

# Bones of the thorax, connections, motility of the ribs

The thorax is the area between the head and the abdomen. It is supported and protected by the ribcage, comprised of ribs and thoracic vertebrae. There are 12 pairs of ribs and thoracic vertebrae.

## Thoracic Vertebrae

Thoracic vertebrae have a heart-shaped body and a small vertebral foramen going through them. They have:-

- Two articulation facets (transverse costal facets)
- Four demi-facets (superior and inferior costal facets)

## Ribs

A typical rib has a head with articulation facets for vertebrae; separated by costal crest. A rib also has a neck. A rib's tubercle juts out posteriorly and the articular part of the rib is for the transverse processes. The non-articular part of the rib is for attachment to ligaments. The curved shaft of the rib has a costal groove on the inferior margin. There are 12 pairs of ribs, terminating anteriorly with the costal cartilage. The upper 7 ribs are known as 'true' ribs because they articulate with the sternum. The rest of the ribs are known as 'false' ribs. The 11th and 12th ribs are known as 'floating' ribs as they have no anterior connection.

## Connections

- **Costo-transverse:** head of rib to transverse process with ligaments
- **Costo-vertebral:** head of rib with vertebrae
- **Inter-chondral:** synovial joints between ribs 8 and 10
- **Manubrio-sternal:** synchondrosis
- **Sterno-costal:** first rib is fibro-cartilagenous and the rest are synovial joints

## Motility

In inspiration, the ribs move super-anteriorly. The anterior end is inferior to the posterior end so when the ribs elevate, the sternum also goes upwards and outwards. The middle of the shafts are inferior to the ends so when the ribs are elevated, the ribs move out laterally and superiorly, expanding the size of the ribcage.

## Links

## Bibliography

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- SNELL, Richard S. *Clinical Anatomy by Regions*. 8th Edition edition. 2004. ISBN 978-0-7817-6404-9.