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**Circadian and gender differences in skin temperature in militaries by thermography**

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**Abstract**

**Aim:** The purpose of this study was to determine gender differences in skin temperature ( $T_{sk}$ ) for 21 regions of interest (ROIs) of the body throughout the day in a military sample using infrared thermography.

**Methods:** The  $T_{sk}$  of 20 male ( $23.2 \pm 2.9$  yr) and 20 female ( $20.5 \pm 1.3$  yr) Brazilian Air Force Military members were evaluated with four thermograms collected at 7:00 AM ( $T_{sk7}$ ) and 7:00 PM ( $T_{sk19}$ ) by a Fluke® thermal camera. The ROIs analyzed included the abdomen and bilateral anterior and posterior views of the hands, forearms, arms, thighs, and legs. Student's t-tests were performed on independent samples ( $\alpha=0.05$ ).

**Results:** With the exception of the hands, men's  $T_{sk7}$  was significantly higher than that of women ( $p<0.05$ ). However, in the late evening ( $T_{sk19}$ ), only the temperatures of the posterior side of the thigh and leg were significantly lower ( $p<0.05$ ) in women.

**Conclusions:** In the early morning, men present a greater average  $T_{sk}$  than women across all evaluated ROIs; however, those differences disappear after 12 hours, except for the posterior thighs and legs. The hands were the sole areas showing similar temperatures at both time points.

**Keywords:** body temperature regulation; skin temperature; thermoregulation; thermography.

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