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Response Patterns in Finger and Central Body Skin Temperatures Under Mild Whole Body Cooling

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50) Response patterns in finger and central body skin temperatures under mild whole body cooling.

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Introduction: The actual heat loss may be underestimated especially in studies employing mild whole-body cooling, if AVA-rich distal areas are not taken into account. In the present report, we illustrate the skin temperature response pattern in fingers (rich in AVAs) to transient whole-body cooling as compared to non-acral body sites (without AVAs).

Methods: Eight men participated in the study. During the test the subjects were dressed in shorts, socks and shoes and stayed seated with the arms on insulated supports at heart level. The air temperature of 32 °C was after 25 minutes gradually reduced to 13 °C (0.2 °C/min). Core, finger (sulcus lateral to the nailbed) and non-acral skin (8 points) temperatures were measured.

Results: During cooling the mean skin temperature in all subjects decreased at a similar rate. Higher variation in the end of the cooling could be explained by differences in body fat (R^2=0.902). Simultaneously, the finger cooling could start with up to about 1 hour difference in different subjects.

Discussion and conclusion: Mean skin temperature did not give any idea on when the subjects left thermal neutrality. It is strongly recommended to measure finger (or toe) temperatures when maintaining the thermal comfort of the subjects in dynamic conditions is important.

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