

Nida Rattanakrong 2006: The Effects of Proprioceptive Neuromuscular Facilitation on Response Time, Flexibility and Strength. Master of Science (Sports Science), Major Field: Sports Science, Interdisciplinary Graduate Program. Thesis Advisor: Miss Apasara Arkarapanthu, Ph.D. 159 pages. ISBN 974-16-2119-1

The purposes of this research were to study and to compare the effect of proprioceptive neuromuscular facilitation on eyes and feet response time; hip, knee and ankle flexibility; and leg muscle strength at several times such as pretraining, four weeks after training and eight weeks after training. Forty four participants of this research were randomly selected from badminton and tennis players, aged 12-16 years, were trained for physical performance development at Kasetsart university sport club. They were randomly assigned into 4 groups, one control group and three experimental groups. The control group practiced only static stretching (SS). The first experimental group was stretched using Hold-Relax technique (HR) of proprioceptive neuromuscular facilitation (PNF). The second experimental group was stretched using Contract Relax technique (CR) of PNF. The third group experimental group was stretched using Slow-Reversal-Hold Relax training (SRHR) of PNF. The training program was performed three days per week for eight weeks. The data of response time, flexibility and strength were analyzed by using ANOVA; 1-way and 2-way ANOVA with repeated measure; ANCOVA and multiple comparison was performed by Tukey and Bonferroni at 0.05 level of significance.

The major findings were as follow: 1) After 4 weeks of program, the eyes and feet response time and leg muscle strength were not statistically significant difference among 4 groups. While the flexibility of hip flexion, hip extension, hip external rotation, ankle dorsiflexion, ankle plantarflexion and ankle eversion were statistically significant difference. 2) After 8 weeks of program, the eyes and feet response time, the flexibility of hip extension, hip internal rotation, hip external rotation, knee flexion, knee extension, ankle dorsiflexion, ankle plantarflexion, ankle eversion and the strength of leg muscle was statistically significant difference among 4 groups. The best eyes and feet response time was found in HR group. The highest hip, knee and ankle flexibility was found in CR group. The highest leg muscle strength was found in HR group.

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