



Viktor Frankl
Breathwork
Life-Coaching Program
Week 5



5

The Anatomy of Breathing

Breathing Phase	Primary Muscles	Accessory/Forceful Muscles
Inspiration	Diaphragm , External Intercostals	sternocleidomastoid , scalenes , serratus anterior , pectoralis major and minor, serratus anterior, latissimus dorsi, trapezius, and iliocostalis cervicis
Expiration	(Passive relaxation)	Internal Intercostals , Abdominal Muscles , Transversus Thoracis , Subcostals

During human breathing, distinct sets of muscles are involved in inspiration (inhaling) and expiration (exhaling), and these can be further divided into primary and accessory muscles, especially during forceful breathing.

Inspiratory Muscle Mechanism

- Primary Inspiratory Muscles:
 - Diaphragm: The most important inspiratory muscle. When it contracts, it moves downward, increasing the vertical dimension of the thoracic cavity and drawing air into the lungs.
 - External Intercostals: These muscles lie between the ribs and, when contracted, elevate the ribs and sternum, expanding the thoracic cavity laterally and anteroposteriorly
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Primary muscles used in breathing:

- Diaphragm
- Intercostal muscles

Muscles of inspiration

Accessory

Sternocleidomastoid
(elevates sternum)

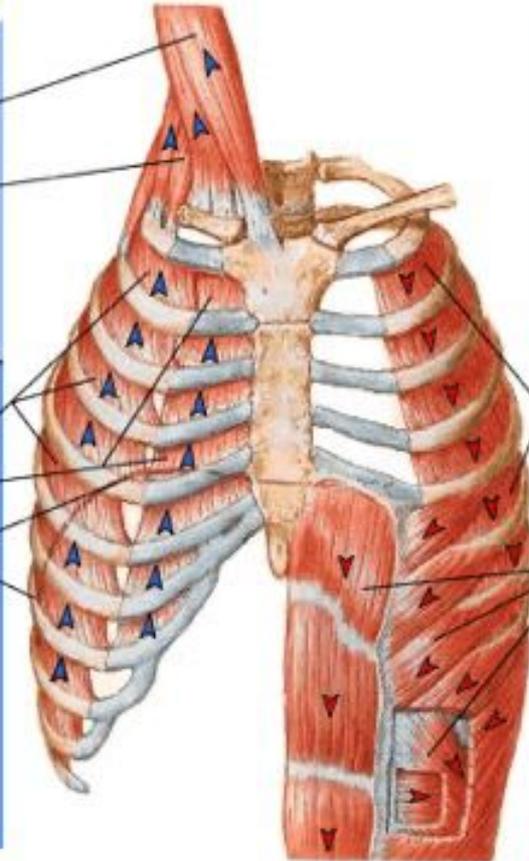
Scalenes Group
(elevate upper ribs)

Not shown:
Pectoralis minor

Principal

External intercostals
Interchondral part of
internal intercostals
(also elevates ribs)

Diaphragm
(dome descends, thus
increasing vertical
dimension of thoracic
cavity; also elevates
lower ribs)



Muscles of expiration

Quiet breathing

Expiration results from
passive, elastic recoil
of the lungs, rib cage
and diaphragm

Active breathing

Internal intercostals,
except interchondral
part (pull ribs down)

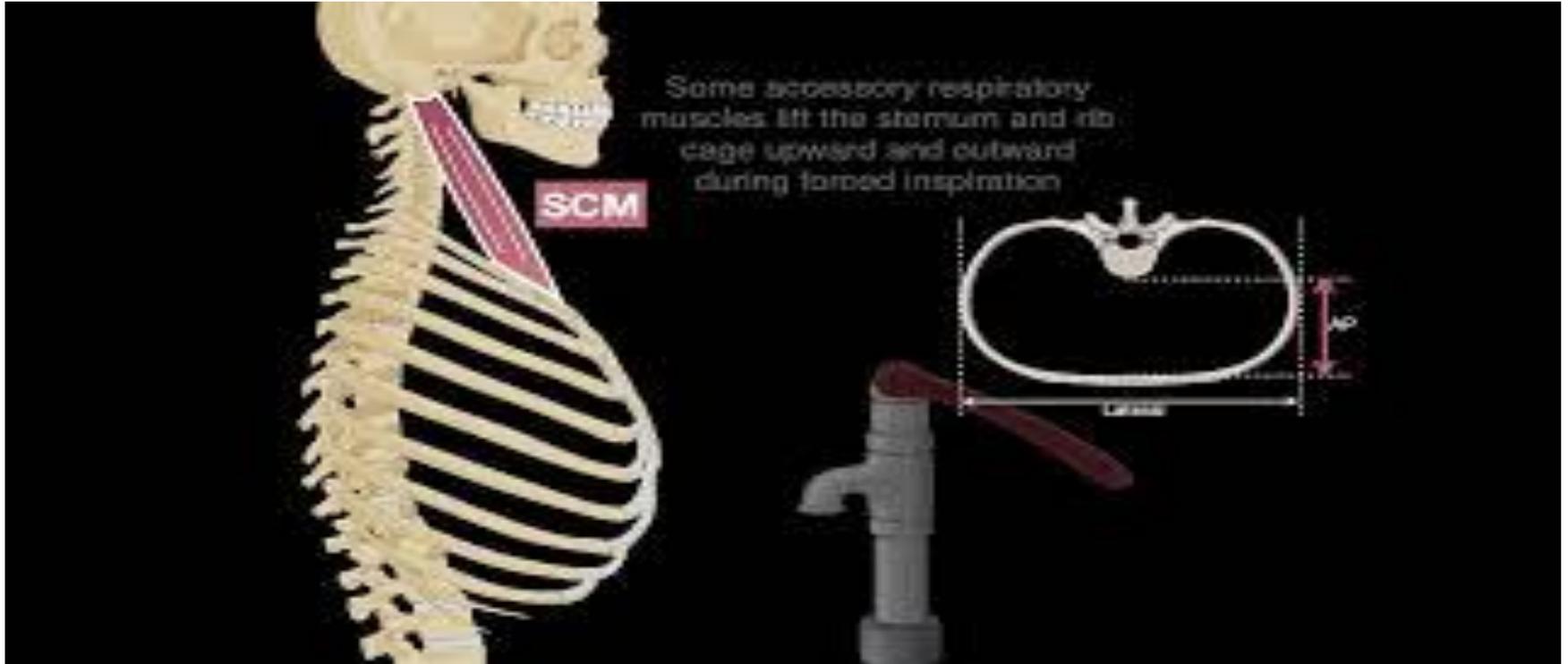
Abdominals
(pull ribs down,
compress abdominal
contents thus pushing
diaphragm up)

Note shown:
Quadratus lumborum
(pulls ribs down)

Primary Expiratory Mechanism:

Passive Process: Under normal (quiet) breathing, expiration is passive; it results from the relaxation of the diaphragm and external intercostals, along with the elastic recoil of lung tissue and the thoracic cage.

ACCESSORY MUSCLES OF RESPIRATION





Ciliated cell

Goblet cell
(produces mucus)

Respiratory System Overview



Allila
MEDICAL MEDIA

