

## Anatomy & Physiology: Muscles—Serratus Anterior.

### STRUCTURE.

- Origin: ribs 1-8 or ribs 1-9.
- Insertion: vertebral border and inferior angle of scapula.

### FUNCTION.

- Concentric action: scapular protraction/abduct scapula, elevation, depression, medial tilt, downward tilt, and upward rotation; elevates ribs when scapula is stabilized; "boxer's muscle" (horizontal arm movements, punching, pushing).
- Reverse mover action: retracts trunk at scapulocostal joint (ScC); depresses trunk at ScC; elevates trunk at ScC.
- Eccentric action: controls/restrains/slows scapular retraction, downward rotation, depression, elevation, lateral tilt, and upward tilt. Controls/restrains/slows protraction, elevation, and depression of the trunk.
- Isometric action: stabilization of the scapula and stabilization of the rib cage.
- Innervation: long thoracic nerve C5-C7.
- Arterial supply: dorsal scapular artery (branch of subclavian artery), lateral thoracic artery (branch of axillary artery), superior thoracic artery (branch of axillary artery).

### CLINICAL SIGNIFICANCE.



## References

Biel, A. (2015). *Trail guide to the body: A hands-on guide to locating muscles, bones and more.*

Cedars-Sinai. (2018). Vertebrae of the spine. Retrieved from <https://www.cedars-sinai.org/health-library/diseases-and-conditions/v/vertebrae-of-the-spine.html>

Clark, M., Lucett, S., Sutton, B. G., & National Academy of Sports Medicine. (2014). *NASM essentials of corrective exercise training.* Burlington, MA: Jones & Bartlett Learning.

Jenkins, G., & Tortora, G. J. (2012). *Anatomy and Physiology: From Science to Life, 3rd Edition International Stu.* John Wiley & Sons.

Muscolino, J. E. (2017). *The muscular system manual: The skeletal muscles of the human body.*