

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.

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.

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.

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.

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.

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**.

7. What is the histological lining of the oesophagus?

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

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

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

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.

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**.

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**.

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

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

13. What is the nerve supply of the oesophagus?

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

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**.

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**.

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

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

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.

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.

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**.

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

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

- A. C4
- B. C5
- C. C6
- D. T1

? **Answer:** C. C6

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

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

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

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

7. Which bronchus is more vertical and wider?

- A. Right
- B. Left
- C. Both equal
- D. None

? Answer: A. Right

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)

9. The oesophagus extends from:

- A. Pharynx to stomach
- B. Larynx to duodenum
- C. Trachea to stomach
- D. Pharynx to duodenum

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

11. The oesophagus passes through the diaphragm at:

- A. T8
- B. T9
- C. T10
- D. T12

? **Answer:** C. T10

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

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)

14. The constrictions of the oesophagus are important in:

- A. Voice production
- B. Endoscopy
- C. Tracheostomy

D. Heart auscultation

? **Answer:** B. Endoscopy

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

16. The lower oesophageal sphincter is controlled mainly by:

- A. Somatic nerve
- B. Sympathetic system
- C. Parasympathetic system
- D. None

? **Answer:** C. Parasympathetic system

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

18. The thoracic duct begins at:

- A. T8
- B. T10
- C. T12
- D. L2

? **Answer:** C. T12

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

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

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

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

23. Chylothorax results from injury to:

- A. Azygos vein
- B. Thoracic duct
- C. Oesophagus
- D. Lymph nodes

? **Answer:** B. Thoracic duct

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

- A. T3

B. T4

C. T5

D. T6

? **Answer:** C. T5

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

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

A. Caval

B. Aortic

C. Oesophageal

D. None

? **Answer:** B. Aortic

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

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

29. The cisterna chyli lies at the level of:

- A. T10
- B. T12
- C. L1/L2
- D. L3

? Answer: C. L1/L2

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

31. The nerve responsible for cough reflex is:

- A. Phrenic
- B. Glossopharyngeal
- C. Vagus
- D. Accessory

? Answer: C. Vagus

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

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

- A. Aorta, azygous vein, thoracic duct
- B. Aorta, thoracic duct, vagus
- C. Aorta, oesophagus, azygous vein
- D. Aorta only

? Answer: A. Aorta, azygous 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

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