

BODY MAP OF REGIONAL VS. WHOLE BODY SWEATING RATE AND SWEAT ELECTROLYTE CONCENTRATIONS IN MEN AND WOMEN DURING MODERATE EXERCISE-HEAT STRESS

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This study developed a body map of regional (REG) sweating rate and regional sweat electrolyte concentrations and determined the effect of within-subject (bilateral and day-to-day) and between-subject (sex) factors on the relations between REG and the whole body (WB).

METHODS



17 male



9 female



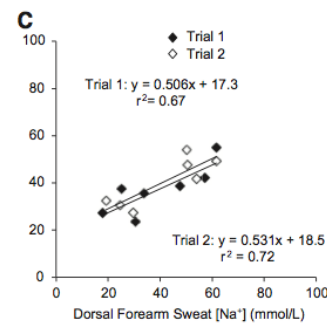
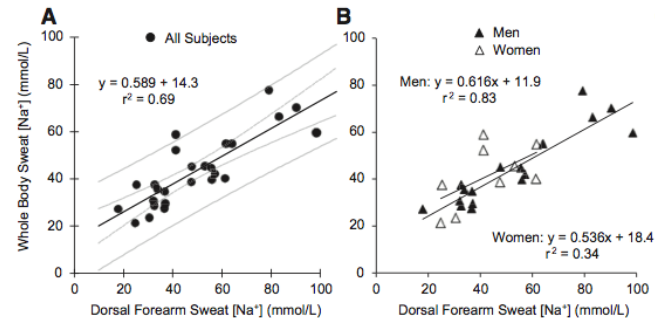
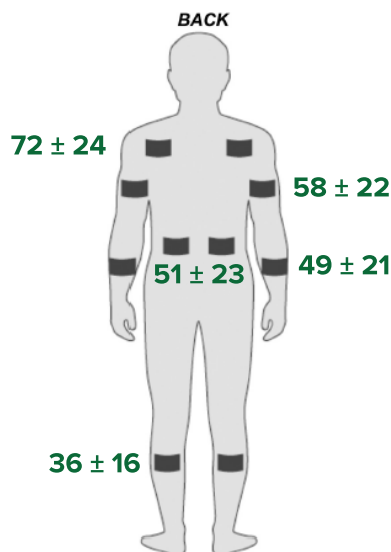
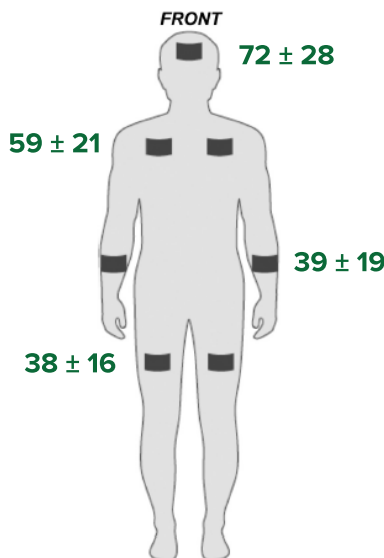
90 MINUTES

75-80% HR_{max}

30°C/42%rh

sweat [Na⁺] (mmol/L)
Whole body vs. Regional patches on 9 sites
43 ± 15 55 ± 19

There were no significant bilateral differences.



Linear regression of regional sweat Na⁺ concentration ([Na⁺]) on whole body sweat [Na⁺] for the dorsal forearm (A–C)

CONCLUSION

Regression equations can be used to predict WB sweat [Na⁺] from REG, especially using the forearm or thigh. However, prediction of WB sweating rate from REG sweating rate using absorbent patches does not reach the accuracy or reliability required to inform fluid intake recommendations. Sex, bilateral variability, and day-to-day variability had no effect on the regression model predicting WB sweat [Na⁺] from REG sweat [Na⁺].

Regression equation for dorsal forearm sweat [Na⁺]

WB sweat [Na⁺] = (0.589*forearm sweat [Na⁺]) + 14.3

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