

Apr 3rd, 11:00 AM - 2:00 PM

# Comparing the Effects of Tissue Flossing and Instrument Assisted Soft Tissue Mobilization on Ankle Dorsiflexion

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Carlson, Sean; Rife, Garrett; and Williams, Zachary, "Comparing the Effects of Tissue Flossing and Instrument Assisted Soft Tissue Mobilization on Ankle Dorsiflexion" (2019). *The Research and Scholarship Symposium*. 5.

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*COMPARING THE EFFECTS OF  
TISSUE FLOSSING AND  
INSTRUMENT ASSISTED SOFT  
TISSUE MOBILIZATION ON ANKLE  
DORSIFLEXION*

*By: Zac Williams, Sean Carlson, and Garrett Rife*

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# *Introduction*

- Instrument Assisted Soft Tissue Mobilization
  - Tissue Flossing
  - Review of Literature
  - Hypothesis
  - Methods
  - Results
  - Discussion
-

## *IASTM*

- A technique used to massage an injured area for the purpose of...
    - Irritating scar tissue
    - Breaking up adhesions
    - Bringing blood flow to the area
    - Aligning collagen fibers
  - Well established and researched
-

## *Tissue Flossing*

- A new technique with various uses
    - Decreases blood flow to an extremity
    - Constricts the involved joint
    - Increases ROM
    - Decreases muscle soreness
    - Increases joint mechanics
  - These bold claims are only anecdotal
-

## *Review of the Literature – Tissue Flossing*

- Biggest gap in the literature?
    - There is very little research
  - What does that research say?
    - Stanek: Single trial was effective
    - Driller: Significant increase in ROM
    - Plocker: Increase in ROM but not significant
  - What does this mean?
    - We don't know
-

## *Review of Literature - IASTM*

- Ample research has been done for IASTM...
  - Research has concluded that
    - Palmer: Increase in ROM
    - Stanek: Increase in ROM
-

## *Review of Literature - Stretching*

- Extensive research has been done about stretching also...
  - Research has concluded that
    - Jeon: Increase in ROM after self stretching
    - Mason-Mackay: Decrease in ROM predisposes an injury
-



## *Hypothesis*

- Tissue flossing will have a significant increase in ankle dorsiflexion as compared to the control group, but not significantly to IASTM.
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## *Methods – Statement of Ethics*

- We will not be working with vulnerable populations. Our participants have signed informed consent, are free to withdraw at any time, and all information regarding participants is confidential. We ensure quality and integrity and have taken steps to minimize risk.
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## *Methods – Design*

- A multigroup pre-test post-test design
  - Group randomization
  - 4 weeks, 2 treatments per week
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## *Methods – Location*

- Cedarville University
  - Athletic Training Facility
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## *Methods – Participants*

- Had to be 18+
  - No recent/current ankle injury
  - Request for volunteers through email
    - Randomly assigned
  - 16 participants (12 female, 4 male)
  - 13 left and 3 right non-dominant ankles
-

## *Methods – Instruments and Measures*

- Instruments
    - HawkGrips IASTM Tools
    - Rogue Floss Bands
  - Measures
    - Goniometer
-

## *Methods – Interventions*

- Control
    - Calf stretch on 30° slant board (3x30sec)
    - Calf raises (3x10)
-

## *Methods – Interventions*

- IASTM
    - 5 minute treatment on non-dominant ankles' Achilles tendon
    - Same exercise as control group
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## *Methods – Interventions*

- Tissue Flossing
    - Band wrapped around the non-dominant ankle
    - Complete 2 sets of 20 ankle pumps
    - Remove band and complete same exercises as control group
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## *Methods – Data Collection*

- Measure baseline ankle dorsiflexion
  - Measure ankle dorsiflexion after the 2<sup>nd</sup> treatment of each week
  - Confirm final dorsiflexion measurement
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## *Data Analysis*

- SPSS version 25 with a p value set at 0.05
  - Mixed ANOVA statistical test
    - Within-subjects factor and a between-subjects factor
    - The within-subjects factor was "time" and the between subjects factor was "group"
  - Significant increase in ROM over time (p value .023)
  - No significant difference in ROM between groups
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## *Discussion- Application*

- Decrease risk of injury
  - Increase flexibility/ROM post- surgery
  - Improve jumping mechanics
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## *Discussion-Limitations*

- Number of participants
  - Consistency between researchers and participants
  - Scheduling
-

*Questions?*

