Fluid and electrolyte balance in elite male football (soccer) players training in a cool environment

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There are few data in the published literature on sweat loss and drinking behavior in athletes training in a cool environment. Sweat loss and fluid intake were measured in 17 first-team members of an elite soccer team training for 90 min in a cool (5°C, 81% relative humidity) environment. Sweat loss was assessed from the change in body mass after correction for the volume of fluid consumed. Sweat electrolyte content was measured from absorbent patches applied at four skin sites. Mean (± s) sweat loss during training was 1.69 ± 0.45 1 (range 1.06 – 2.65 1). Mean fluid intake during training was 423 ± 215 ml (44-951 ml). There was no apparent relationship between the amount of sweat lost and the volume of fluid consumed during training (r^2 = 0.013, P=0.665). Mean sweat sodium concentration was 42.5 ± 13.0 mmol·1^-1 and mean sweat potassium concentration was 4.2 ± 1.0 mmol·1^-1. Total salt (NaCl) loss during training was 4.3 ± 1.8 g. the sweat loss data are similar to those recorded in elite players undergoing a similar training session in warm environments, but the volume of fluid ingested is less.