

The Effects of Foam Rolling and Static Stretching on Flexibility and Acute Muscle Soreness

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Purpose: To compare the effectiveness of static stretching and foam rolling on flexibility and acute muscle soreness. **Methods:** Ten active subjects (age: 21.2 ± 0.6 yrs, wt: 74.4 ± 8.9 kg, ht: 175.1 ± 11.1 cm) were randomized into two groups: static stretching for the right leg and foam rolling the left leg or foam rolling the right leg and static stretching the left leg. On their first visit, subjects' sit and reach and muscle soreness were measured as baseline as well as 10-repetition maximum for leg curl. Subjects then completed three sets of 10 repetitions on standing leg curls. All static stretching and foam rolling were done for 30 sec on each leg and then repeated for a total of 1 minute/leg per condition based on the group the subjects were assigned to. Each subject then performed a sit and reach test to assess changes in range of motion as well as perceived muscle soreness. **Results:** Method of treatment failed to show any significant difference between the pre and post sit and reach test and for change in soreness ($p > 0.05$). Although the data suggests that foam rolling had a greater positive effect on increasing one's flexibility and decreasing one's pain, the differences were not significant ($p > 0.05$).

| Condition | Sit and Reach (cm) | | | | Change in Pain (cm) |
|--------------|-----------------------|-------------------|-------------------|-------------------|---------------------|
| | Rest | Post warm up | Post exercise | Post stretch | |
| Foam Rolling | 29.1 \pm 11.0 | 30.1 \pm 9.1 | 31.0 \pm 8.4 | 31.6 \pm 9.4 | 0.8 \pm 1.2 |
| Static | 28.1 \pm 11.8 | 29.1 \pm 9.8 | 30.1 \pm 8.6 | 30.7 \pm 9.4 | 0.5 \pm 3.2 |

Conclusions: These results did not support our research hypothesis that static stretching will be more effective at improving flexibility. Further studies are recommended to confirm the effectiveness of static stretching and foam rolling on flexibility and acute muscle soreness.
