TRANSIENT MOVEMENTS FOLLOWING MUSCLE FATIGUE REDUCED LOW BACK PAIN DEVELOPED FROM PROLONGED STANDING

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INTRODUCTION

Hip Abductor Fatigue + **Low Back Pain from Standing** = **?**

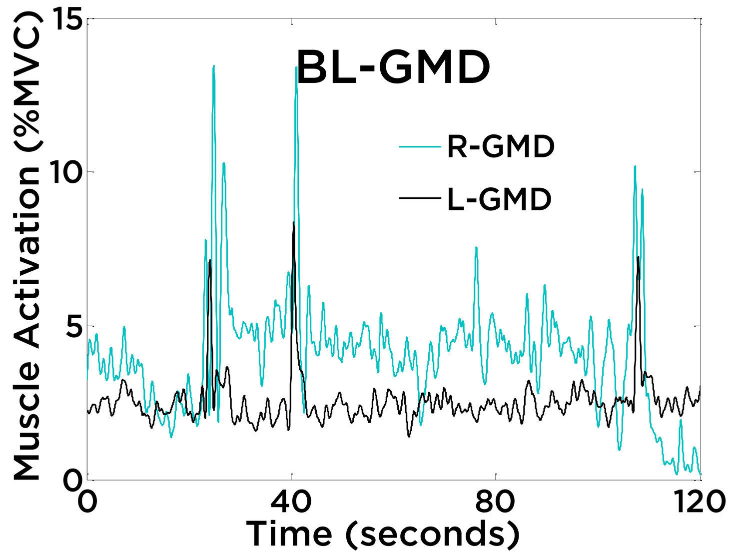
- Involved in posture control[1] and pain pathway[2] in standing
- Common in workplace settings[3] and predicts future low back pain[4]

Does knocking out the hip abductors using fatigue alter standing behaviours?

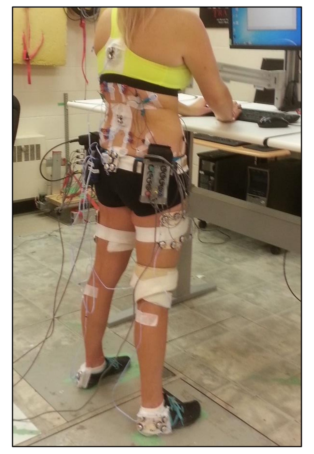
METHODS

Participants
- 20 ♂ + 20 ♀
- No prior low back pain

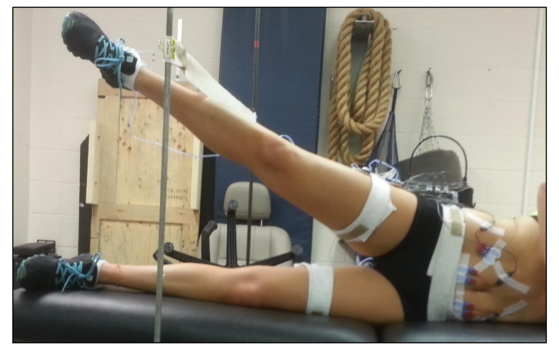
Measurements
- Muscle Co-activity (BL-GMD)
- Spine Posture (LP Flexion)
- Transient Movements (APMI)
- Low Back Pain (LBP)

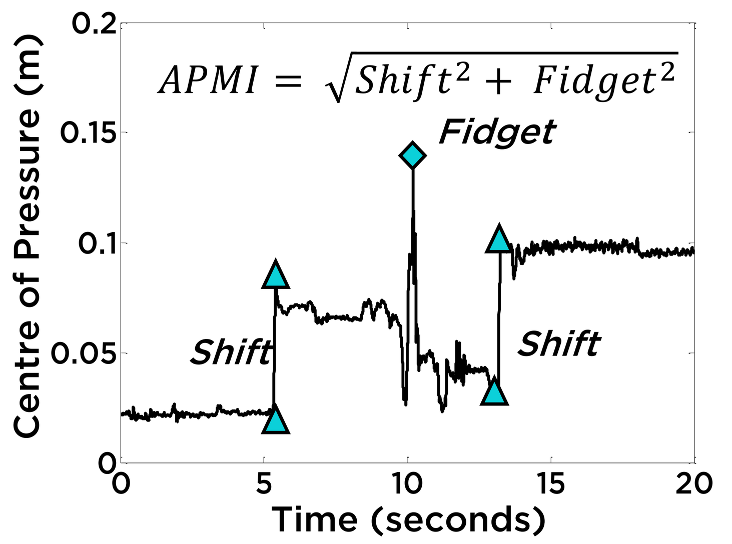


Control
- 2 Hour Stand



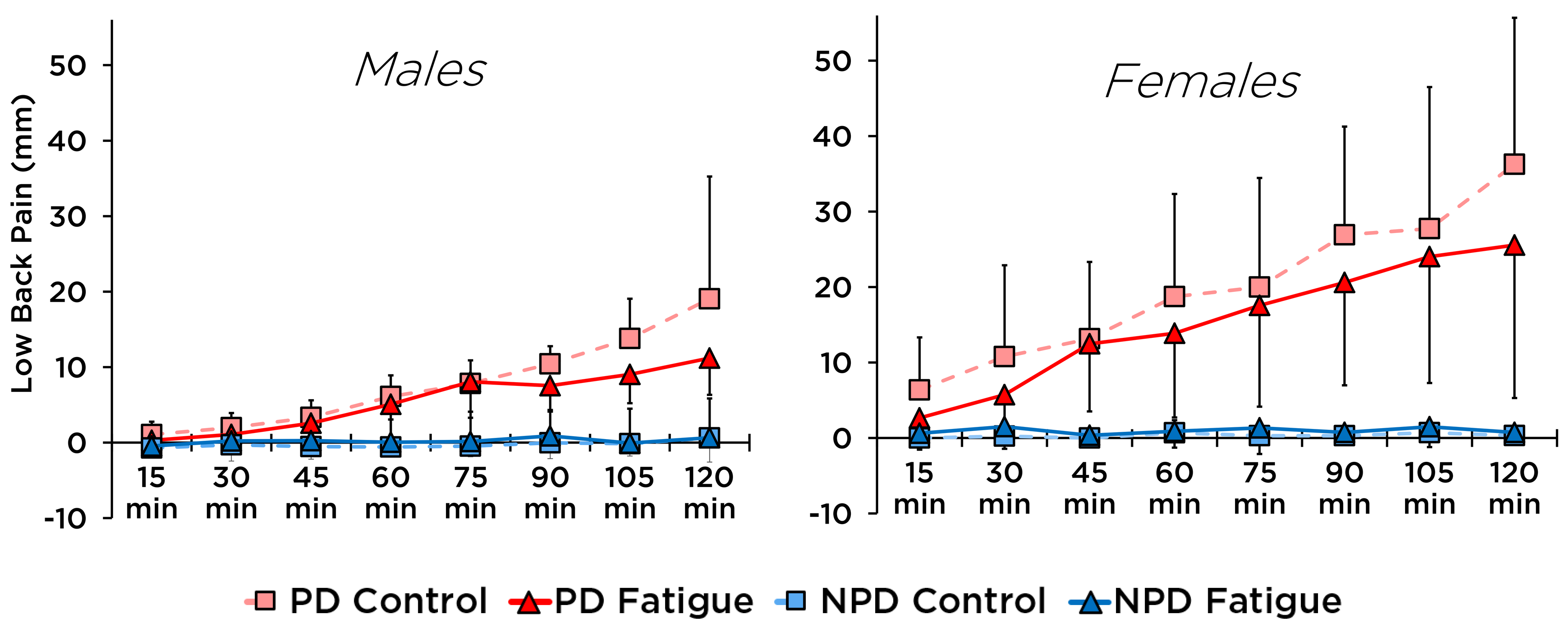
Fatigue
- Exercise
- 2 Hour Stand



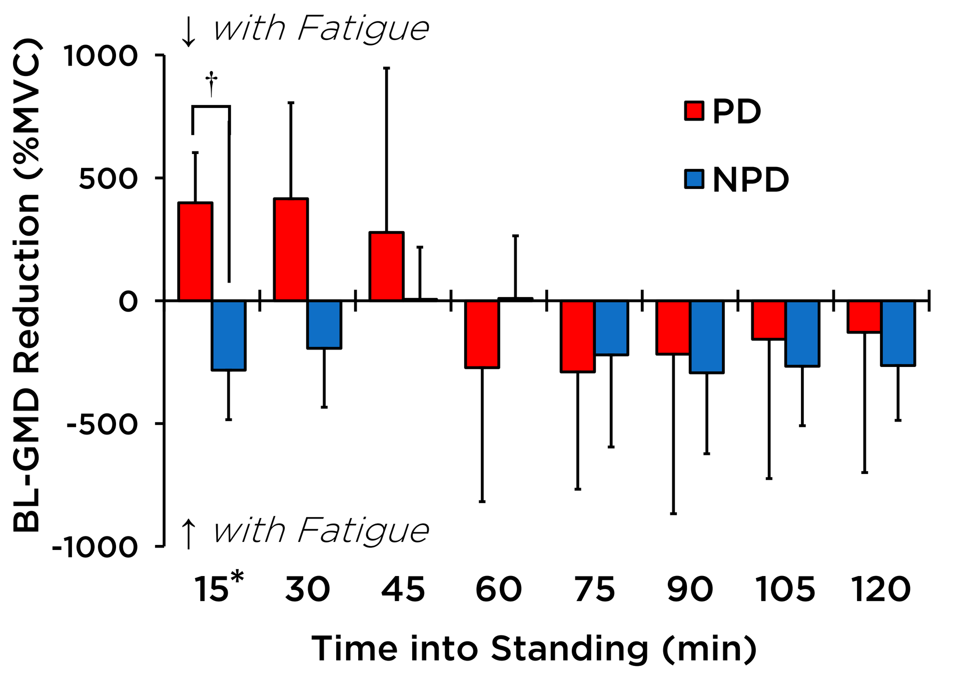


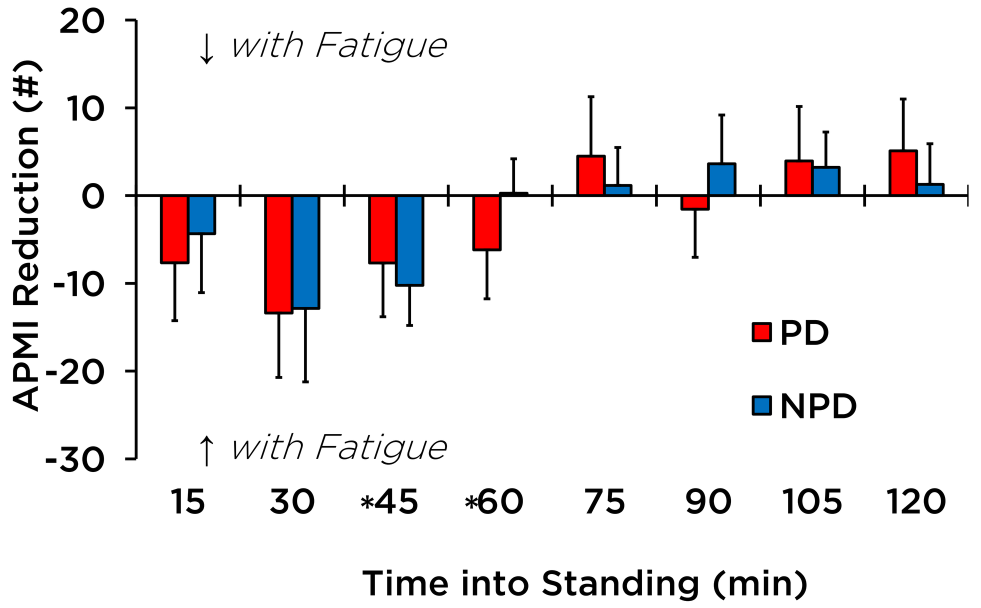
RESULTS AND DISCUSSION

16/40 (8♂, 8♀) developed LBP (PDs), others (NPDs)
- Males and females had different patterns of LBP development
- All PDs (♂ and ♀) reported less LBP during the fatigue session



More movement occurred early in the fatigue session
- Early reductions in BL-GMD (PD)
- Early increases in APMI (PD & NPD)

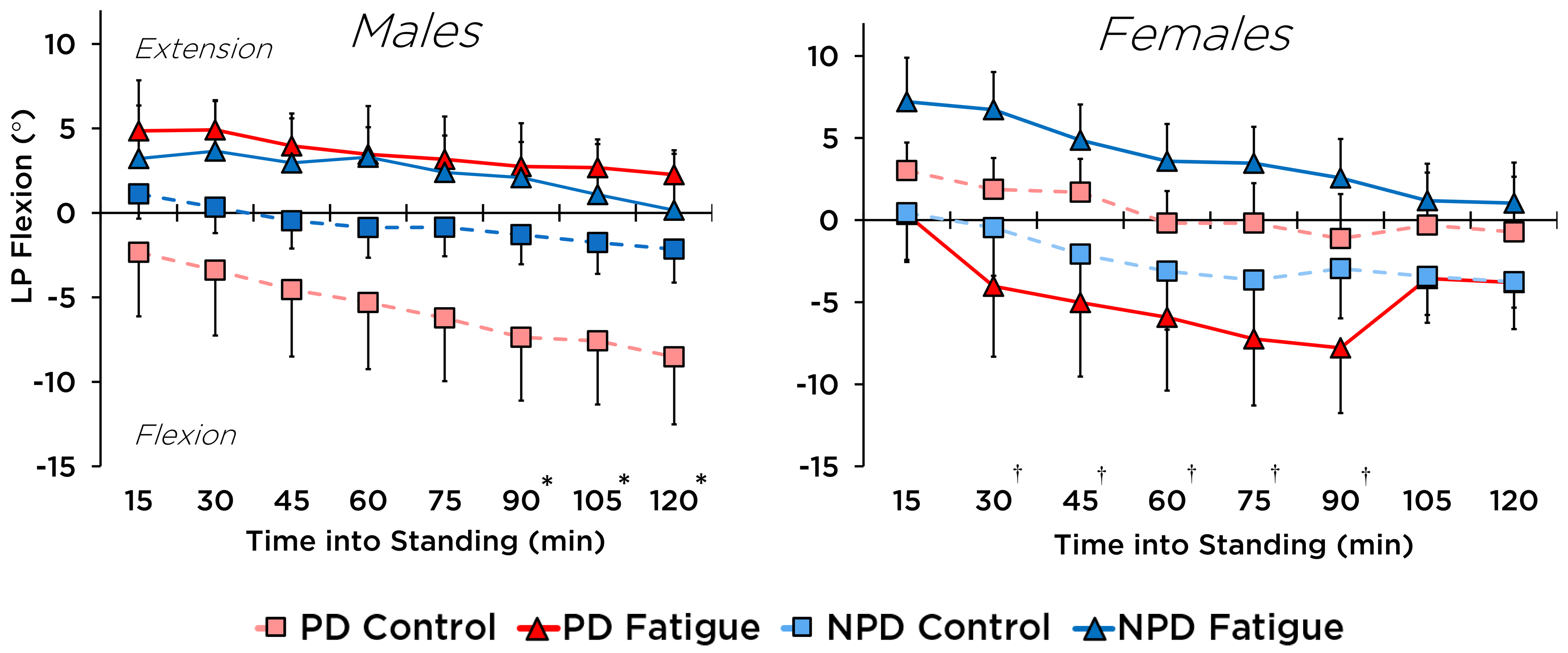




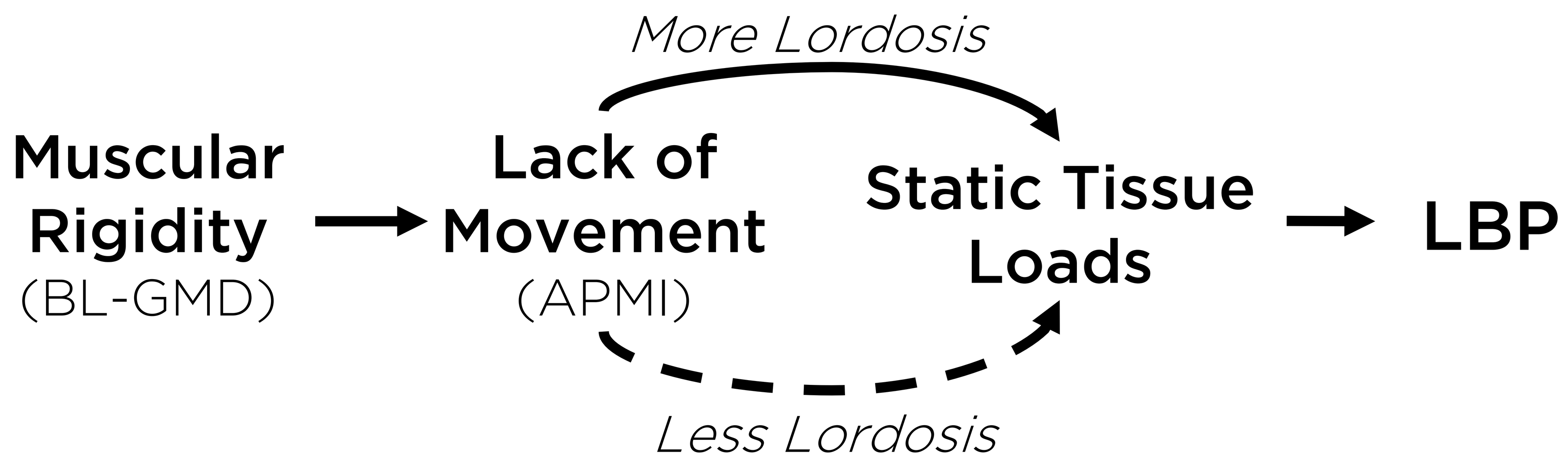
- Both reductions in muscle co-activity[2] and increases in transient movements[5] could have reduced LBP
- Unable to account for differences in LBP between genders

*Sessions were different (p<0.05) at indicated times, †Pain groups (PD/NPD) were different at indicated times

Gender Differences in Lumbar Flexion



- Male and female PDs had opposite LP Flexion responses to fatigue occurring at different time points during standing



- LBP reductions from increased movement during standing appear to be moderated by spine postures

CONCLUSIONS

Altering hip abductor activity increased movement and reduced LBP during standing

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References
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