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# Thermal Lower Limbs Response After Acute Exercise in Elderly With Osteoarthritis

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## ABSTRACT

**Introduction:** Staying physically active is critical for an individual who has osteoarthritis, depending on the degree of joint inflammation, there will be present a lower mobility, affecting the of daily life activities. **Aims:** This study investigated the skin thermal response of lower limbs in elderly with or without osteoarthritis before and after exercise. **Methods:** 70 elderlies (75.1±6.7 yrs., wt: 70.5 ±9.3 kg, ht:1.6±0.1 m, BMI: 29±3.4 kg/m<sup>2</sup>) were divided in 4 groups: men with osteoarthritis (n=7), men control (n=17), women with osteoarthritis (n=13), women control (n=33). **Results and Discussion:** Men with osteoarthritis presented higher temperature in the anterior and posterior thigh before exercise in comparison to the Control (p<0.05), but there was a significant decrease after exercise (anterior: -1.1±1.0 and -1.6±1.5 oC for right and left; respectively, posterior: -1.3±1.5 and -1.6±2.0 oC for right and left; respectively). Similar results were observed in the women (p<0.05) in the posterior thigh (-0.6±1.0 and -0.6±0.9 oC for right and left; respectively) and anterior leg (p <0.05, -0.6±0.9 and -0.6±0.8 oC for right and left; respectively). In the knee, men with osteoarthritis have a lower pre-exercise temperature (-0.7±0.9 and 0.5±1.2 oC for right and left; respectively) in comparison to the Control, but was but there was a significant increase (p<0.05), after exercise (1.8±2.0 and 2.1±2.2 oC for right and left; respectively). **Conclusion:** subjects with osteoarthritis present a higher skin temperature in the thigh before exercise, but occurred decreases after exercise. In contrast, the pre-exercise skin temperature in the knee was lower in this group when compared to those without osteoarthritis, however, post-exercise skin temperature was warmed. The present study was the first to observed the effects of an exercise session on thermographic response in elderly with osteoarthritis, future studies may investigate the effect of other exercise protocols for this population.

**Keywords:** Osteoarthritis; Aging; Skin temperature; Infrared thermography

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