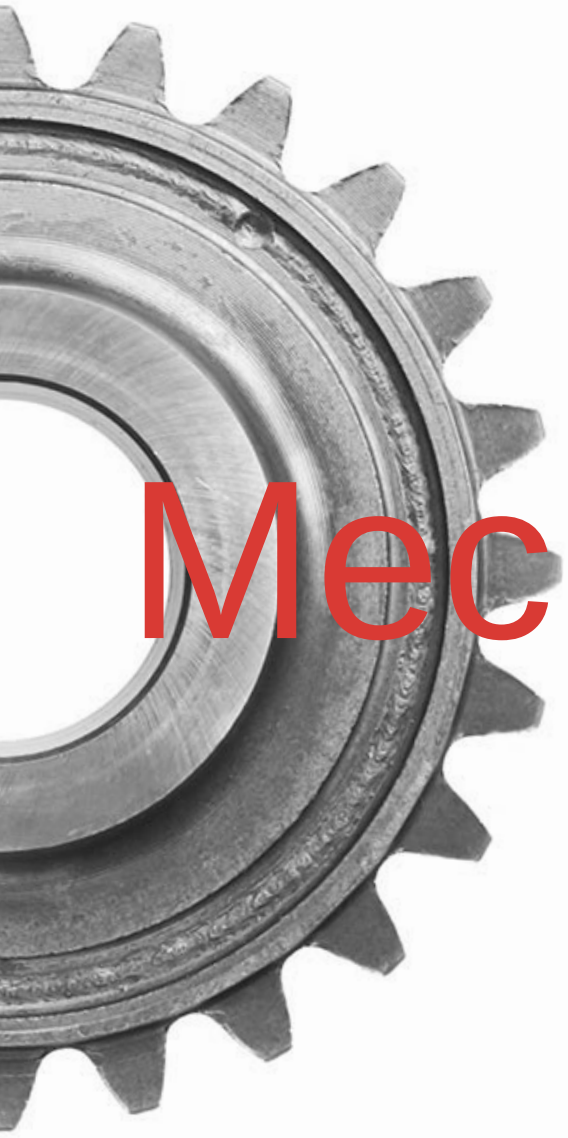




Mechanics of Stabilization

Muscular Contraction & IAP

Muscular Contraction

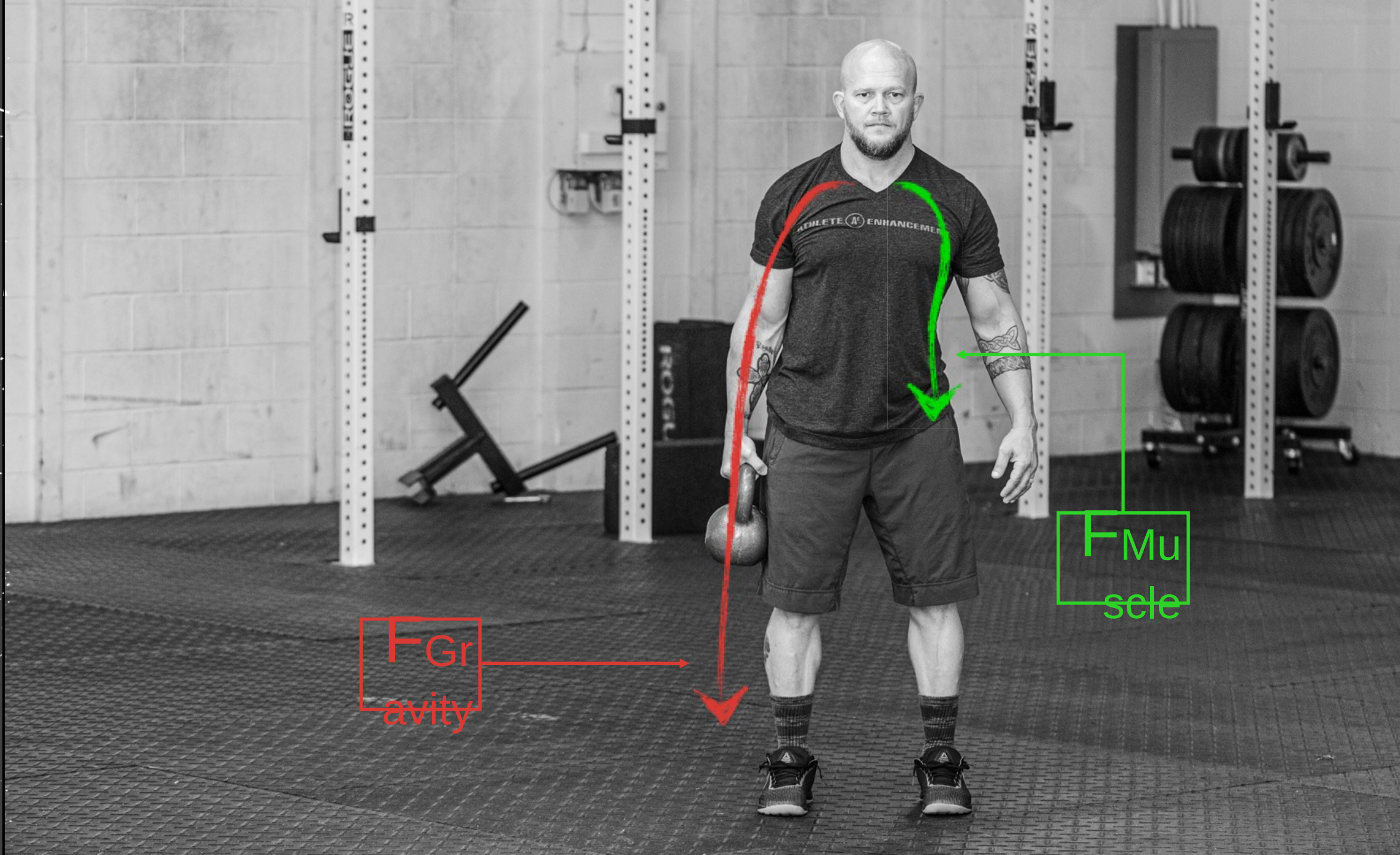
NEUROMECHANICS OF STABILIZATION



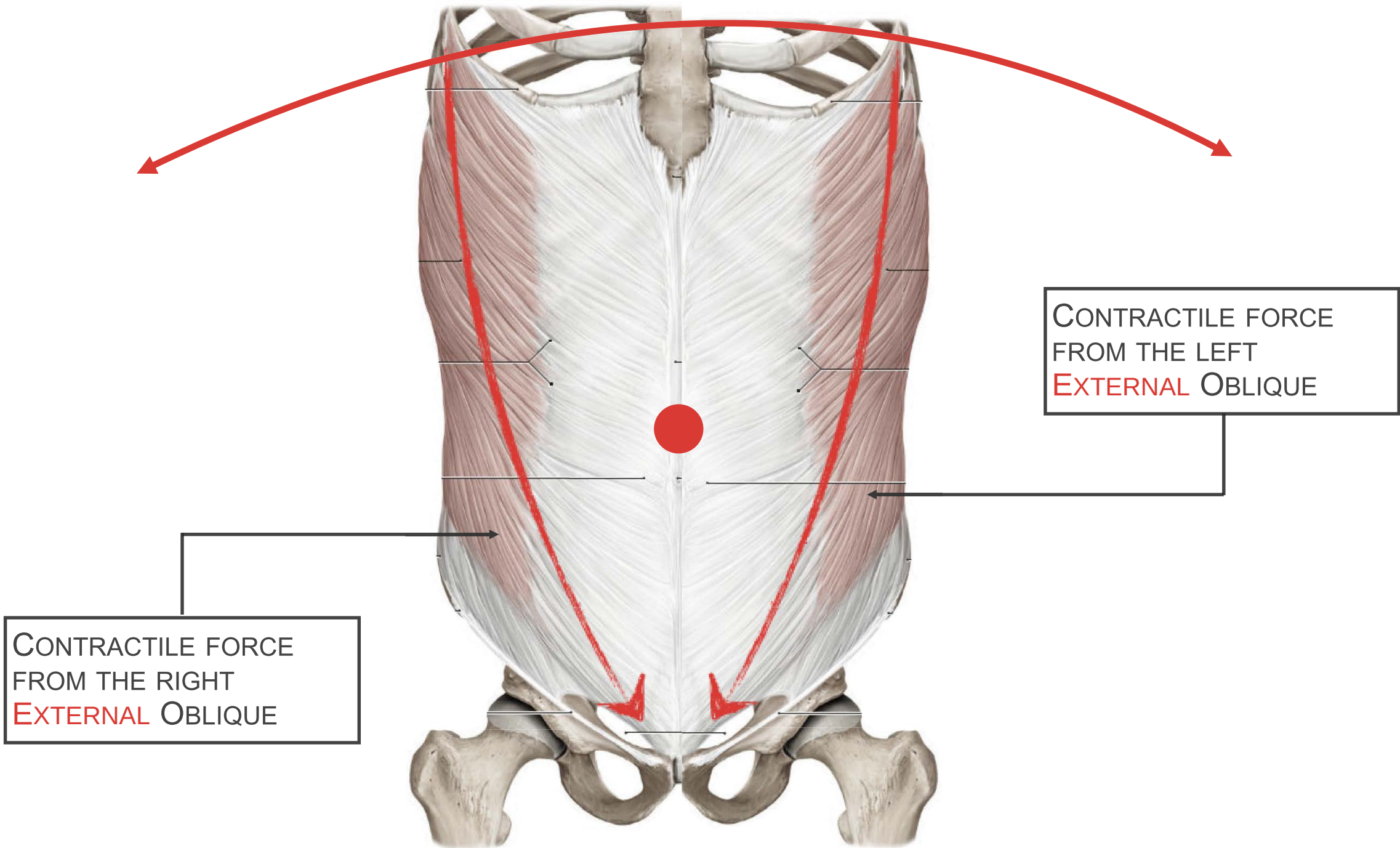
NEUROMECHANICS OF STABILIZATION

$F_{Gravity}$

F_{Muscle}



NEUROMECHANICS OF STABILIZATION



“The foundation of spinal stability is intra-abdominal pressure.”

a-Abdominal Press

Pavel Kolar, PT, Paed
World-Renown Physical Therapist



“The foundation of spinal stability is intra-abdominal pressure.”

Pavel Kolar, PT, Paed
World-Renown Physical Therapist



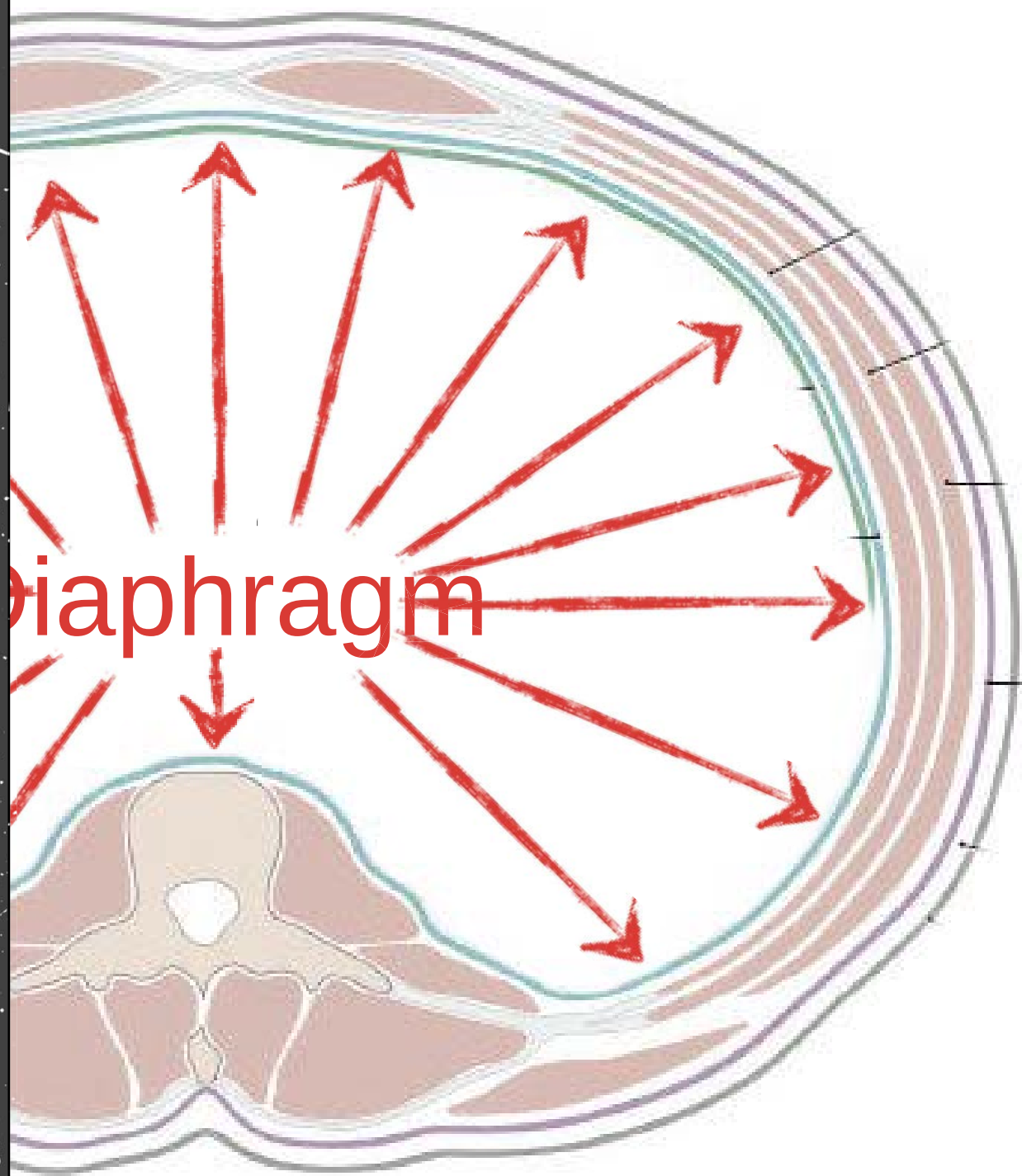
“Without the diaphragm,
there is no pressure;
without pressure, there
is no stability.”

Paul Hodges, PhD,
PT
World-Leading Researcher

A grayscale photograph of a woman in a gym, performing a squat. She is wearing a dark tank top, light shorts, and sneakers. A barbell with two 20 kg Rogue plates is on her back. The background shows gym equipment.

What is IAP?

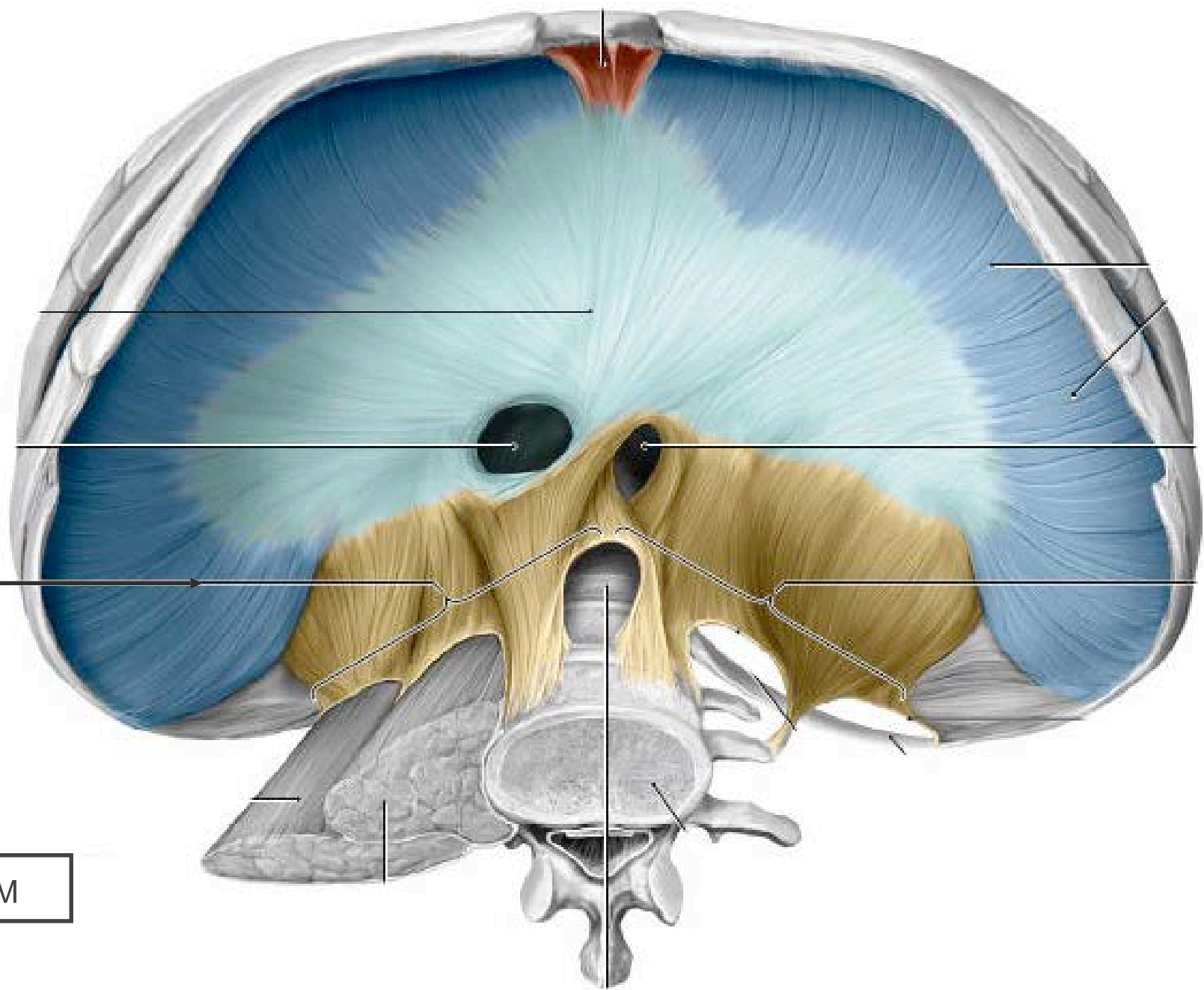
Exactly



IAP is an
outward-
pushing
force within
the
abdomen

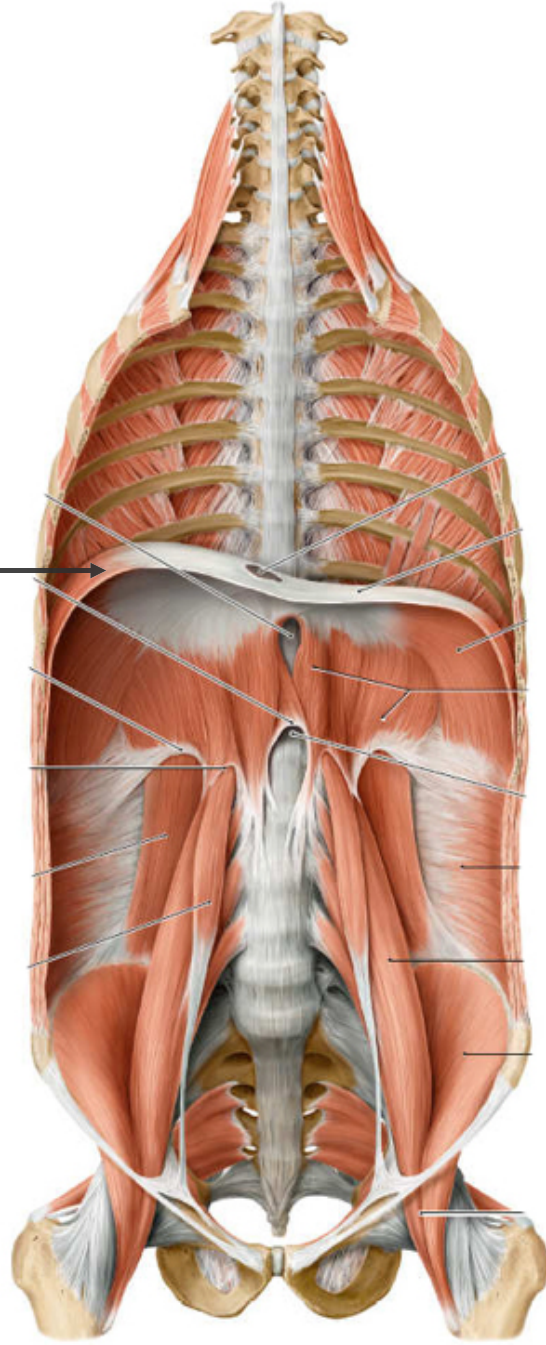
NEUROMECHANICS OF STABILIZATION

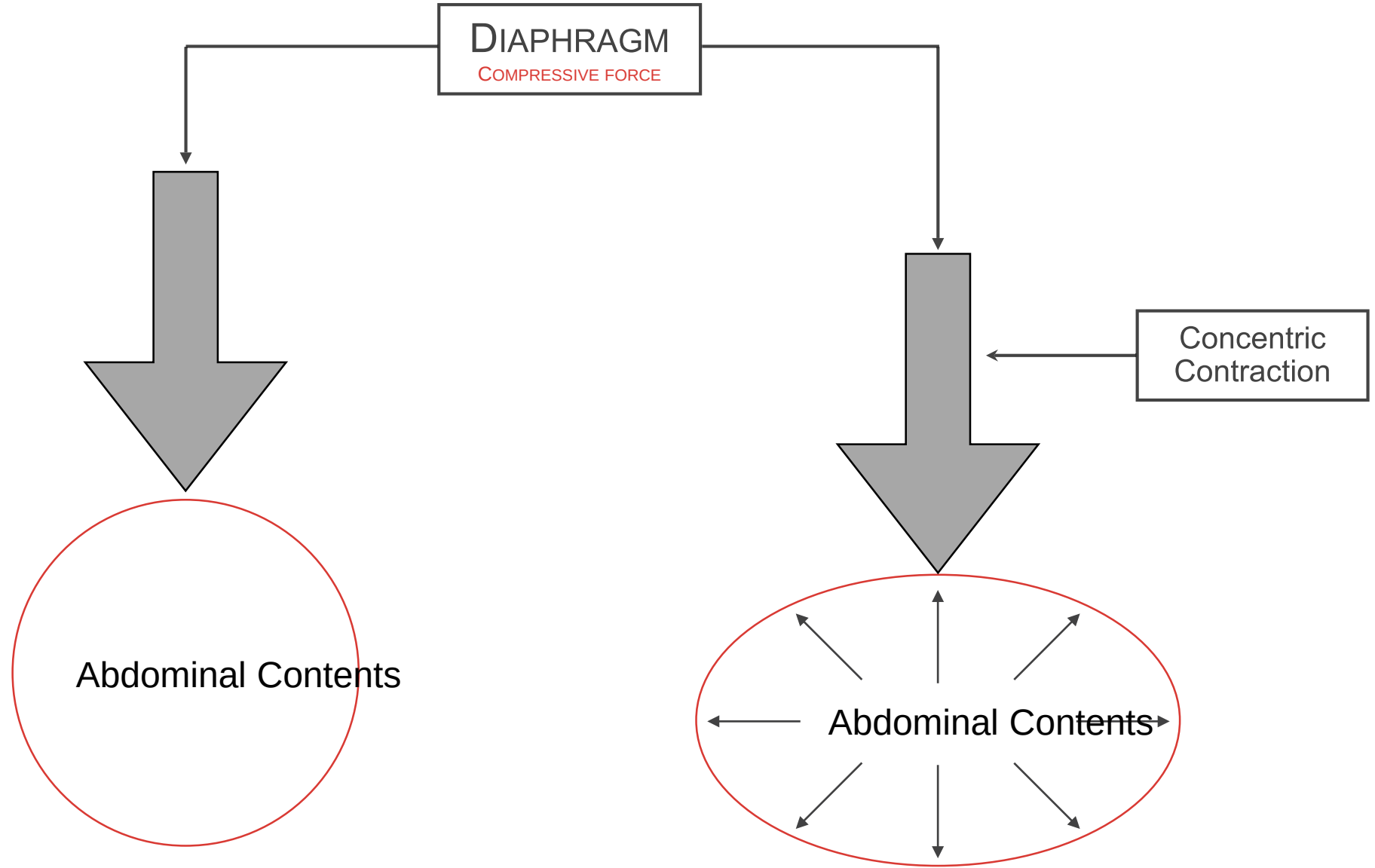
DIAPHRAGM

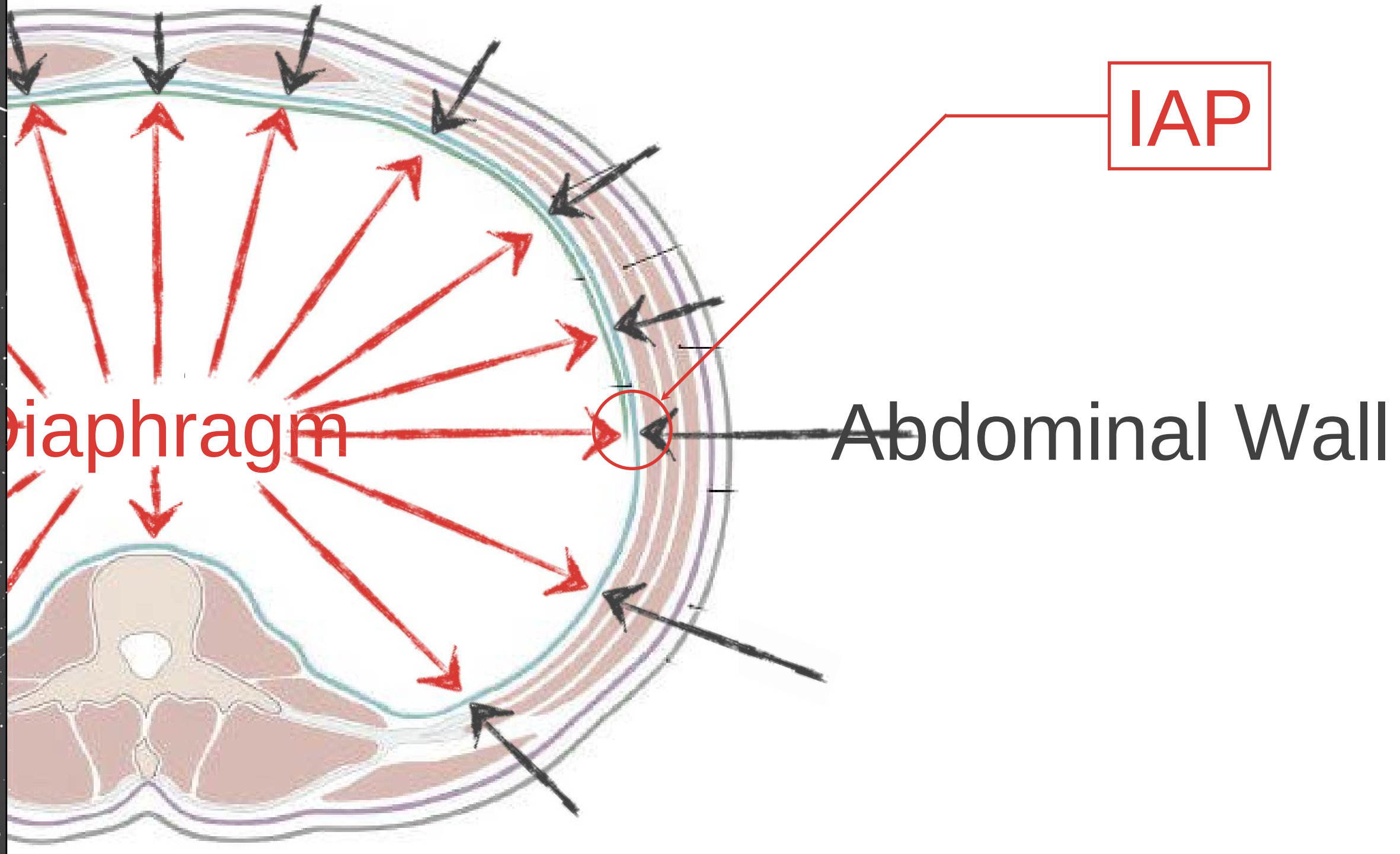


NEUROMECHANICS OF STABILIZATION

DIAPHRAGM

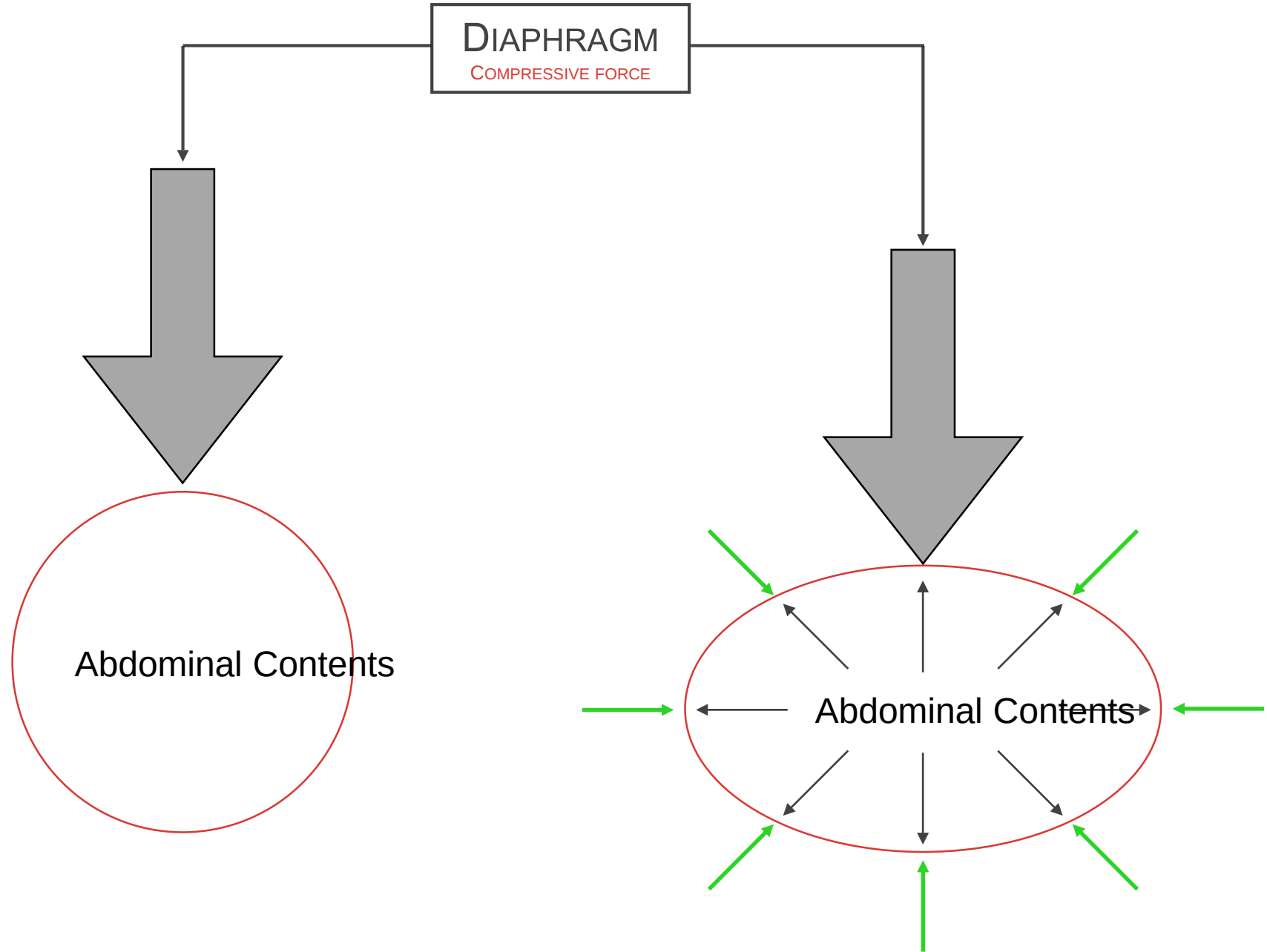






abdominal pressure is...

The summation of the mechanical forces produced by the diaphragm and the torso musculature.



Why is IAP
so vital to
spinal
stability?