

A comparison of self-administered proprioceptive neuromuscular facilitation to static stretching on range of motion and flexibility.

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Purpose: The purpose of this study was to determine whether self-administered proprioceptive neuromuscular facilitation (PNF) is more effective than static stretching for increasing range of motion (ROM) in the hips, lower back, and shoulder flexibility (HBSF). **Methods:** Twenty-five college students from the Department of Kinesiology (M=14, F=11), age 22 ± 3 years old, were randomly assigned to either a static or self-PNF hamstring stretching group (2 x 40 seconds) on each leg for 6 weeks. Mean and standard deviation for weight and height were 61.0 ± 4.2 kg and 166.2 ± 6.3 cm, respectively for the females, and 78.6 ± 6.3 kg and 180.5 ± 5.3 cm, respectively for the males. A cross-over design was used; after completion of the intervention, a week rest period was given before repeating the process with the other intervention. Each leg was stretched separately by placing the heel on the seat of a chair approximately 50 cm high. Self-PNF was performed by static stretching for 15 sec, contracting the hamstring muscle by driving the heel into the chair for 10 sec, followed by 15 sec of static stretching. The main effects from a 2X2 repeated measures ANOVA was used to determine if significant differences existed between pre- and post-measures of hip ROM and HBSF ($p < 0.05$). A 99% confidence interval was used to determine if a change in the measures was different from 0. **Results:** After six weeks of intervention, the PNF group gained hip ROM by 6.2 ± 6.6 degrees, whereas the static stretch group lost hip ROM by 0.6 ± 4.5 degrees ($p = 0.001$). Both the PNF and static groups experienced an increase in sit-and-reach by 5.2 ± 3.3 cm and 2.0 ± 2.6 cm ($p = 0.007$), respectively. **Conclusion:** Greater improvements in hip ROM and HBSF were demonstrated in the PNF group after six weeks of intervention when compared to static stretching. Due to the gains in ROM and convenience of not relying on a partner, individuals are more likely to adhere to a self-PNF as opposed to a static stretching program.