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The effect of three different angles of application of Ergon® IASTM technique on hamstrings thermal skin responses

Konstantinos Fousekis, Konstantinos Mylonas and Pavlos Angelopoulos
Technological Educational Institute of Western Greece, Greece

Background: Ergon® instrument assisted soft tissue mobilization technique (Ergon® IASTM) is an innovative and rapidly growing in popularity procedure in neuro musculo skeletal rehabilitation due to its effectiveness and efficiency in correcting postural alterations and accelerating tissue healing. Ergon IASTM technique applications are based on the use of Ergon® IASTM tools which treat various myofascial dysfunctions utilizing multiple angles of therapeutic application such as 20°, 60° and 90°. This study aimed to examine the thermal skin responses (thermal built-up and retention rate) to Ergon IASTM treatment procedures applied in 20°, 60° and 90° angle.

Methods: 20 college students participated in the present study and received Ergon treatment in a random and counter balanced order as follows: a) with 20° treatment angle b) with 60° treatment angle and c) with 90° treatment angle, on three visits made 1 per week. The participants received a 10-minute application of the IASTM technique to their dominant hamstrings with linear and semicircular strokes, and their skin temperature was measured in three points for every one minute by a skin thermometer before, immediately post treatment and up to a point was returned to the base line value.

Results: Ergon IASTM technique application resulted in a significant increase (2-3°C, $p < 0.05$) in skin temperature compared with the baseline values, irrespective of the angle of implementation. Nevertheless, the use of the Ergon IASTM Techniques at 60° and 90° led to a statistically significant increase in skin temperature compared with the 20° application. No significant difference in thermal built-up was observed between the applications of 60° and 90°. Furthermore, there was a statistically significant difference ($p = 0.00$) regarding the thermal retention rate produced by the treatment procedure utilizing 90° compared with the 20° as in the 90° group the temperature was maintained above the baseline levels for 76, 75 minutes while in the group treated with 20° angles for 62, 75 minutes.

Conclusions: The findings of the present study confirm that Ergon IASTM Techniques applications of different angles can induce and sustain significant thermal skin adaptations. These skin temperature adaptations were more pronounced when adopting a high angle of application (>60°).

konfousekis@gmail.com