

Grande Finale of Mulligan's MWM

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The Effect of Mulligan MWM and Taping Technique on the Temporal and Spatial Parameters of Gait in Acute Inversion Ankle Sprains

Literary Review

- Incidence: 10-27,000 reported each day^{1,2}
- Inversion Ankle Sprain (IAS) most common³
- Currently no Gold Standard for treatment



Mulligan Mobilization With Movement (MWM) for IAS⁴⁻⁹

- Mulligan's Premise with IAS:
 - anterior fibular positional fault
 - Evidence is inconclusive of fibular positioning
- Question:
 - Does Mulligan's MWM and taping for IAS have an immediate effect on temporal and spatial parameters of gait?

Methods

- Informed Consent
- Evaluation
- GAITRite
- MWM
- Taping
- GAITRite
- Remove Tape
- GAITRite



Methods

- Inclusion Criteria:
 - IAS past 72 hrs
 - Ottawa Modified Ankle Rules
 - Able to walk without Assistive Device
- Exclusion Criteria:
 - Presence of ankle fractures
 - Prior lower extremity surgery
 - Previous allergy to athletic tape

Mulligan MWM

- Apply dorso-cranial force lateral malleolus
- Active inversion of the injured ankle 3 times



Retrofibular Taping

- Start lateral malleolus
- Wrap obliquely behind leg
- End tibial crest



Methods

- Independent Variables
 - MWM
 - Retrofibular Taping
- Dependent Variables
 - Temporal Parameters
 - step time
 - single support time
 - double support time
 - stance time
 - Spatial parameters
 - H-H support
 - toe in/toe out
 - step length

Data Analysis

- Combined analysis
 - Excluding 3rd walk
- Excel & SPSS
 - Repeated measures
 - $p < 0.05$
 - Post hoc analysis
 - paired t test
 - Bonferroni Correction < 0.025

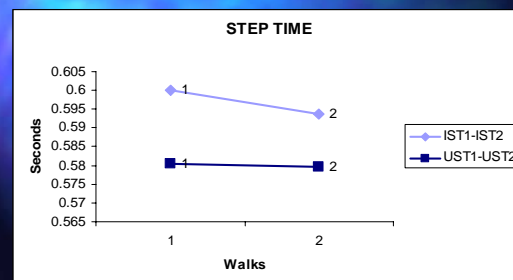


Results

- 2 subjects + 10 subjects from last year
 - N=12
 - 9 Grade I
 - 2 Grade II
 - 1 Grade III

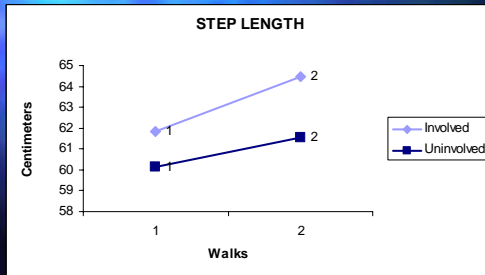
Step Time

- RM: Time ($p=0.017$)
- Paired t: Limb ($p=0.029$)



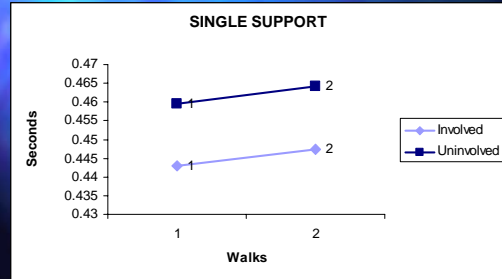
Step Length

- RM: Time ($p=0.013$) & Limb ($p=0.016$)
- Paired t: Time $p=0.003$ & Limb ($p=0.005$)



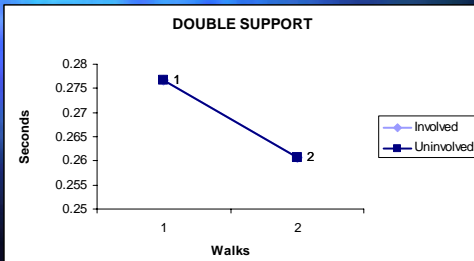
Single Support

- RM: Limb ($p=0.014$)
- Paired t: Limb ($p=0.010$)



Double Support

- RM: Time ($p=0.016$)
- Paired t: Time ($p=0.013$) & Limb ($p=0.023$)



Discussion

■ Limitations

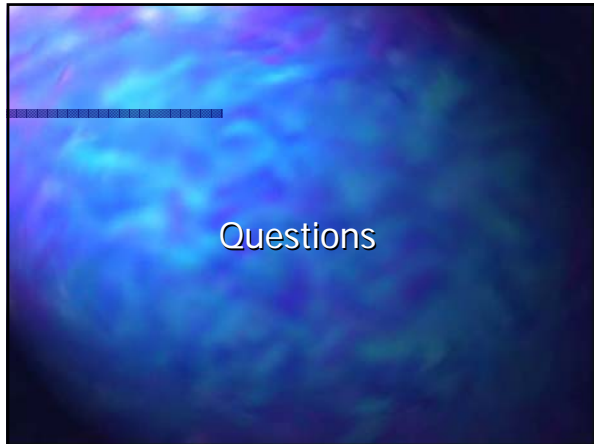
- Small sample
 - No control
- Ceiling Effect
- Test Learning
- Lack of blinding
- Different MWM from previous study's

Conclusion

- Statistical significance parameters
 - Are not clinically meaningful
 - Can not be attributed to the intervention
- Effect of Mulligan's MWM + taping on the acute IAS remains inconclusive

Recommendations

- Larger sample
 - Use control
 - Ordering of intervention



Questions



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