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## The Effects of Cupping vs. Instrument-assisted Soft Tissue Mobilization on Hamstring Flexibility

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# THE EFFECTS OF CUPPING VS IASTM ON HAMSTRING FLEXIBILITY

Joel Gatchell, Kelsey Howell, Bethany Seman

## Therapeutic Cupping

- Uses negative pressure to stimulate the inflammatory response
- Effective in reducing VAS scores in individuals with chronic low back pain
- Effects on hamstring flexibility are difficult to conclude



## Instrument- Assisted Soft Tissue Mobilization (IASTM)

- Tools designed to mobilize scar tissue and break up myofascial adhesions
- Shown to result in statistically significant improvements in hamstring flexibility



**Research gap:** no direct comparisons between cupping therapy and IASTM

**Purpose:** to determine if cupping is more effective than IASTM at increasing hamstring flexibility in healthy adults

**Hypothesis:** Therapeutic cupping will be more effective than IASTM at increasing the hamstring flexibility of healthy individuals.



## Design

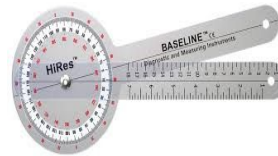
- Pretest-posttest randomized control design
- Interventions occurred in the Cedarville University Athletic Training Facility

## Participants

- Convenience sample of 20 individuals between the ages of 18 and 50
- No history of hamstring injury in the last 12 months, and no lower body injury in the last 6 months
- Participants were randomly assigned into two groups through the use of a random number generator

## Instruments

- Hawkgrrips IASTM tools
- Hansol cupping set



## Measurements

Goniometer to measure active knee extension from the 90/90 position

## Procedures

- Pretest measurements for all participants
- Treatment-IASTM group
  - Received IASTM treatment for 5 minutes each session using either the HG1, HG2, or HG3 tool
  - 2 sessions per week for 3 weeks
- Treatment-Cupping group
  - Received treatment for 10 minutes with 6 cups: 3 laterally and 3 medially
  - 2 sessions per week for 3 weeks
- Posttest measurements for all participants



## Data Analysis

- Descriptive statistics were calculated, including the mean scores for the goniometer measures and standard deviations
- Used a mixed ANOVA for statistical analysis to compare mean scores between groups and within groups
- Significance level was set at 0.05

## Results

- There was no significant difference in active AKE scores over time for either treatment group
- There were also no significant differences in active AKE scores between the two treatment groups

	Group	Mean	Standard Deviation
Pre-test AKE (Intervention)	Cupping	160.37°	14.889
	IASTM	158.29°	6.211
Post-test AKE (Intervention)	Cupping	152.75°	10.912
	IASTM	159.43°	10.565
Pre-test AKE (Control)	Cupping	151.25°	14.449
	IASTM	153.43°	12.674
Post-test AKE (Control)	Cupping	154.50°	10.542
	IASTM	156.86°	8.896

## Discussion

- Because there were no statistically significant results, we must accept the null hypothesis
- While not statistically significant, there was an improvement of 7° in the IASTM group

## Limitations

- Healthy individuals
- Time
- Sample size
- Researcher bias

## Future Research

- Effects of cupping and IASTM on individuals with injured hamstrings
- Different treatment protocols
  - Varied length of treatment times
  - Varied number of treatments per week
  - Varied total length of time for the study
- Acute effects of cupping and IASTM on hamstring muscle length