



Injury Prevention + Strength Program for Runners

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Today's Agenda

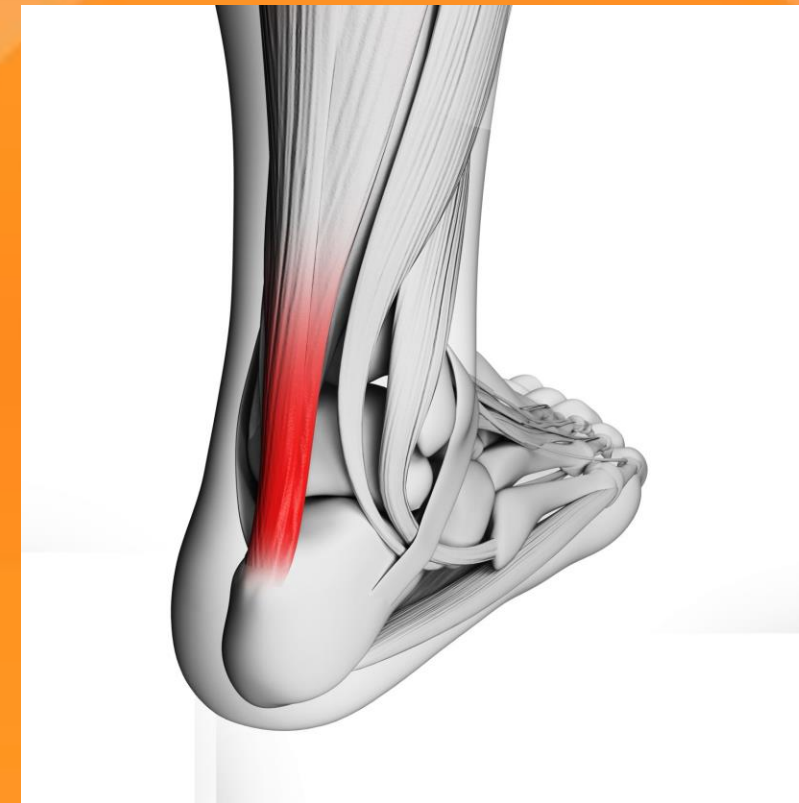
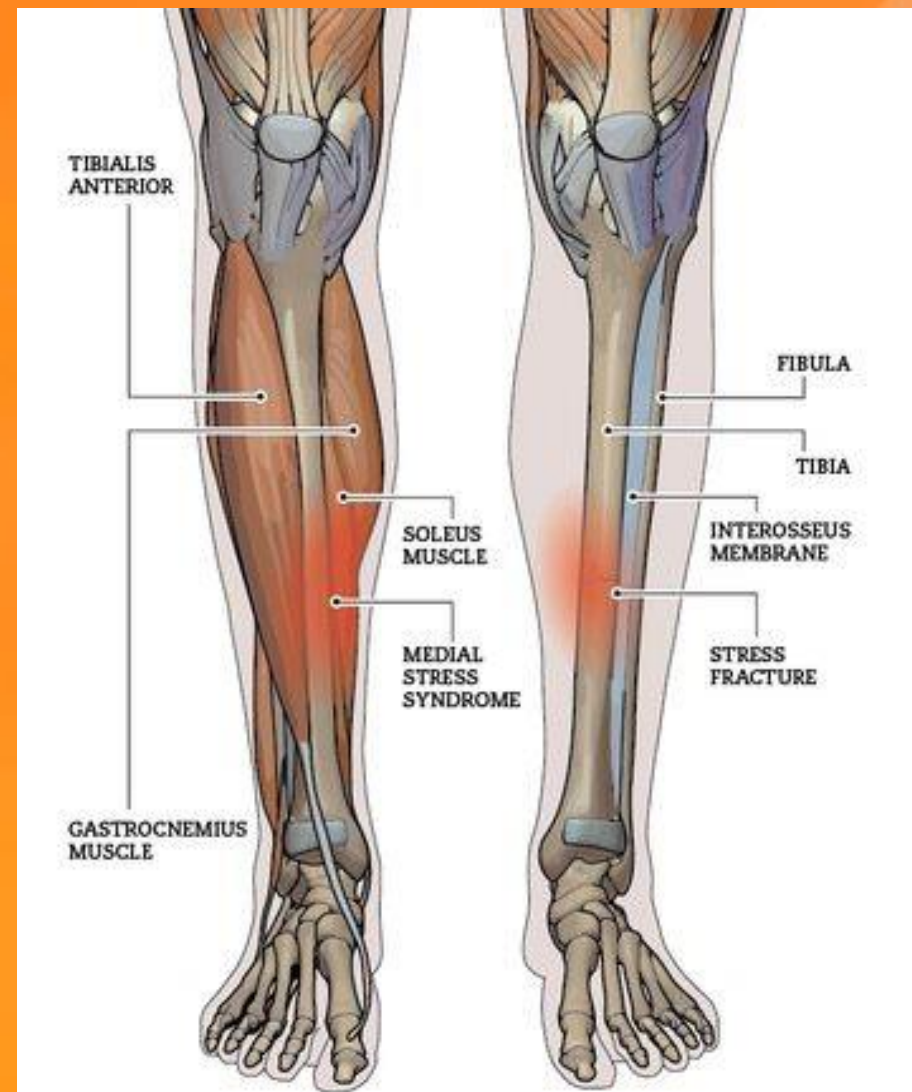
- ∞ **Short presentation**
 - ∞ Risk factors for running injuries
 - ∞ How we can protect from injury
 - ∞ Training principles
 - ∞ Ramping up mileage
 - ∞ Physical factors we can address

- ∞ **Demo/workout**

Running Injuries: Why?

- **Repetitive Overuse**
 - Excessive increase in volume
 - Excessive increase in intensity
- Inadequate recovery/nutrition
- Mobility, flexibility, strength, other deficits

Running Injuries



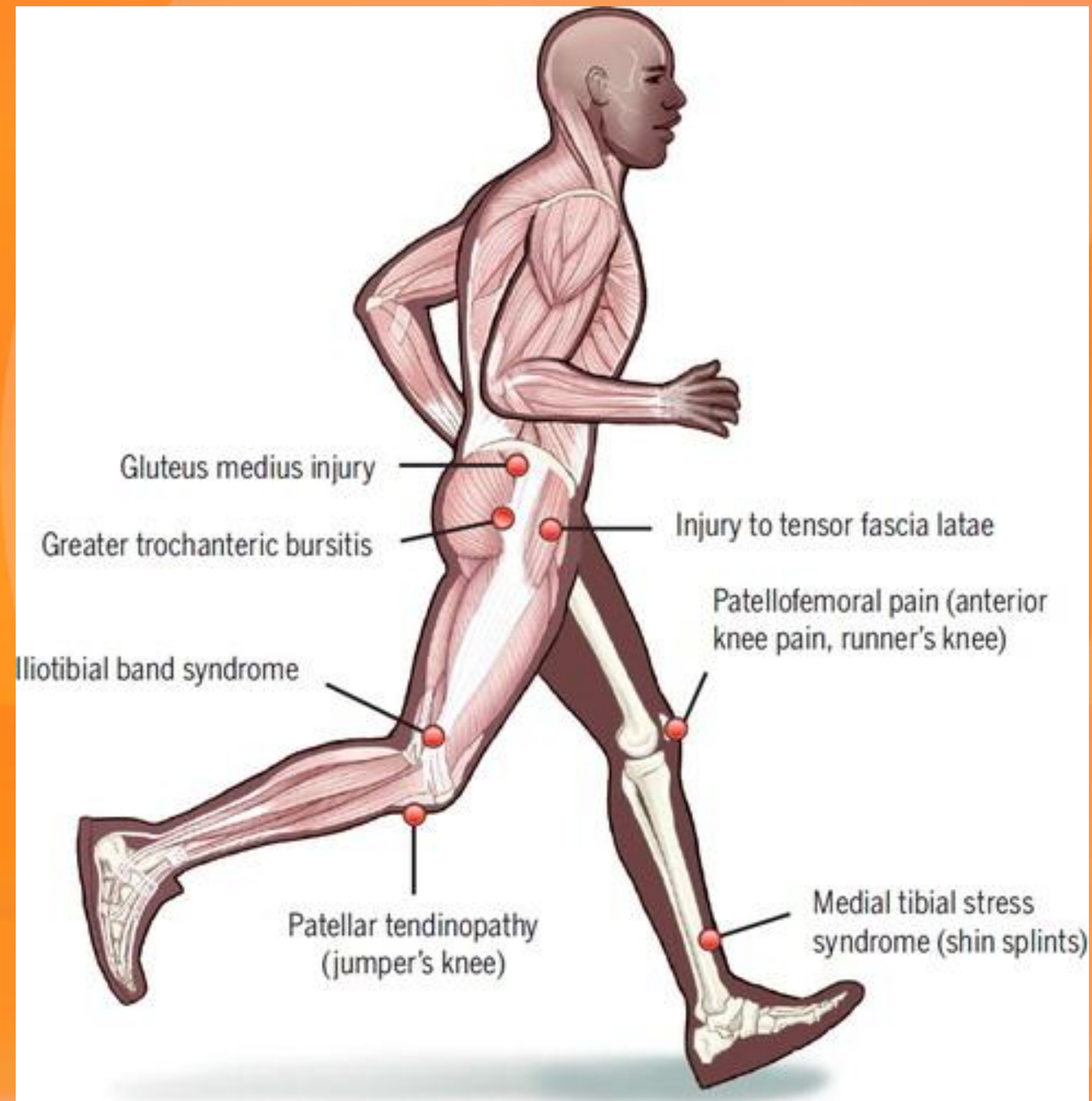
- ∞ Most common lower body injuries: medial tibial stress, Achilles tendinopathy, plantar fasciitis

Other Injuries

- Hip or sacral stress reactions/fractures
- muscle strains
- IT band syndrome
- labral tears or hip impingement
- patellofemoral (knee) pain



Other Injuries



How can we protect from injury?

- ∞ **Smart training**
- ∞ **Mobility** (hips, spine, feet/ankles)
- ∞ **Stability:** Gluteus medius, core
- ∞ **Strength:** Gluteus maximus, legs

Training Principles

- Mileage
 - 10-20% per week
 - Beginners: start with 1-4 miles, 2-4 days/week, run-walk, progress more slowly
 - Ramping up for a big race



Training Principles

- Recovery: a part of training
 - Rest day
 - Cutback week
- Intensity
 - Workouts
 - Pace

Cross training



- Maintain *or progress* aerobic fitness
- Decrease running-specific strains/overuse

Pain

- Listen to your body
- Soreness \neq pain

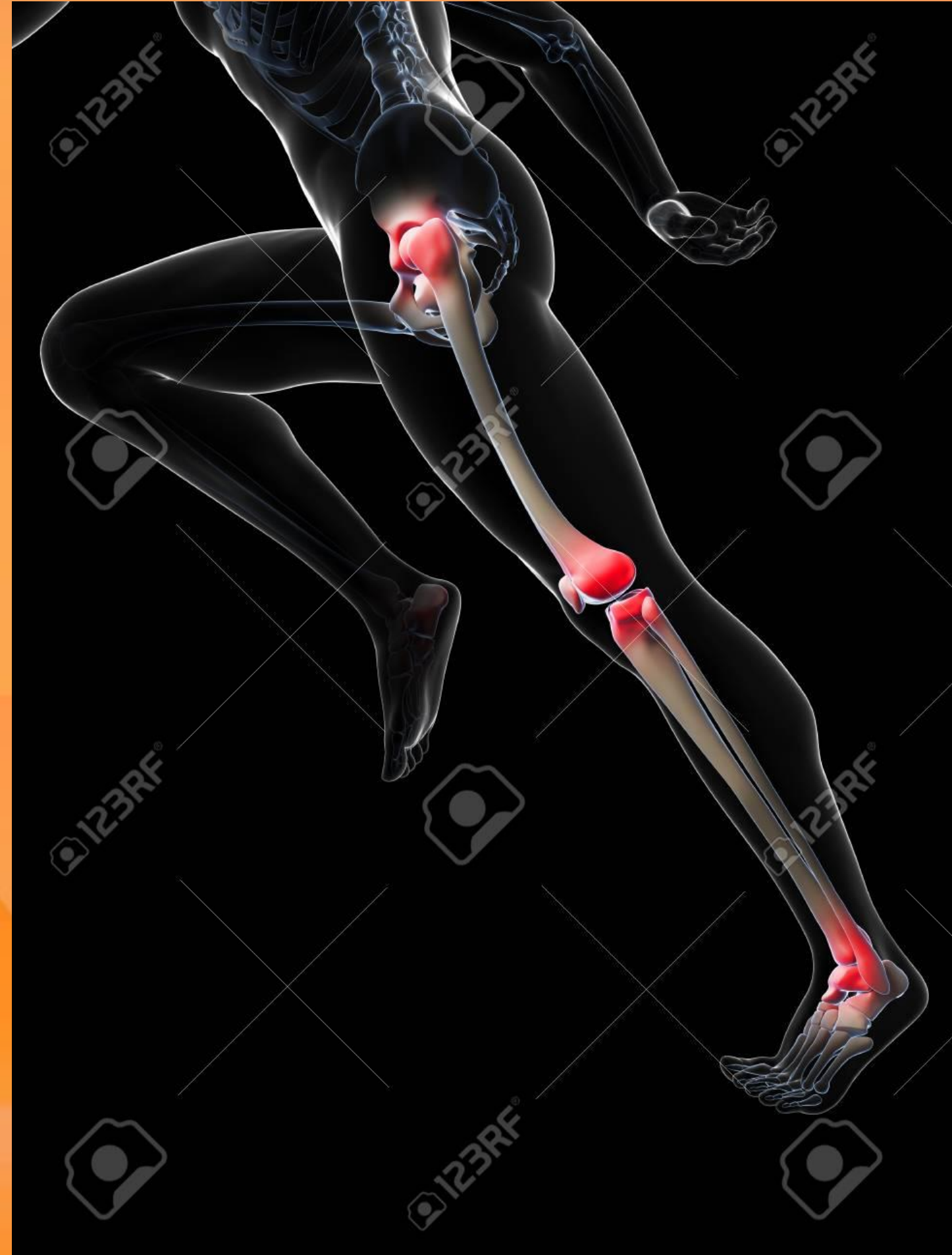


- Asymmetrical
- Localized



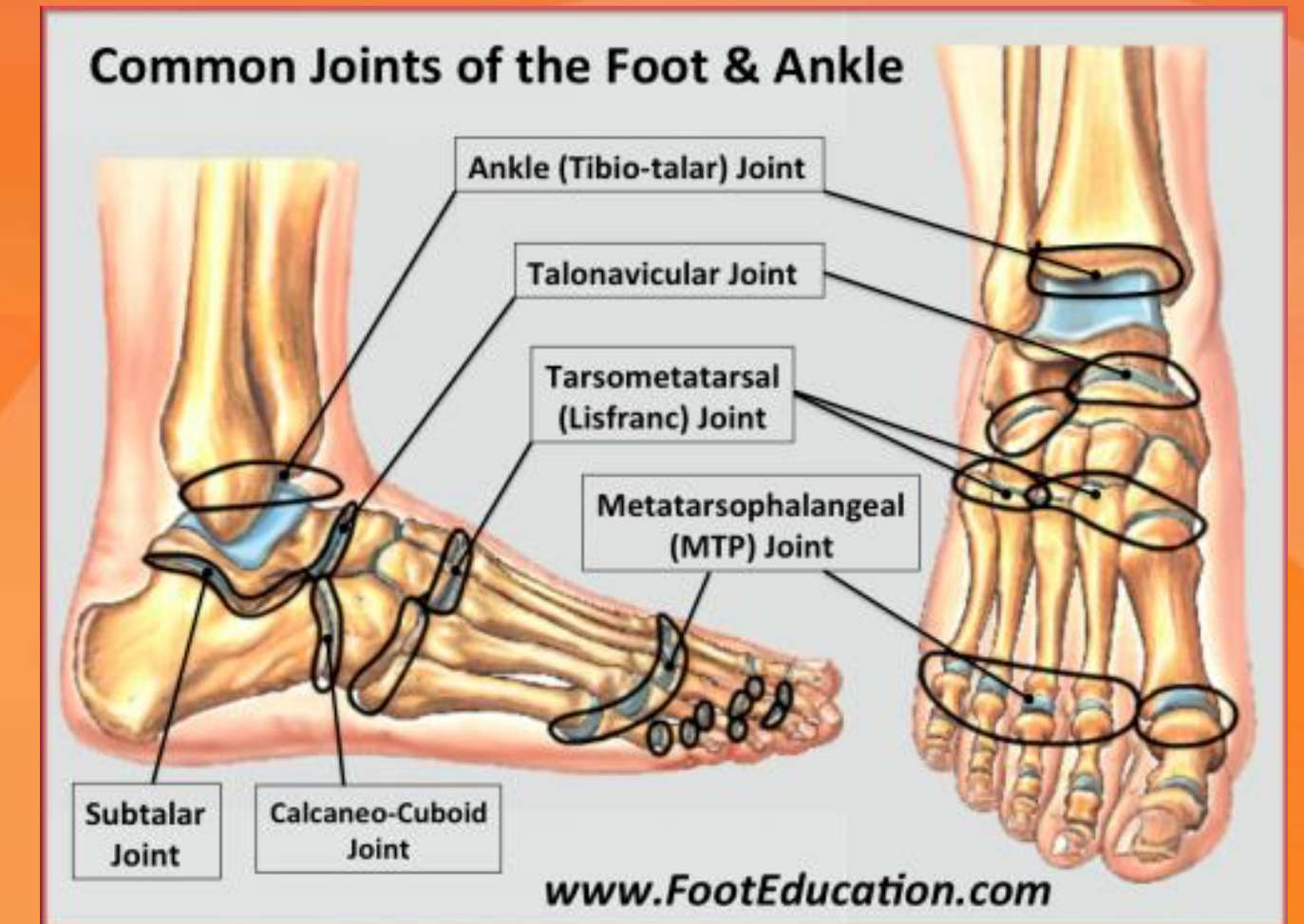
- Pain intensity $>3/10$
- Worsening during
- Persistent

Physical factors of running mechanics



Mobility

- Foot and ankle joints
 - for pronation/supination
- Hip joint
 - for adequate hip flexion/extension, rotation
- Thoracic, lumbar spine
 - breathing, upper body mobility

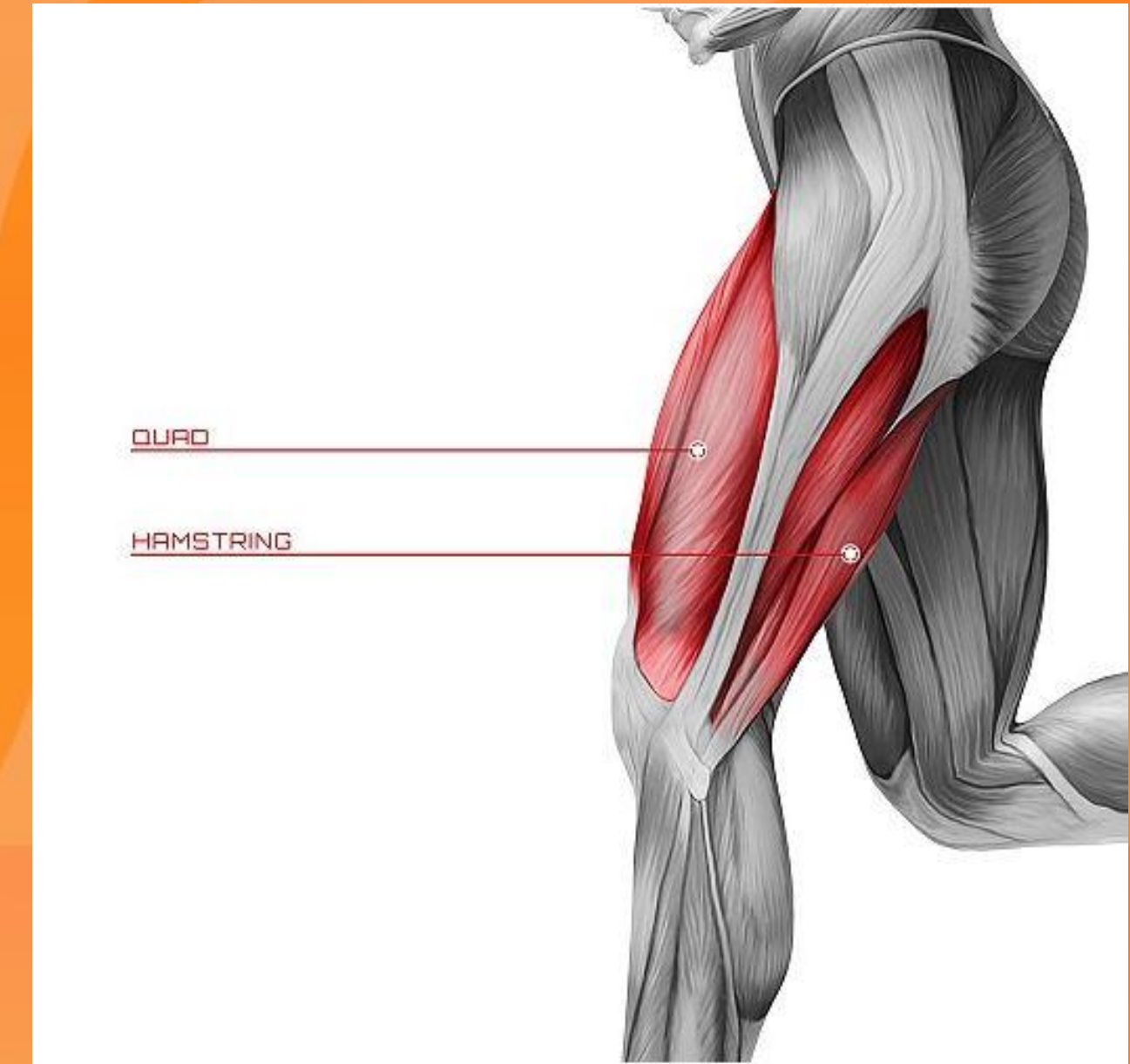


Stability and Strength

- **Core:** internal and external obliques, transverse abdominus, pelvic floor, rectus abdominus
- Stabilizes the trunk/pelvis to give a solid base for our arms and legs to move freely from
- Improves our efficiency of gait = less extra movement and strain on tissues

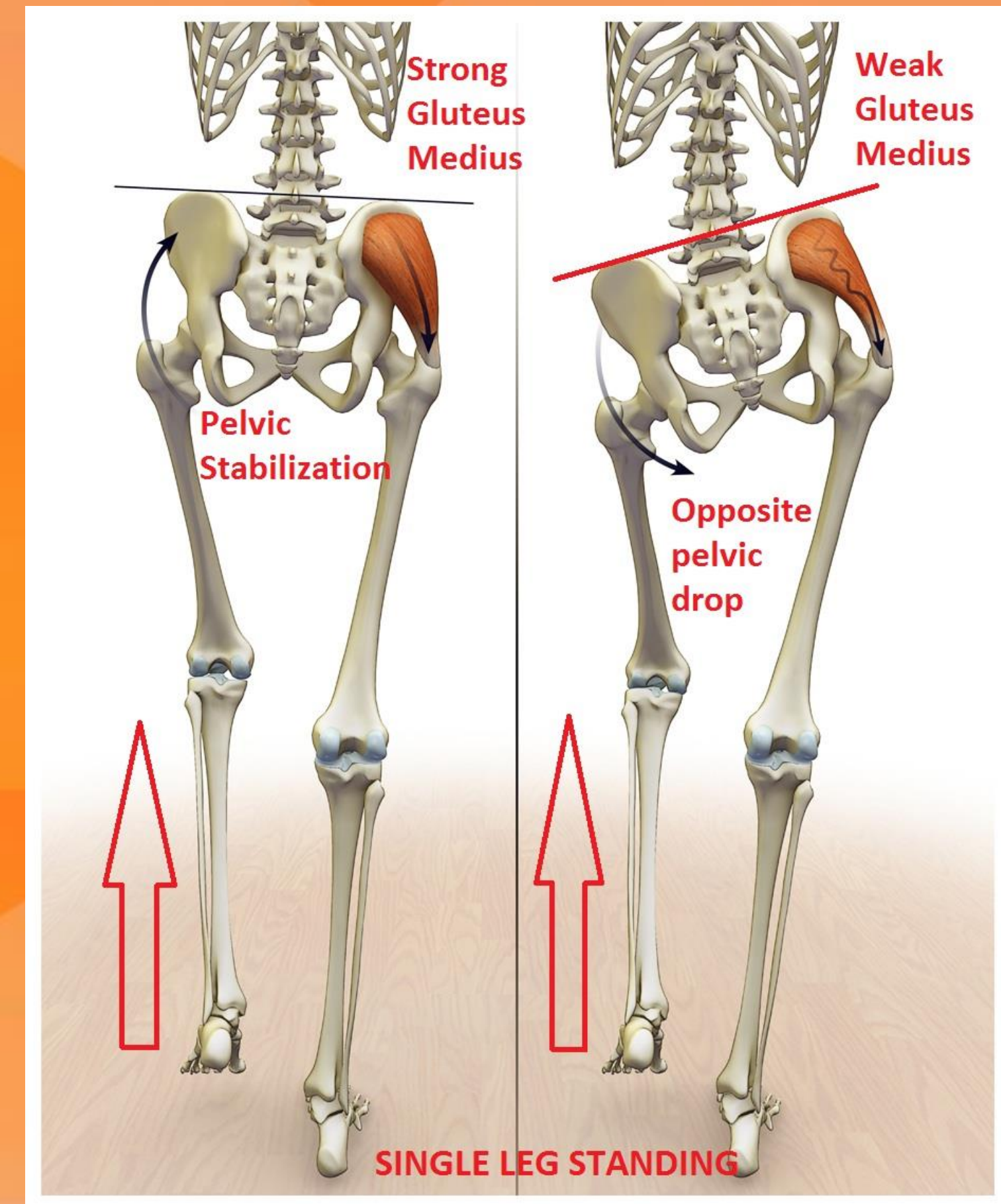
Stability and Strength

- ∞ Hamstring:quadriceps ratio
- ∞ Should be 60% in average person
- ∞ 1:1 in some elite runners
- ∞ Hamstrings extend the hip, flex the knee
- ∞ Eccentric: slow down knee extension



Stability and Strength

- ∞ **Gluteus medius:** stabilization
- ∞ Abducts and internally or externally rotates the hip
- ∞ Weakness= "hip drop" in *single-leg stance*
- ∞ Affects spine, pelvis, hip, knee, ankle, foot



Stability and Strength

- ∞ **Gluteus maximus:** propulsion
- ∞ Eccentrically slows down the leg from swing
- ∞ Extends the hip and entire leg to propel the body *forward*
- ∞ Glute max weakness can lead to compensation by other muscles (lumbar extensors)
- ∞ Various factors affect the function of the gluteal muscles: mobility, flexibility, motor control





More resources

- Some exercises are available on our YouTube page: React Physical Therapy
- Questions about this webinar, more detail, etc: email me! jdiamond@bereact.com
- Come in for a free injury screen/consultation! *Telehealth* option is currently available also.

The background features a warm orange-to-yellow gradient. Two large, overlapping circles are centered horizontally. The left circle is a lighter, semi-transparent orange, while the right circle is a darker, more saturated orange. The text 'WORKOUT TIME!' is centered between the two circles.

WORKOUT TIME!

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