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Research article

Motor Imagery Boosts Proprioceptive Neuromuscular Facilitation in the Attainment and Retention of Range-of -Motion at the Hip Joint

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ABSTRACT

This study examined the effect of proprioceptive neuromuscular facilitation (PNF) coupled with an internal mental imagery technique (PNFI) on both the attainment and retention of increased range-of-movement (ROM) at the hip joint. Twenty-four young adult subjects were randomly allocated to PNF, PNFI, and control treatments administered in fifteen sessions over a three-week period. ROM was assessed prior to training then at the completion of sessions 1 day, 3, 7, and 14 during training, then 28 days after program completion. Analysis-of-Variance with repeated measures showed both significant treatment ($p < 0.01$) and time effects ($p < 0.05$). Mean change of ROM values were always larger under the PNFI condition and significantly different ($p < 0.05$) at day 1 and 3 following training program completion. Thereafter, the diminution of ROM was comparable to the PNF condition. Mean ROM increment relative to baseline was 7.55 and 9.45 degrees for PNF and PNFI respectively receding to 5.86 and 6.5 degrees at twenty-eight days following treatment cessation. Motor imagery coupled with PNF to enhance and retain ROM yields superior results to physical training used alone and can benefit both athletes and those undergoing rehabilitation.

Key words: Mental and physical practice, flexibility training

Key Points

- A Proprioceptive Neuromuscular Facilitation (PNF) technique applied to enhance range-of-movement (ROM) at the hip joint was successful.
- The effect produced greater gains in participants who received and applied a motor imagery technique to supplement the regular PNF.
- Both effects receded by about 50% across a no-practice period of 21 days.
- Incorporation of motor imagery with physical therapy deemed worthwile.