RAPID RESEARCH

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March 2022

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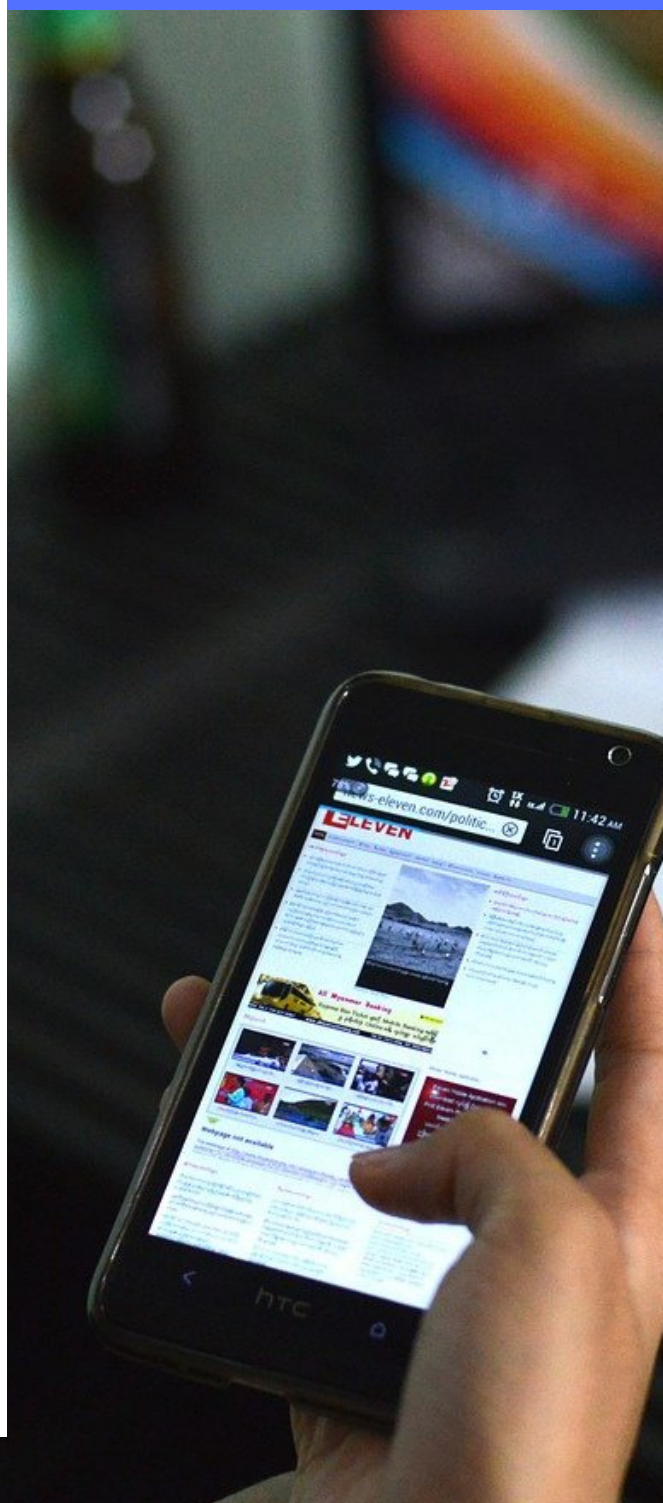
Glute Muscles Performance

- Best Exercises for Glute Muscle Activation
- Glute Medius Function in People With or Without Back Pain
- EMG Activation of Glutes During Squat, Lunge, & Step-Ups

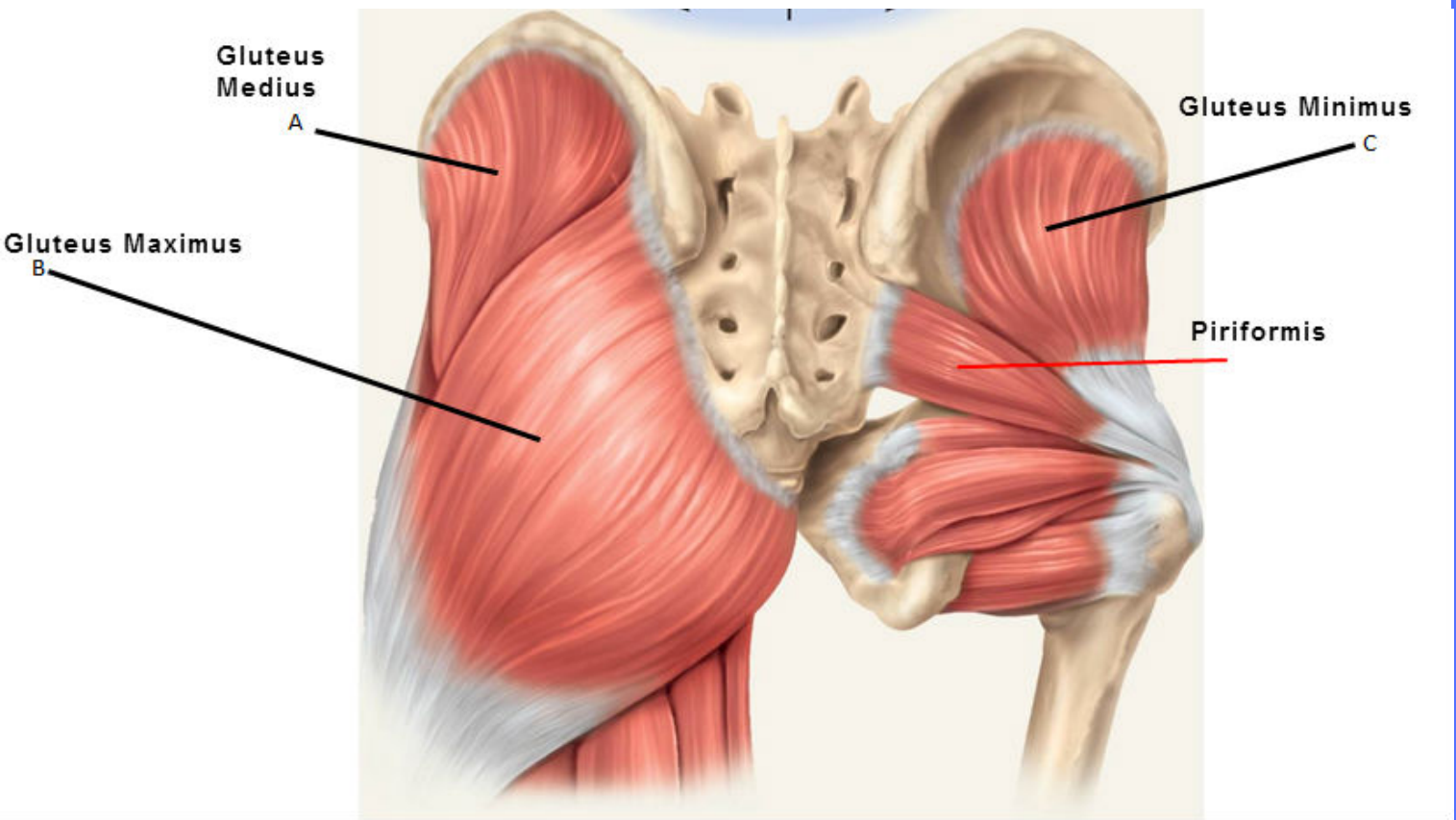


MARCH 2022

BEST EXERCISES FOR GLUTE MUSCLE ACTIVATION

Click for Full Text (Moore et al 2020)

This systematic review evaluated whether common therapeutic exercises generate at least high (> 40% maximum voluntary isometric contraction (MVIC)) electromyographic (EMG) activity in the GMed & GMin.



KEY FINDINGS

56 Articles Included;

Gluteus Medius:

- **Hip hitch/Pelvic drop exercises** generated high activity (>40%).
- **The Dip test & isometric standing hip abduction** had high activity of anterior GMed.
- **Isometric standing hip abduction** for the posterior GMed.
- **Single leg bridge, Side-lying hip abduction with hip internal rotation; lateral step-up; standing hip abduction & resisted side-step** generated high activity for the middle GMed.

Gluteus Minimus:

- **Standing isometric hip abduction & Hip hitch/ Pelvic drop** exercises generated high activity in all GMin segments.
- **Side-lying hip abduction, Dip test, Single leg bridge and single leg squat** had good activation for posterior GMin segment.

MAIN TAKEAWAYS

Despite wide methodological variations between studies, **different variations of the hip hitch/pelvic drop exercise elicits activity in all GMed segments** sufficiently in healthy individuals.

Isometric standing hip abduction and different variations of the hip hitch/ pelvic drop exercise can be **prescribed for strengthening both GMin segments.**

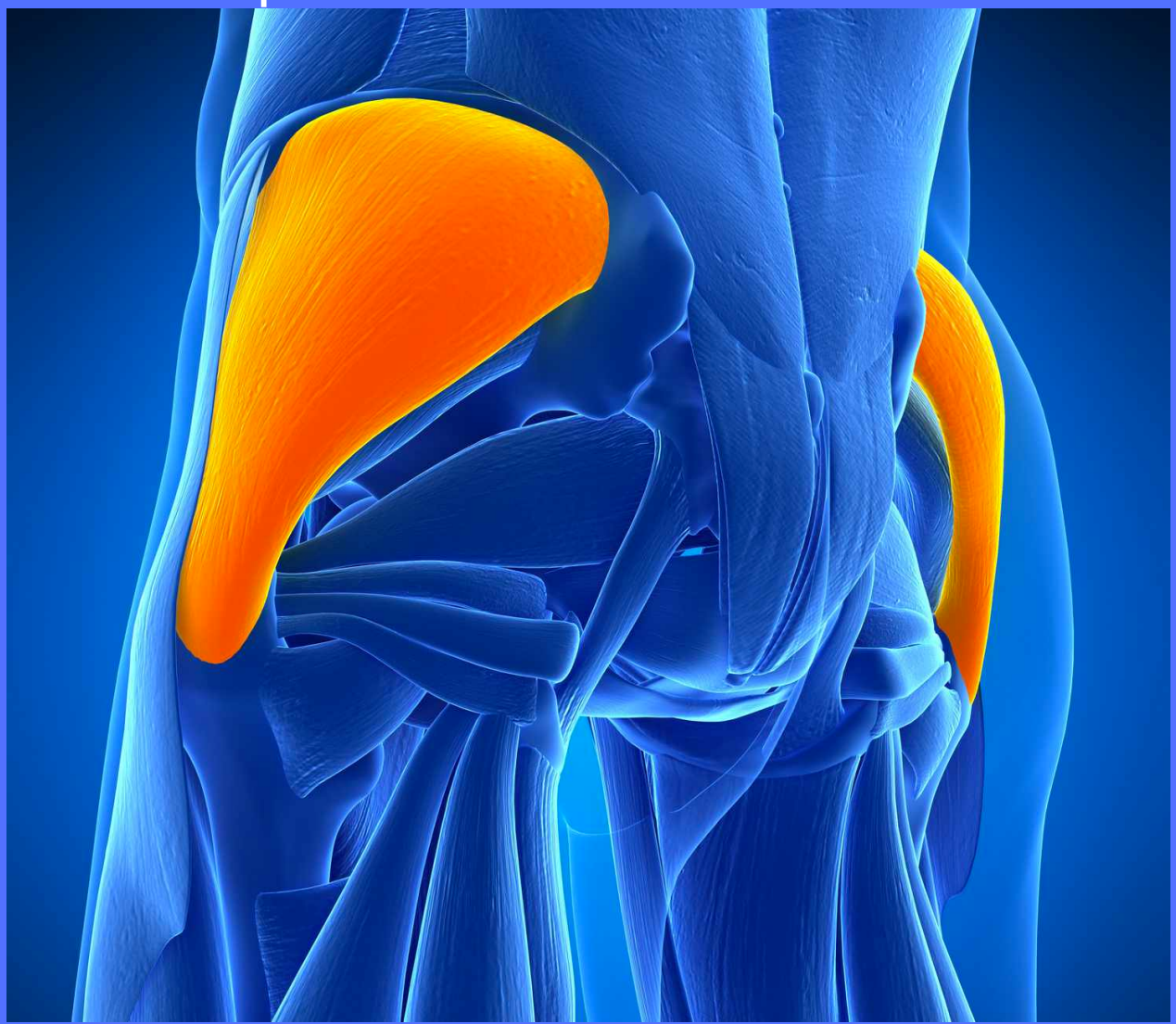
A wide range of exercises are **effective for activating and building strength in the glute medius and minimus.**

MARCH 2022

GLUTE MEDIUS FUNCTION IN PEOPLE WITH OR WITHOUT BACK PAIN

Click for Full Text (Sadler et al. 2019

This systematic review systematic determined if adults with LBP demonstrated differences in measures of gluteus medius function when compared to adults without LBP.



KEY FINDINGS

24 studies were included; 1088 people with LBP & 998 without LBP.

Gluteus medius muscle in participants **with LBP tended to demonstrate reduced strength and more trigger points** vs. those without LBP.

Unclear results were found for:

- Level of activity
- Fatiguability
- Time to activate
- Time to peak activation
- Cross sectional area
- Muscle thickness

Meta-analysis was not performed due to heterogeneity of studies.

MAIN TAKEAWAYS

Both weakness and trigger points in the Glute Medius were **more common in people with Low Back Pain than without.**

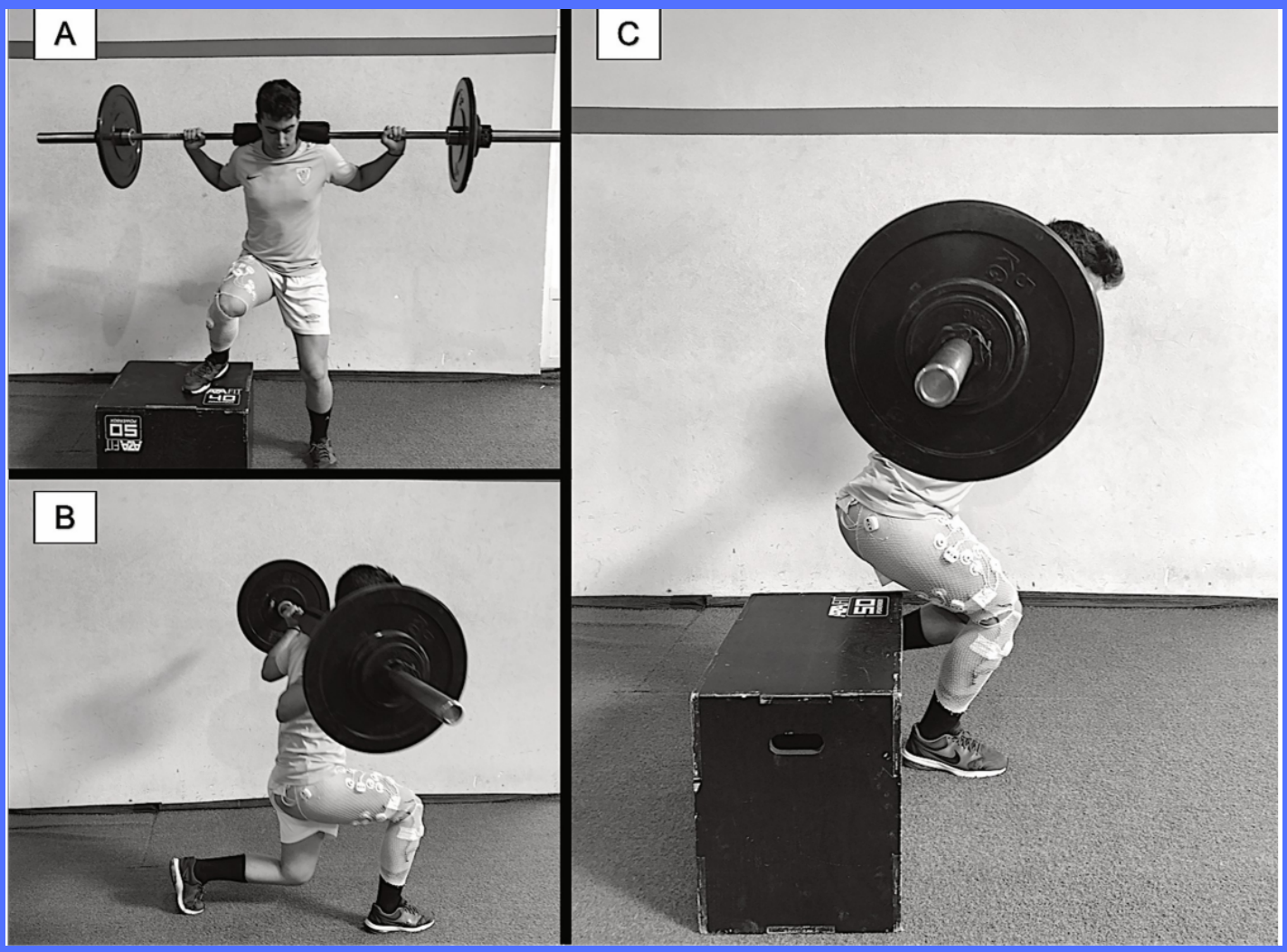
Strengthening the gluteus medius muscle and eliminating trigger points **may help in the management of LBP patients.**

MARCH 2022

EMG ACTIVATION OF GLUTES DURING SQUATS, LUNGES, & STEP-UPS

Click for Full Text (Muyor et al. 2020)

This study evaluated the EMG activity of the Gluteus and Quadriceps muscles in the Lateral Step-Up, Forward Lunge and Monopodal Squat exercises.



KEY FINDINGS

20 physically active participants (10 men and 10 women) included;

- Each performed 5 repetitions at 60% of max in each exercise.
- **EMG amplitude was calculated in % Max Contraction.**

Monopodal Squat exercise showed a higher EMG activity in relation to the Lateral Step-Up and Forward Lunge exercises in all of the evaluated muscles except for the rectus femoris.

All 3 exercises showed significantly higher EMG activity in the concentric phase vs. eccentric phase, for all evaluated muscle groups.

In the 3 exercises, vastus lateralis and vastus medialis showed the highest EMG activity, followed by gluteus medius and gluteus maximus.

MAIN TAKEAWAYS

Monopodal Squat produces significantly higher EMG activity in the GMed, GMax, BF, VL, VM and RF muscles compared to the Lateral Step-Up and Forward Lunge.

Monopodal Squat, Lateral Step-Up and Forward Lunge exercises are recommended not only for rehabilitation purposes but also for performance objectives and strength improvement in the lower limbs.

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