



RESPIRATORY MOVEMENTS

Thorax Respiration Movement

- 1) The curve of each successive rib is greater than the one above it
- 2) When ribs are "pulled" upward the thoracic diameter increases, increasing thorax volume and decreasing thorax pressure
- 3) Ribs 1 and 2 are less mobile than the others
 - a. They act as a unit with the manubrium
 - b. When this unit is raised the superior portion's diameter increases
 - c. Raising & fixing ribs 1 and 2 makes it easier to elevate greater the ribs below. This is an important feature in forced inspiration or in voluntary breathing.

Action of Major Thorax Respiration Muscle

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| 1) Quiet respiration
<u>Raise ribs</u>
External intercostals
(ribs 3-10) | <u>Lower ribs</u>
No muscle, passive |
| 2) Deep respiration
<u>Raise ribs</u>
External intercostals
Scalene
Sternocleidomastoids
Levator costarum muscles
Serratus posterior superior muscles | <u>Lower ribs</u>
No muscle, passive |
| 3) Forced respiration
<u>Raise ribs</u>
All muscles listed above
for deep respiration.
The levator scapulae,
trapezius and rhomboids
raise and fix the scapula
so that the pectoral muscles
and serratus anterior muscles
can raise ribs. (See Type II
Scapular Dysfunction.) | <u>Lower ribs</u>
Quadratus lumborum
Internal intercostals
Subcostals
Transverse thoracic
Serratus posterior
inferior muscles
Obliques
(When QL becomes restricted,
antagonistically all raising of ribs upon
inhalation is forced.) |