# What are the Esophageal Anatomy and Regions?

Worksheet

The esophagus comprises three regions: cervical (C6-T1), thoracic (T1-T11), and abdominal (T11-cardiac orifice). Constrictions occur at the pharyngoesophageal junction (16 cm), aortic arch (27 cm), and left main bronchus (27 cm). The upper esophageal sphincter (UES, pharyngeal constrictor) and lower esophageal sphincter (LES, gastroesophageal junction) regulate swallowing and reflux prevention.

## Questions

1. At which vertebral level does the esophagus pass through the diaphragm?

A) T8
B) T10
C) T12
D) L1

2. Which muscle forms the upper esophageal sphincter?

A) Esophageal muscularis propria
B) Pharyngeal constrictor (cricopharyngeus)
C) Diaphragm
D) Lower esophageal sphincter muscle

3. What is the name of the weak area at the pharyngoesophageal junction?

A) Z-line
B) Killian's dehiscence
C) Gastrocardiac notch
D) Cardiac orifice

4. Which thoracic structure creates a constriction at ~27 cm from the teeth?

A) Carina
B) Aortic arch and left main bronchus
C) Trachea
D) Right subclavian artery

5. How long is the entire esophagus and which vertebral levels does it span?

6. Name the three anatomical constrictions in the esophagus.

7. Why is the left main bronchus a concern for swallowed foreign bodies?

8. Define: What are the three regions of the esophagus?

9. Define: Where is the upper esophageal sphincter?

10. Define: What is the Z-line?

# Answer Key

1. B) T10 - The esophagus pierces the diaphragm at T10, entering the abdominal cavity to reach the stomach.

2. B) Pharyngeal constrictor (cricopharyngeus) - The cricopharyngeus (part of the pharyngeal constrictor) forms the UES; it is tonically contracted to prevent aspiration.

3. B) Killian's dehiscence - Killian's dehiscence is the weak posterior pharyngeal wall area where the esophagus begins (between inferior pharyngeal constrictor and cricopharyngeus).

4. B) Aortic arch and left main bronchus - Both the aortic arch and left main bronchus cross the esophagus at ~27 cm, creating a significant constriction.

5. The esophagus is ~25 cm long, extending from the pharynx (C6, pharyngoesophageal junction) to the stomach (T10 diaphragm level). Cervical (~5 cm), thoracic (~15 cm), abdominal (~2-3 cm).

6. 1) Pharyngoesophageal junction at Killian's dehiscence (16 cm from teeth). 2) Aortic arch crossing at ~27 cm. 3) Left main bronchus at ~27 cm. All are clinical landmarks for endoscopy and foreign body lodgment.

7. The esophagus narrows where the left main bronchus crosses dorsally (27 cm from teeth). Similarly, aspiration of gastric contents or food can involve the left bronchus if the esophageal barrier fails. Thoracic esophageal anatomy determines injury risk.

8. Cervical (C6-T1), thoracic (T1-T11), and abdominal (T11-T10 diaphragm). Total ~25 cm.

9. At C6 level, formed by the pharyngeal constrictor muscle (cricopharyngeus). Tonically contracted; prevents aspiration when swallowing is complete.

10. The junction between esophageal squamous epithelium and gastric columnar epithelium at the gastroesophageal junction (lower esophageal sphincter region).