



**Increased intramuscular and intracapsular temperature
via ThermaCare Knee Wrap application.**

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BACKGROUND: Knee pain is common among the physically active as well as the older population. Heat is often used to decrease pain in these individuals. Modalities such as hot packs and whirlpools increase tissue temperature, yet are not portable. The portable ThermaCare HeatWrap for the knee has recently been marketed.

We wondered if it actually heated the knee joint. MATERIAL/METHODS: A 2 x 5 factorial design was used to compare temperature changes in a treatment group (heat wrap) against a control group (no wrap) for two hours. Eleven volunteers (M=3, F=8; age=22.71+/-3.80) served in both groups.

An Isothermex computer recorded temperatures to the nearest +/-0.1 degrees C every 30 seconds. Subjects rated heat perception using a 10 cm visual analog scale (VAS). To measure muscle temperature one thermocouple monofilament was inserted 1.5 cm into the vastus medialis oblique (VMO). To measure knee intracapsular temperature (KJC), a thermocouple was inserted 5 cm deep in the suprapatellar pouch.

RESULTS: The mean temperature increases for the ThermaCare Knee Wrap were: VMO: 3.19+/-1.27 degrees C; KJC: 2.62+/-0.93 degrees C; Surface: 7.48+/-1.35 degrees C. The mean temperature increases for the control were: VMO: -1.99+/-1.01 degrees C; KJC: -2.10+/-0.56 degrees C; Surface: -1.15+/-0.61 degrees C. According to the VAS data, the longer the subjects wore the wrap, the warmer it felt. CONCLUSIONS: The ThermaCare Knee

Wrap causes significant temperature increases in the VMO, the KJC and the skin. This portable heat product is beneficial for conditions in which intramuscular and intracapsular heating is indicated, such as pain relief.

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