subdiaphragmatic lymph nodes.

THANK YOU FOR CHECKING OUR WORK
GOOD LUCK DOCTORS

Key Answers:

- 1-B
- 2-C
- 3-C
- 4-B
- 5-D
- 6-C
- 7-D
- 8-B



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