

What is the Thoracic Cage?

Worksheet

The thoracic cage is the skeletal enclosure of the chest made of the sternum, 12 pairs of ribs, and 12 thoracic vertebrae; it protects the heart and lungs and assists breathing.

Questions

1. How many pairs of ribs are in the thoracic cage?

- A) 10
- B) 11
- C) 12
- D) 14

2. Which ribs are called 'floating ribs'?

- A) 1-7
- B) 8-10
- C) 11-12
- D) All 12

3. What connects true ribs to the sternum?

- A) Bone directly
- B) Costal cartilage
- C) Ligamentum nuchae
- D) Nothing

4. What is the main protective role of the thoracic cage?

- A) Protects the brain
- B) Protects the heart and lungs
- C) Protects the kidneys
- D) Protects the spinal cord only

5. A rib fracture is found on the 11th rib. Why does this rib move more freely under trauma than rib 3?

6. How many total ribs protect the thoracic cavity, and how are they classified?

7. During inhalation, how does the thoracic cage change shape?

8. Define: What bones form the thoracic cage?

9. Define: What are true ribs?

10. Define: What are floating ribs?

Answer Key

1. C) 12 - There are 12 pairs of ribs (24 total), numbered 1-12 from top to bottom.
2. C) 11-12 - Ribs 11 and 12 have no cartilage connection to the sternum at all, so they 'float'.
3. B) Costal cartilage - Each true rib (1-7) has its own costal cartilage linking it to the sternum.
4. B) Protects the heart and lungs - The thoracic cage forms a bony basket around the heart and lungs.
5. Rib 11 is a floating rib with no cartilage attachment to the sternum Rib 3 is a true rib anchored directly to the sternum via its own costal cartilage Without an anterior anchor, rib 11 has more free movement and can be displaced more easily under impact
6. 12 pairs of ribs = 24 ribs total Ribs 1-7 = true ribs (direct sternal attachment) Ribs 8-12 = false ribs, and within these, ribs 11-12 are floating ribs (no sternal attachment at all)
7. Intercostal muscles contract, pulling ribs upward and outward This increases the thoracic cavity's front-to-back and side-to-side diameter The larger cavity lowers internal pressure, drawing air into the lungs
8. The sternum, 12 pairs of ribs, and 12 thoracic vertebrae (T1-T12).
9. Ribs 1-7, which attach directly to the sternum via their own costal cartilage.
10. Ribs 11 and 12, which have no anterior attachment to the sternum at all.

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