

LYMPHATIC DRAINAGE

PART 1: LYMPHATIC DRAINAGE OF THE ABDOMEN

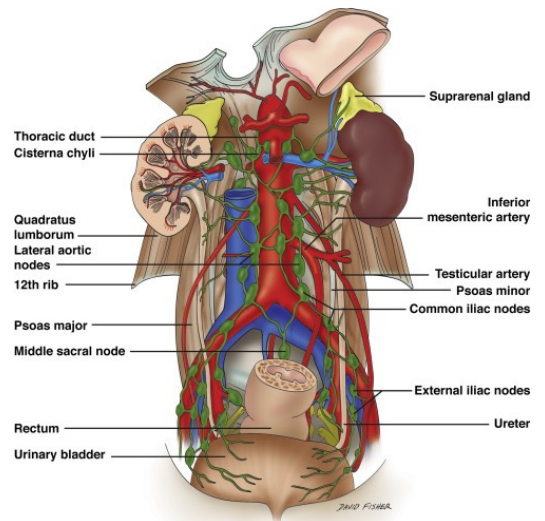
1 Anterior Abdominal Wall

A. Superficial Lymphatics

- Above the umbilicus → Axillary lymph nodes
- Below the umbilicus → Superficial inguinal lymph nodes

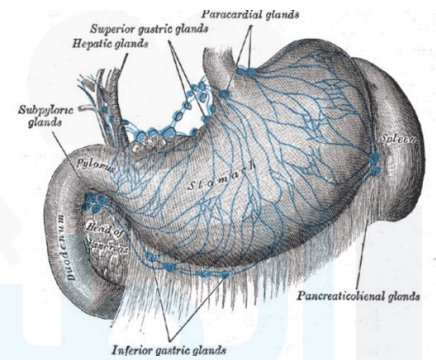
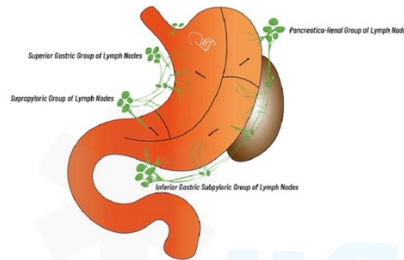
B. Deep Lymphatics

- Above the umbilicus → Parasternal lymph nodes
- Below the umbilicus → External iliac lymph nodes



2 Lymph Drainage of the Stomach

- Lymph vessels follow arteries into:
- Left gastric nodes
- Right gastric nodes
- Left gastroepiploic nodes
- Right gastroepiploic nodes
- Short gastric nodes
- 🗝️ Final drainage:



➤ All lymph → Celiac lymph nodes (around root of celiac artery) posterior abdominal wall

3 Lymph Drainage of the Duodenum

🗝️ تقسيم مهم

Upper Part

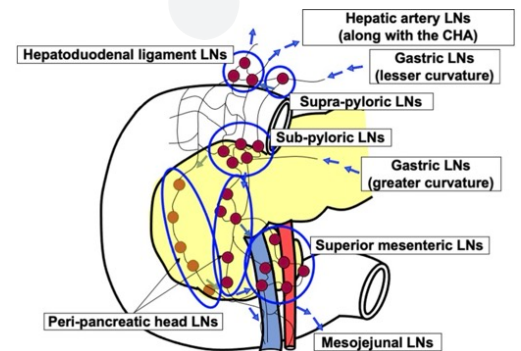
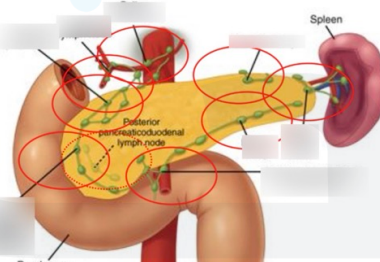
- Drains → Hepatic lymph nodes

Lower Part

- Drains → Superior mesenteric lymph nodes

Pathways:

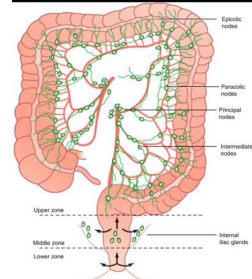
- Upward pathway:
- Pancreaticoduodenal nodes → Gastrooduodenal nodes → Celiac nodes
- Downward pathway:
- Pancreaticoduodenal nodes → Superior mesenteric nodes



4 Lymph Drainage of Jejunum & Ileum

Mesenteric lymph nodes arranged into 3 groups:

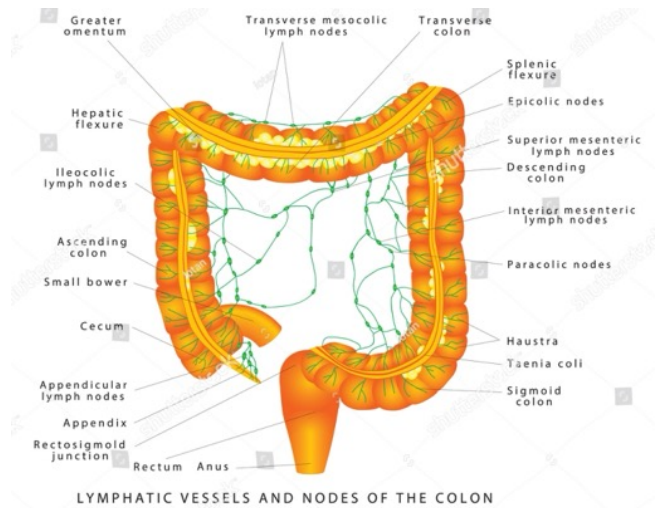
1. Small, numerous nodes → close to intestine
2. Larger, fewer nodes → along jejunal & ileal vessels
3. Larger, fewer nodes → along superior mesenteric vessels



5 Lymph Drainage of the Colon

Colic lymph nodes (4 groups):

1. **Epicolic nodes** → on wall of colon
2. **Paracolic nodes** → along borders of colon
3. **Intermediate nodes** → along branches of SMA & IMA
4. **Terminal nodes** → along main SMA & IMA

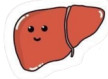


LYMPHATIC VESSELS AND NODES OF THE COLON

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6 Lymph Drainage of the Liver



Important fact ⚠️

- Liver produces 1/3 to 1/2 of total body lymph

A. General Drainage

- Lymph → Nodes at porta hepatis
- Efferents → Celiac nodes

B. Superficial Lymphatics

Drain entire liver surface → end in:

- Nodes around terminal IVC
- Hepatic lymph nodes (along hepatic artery)
- Para-cardiac group (lower esophagus)
- Celiac lymph nodes

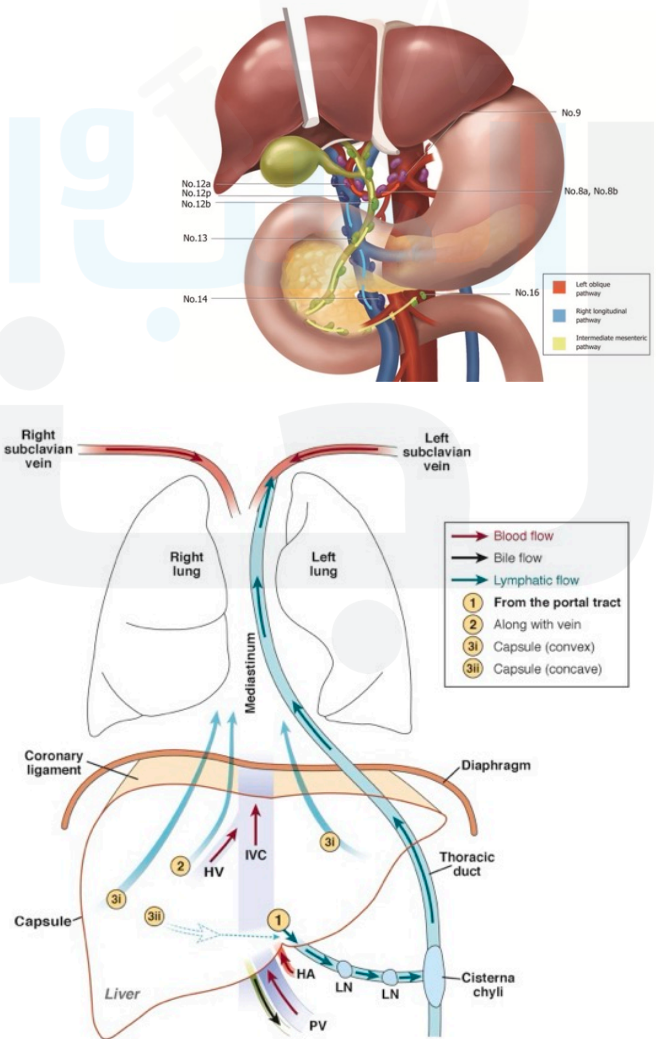
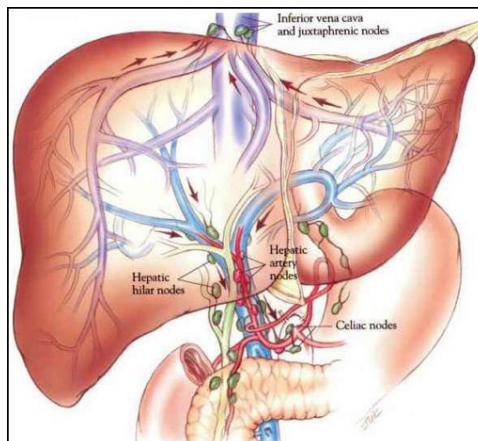
C. Deep Lymphatics

1. Ascending trunk

- Ends → Nodes around IVC

2. Descending trunk

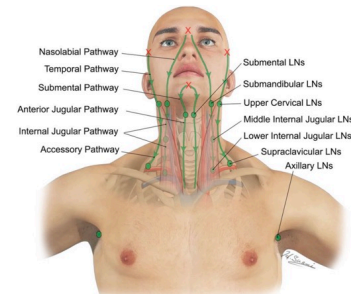
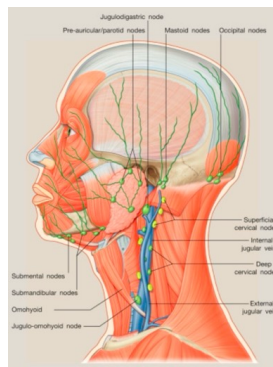
- Ends → Hepatic lymph nodes



PART 2: LYMPHATIC DRAINAGE OF HEAD & NECK

1 General Rule

- ✓ All lymph → Deep cervical lymph nodes
- They receive:**
- From other lymph node groups
- Directly from organs



2 Final Drainage

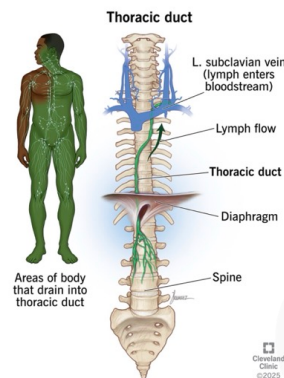
- Jugular trunk forms from deep cervical nodes

◆ Left side:

◆ Right side:

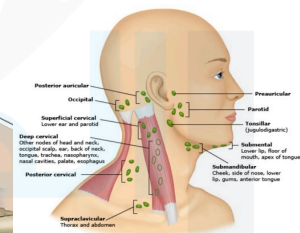
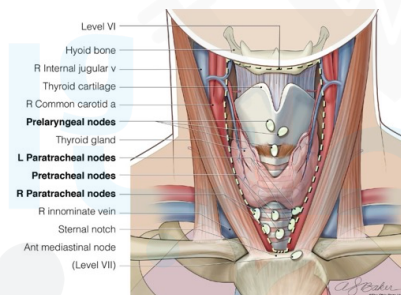
→ Thoracic duct

→ Right lymphatic duct



3 Termination

- Both ducts empty into:
- Junction of **subclavian + internal jugular veins**
- OR **directly into either vein**



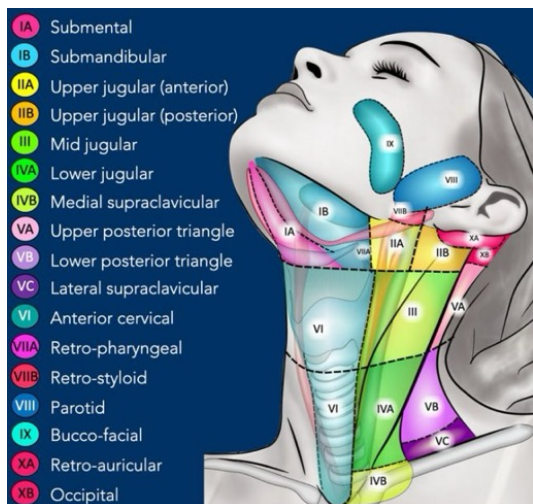
4 Superficial Lymph Node Ring (Horizontal Band)

Located at craniocervical junction

👉 Clinically palpable when enlarged

Additional:

- Anterior cervical nodes**
- Along **anterior jugular veins**
- One may lie in suprasternal space



Groups:

- Submental nodes**
 - Midline, below chin (submental triangle)
- Submandibular nodes**
 - In digastric triangle
 - Related to submandibular gland
- Preauricular nodes**
 - Around parotid (superficial, deep, within gland)
- Mandibular node**
 - At crossing of facial vessels with mandible
- Buccal node**
 - On buccinator muscle, lat. wall
- Mastoid (postauricular) nodes**
 - On mastoid process
- Occipital nodes**
 - Apex of posterior triangle, two or three
- Superficial cervical nodes**
 - Along **external jugular vein**, superficial surface of the sternocleidomastoid,
 - Drain:
 - Auricle lobule
 - Floor of External acoustic meatus floor
 - skin of Lower parotid region
 - Lateral neck skin

5 Deep Cervical Lymph Nodes

Divided into:

A. Midline Group

Located deep to investing fascia:

- **Infrahyoid nodes** → on thyrohyoid membrane
- **Prelaryngeal nodes** → on cricothyroid membrane
- **Pretracheal nodes** → on trachea

👉 Drain:

- **Anterior cervical nodes**
- Larynx
- Trachea
- Thyroid

- **Paratracheal nodes**

- Along trachea & esophagus
- Receive from:
- **Pretracheal nodes**
- **Trachea & esophagus**

Retropharyngeal nodes

• posterior to the pharynx and anterior to the prevertebral fascia

- Drain:
- Pharynx
- Soft palate
- Posterior hard palate
- Nose
- Cervical vertebrae

⚠️ Clinical:

- Enlargement → **Dysphagia**

B. Lateral Deep Cervical Nodes (Main Group)

◆ Upper Deep Cervical Nodes

- Along upper **internal jugular vein**
- Deep to SCM

★ Important:

- Jugulo-digastric node
- Between posterior belly digastric muscle & **IJV**
- Drains → Tongue

◆ Lower Deep Cervical Nodes

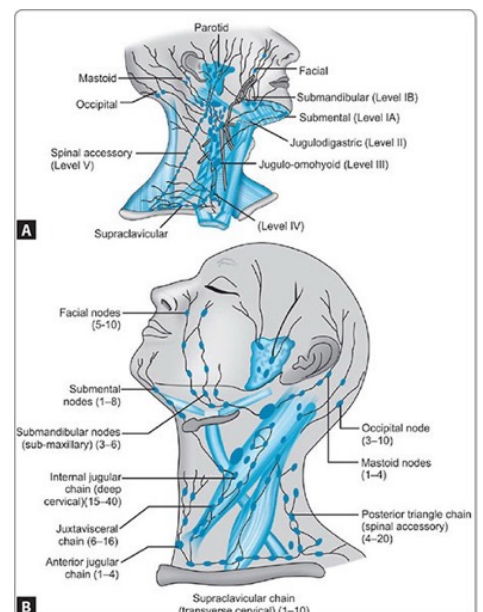
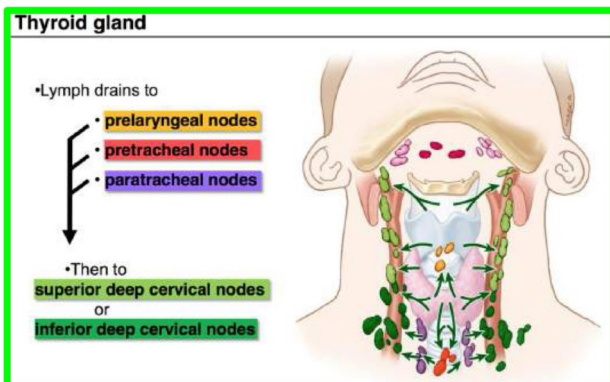
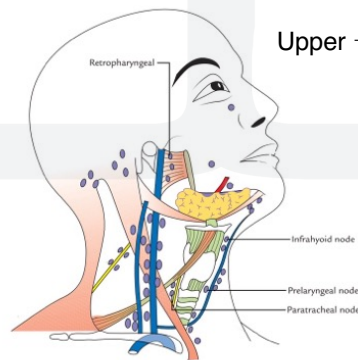
- Along lower **IJV**

★ Important:

- Jugulo-omohyoid node
- Between intermediate tendon of omohyoid & **IJV**
- Drains → Tongue

Flow:

Upper → Lower → Jugular trunk



🧠 Surgical Levels of Neck Lymph Nodes

◆ Level I

- Submental + Submandibular triangles

◆ Levels II–IV (Deep Cervical Chain)

◆ Level II

- From base of skull → carotid bifurcation (hyoid bone)

◆ Level III

- From carotid bifurcation → intermediate tendon of omohyoid (cricoid cartilage)

◆ Level IV

- From intermediate tendon of omohyoid → clavicle
- Includes supraclavicular nodes

◆ Level V

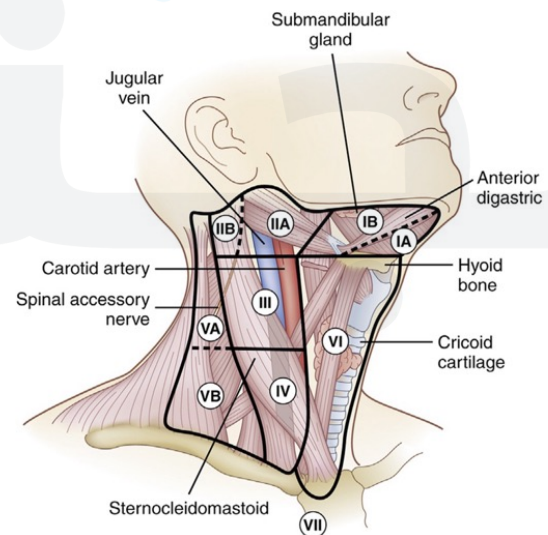
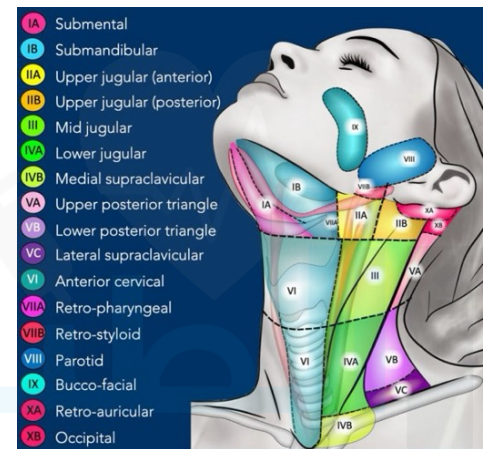
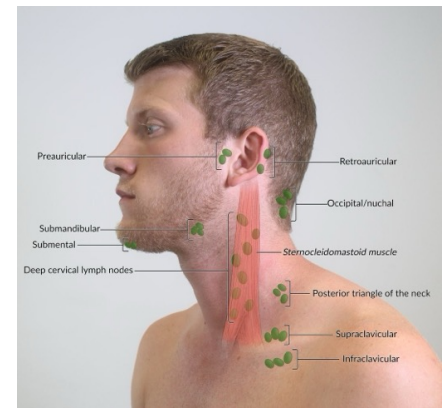
- Posterior triangle
- Related to accessory nerve

◆ Level VI

- Around midline visceral structures
- Includes:
- Pretracheal nodes
- Paratracheal nodes

◆ Level VII

- Superior mediastinum



● Surgical Procedures

1. Classical Radical Neck Dissection

Removes:

- Levels I–V
- 1• Sternoideomastoid muscle
- 2• Internal jugular vein
- 3• Accessory nerve

functional neck dissection or called

2. Modified Radical Neck Dissection

- Preserves some/all of 3 structures

3. Selective Neck Dissection

- Removes *some levels only* (I–V)

Lymphatic Drainage — Main Headings

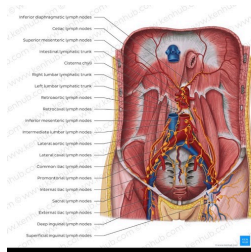
1. Anterior Abdominal Wall

A. Superficial lymphatics

- Above umbilicus
- Below umbilicus

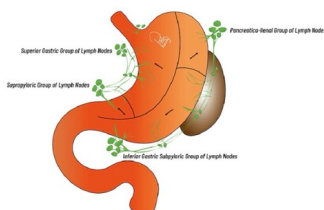
B. Deep lymphatics

- Above umbilicus
- Below umbilicus



2. Stomach

- Left gastric nodes
- Right gastric nodes
- Left gastroepiploic nodes
- Right gastroepiploic nodes
- Short gastric nodes
- → Celiac nodes

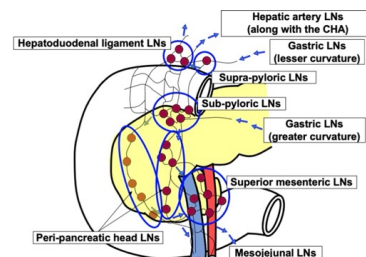


3. Duodenum

- Upper part
- Lower part

Pathways:

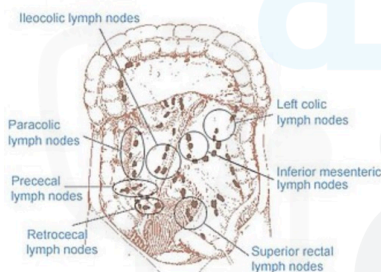
- Upward pathway
- Downward pathway



4. Jejunum & Ileum

Mesenteric lymph nodes (3 groups):

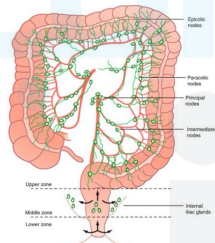
- Group 1
- Group 2
- Group 3



5. Colon

Colic lymph nodes (4 groups):

- Epicolic
- Paracolic
- Intermediate
- Terminal

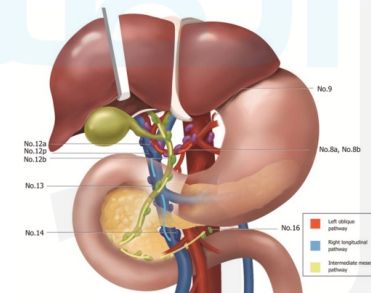


6. Liver

A. Superficial lymphatics

B. Deep lymphatics

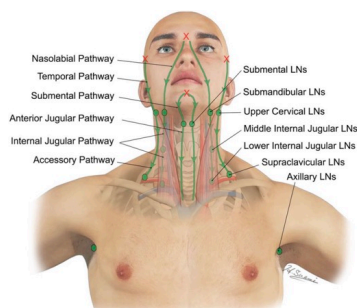
- Ascending trunk
- Descending trunk



Head & Neck Lymph Drainage

7. General Organization

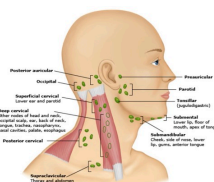
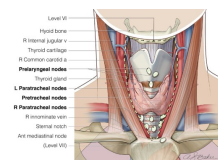
- → Deep cervical nodes
- → Jugular trunk
- → Thoracic duct / Right lymphatic duct



8. Superficial Lymph Node Ring (Horizontal Band)

Groups:

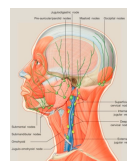
1. Submental
2. Submandibular
3. Preauricular
4. Mandibular
5. Buccal
6. Mastoid (postauricular)
7. Occipital
8. Superficial cervical
9. Anterior cervical



9. Deep Cervical Lymph Nodes

A. Midline group

- Infrahyoid
- Prelaryngeal
- Pretracheal
- Paratracheal
- Retropharyngeal



B. Lateral group

- Upper deep cervical
- Lower deep cervical

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