



Feet, Fascia & Functional Movement

Webinar Series
Week 2 – Future of Energy Transfer

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Welcome!

Intro to the Evidence Based Fitness Academy
Leaders in Barefoot Education



How the Webinar Series Works

3 Weeks – 60 Minute Lectures

Recorded & Archived

Final Exam for CECs

Materials / Videos

Questions / Polls

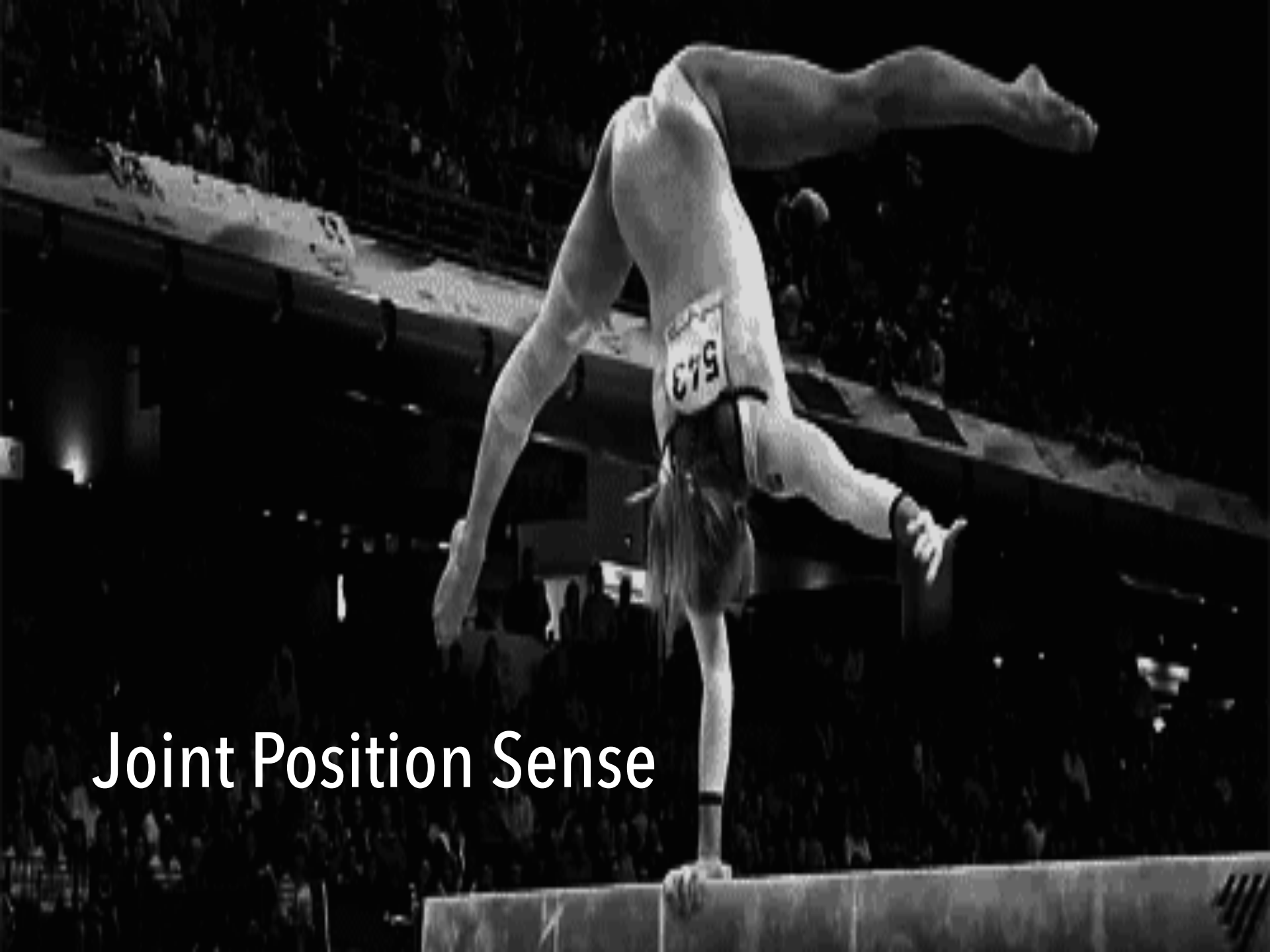
Review Week 1

Fascial Tensioning & the Future of Proprioception Training

Get ready to **challenge** your current
approach to proprioception training!



What is proprioception?



Joint Position Sense

What provides joint position sense?

- Joint capsule
- Ligaments
- Retinaculum
- Fascia
- Myotendon junction
- Skin

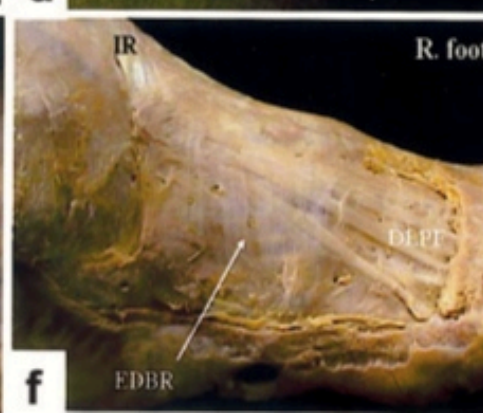
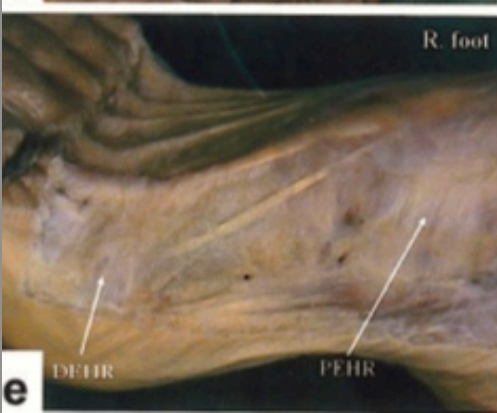
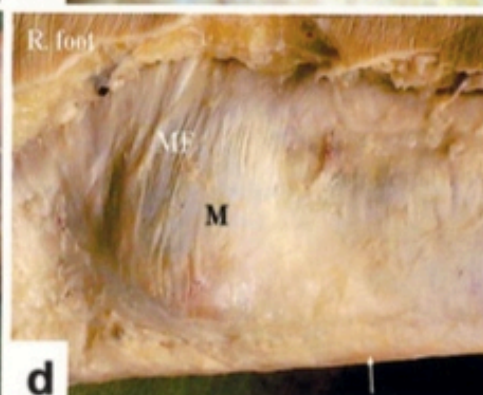
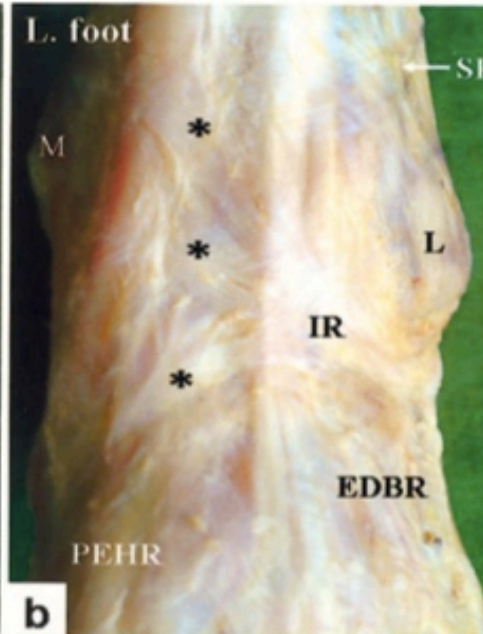
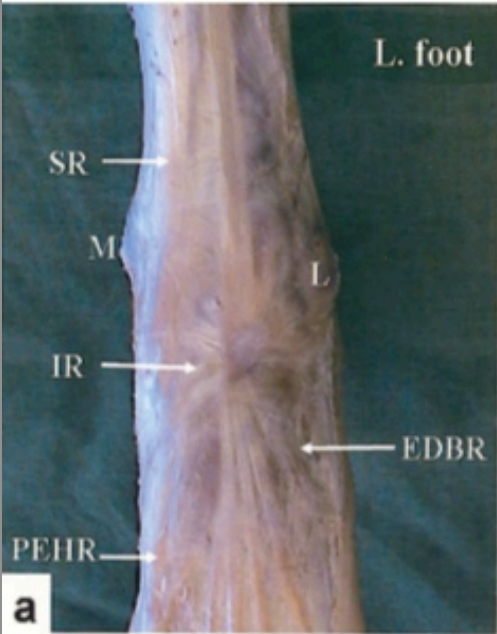
All create a nervous system response – but not all responses are the same!

What is the **largest and most sensitive** sensory tissue in the body containing the **largest number of small nerves?**



Neuromyofascial Web

Fascial Tensioning



Ectoskeleton tensed during isometric contractions

"feel fascia" – not muscles



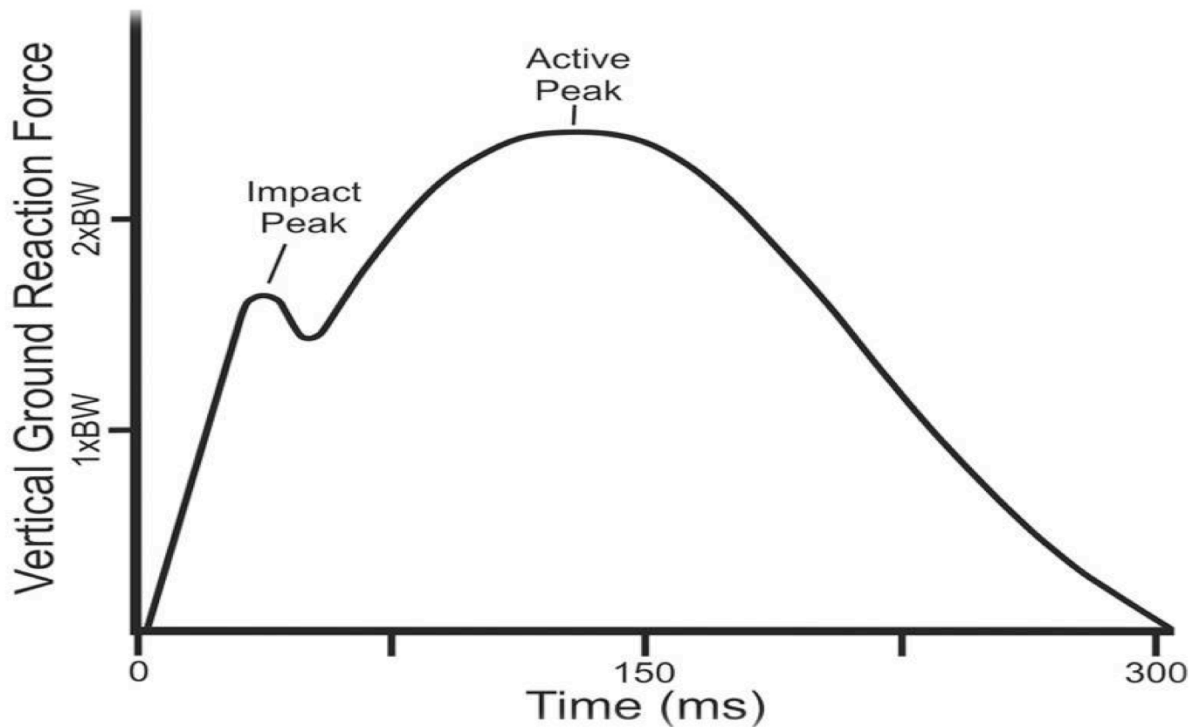
Deep Fascial Stability

Week 2

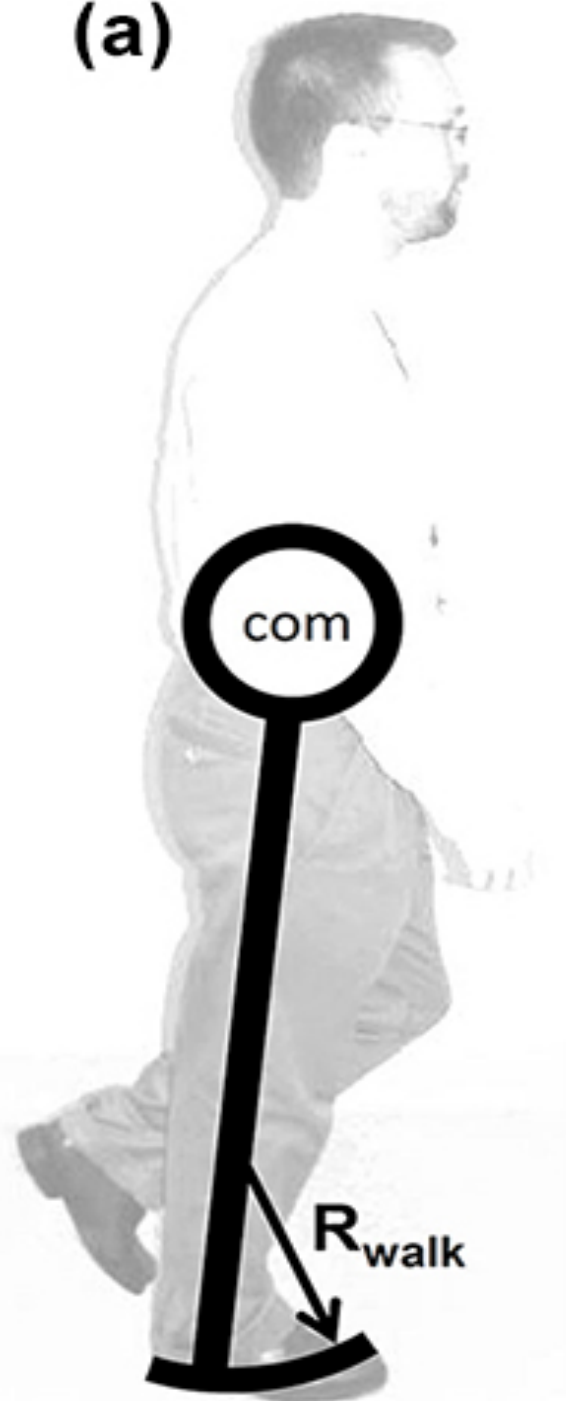
Fascial Elasticity & the Future of Energy Transfer

Our ability to **rhythmically** load and unload
impact is dependent on fascial elasticity

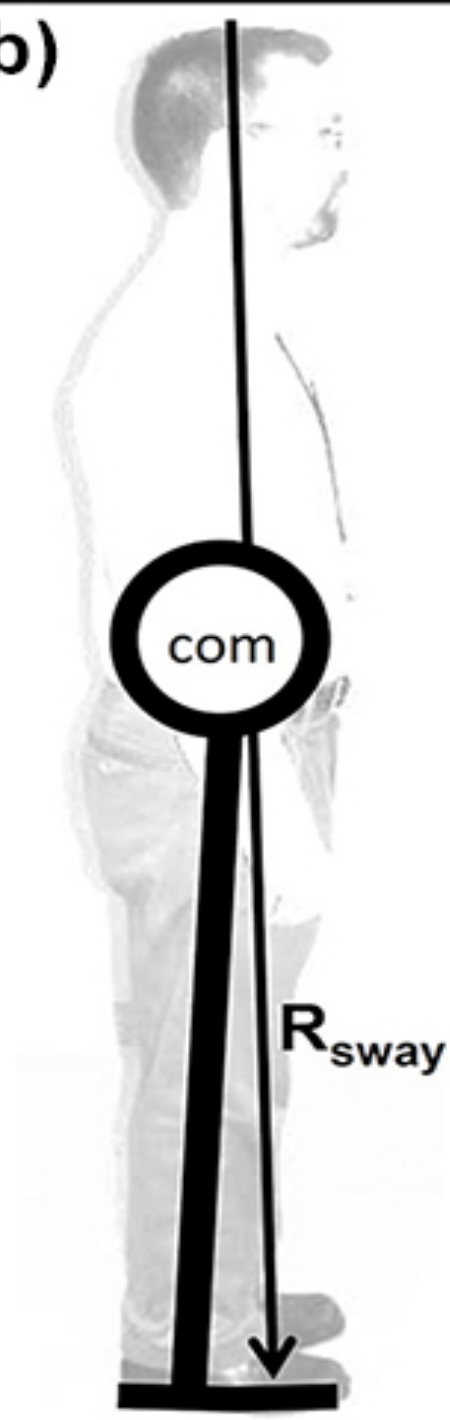
Average adult take 5,000 – 8,000 steps a day
 $1 - 1.5 \times$ body weight in ground reaction forces



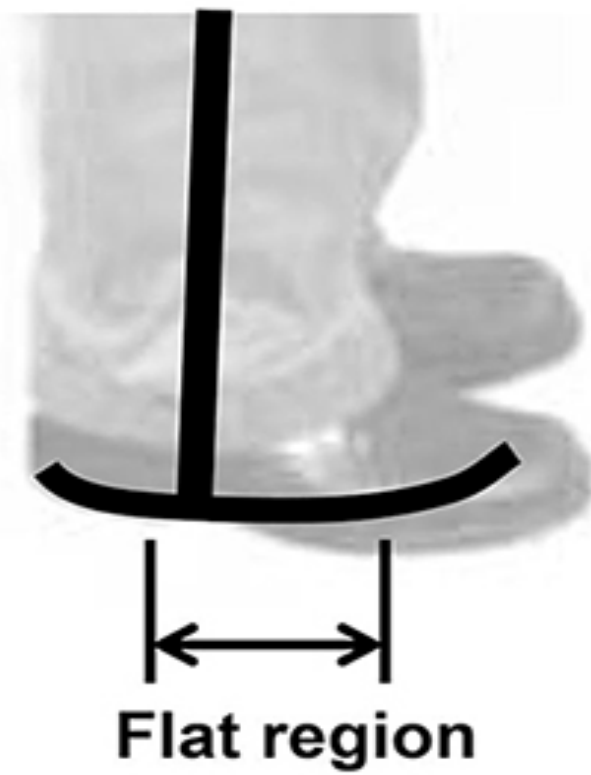
(a)



(b)



(c)



Pendulum Type Movement

- **Energy conservation**
 - Potential energy from impact forces
 - Elastic recoil from tendons / muscle fascicles
 - Fascicles surrounded by perimysium
- **Catapult Effect**
 - Slow stretch followed by rapid recoil

How do we perceive impact forces?

Vibrations



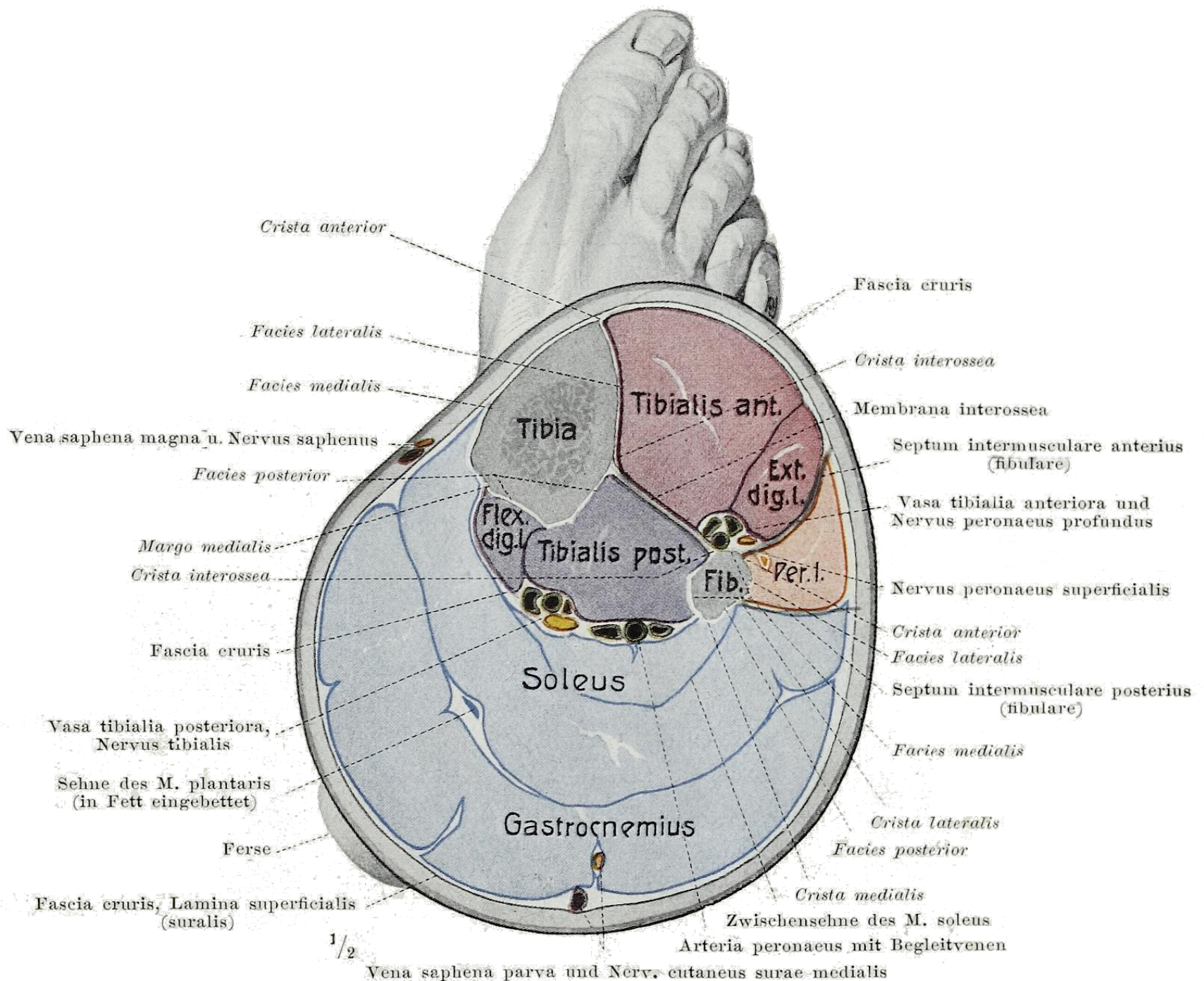
Once you perceive vibrations –
how does the body **damp** vibrations?

Isometric Contractions



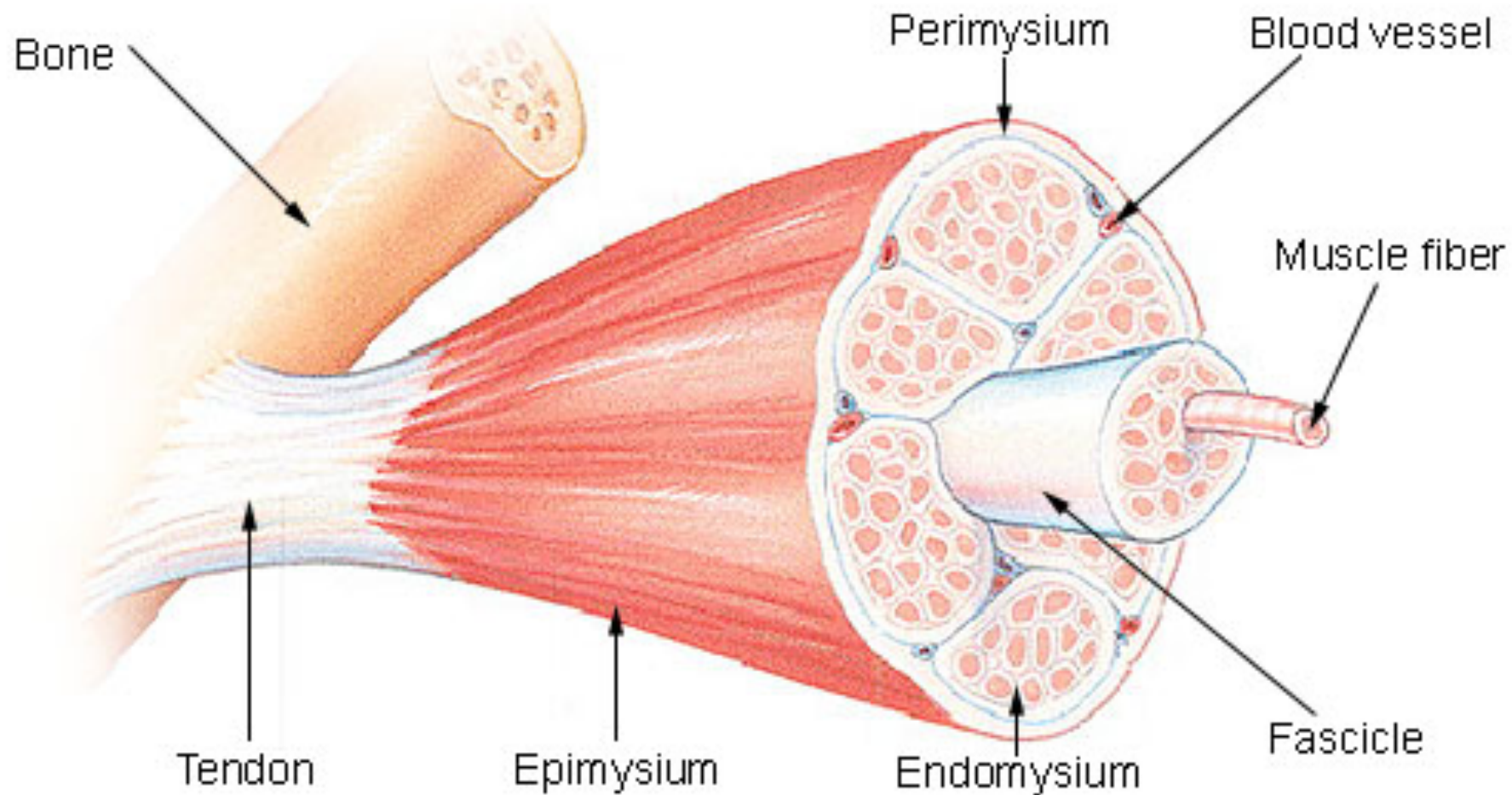
Intra-muscular
pressure

"compartment pressure"



Isometric contractions increases potential energy within the **perimysium** of the muscle fascicles.

Structure of a Skeletal Muscle



Perimysium

Has highest density of myofibroblasts and acts principally to transmit muscle force.

Isometric contractions create tension in the perimysium

Future of Movement Programming



Not just muscular strength & NM coordination but also fascial tension & elasticity

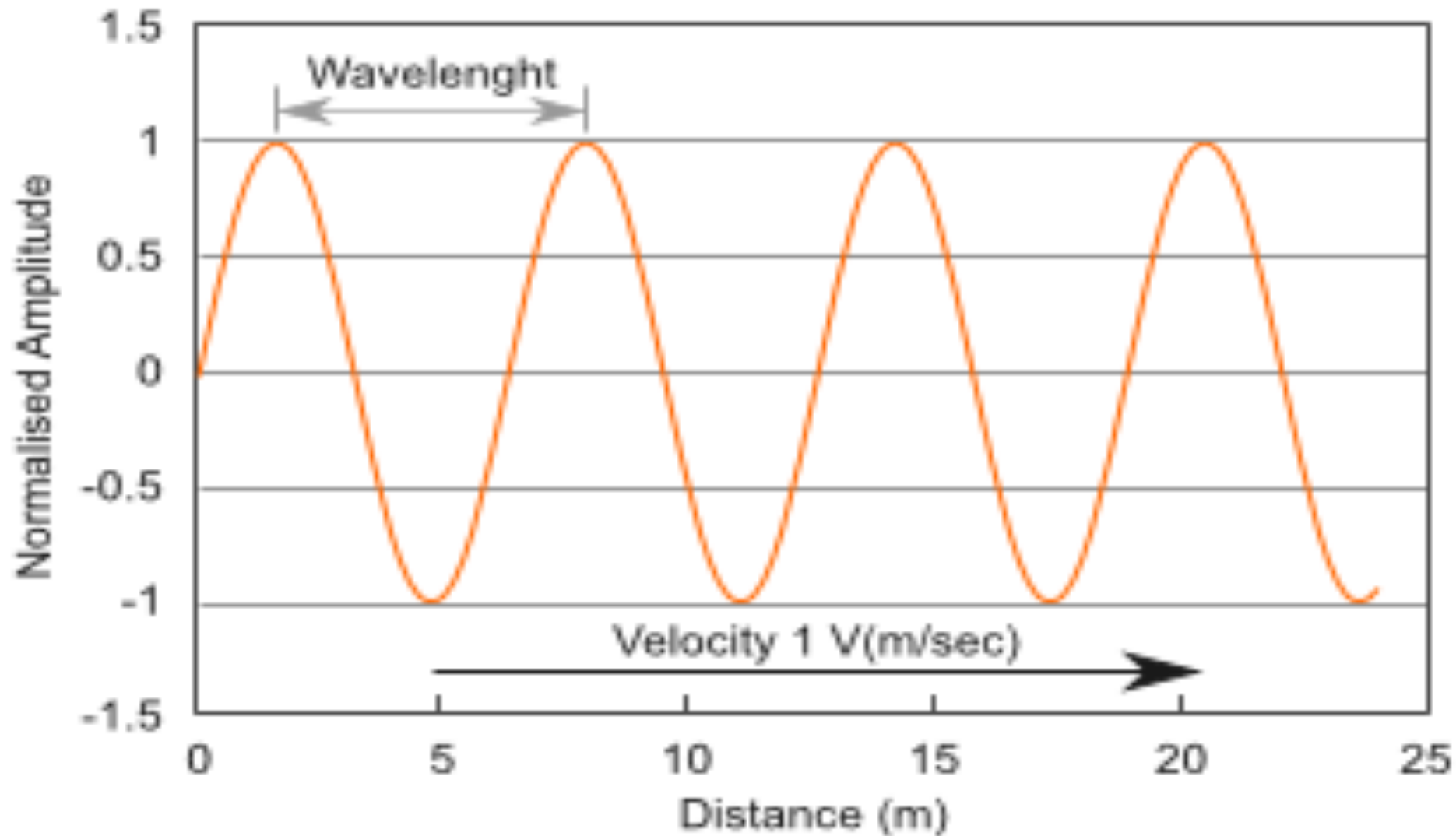
Optimizing Elastic Potential

Goal is to remodel fibroblasts and
collagenous fibrous network

In rhythmic movements

- Muscle fiber length changes little / isometric contractions
- Muscle fibers stiffen temporarily while fascia acts like elastic band or yo-yo

Rhythmic vs. Non-Rhythmic Movements



Optimal Movements

Load fascial tissue over multiple extension ranges while utilizing their elastic springiness

Bounce at end range of motion

Low repetitions

Sinusoidal

Video of BARE

- <https://www.youtube.com/watch?v=lqkeqyeS3zs>

Stretching vs. SMR

Classic static stretching does not address the extramuscular fascia or intramuscular fascia

Hatha type yoga is more focused on muscle fiber lengthening than fascia

A-I type (contract-relax) stretching promises the most comprehensive stimulation of fascial tissues

SMR / Foam Rolling

Brings hydration to fascial tissue

2/3 fascia tissue is water

Addresses adhesions / non-enzymatic crosslinks

Addresses proprioceptors

Injured or Impaired Elastic Recoil?

- Consider crosslinks
 - Enzymatic vs. Non-Enzymatic
- Tendinopathy

Enzymatic Crosslinks vs. Non-Enzymatic Crosslinks

(Elastic)

(Non-elastic / Stiff)

Sugar makes tissue sticky



Connective Tissue Supplements



Benfotiamine – glucose control / 300mg per day

L-Carnosine – 1000mg per day

L-Lysine – prevents AGE formation / 500mg per day

Vitamin C – prevent crosslinking / 1000mg per day

Thank you

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