MEDICAL EDUCATION RESOURCE

FAQs,MCQs and Viva Voce

Frequently Asked Questions — Trachea, Oesophagus, and Thoracic Duct

1. What is the extent of the trachea?

It extends from the **lower border of the cricoid cartilage (C6)** to the level of the **sternal angle (T4/T5)**, where it divides into right and left main bronchi.

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2. How many tracheal rings are present?

There are **16–20 C-shaped hyaline cartilaginous rings**, open posteriorly where the trachealis muscle bridges the gap.

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3. Why is the right bronchus more prone to foreign body entry?

Because the **right main bronchus** is **shorter, wider, and more vertical** than the left, making it a direct continuation of the trachea.

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4. What is the carina?

It is a **ridge of cartilage** at the **tracheal bifurcation**. It is extremely **sensitive** and initiates the **cough reflex** when irritated.

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5. What is the epithelial lining of the trachea?

The trachea is lined by **pseudostratified ciliated columnar epithelium** with **goblet cells**, responsible for mucociliary clearance.

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6. What are the natural constrictions of the oesophagus?

1. At the **cricoid cartilage (C6)**.
2. Where it is **crossed by the aortic arch (T4)**.

3. Where it **passes through the diaphragm (T10)**.

These constrictions are important for **endoscopy** and **foreign body impaction**.

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7. What is the histological lining of the oesophagus?

It is lined by **stratified squamous non-keratinized epithelium** that protects it from mechanical injury.

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8. What type of muscle is present in the oesophagus?

- **Upper third:** Striated (voluntary) muscle.
- **Middle third:** Mixed muscle.
- **Lower third:** Smooth (involuntary) muscle.

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9. What is Achalasia cardia?

It is a condition in which the **lower oesophageal sphincter fails to relax**, causing difficulty in swallowing and dilatation of the upper oesophagus.

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10. What is the venous drainage of the oesophagus?

Venous blood drains into the **azygos vein (systemic)** and **left gastric vein (portal)**, forming a **porto-systemic anastomosis**.

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11. What is the importance of the porto-systemic anastomosis in the oesophagus?

In **portal hypertension**, the veins dilate to form **oesophageal varices**, which may rupture and cause **haematemesis**.

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12. What is the level of the oesophageal opening in the diaphragm?

At the level of the **T10 vertebra**.

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13. What is the nerve supply of the oesophagus?

- **Parasympathetic:** Vagus nerve (forms the oesophageal plexus).
- **Sympathetic:** From the sympathetic trunk.

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14. What is the course of the thoracic duct?

It begins at the **cisterna chyli (T12)**, ascends through the **aortic opening**, passes **behind the oesophagus**, crosses to the **left at T5**, and opens into the **left venous angle**.

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15. What areas of the body does the thoracic duct drain?

It drains **lymph from the entire body below the diaphragm** and the **left half above it**, including the **left head, neck, thorax, and upper limb**.

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16. What are the major tributaries of the thoracic duct?

Left jugular, left subclavian, and left bronchomediastinal lymph trunks.

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17. What is Chylothorax?

It is the **accumulation of lymph (chyle) in the pleural cavity** due to **injury or rupture of the thoracic duct**, often following surgery or trauma.

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18. What are the relations of the thoracic duct in the posterior mediastinum?

- **Anteriorly:** Oesophagus and diaphragm.
- **Posteriorly:** Vertebral column.
- **Right side:** Azygos vein.
- **Left side:** Descending aorta.

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19. What is the significance of the left venous angle?

It is the **termination point of the thoracic duct**, where lymph rejoins the **venous circulation** via the **junction of the left internal jugular and subclavian veins**.

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20. What is Tracheoesophageal Fistula (TEF)?

A congenital condition where the **trachea and oesophagus remain abnormally connected**, leading to **coughing, choking, and cyanosis** in newborns during feeding.

Multiple Choice Questions (MCQs) — Trachea, Oesophagus, and Thoracic Duct

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1. The trachea begins at the level of which vertebra?

A. C4

B. C5

C. C6

D. T1

? **Answer:** C. C6

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2. The trachea divides into right and left bronchi at the level of:

A. T2

B. T4/T5

C. T6

D. T8

? **Answer:** B. T4/T5

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3. The trachea is lined by:

A. Stratified squamous epithelium

B. Transitional epithelium

C. Pseudostratified ciliated columnar epithelium

D. Cuboidal epithelium

? **Answer:** C. Pseudostratified ciliated columnar epithelium

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4. The trachea contains how many C-shaped cartilages?

A. 8–12

B. 12–15

C. 16–20

D. 25–30

? **Answer:** C. 16–20

5. The posterior wall of the trachea is formed by:

A. Fibroelastic tissue

B. Trachealis muscle

C. Cartilage

D. Elastic lamina

? **Answer:** B. Trachealis muscle

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6. The carina is located at:

A. The upper end of trachea

B. The lower end of trachea

C. Behind the aortic arch

D. In the neck

? **Answer:** B. The lower end of trachea

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7. Which bronchus is more vertical and wider?

A. Right

B. Left

C. Both equal

D. None

? **Answer:** A. Right

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8. The cough reflex is initiated from which part of trachea?

A. Upper end

B. Lower end (carina)

C. Posterior wall

D. Lateral wall

? **Answer:** B. Lower end (carina)

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9. The oesophagus extends from:

A. Pharynx to stomach

B. Larynx to duodenum

C. Trachea to stomach

D. Pharynx to duodenum

? **Answer:** A. Pharynx to

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10. The length of the oesophagus in adults is approximately:

A. 15 cm

B. 20 cm

C. 25 cm

D. 30 cm

? **Answer:** C. 25 cm

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11. The oesophagus passes through the diaphragm at:

A. T8

B. T9

C. T10

D. T12

? **Answer:** C. T10

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12. The epithelial lining of the oesophagus is:

A. Simple columnar

B. Stratified squamous non-keratinized

C. Transitional

D. Cuboidal

? **Answer:** B. Stratified squamous non-keratinized

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13. The muscle in the upper one-third of the oesophagus is:

A. Smooth

B. Striated (voluntary)

C. Mixed

D. None

? **Answer:** B. Striated (voluntary)

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14. The constrictions of the oesophagus are important in:

A. Voice production

B. Endoscopy

C. Tracheostomy

D. Heart auscultation

? **Answer:** B. Endoscopy

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15. The nerve supply of the oesophagus includes:

A. Only vagus

B. Only sympathetic trunk

C. Vagus and sympathetic trunks

D. Phrenic nerve

? **Answer:** C. Vagus and sympathetic trunks

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16. The lower oesophageal sphincter is controlled mainly by:

A. Somatic nerve

B. Sympathetic system

C. Parasympathetic system

D. None

? **Answer:** C. Parasympathetic system

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17. Achalasia cardia is due to failure of relaxation of:

A. Upper oesophageal sphincter

B. Middle oesophagus

C. Lower oesophageal sphincter

D. Pyloric sphincter

? **Answer:** C. Lower oesophageal sphincter

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18. The thoracic duct begins at:

A. T8

B. T10

C. T12

D. L2

? **Answer:** C. T12

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19. The thoracic duct terminates at the junction of:

A. Right subclavian and right internal jugular veins

B. Left subclavian and left internal jugular veins

C. Left subclavian and left external jugular veins

D. Right subclavian and right external jugular veins

? **Answer:** B. Left subclavian and left internal jugular veins

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20. The thoracic duct drains lymph from:

A. Entire body

B. Right upper limb only

C. Both lower limbs and left half of body above diaphragm

D. Left upper limb only

? **Answer:** C. Both lower limbs and left half of body above diaphragm

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21. The length of the thoracic duct is approximately:

A. 25 cm

B. 35 cm

C. 45 cm

D. 55 cm

? **Answer:** C. 45 cm

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22. The beaded appearance of the thoracic duct is due to:

A. Valves

B. Lymph nodes

C. Fat droplets

D. Muscular constrictions

? **Answer:** A. Valves

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23. Chylothorax results from injury to:

A. Azygos vein

B. Thoracic duct

C. Oesophagus

D. Lymph nodes

? **Answer:** B. Thoracic duct

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24. The thoracic duct crosses from right to left at the level of:

A. T3

B. T4

C. T5

D. T6

? **Answer:** C. T5

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25. The tributaries of the thoracic duct include all except:

A. Left jugular trunk

B. Left subclavian trunk

C. Right bronchomediastinal trunk

D. Left bronchomediastinal trunk

? **Answer:** C. Right bronchomediastinal trunk

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26. The thoracic duct passes through which opening of the diaphragm?

A. Caval

B. Aortic

C. Oesophageal

D. None

? **Answer:** B. Aortic

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27. The condition of dilated veins at the lower end of oesophagus is called:

A. Haemorrhoids

B. Oesophageal varices

C. Achalasia cardia

D. Diverticulosis

? **Answer:** B. Oesophageal varices

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28. The porto-systemic anastomosis at the lower end of oesophagus connects:

A. Azygos vein and left gastric vein

B. Portal vein and superior vena cava

C. Inferior vena cava and azygos vein

D. Right gastric and hepatic veins

? **Answer:** A. Azygos vein and left gastric vein

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29. The cisterna chyli lies at the level of:

A. T10

B. T12

C. L1/L2

D. L3

? **Answer:** C. L1/L2

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30. The oesophagus lies immediately behind which cardiac chamber?

A. Right atrium

B. Right ventricle

C. Left atrium

D. Left ventricle

? **Answer:** C. Left atrium

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31. The nerve responsible for cough reflex is:

A. Phrenic

B. Glossopharyngeal

C. Vagus

D. Accessory

? **Answer:** C. Vagus

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32. Tracheoesophageal fistula occurs due to:

A. Abnormal separation of trachea and oesophagus

B. Failure of tracheal ring formation

C. Failure of oesophageal recanalization

D. Diaphragmatic hernia

? **Answer:** A. Abnormal separation of trachea and oesophagus

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33. Which of the following passes through the aortic opening of the diaphragm?

A. Aorta, azygos vein, thoracic duct

B. Aorta, thoracic duct, vagus

C. Aorta, oesophagus, azygos vein

D. Aorta only

? **Answer:** A. Aorta, azygos vein, thoracic duct

34. The sensory innervation of tracheal mucosa is via:

A. Glossopharyngeal nerve

B. Vagus nerve

C. Sympathetic trunk

D. Phrenic nerve

? **Answer:** B. Vagus nerve

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35. The muscular coat of the oesophagus is organized into:

A. Outer circular and inner longitudinal layers

B. Outer longitudinal and inner circular layers

C. Random muscle fibres

D. Smooth fibres only

? **Answer:** B. Outer longitudinal and inner circular layers