#ideaworld

IDEA WORLD CONVENTION

FITNESS • NUTRITION • BUSINESS

Loaded Breathwork

PRESENTED BY

ViPR PRO®


ACCELERATE
STEPH CURRY, NBA
@COACHBRANDONPAYNE

WORKSHOP OBJECTIVES

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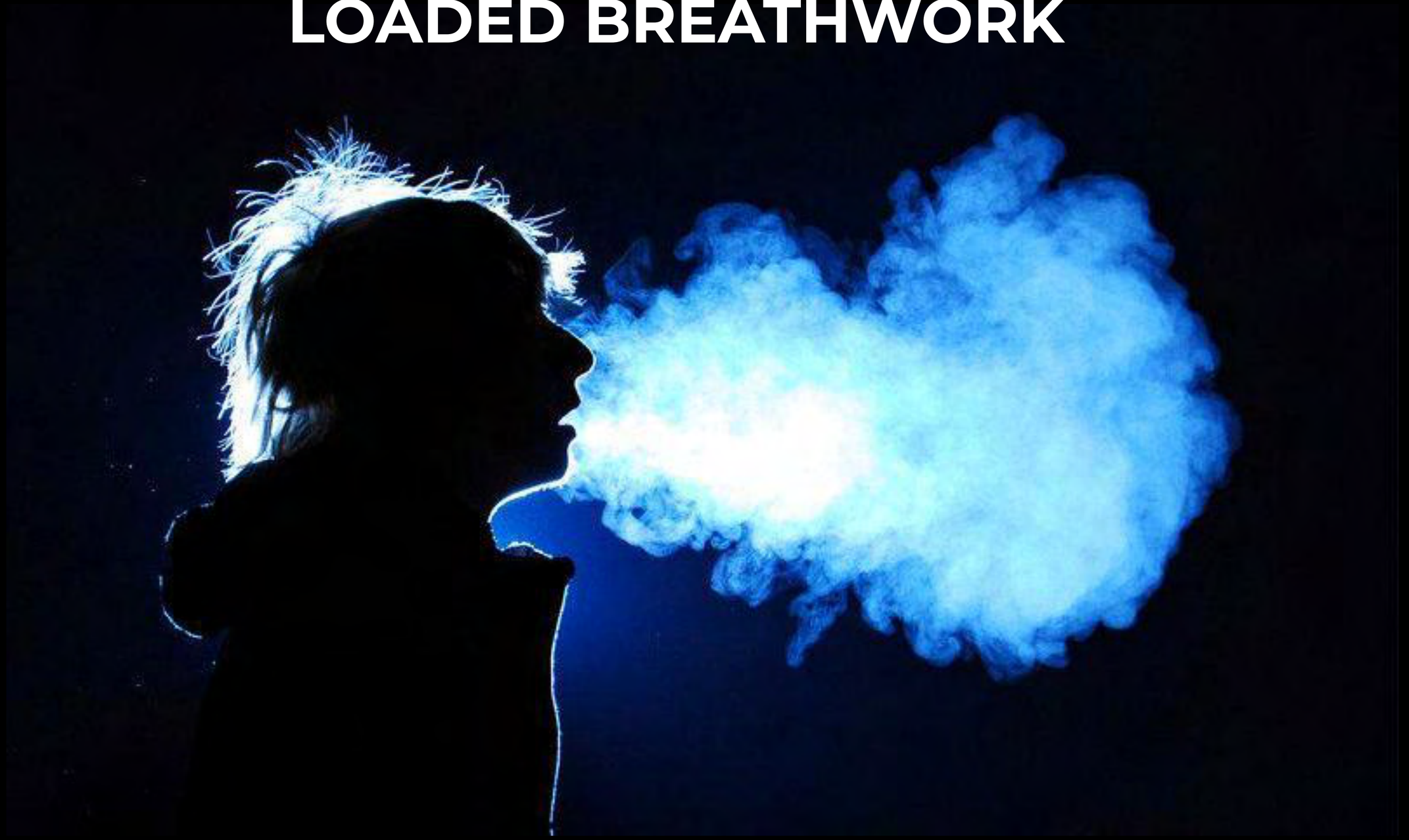
LOADED BREATHWORK



RESPIRATION

Exchange of O2 from environment for CO2 from the body's cells

RATE

APPROXIMATELY 23,000 TIMES/DAY

(both voluntary and involuntary)

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HEALTH
AND
HUMAN PERFORMANCE

LOSS OF ADAPTABILITY

↓

FUNCTIONAL IMPAIRMENT

↓

DEATH

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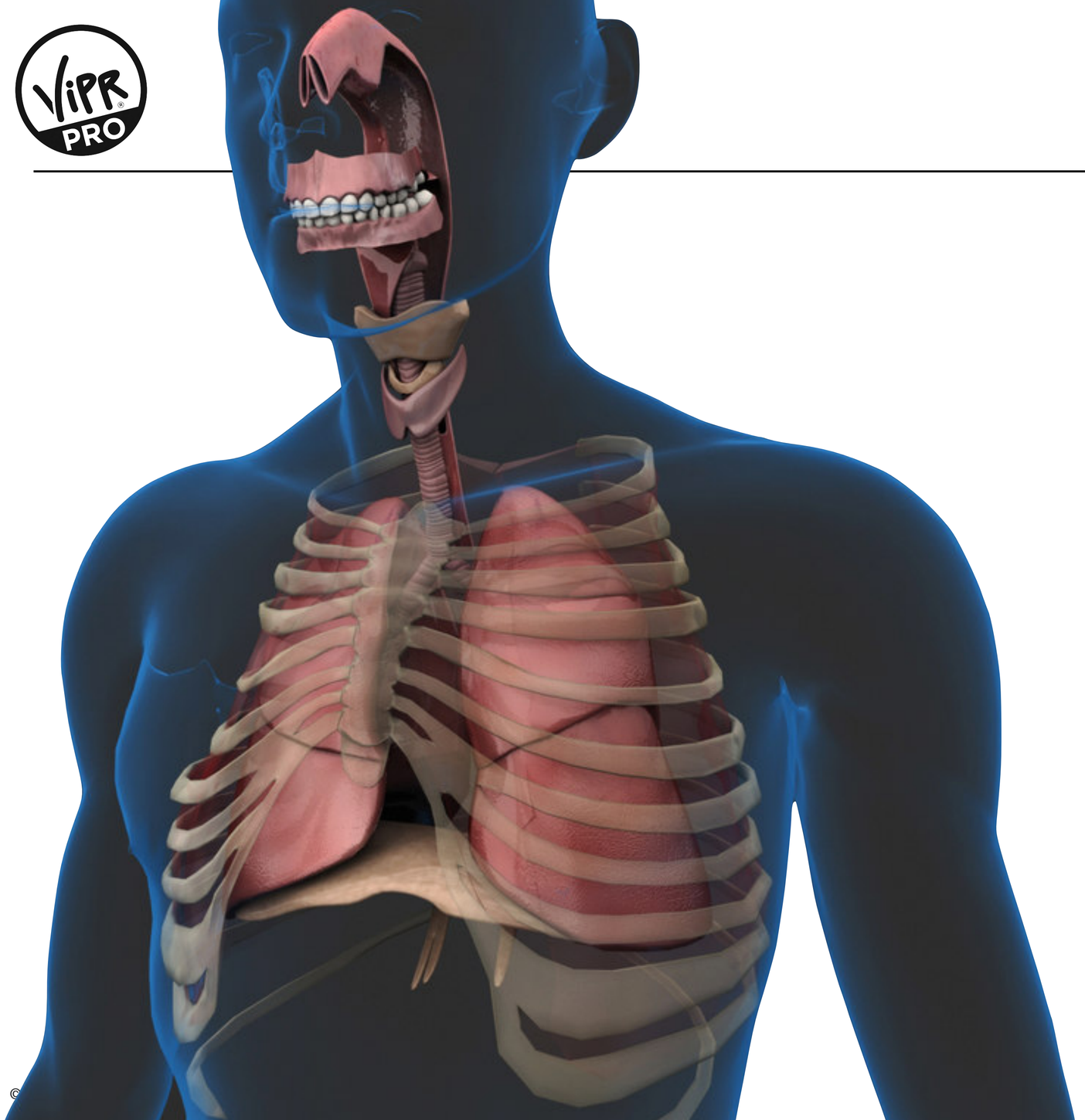

HEALTH
AND
HUMAN PERFORMANCE

MUST TAKE ADVANTAGE OF:

- Nerve
- Muscle
- Mechanics
- Gas Exchange
- voluntary / involuntary controls

NEED VARIABILITY OF BREATHING :

- valsalva
- belly
- forced
- percussive
- tempo
- weighted
- short/shallow
- etc ...

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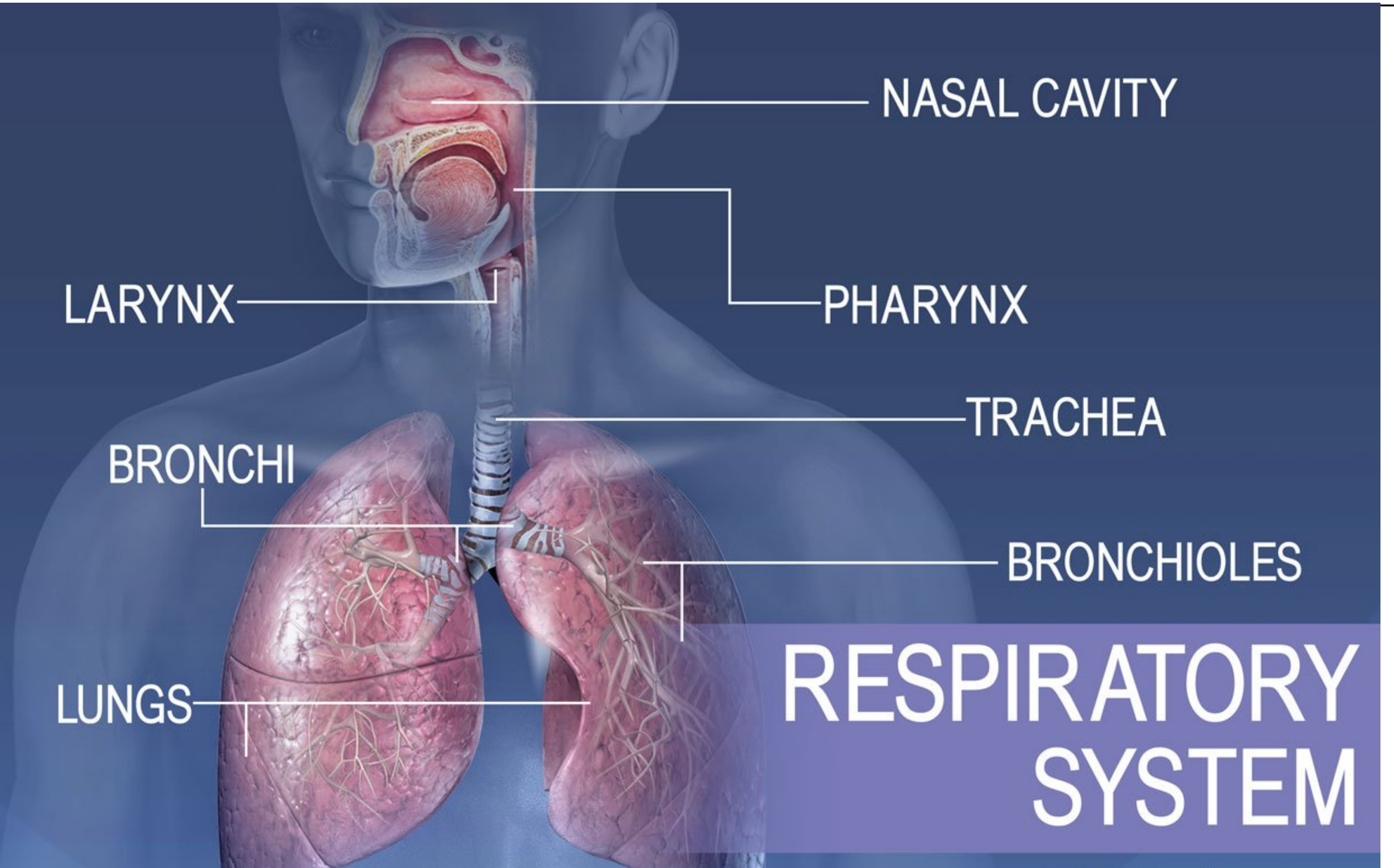
NASAL CAVITY
LARYNX
PHARYNX
TRACHEA
BRONCHI
BRONCHIOLES
LUNGS
RESPIRATORY SYSTEM

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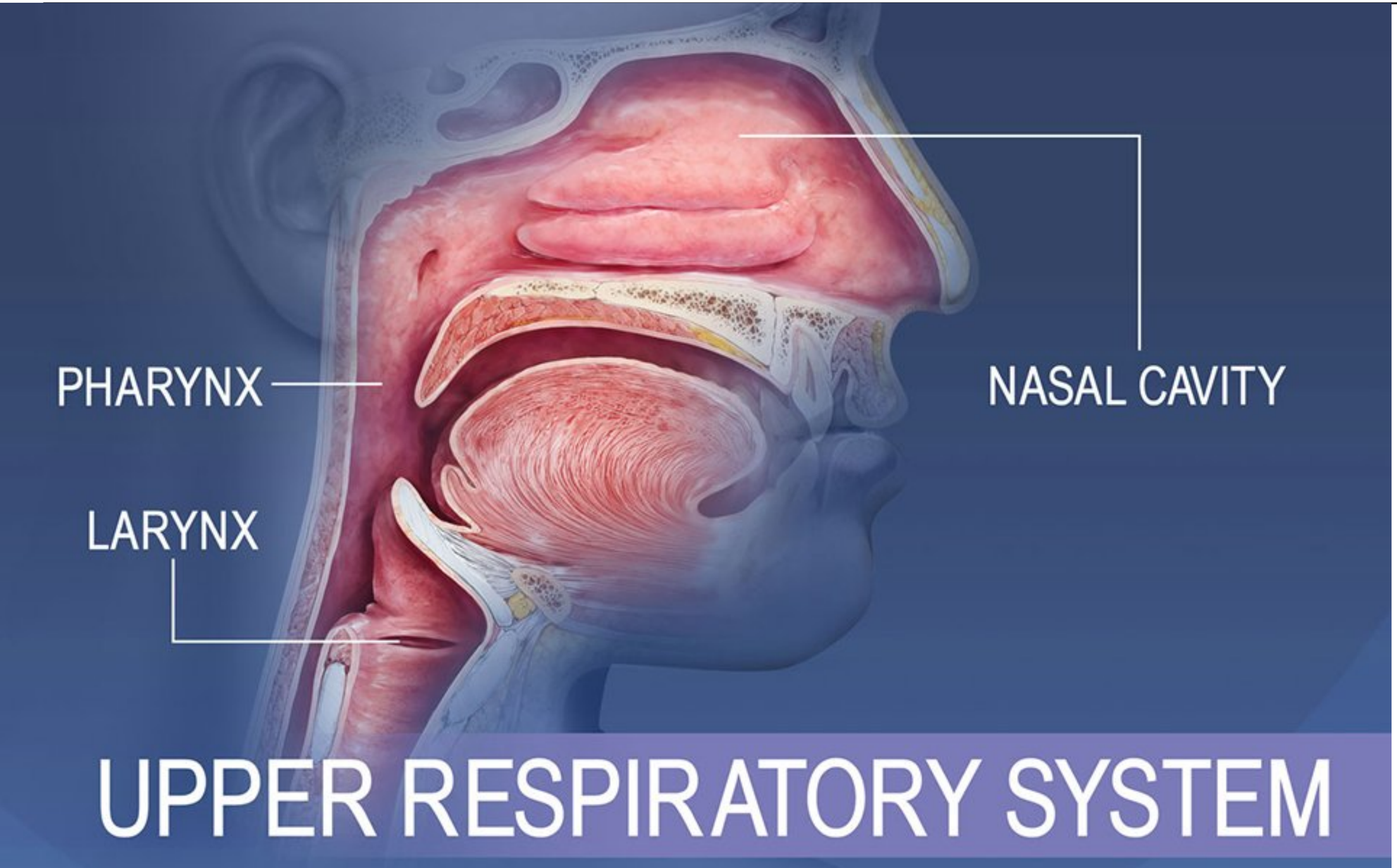

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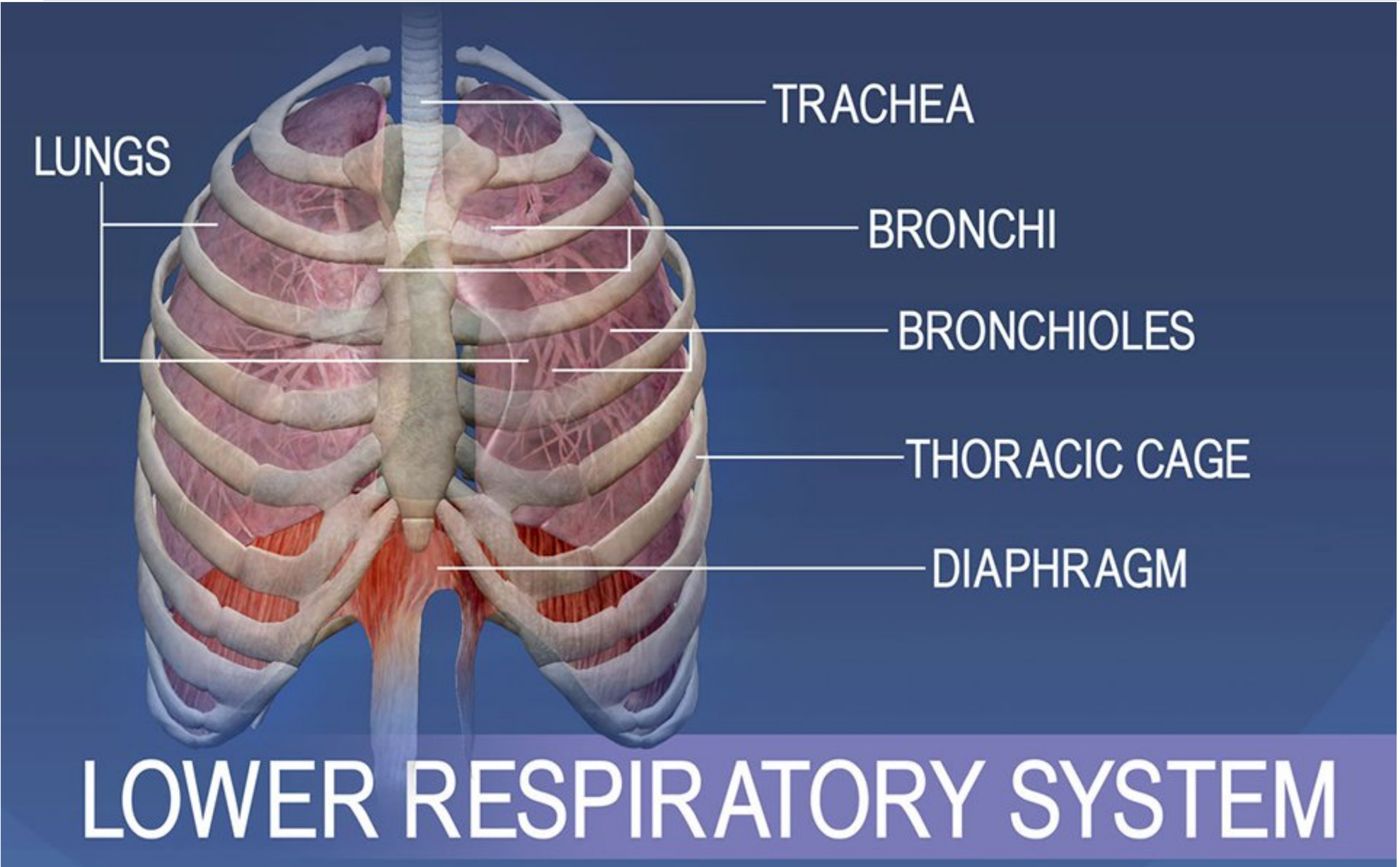
LUNGS
TRACHEA
BRONCHI
BRONCHIOLES
THORACIC CAGE
DIAPHRAGM
LOWER RESPIRATORY SYSTEM

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REDUNDANCIES

Nerves
Muscles
Mechanics
Gas Exchange
Voluntary/
Involuntary

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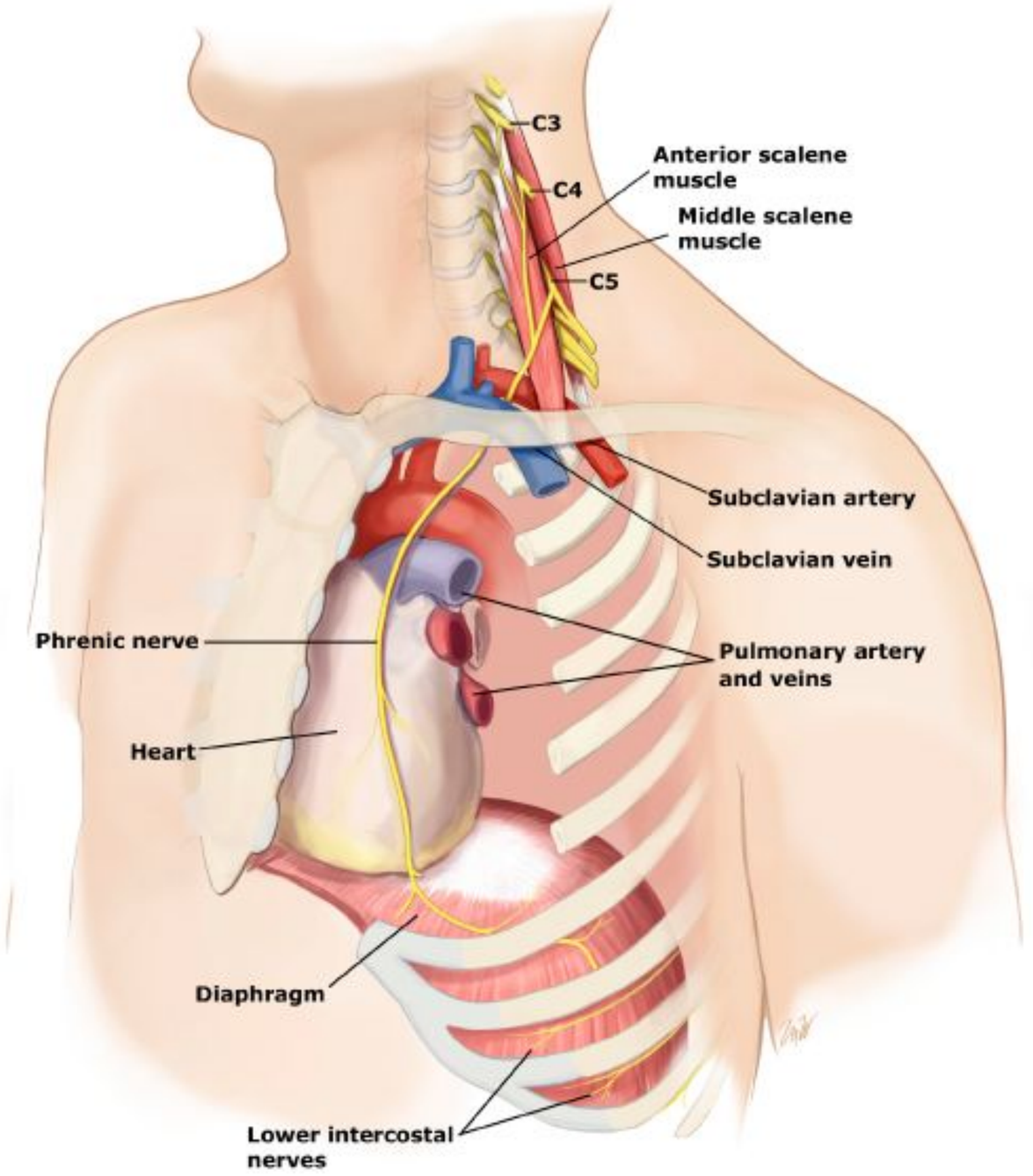

REDUNDANCIES

Nerves

Muscles

Mechanics

Gas Exchange

Voluntary/ Involuntary

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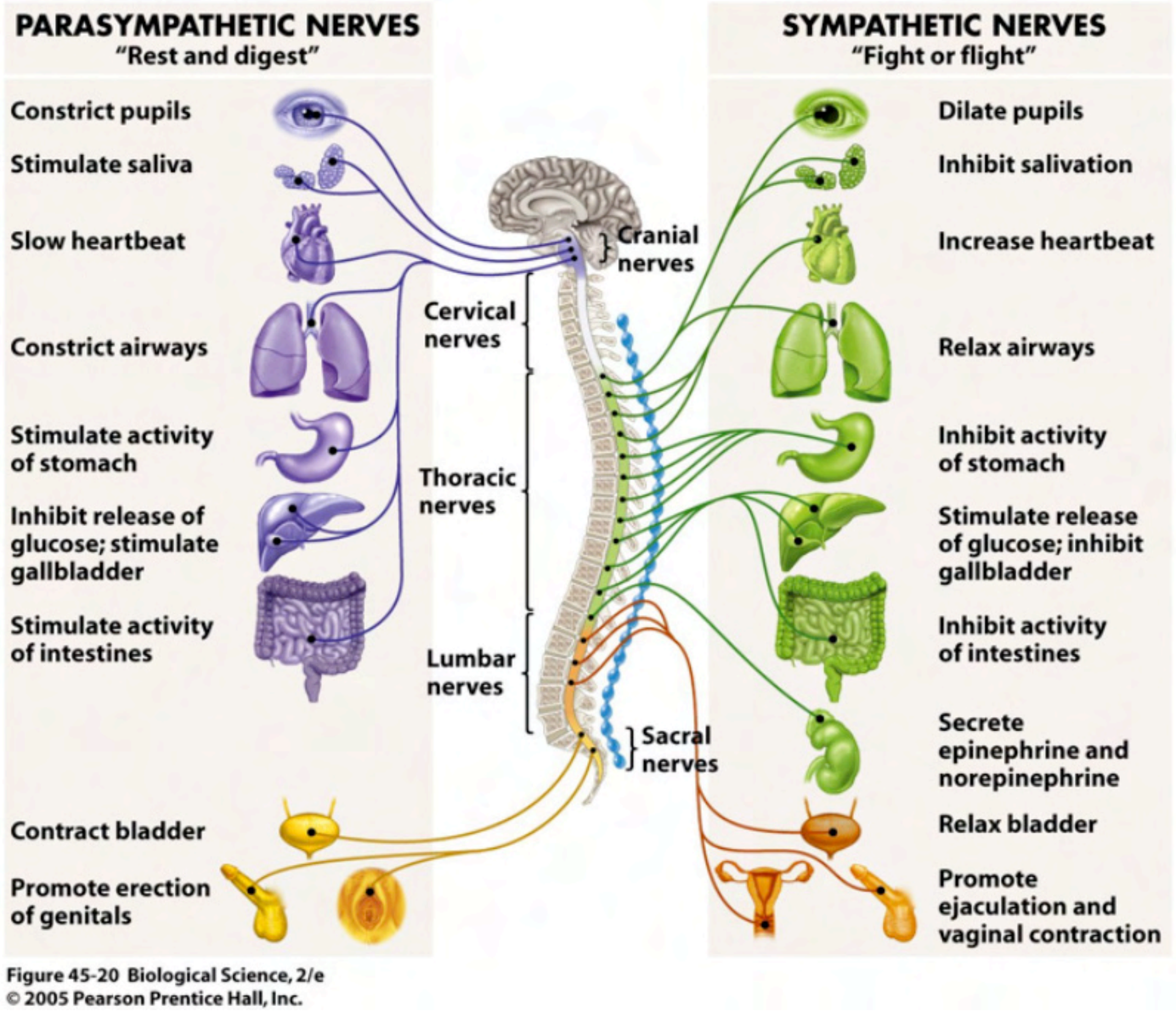

Figure 45-20 Biological Science, 2/e
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REDUNDANCIES

Nerves

Muscles

Mechanics

Gas Exchange

Voluntary/ Involuntary

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INSPIRATION

Muscles

1 - Respiratory Diaphragm

2 - Pectoralis Minor
3 - Pectoralis Major
4 - Serratus Anterior

Muscles which lift the ribs from the scapular girdle

5 - Levatores Costarum
6 - Transversopinalis

Muscles which lift the ribs away from the thoracic spine

7 - Serratus Posterior Superior

8 - Sternocleidomastoid

Muscles which lift the ribs from the head or neck

REDUNDANCIES
Nerves
Muscles
Mechanics
Gas Exchange
Voluntary/
Involuntary

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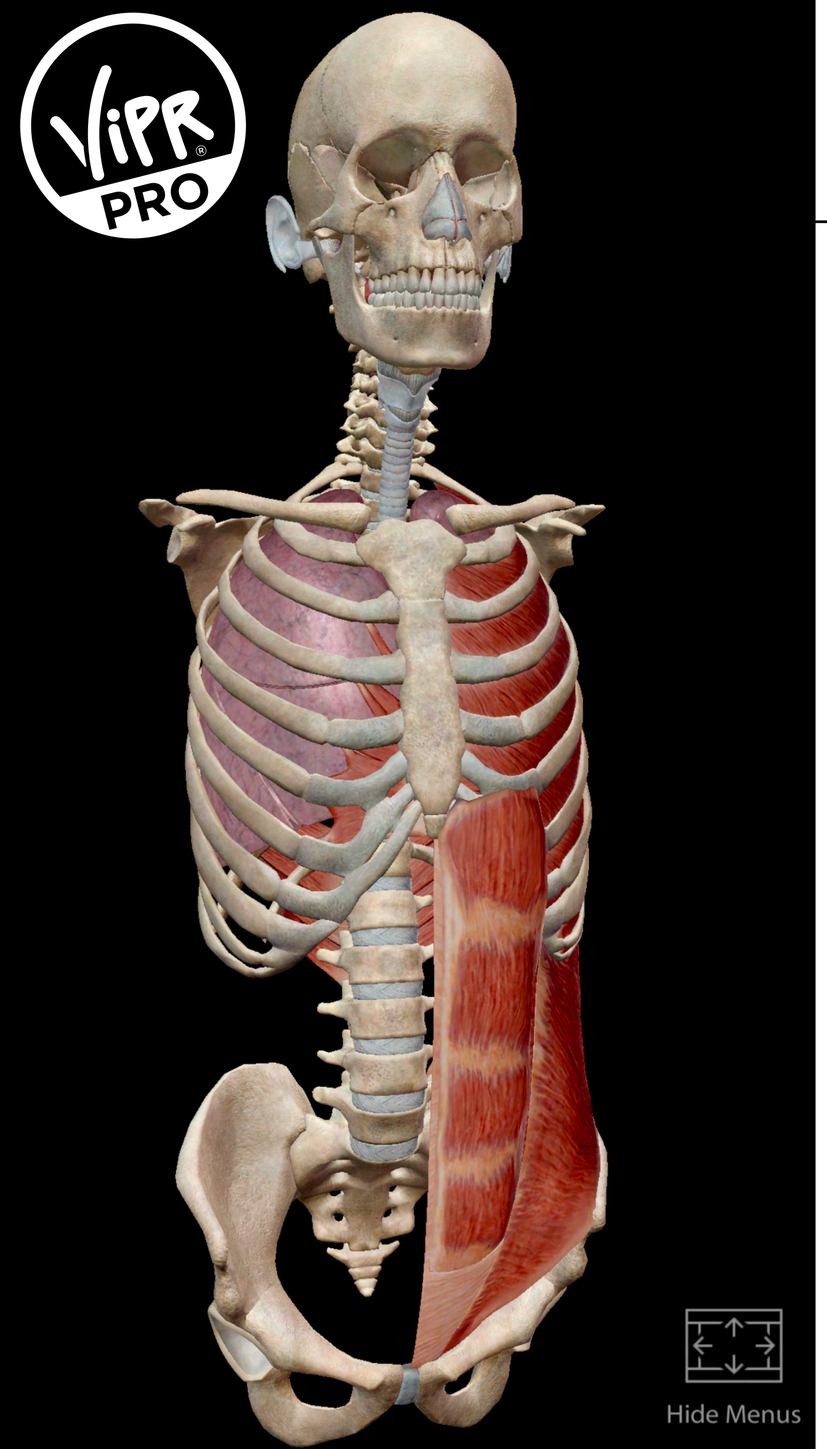

EXPIRATION

REDUNDANCIES
Nerves
Muscles
Mechanics
Gas Exchange
Voluntary/
Involuntary

1 - Abdominal Muscles

2 - Pelvic Diaphragm (floor)

3 - Transversus Thoracis
(at the inside of the rib cage)

4 - Quadratus Lumborum

5 - Serratus Posterior Inferior

Muscles that move the ribs

6 - Intercostals
(Internal / External)

Muscles with variable actions

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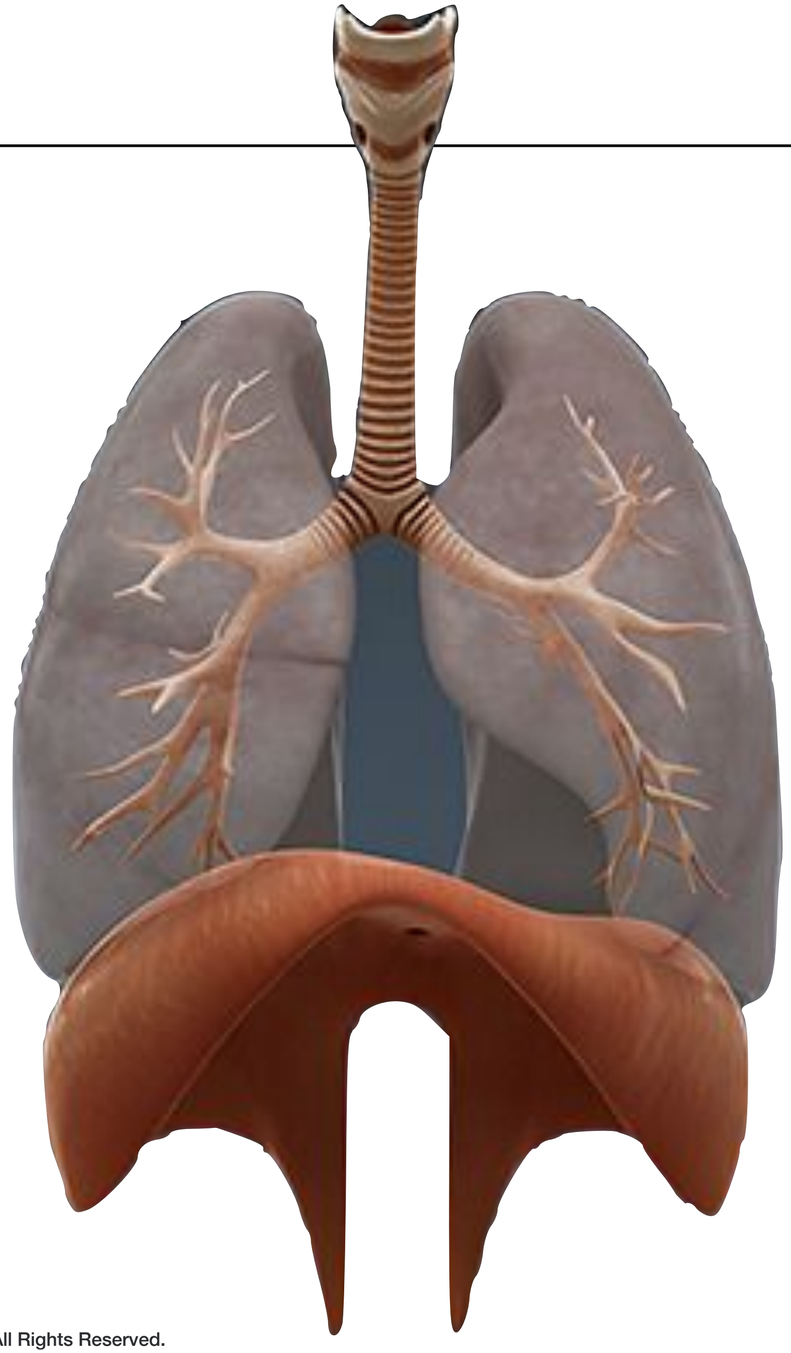

REDUNDANCIES

Nerves

Muscles

Mechanics

Gas Exchange

Voluntary/
Involuntary

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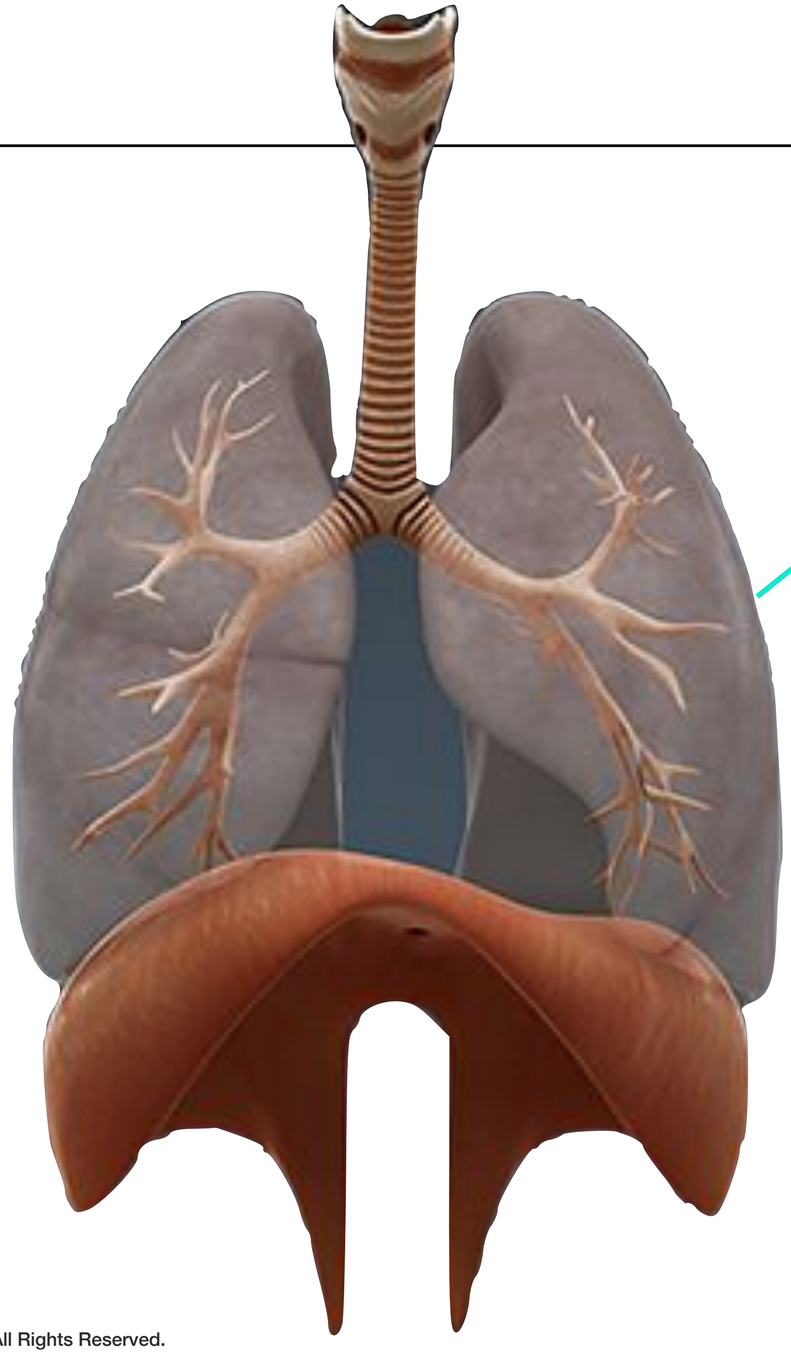


Spine

REDUNDANCIES

Nerves

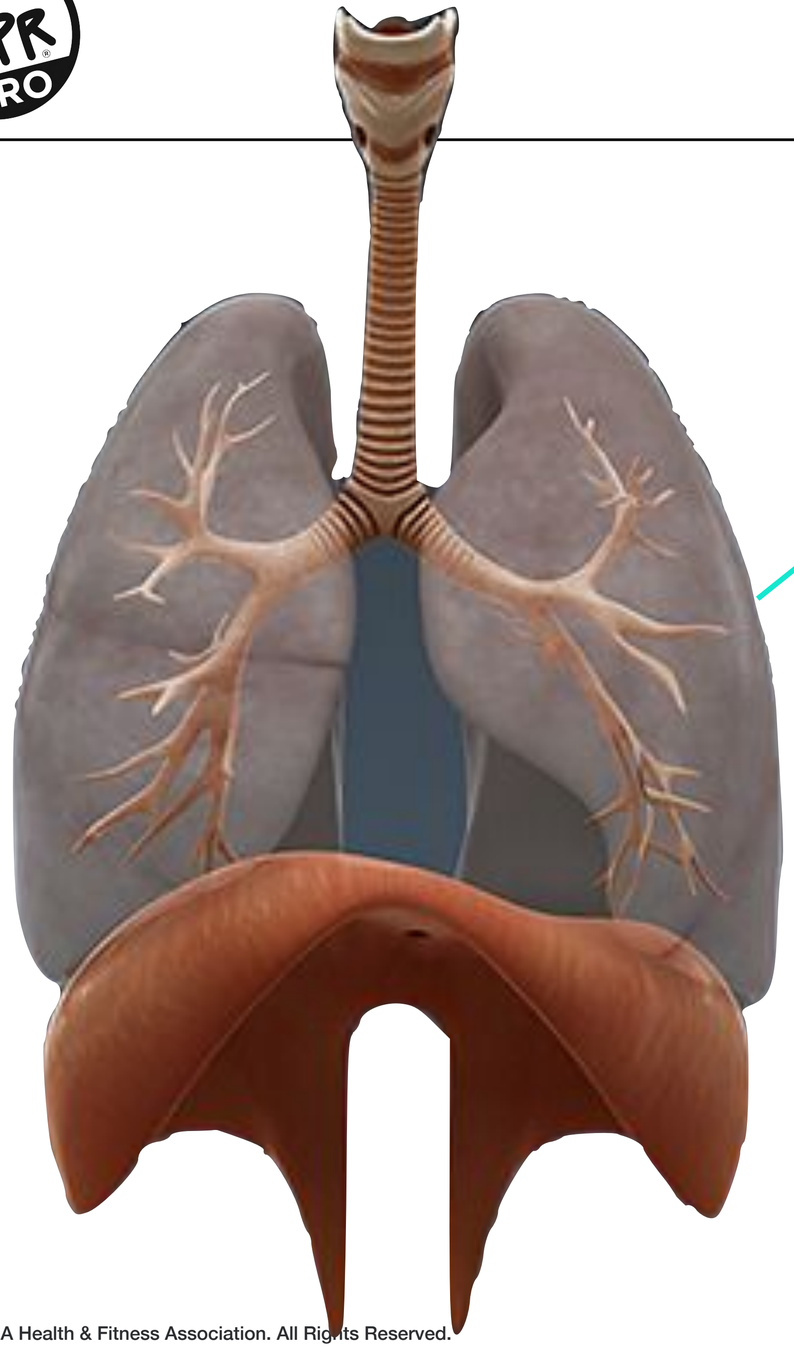
Muscles

Mechanics

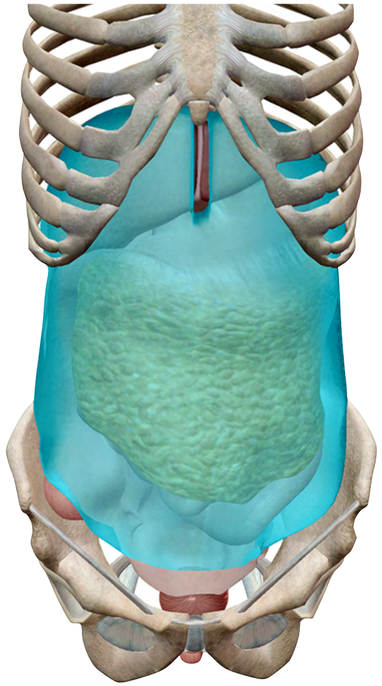
Gas Exchange

Voluntary/
Involuntary

#ideaworld



Spine



Parietal Peritoneum

REDUNDANCIES

Nerves

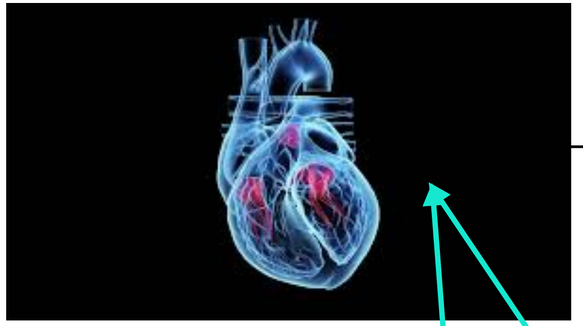
Muscles

Mechanics

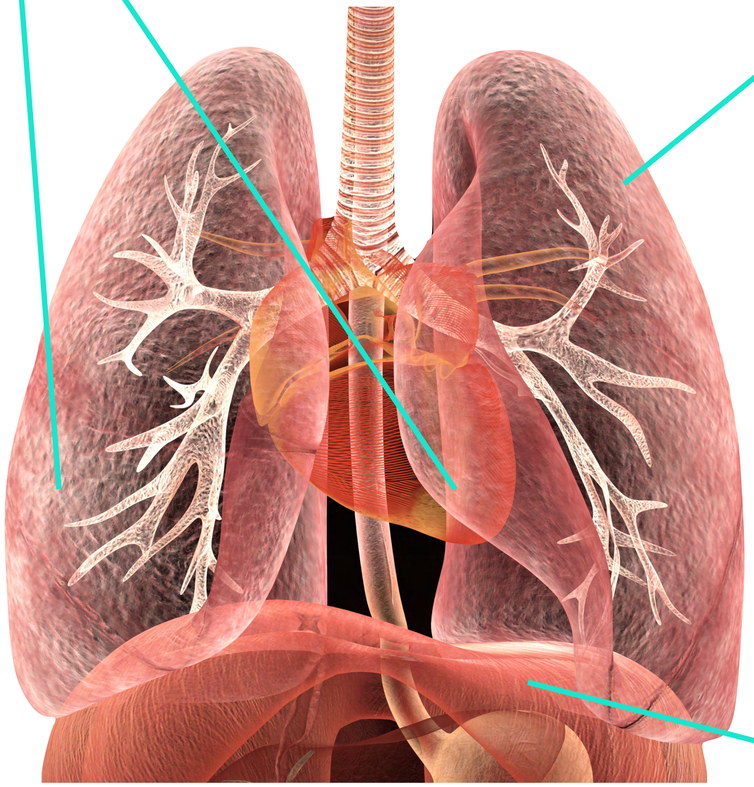
Gas Exchange

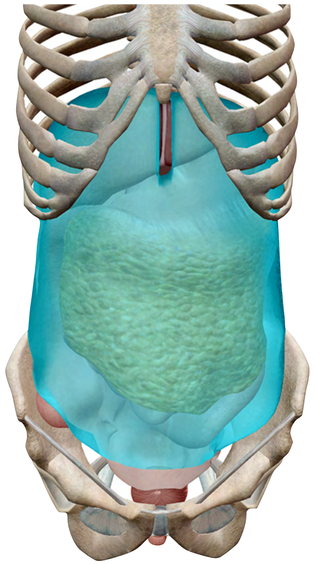
Voluntary/
Involuntary

#ideaworld



Spine





Parietal Peritoneum

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Nerves

Muscles

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Voluntary/
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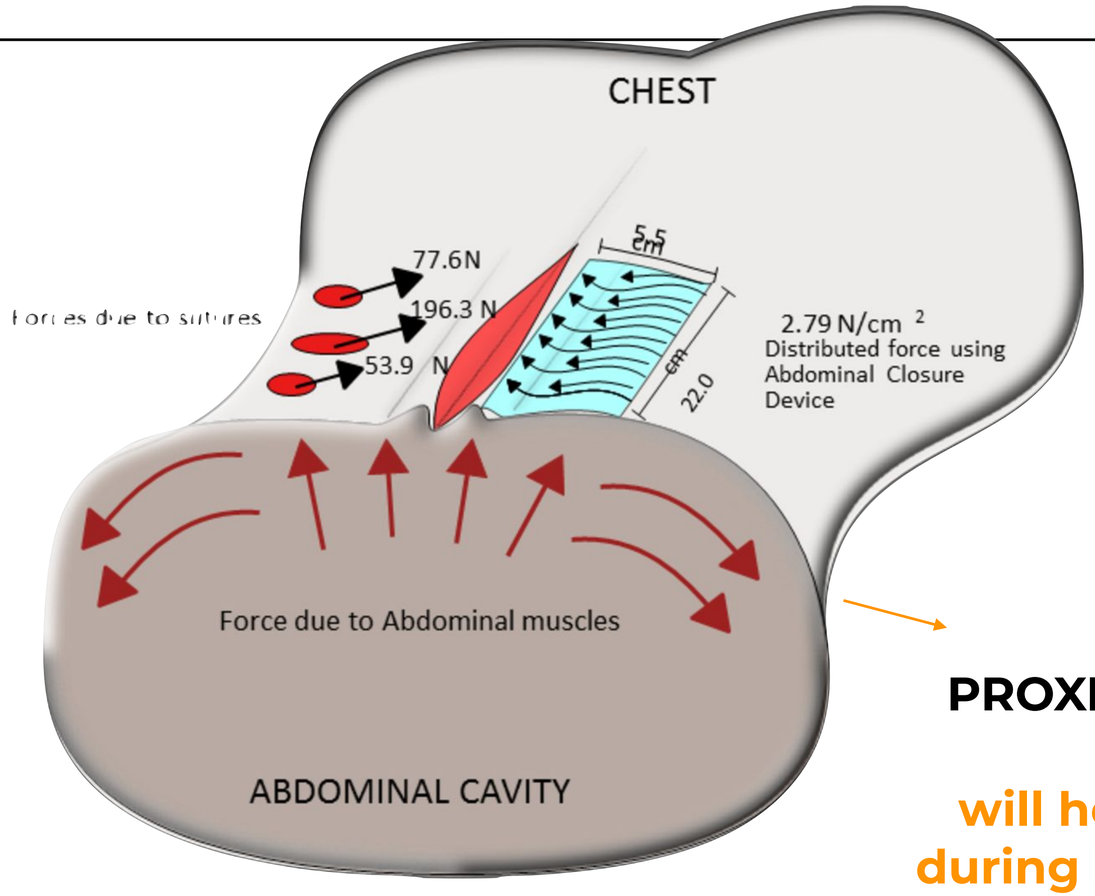

Abdominal 'Hoop Tension' (accented during exhalation) / diaphragmatic sparing)

PROXIMAL STABILITY

will help hamstrings during high contraction with high ventilation rates e.g. Crossfit)

REDUNDANCIES

Nerves

Muscles

Mechanics

Gas Exchange

Voluntary/ Involuntary

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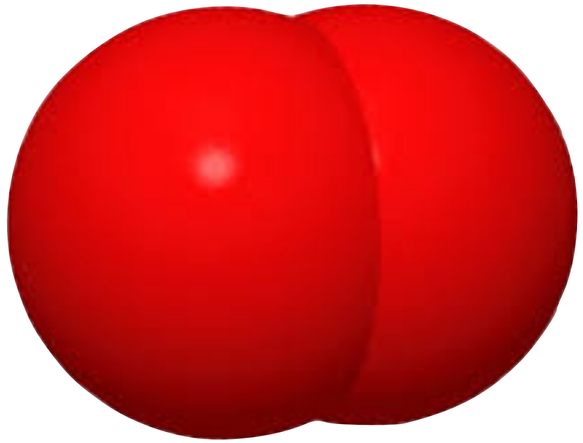

[HGb]

[MGb]

REDUNDANCIES

Nerves

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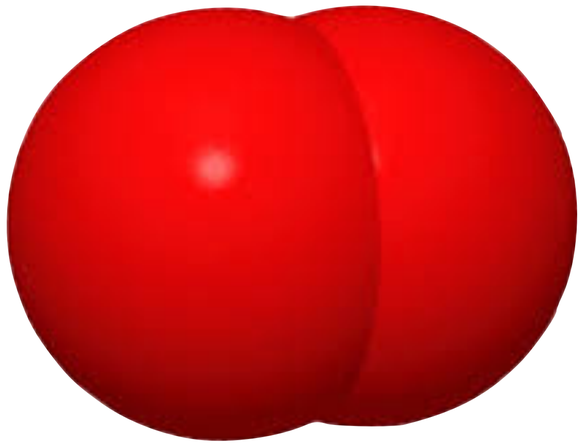

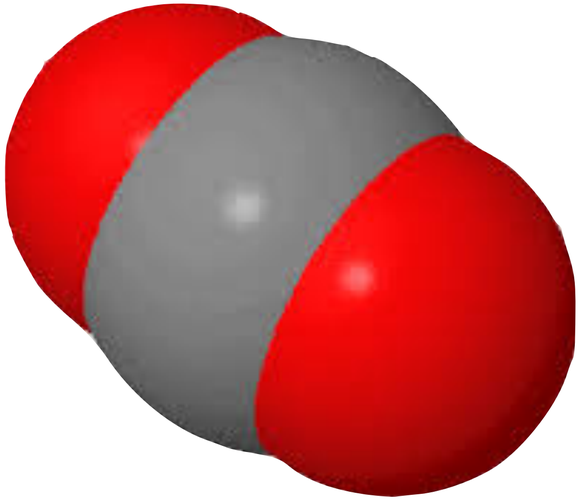

REDUNDANCIES

Nerves
Muscles
Mechanics
Gas Exchange
Voluntary/
Involuntary

[HGb]

[MGb]

CO2 clearance

(Metabolite formation)

OBLA

(Acidosis [H+])

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RESPIRATORY MUSCLE TRAINING (RMT)

BreathWork

THEORY

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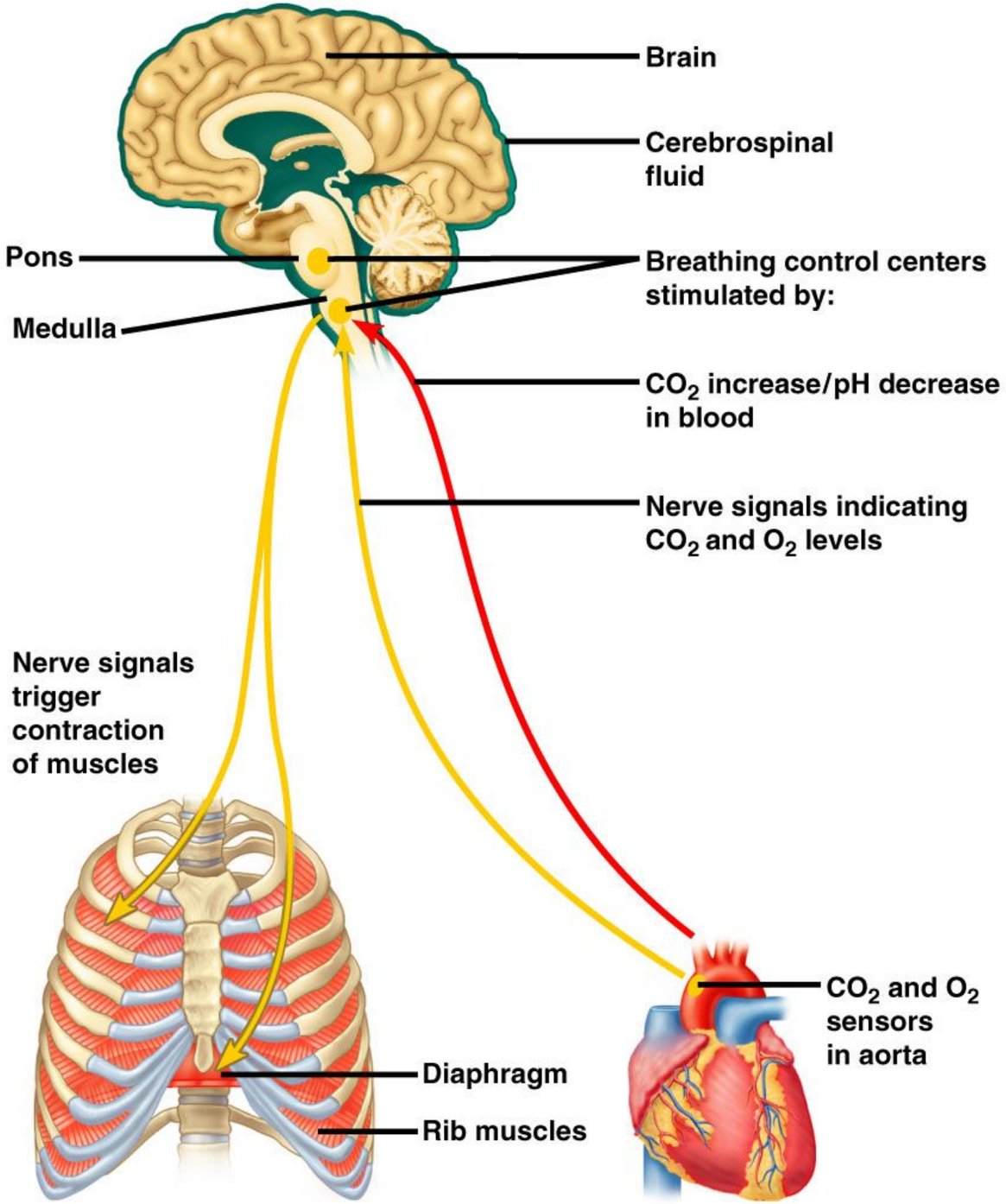

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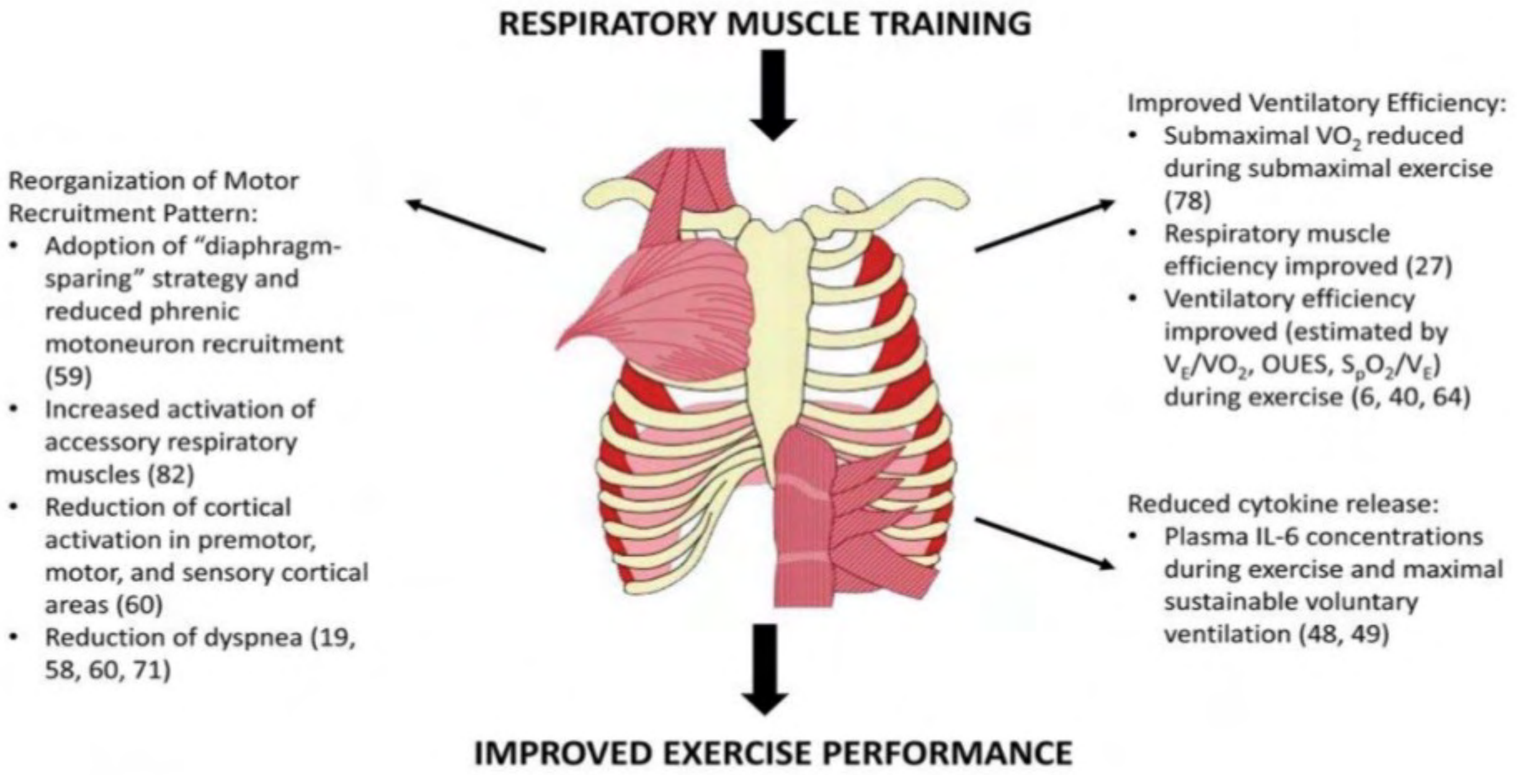


Figure 2.
Illustration of new insights from recent investigations into physiological adaptations induced by IMT that may enhance exercise performance.

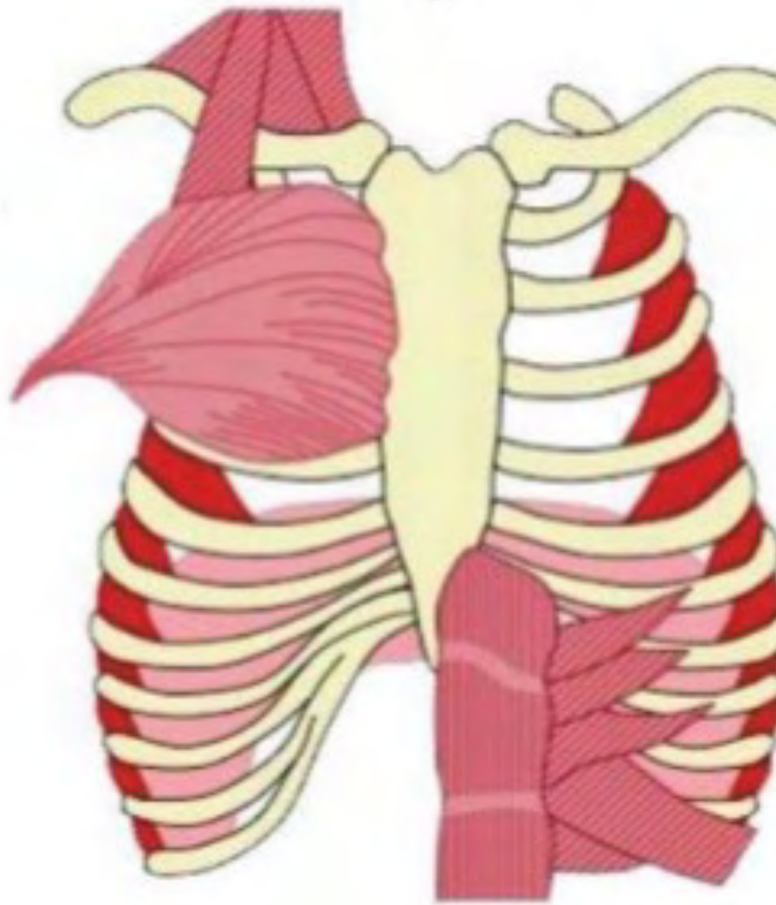
Adopted from: Recent advancements in our understanding of the ergogenic effect of respiratory muscle training in healthy humans: a systematic review

#ideaworld

RESPIRATORY MUSCLE TRAI

Reorganization of Motor Recruitment Pattern:

- Adoption of "diaphragm-sparing" strategy and reduced phrenic motoneuron recruitment (59)
- Increased activation of accessory respiratory muscles (82)
- Reduction of cortical activation in premotor, motor, and sensory cortical areas (60)
- Reduction of dyspnea (19, 58, 60, 71)



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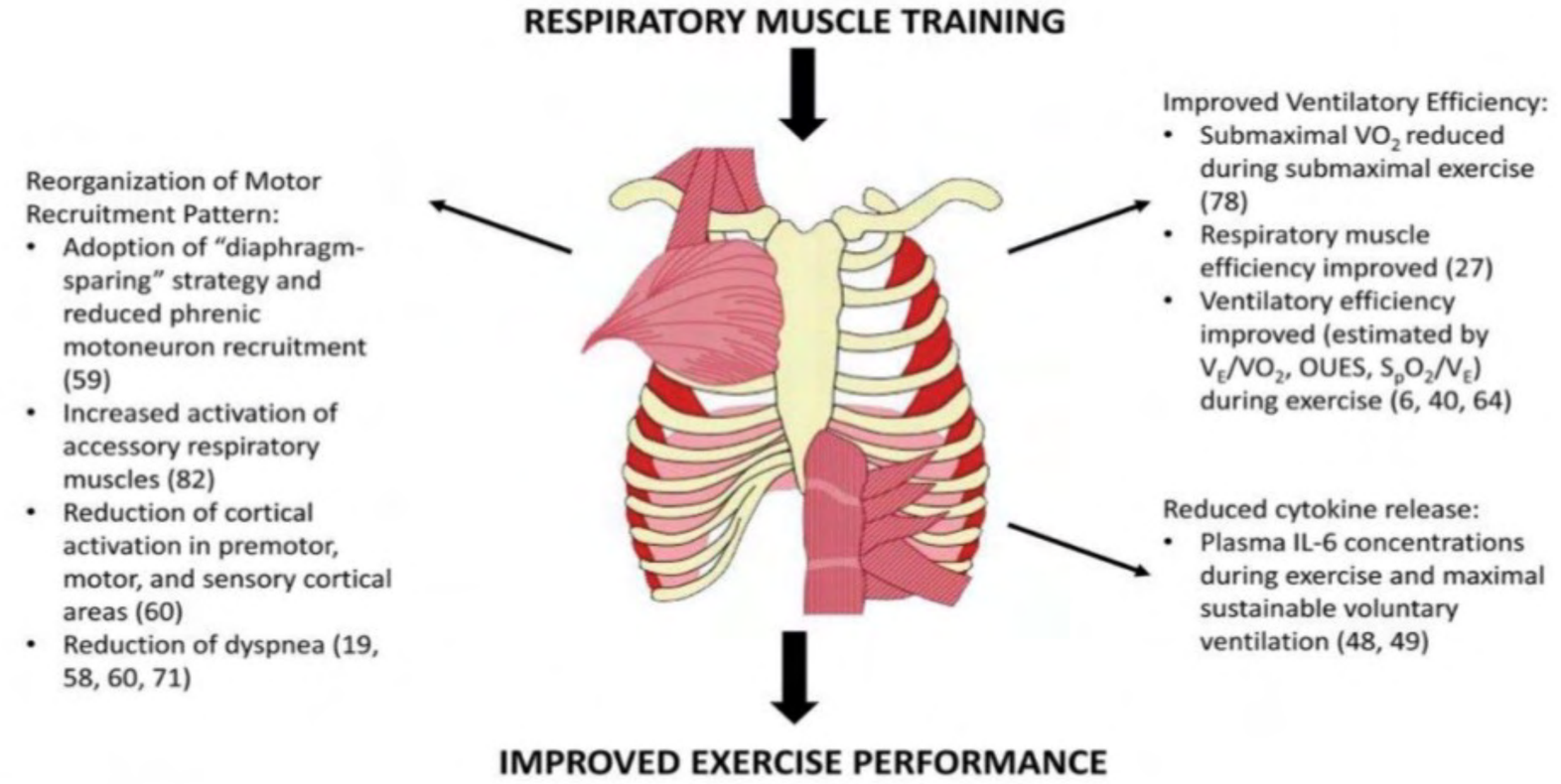

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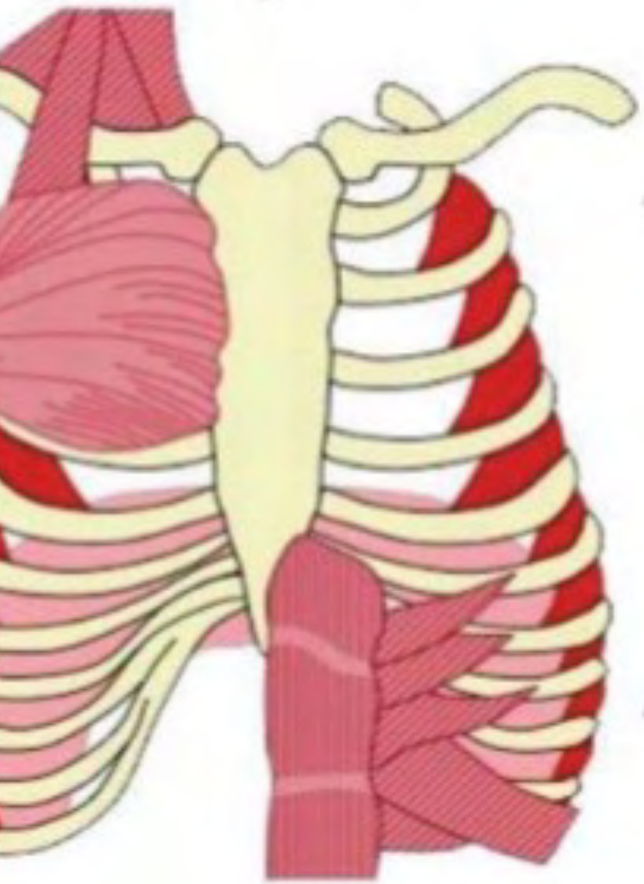


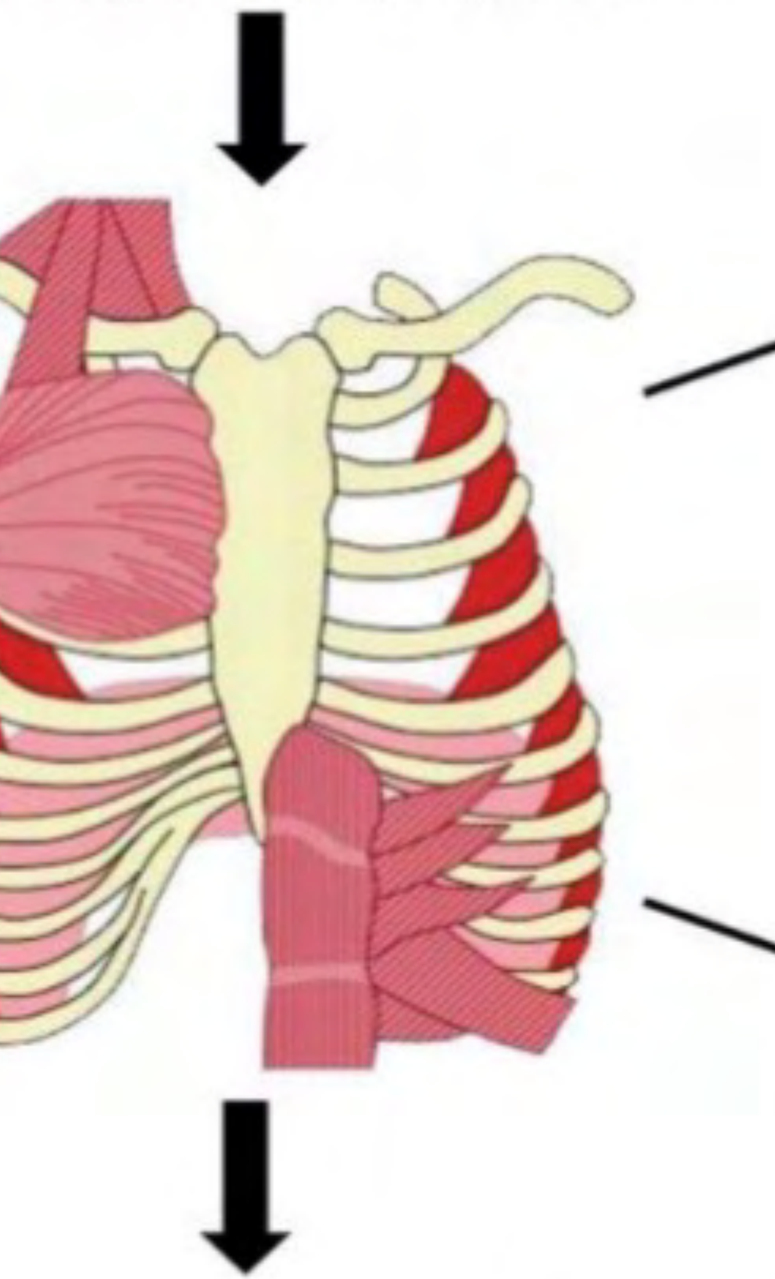
Improved Ventilatory Efficiency:

- Submaximal VO_2 reduced during submaximal exercise (78)
- Respiratory muscle efficiency improved (27)
- Ventilatory efficiency improved (estimated by V_E/VO_2, OUES, S_pO_2/V_E) during exercise (6, 40, 64)

Reduced cytokine release:

- Plasma IL-6 concentrations during exercise and maximal sustainable voluntary ventilation (48, 49)

D EXERCISE PERFORMANCE



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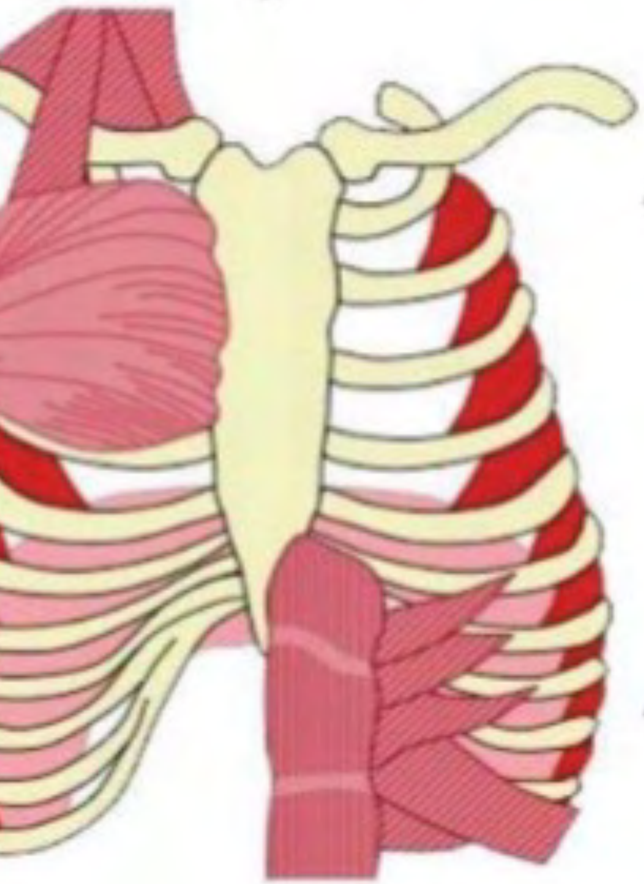

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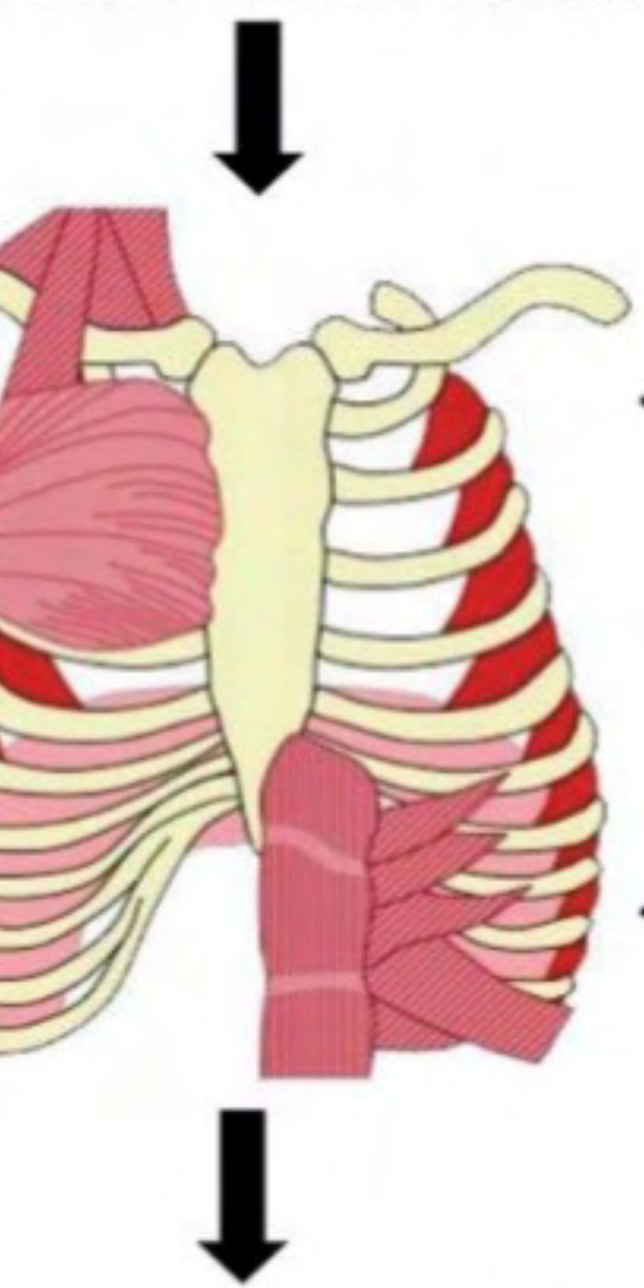

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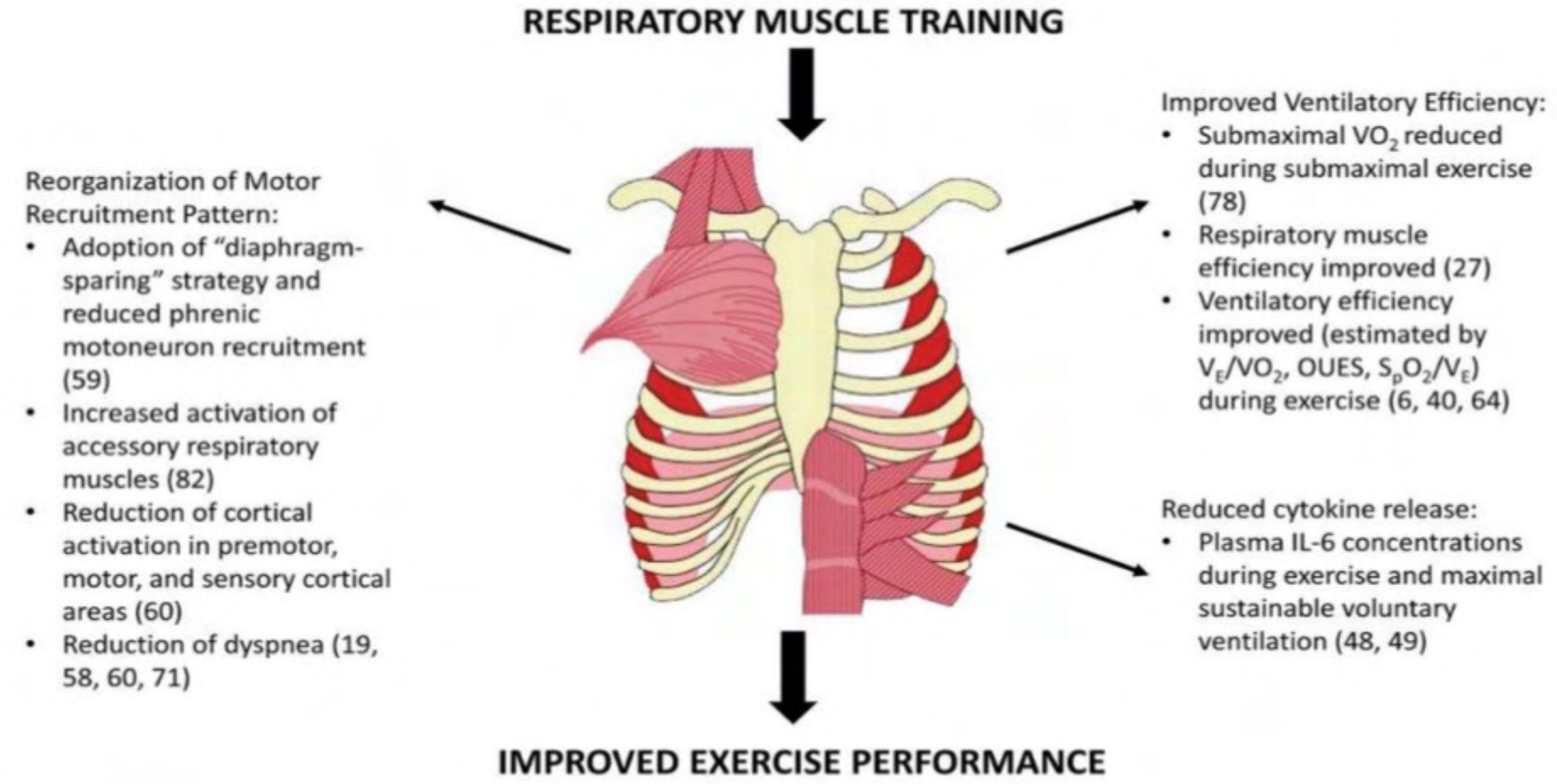

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RESPIRATORY MUSCLE TRAINING (RMT)

BreathWork

PRACTICE

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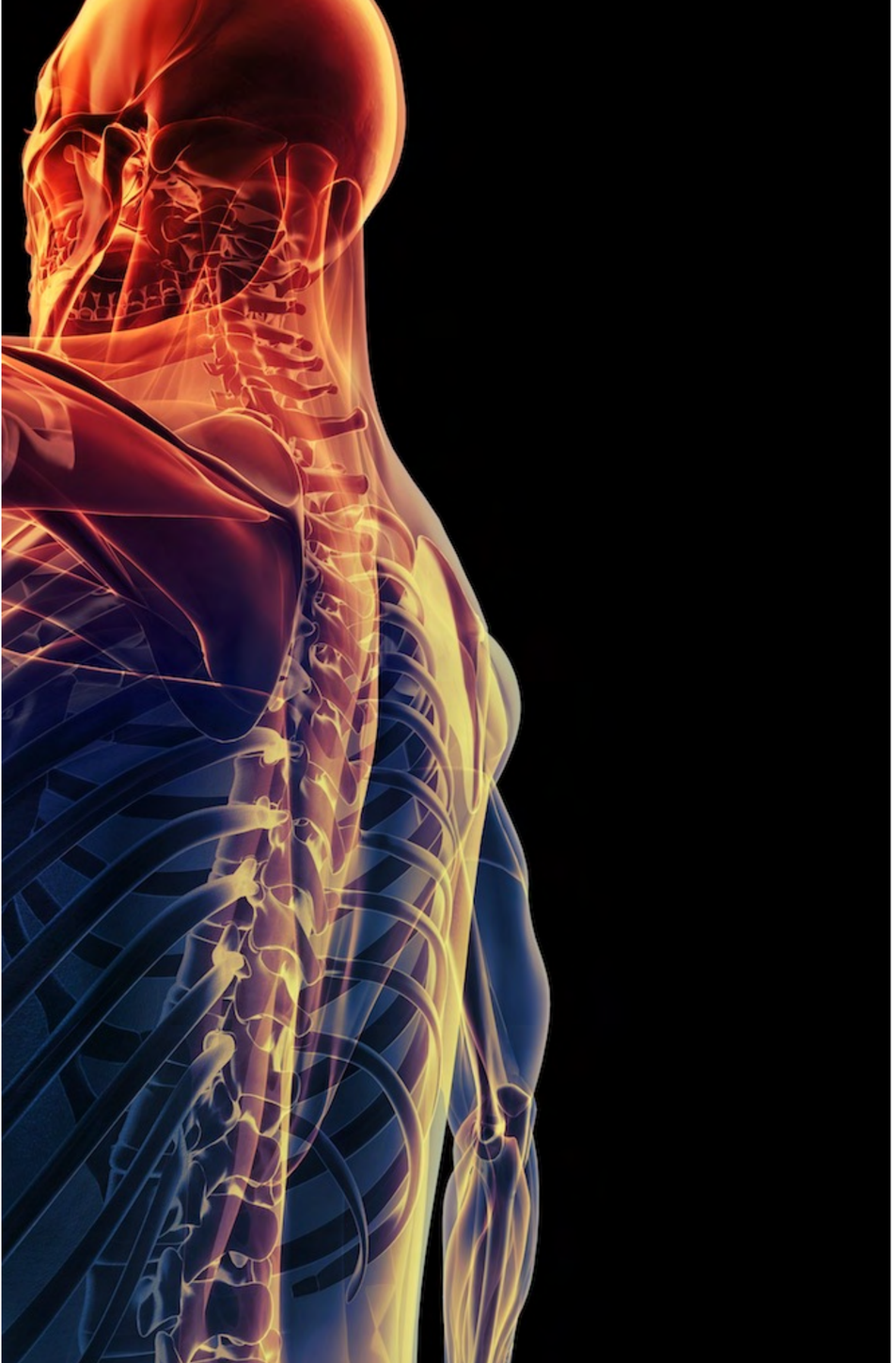


Muscles are, first and foremost, TASK DRIVEN. (research by Zajac and Gordon)
This means they coordinate (through nervous input) to optimize an outcome. Think of walking … rarely are we conscious of it, and if we are, we generally impair its coordination.

Thus, many different muscles can influence the action of breathing.
For most of these muscles, breathing is NOT their main function.
Accessory breathing muscles (those involved in speeding up, slowing, down, stopping, relaxing or exciting breathing) are primarily TYPE 1 (slow oxidative) stabilization motor units.

Therefore, to influence deep stabilization of the lumbo-pelvic hip complex, we will teach:

1 - Forced Breathing

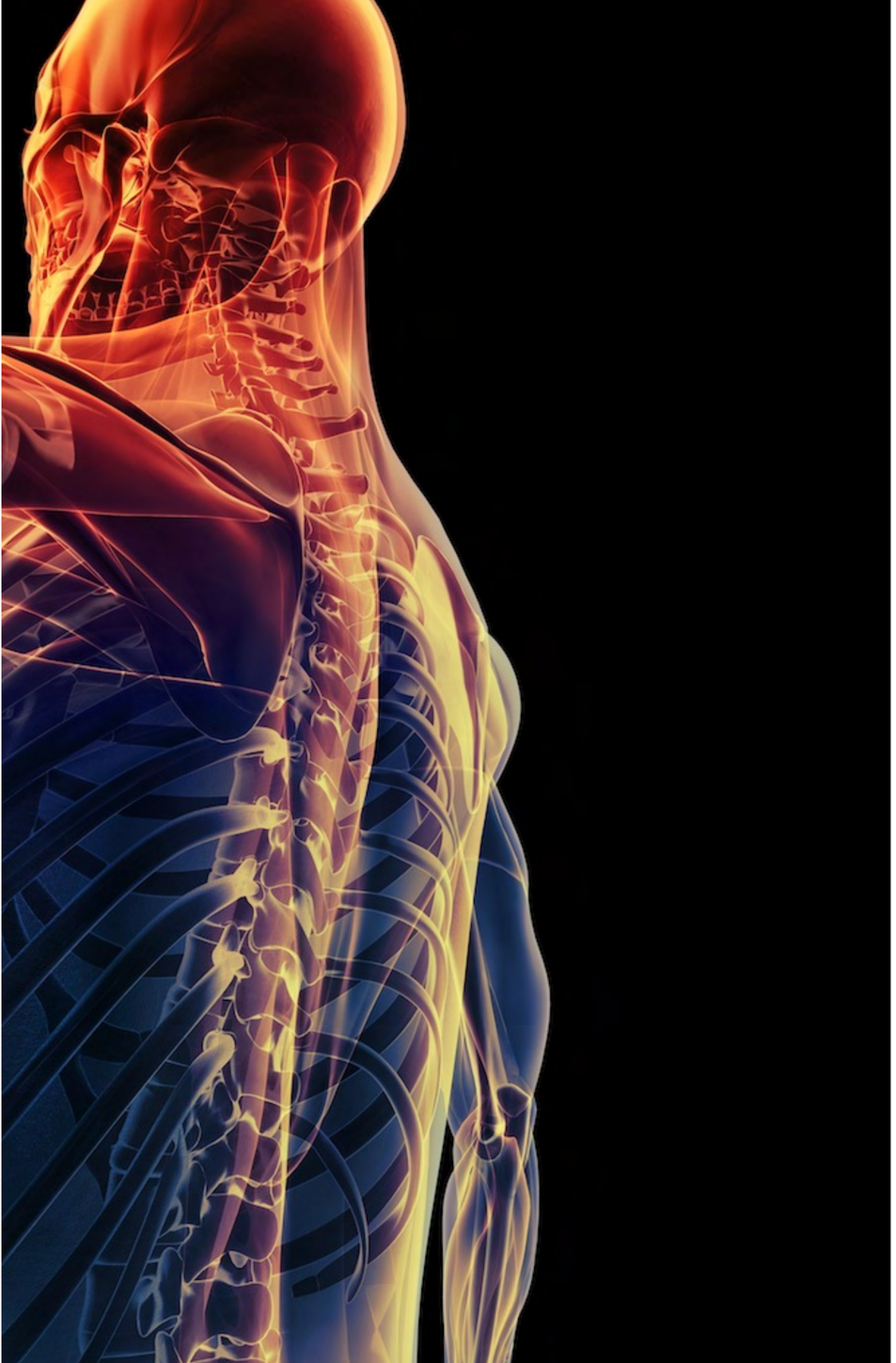
- Inspiration
- Expiration

→ Small Motor Unit Recruitment

2 - Percussive Breathing

- Inspiration
- Expiration

→ Excitation



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Excitation

FORCED INHALATION

(Positional Breathing-Type 1)

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FORCED INHALATION

(Positional Breathing-Type 2)

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FORCED EXHALATION

(Positional Breathing)

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FORCED EXHALATION

(Positional Breathing)

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FORCED EXHALATION/INHALATION

(Forced Breathing)

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FORCED EXHALATION/INHALATION

(Forced Breathing)

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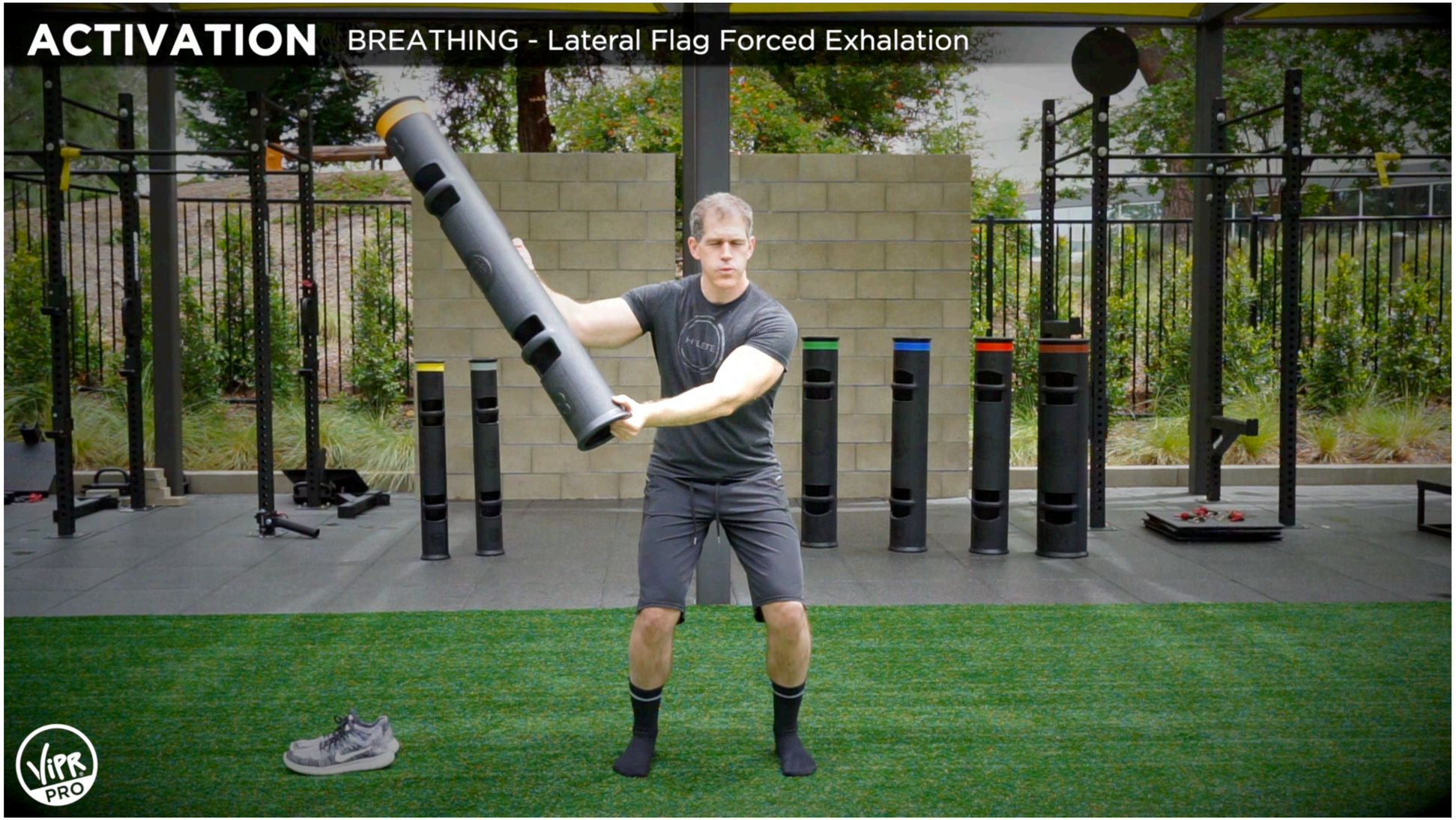
FORCED EXHALATION

(Positional Breathing)



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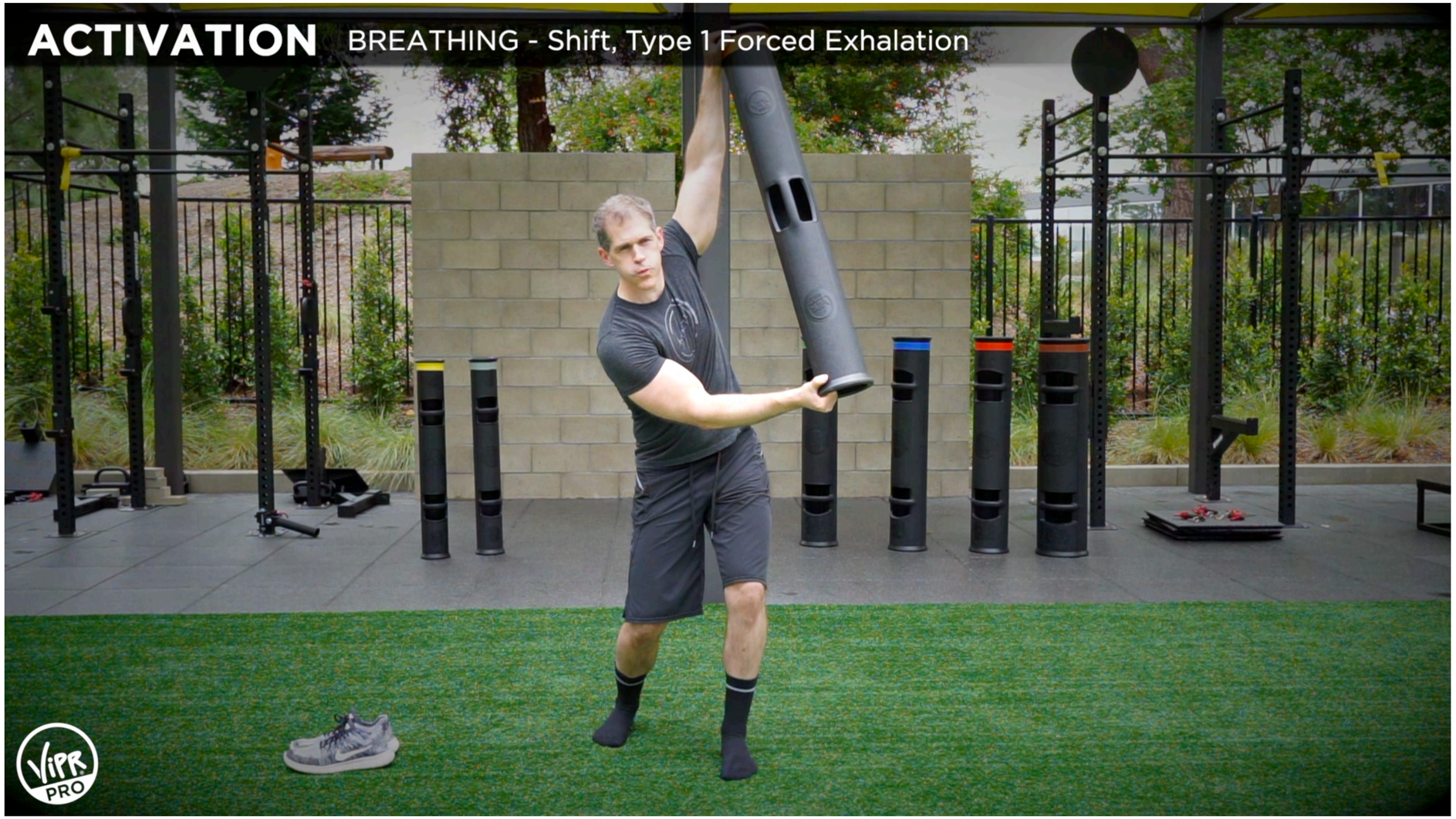
FORCED EXHALATION

(Positional Breathing)



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FORCED EXHALATION

(Valsalva Breathing)

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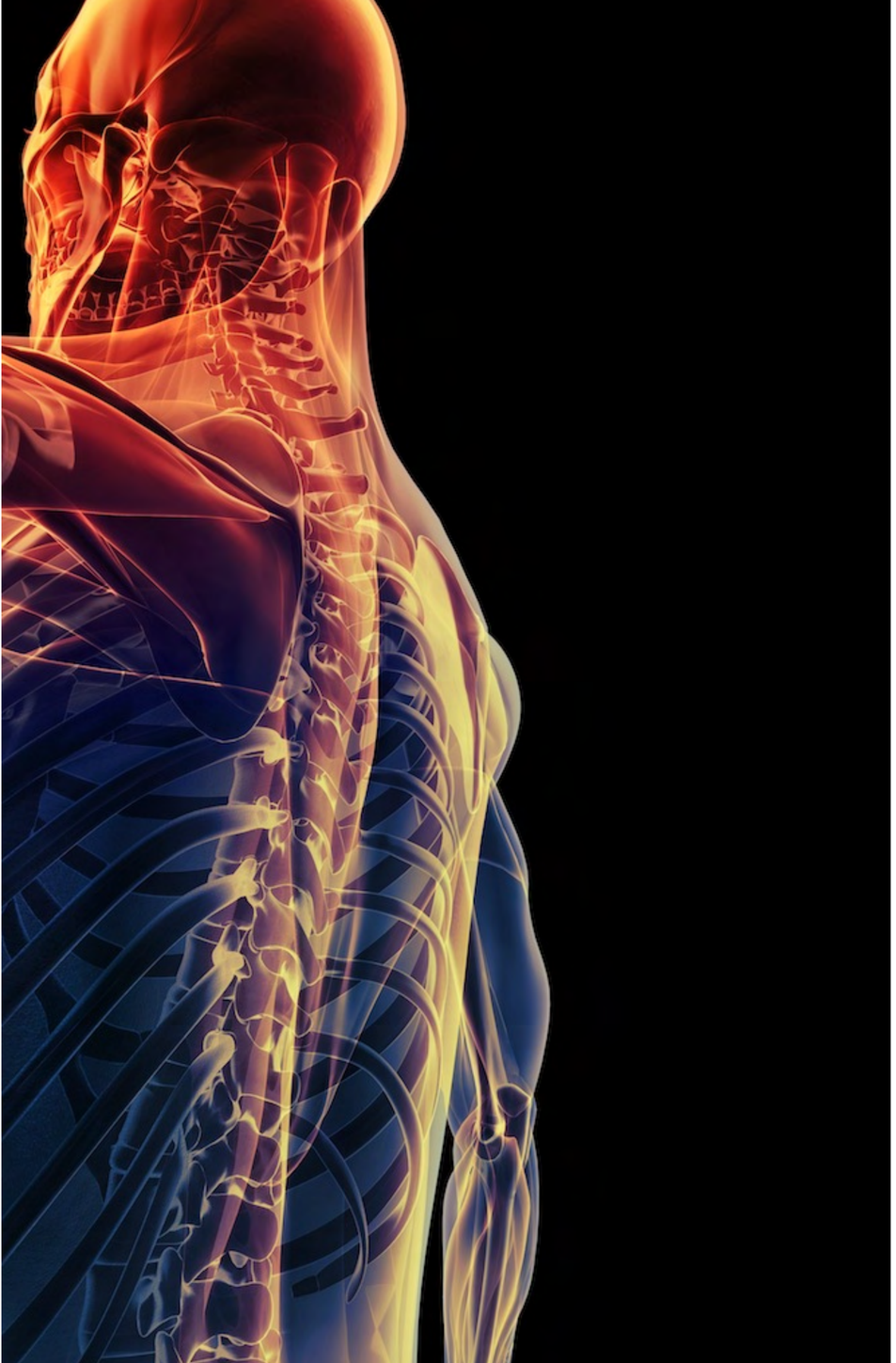

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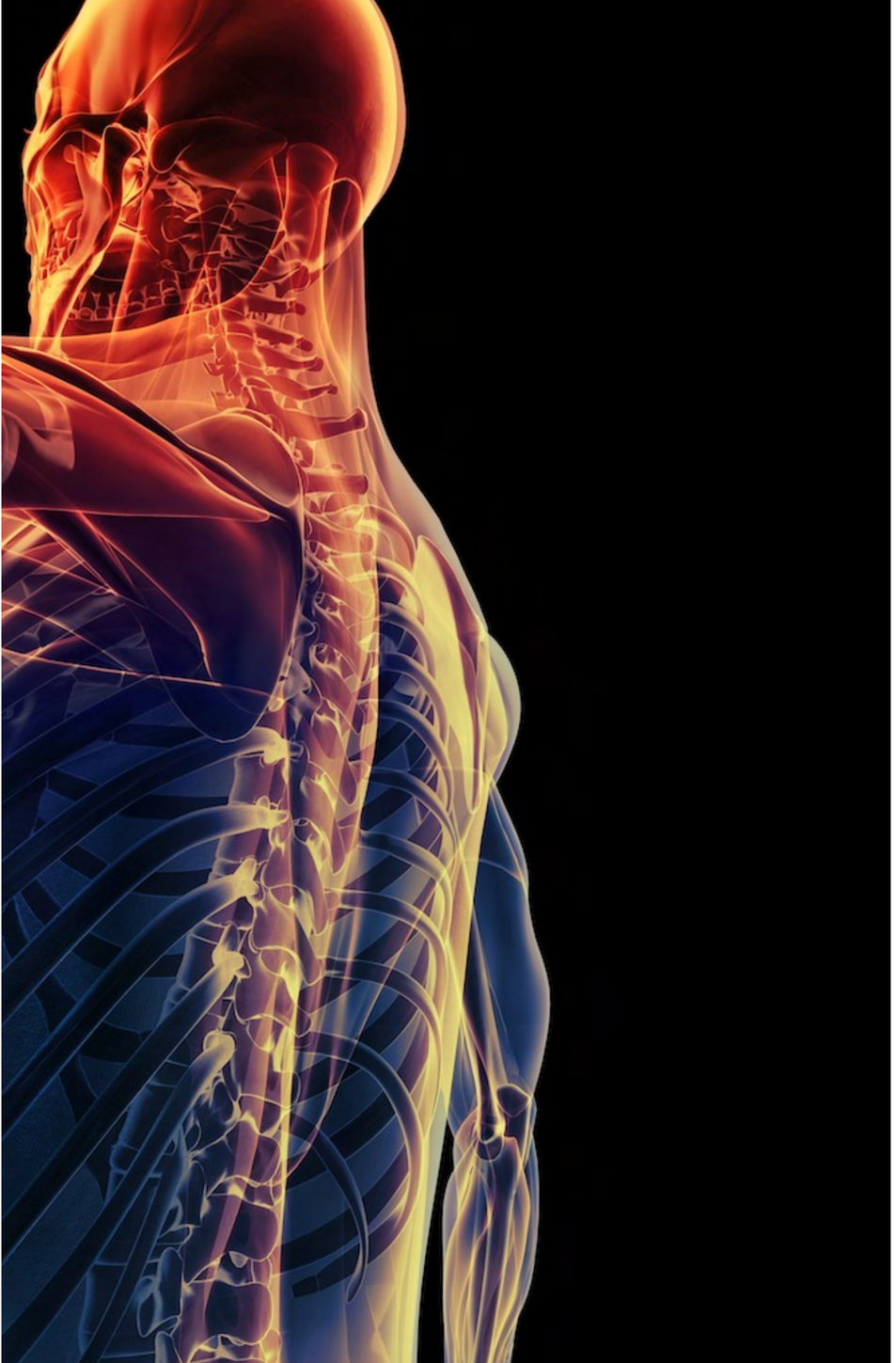
→ Excitation



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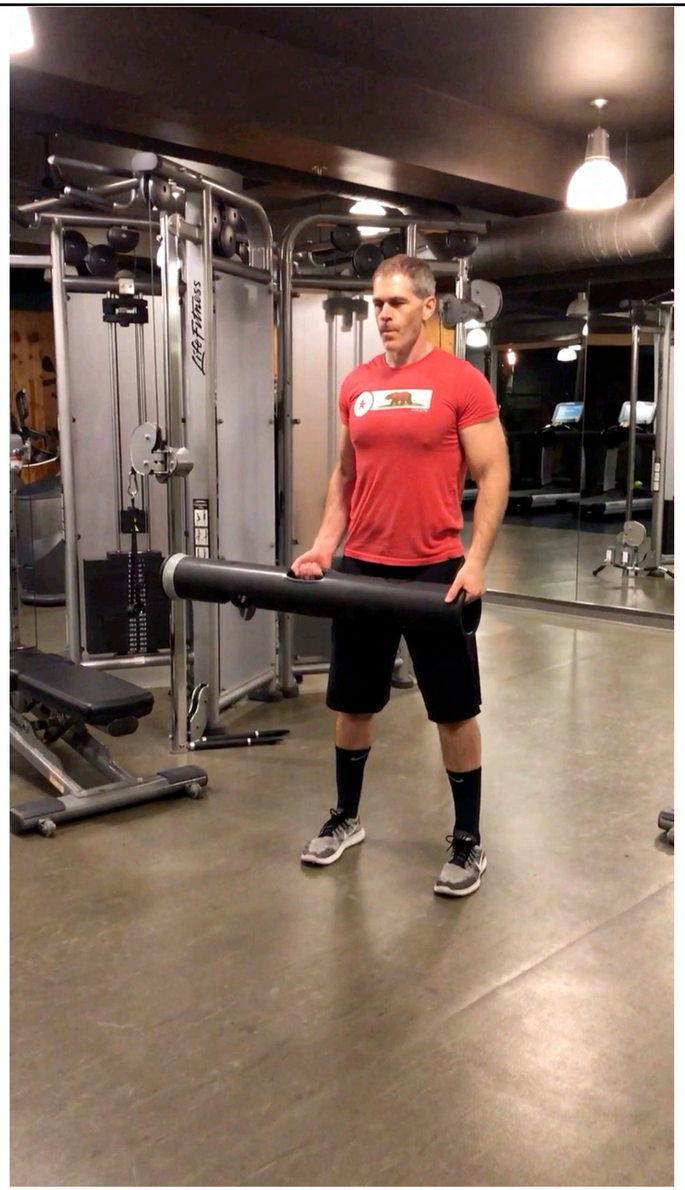
2 - Percussive Breathing

Inspiration **Expiration**

Excitation

PERCUSSIVE EXHALATION

(Rate of Relaxation)



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PERCUSSIVE EXHALATION

(Rate of Relaxation)

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RESPIRATORY MUSCLE TRAINING (RMT)

BreathWork

APPLIED

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PROGRAMMING MAP

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PROGRAMMING THEMES

Activation Strategies:
Activation exercises increase system stimulation

Mobility Strategies:
Mobility exercises increase internal space and joint RoM

Cardio Strategies:
Cardio exercises increase cardiovascular and cardiorespiratory conditioning through rhythmical, continuous movement

Strength Strategies:
Strength exercises increase force production

Power / Plyometric Strategies:
Power exercises increase rate of force production

Regeneration Strategies:
Regeneration exercises increase system recovery

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PROGRAMMING THEMES

Activation Strategies:

Activation exercises increase system stimulation

1.Fluid Dynamic
Rub and Scrub
pumps
cardio

2.Small Motor Unit Recruitment
Forced Breathing

3.Excitation
Percussive Breathing

4. Stimulation
Oculomotor
Vestibular
Task Switching

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WORKOUT DAY PROGRAMMING THEMES

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WARM-UP

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SESSION

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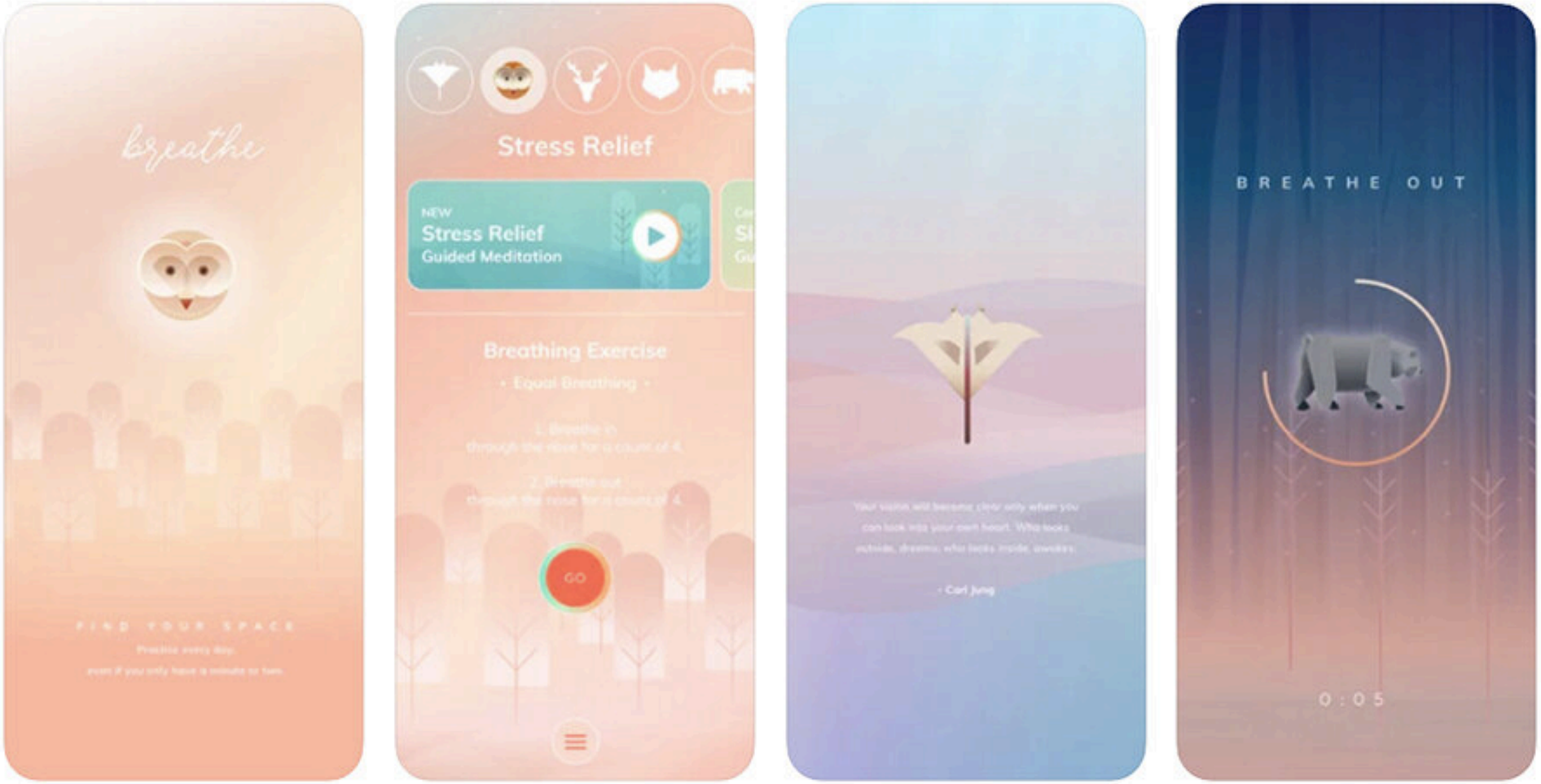

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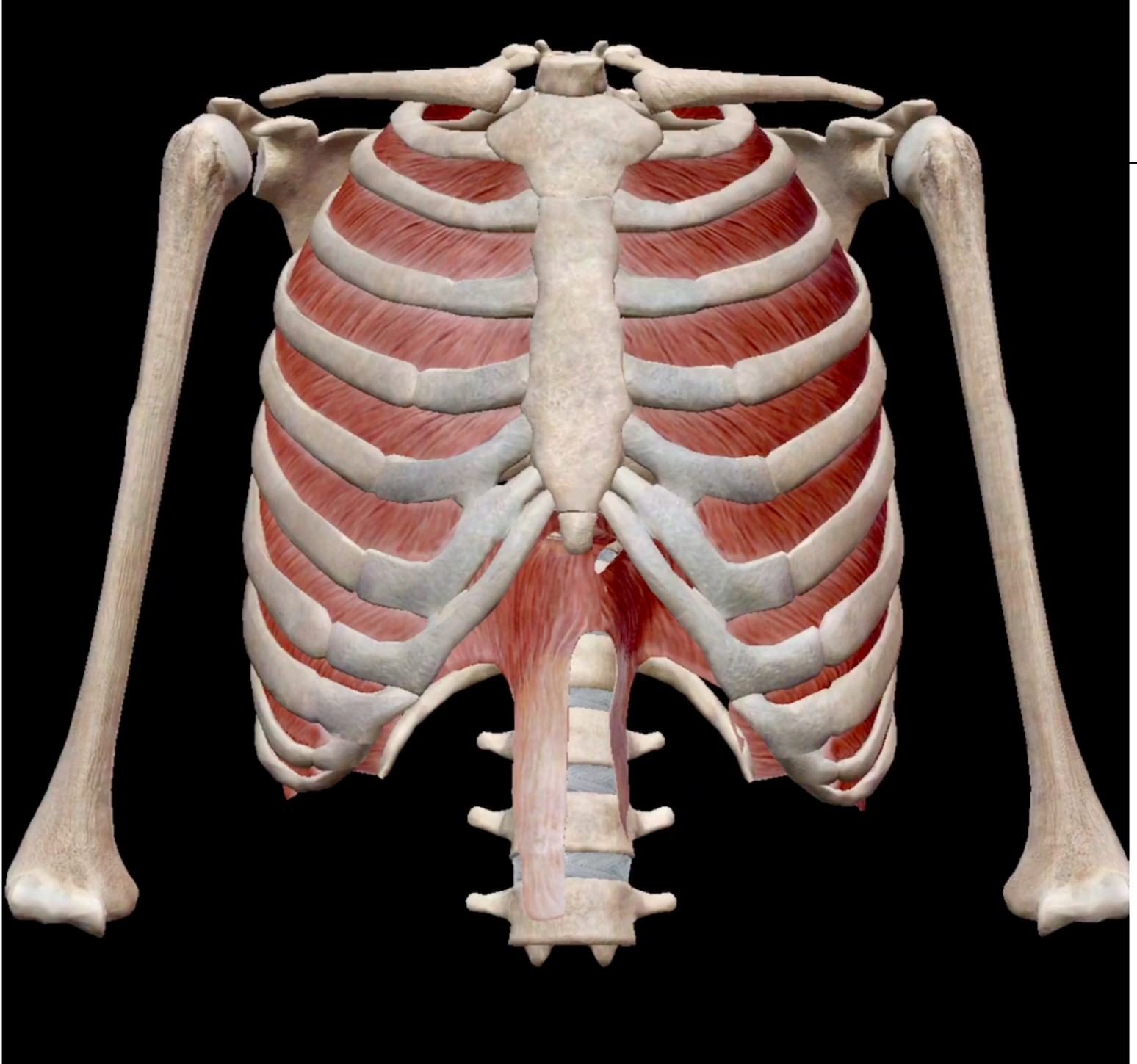

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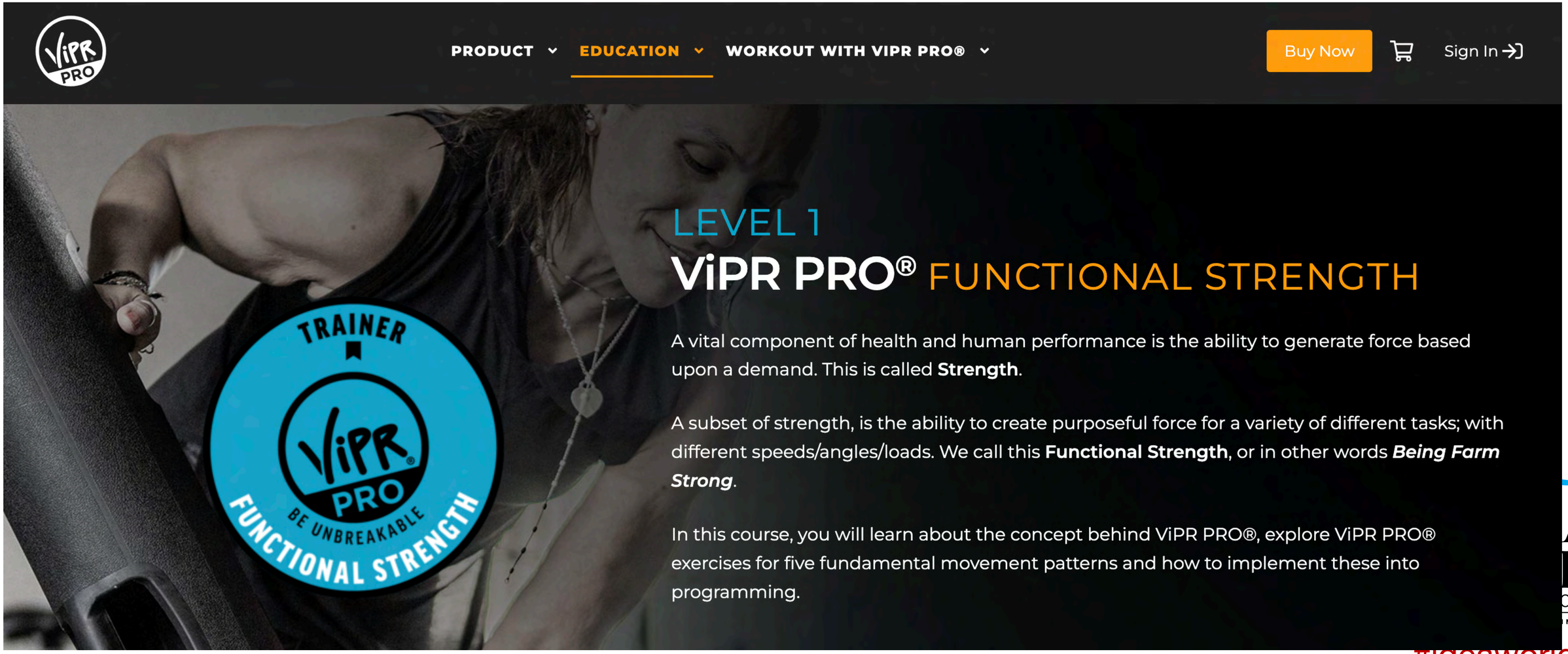

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