

A COMPARATIVE STUDY ON THE EFFECTS OF SUPERFICIAL HEATING AND COOLING APPLICATION OVER THE HAMSTRING PRIOR TO STRETCHING IN NORMAL INDIVIDUALS

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ABSTRACT

Background: Prior to stretching the muscle need to warm up or relaxation to obtain greater extent of the joint range of motion. **Materials and Methods:** The study was carried out with Sixteen healthy male subjects, in outpatient department of Kugler physio & pain care clinic, Guntur. Measured knee joint range of motion in pre-treatment, After applying superficial heat, superficial heating plus static stretch and superficial cooling and superficial cooling plus static stretch and compared the obtained range of motions. **Results:** While applying the superficial heating and superficial cooling plus stretching, there is a greater extent of range of motion obtained compare to the other modalities. **Conclusion:** Superficial heating modality is effective in conjunction with static stretch to improve the muscle flexibility as well as joint range of motion.

KEY WORDS: STATIC STRETCHING, GONIOMETER, HOT PACK, ICE PACK, LABORATORY THERMOMETER

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INTRODUCTION

Unrestricted pain free range of motion is often required to perform many functional daily living tasks as well as occupational or recreational activities. Mobility and flexibility of the soft tissues that surrounds a joint, that is muscles, connective tissue and skin in conjunction with adequate joint mobility are necessary for normal range of motion. Muscle injuries are common among the peoples performing high speed and high load activities. Inadequate warm-up, inflexibility and poor stretching programs can predispose the person to injury. Among all the muscles of lower limb, hamstring is more prone to injury according to Garrett(1984).

Zachezeweski (1989) defined flexibility as "the ability of a muscle to lengthen. Allowing one or more than one joint to move through a range of motion".

Stretch programs are aimed at decreasing the likelihood of injury (Liemohn.W, 1978). Physical therapists often advocate the use of stretching techniques as a means of increasing and maintaining hamstring length (Stannish And Hubble-Kozly, 1984), thus decreasing risk of injury. Superficial heating and cooling modalities is often used in conjunction with static stretch in attempt to increase the efficacy.