

SWEATING RATE AND SWEAT CHLORIDE CONCENTRATION OF ELITE MALE BASKETBALL PLAYERS MEASURED WITH A WEARABLE MICROFLUIDIC DEVICE VERSUS THE STANDARD ABSORBENT PATCH METHOD

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The purpose of this study was to compare a wearable microfluidic device (Gx Sweat Patch) and standard absorbent patch in measuring local sweating rate (LSR) and sweat chloride concentration ($[Cl^-]$) in elite basketball players. For ecological validity, the testing took place during live coach-led practices (98 ± 30 min).



PARTICIPANTS

53 male basketball players in the National Basketball Association's development league (G-League).



RESULTS



There were **no differences** between the absorbent patch and microfluidic patch for LSR (Fig 1, $p = 0.34$) or local sweat $[Cl^-]$ (Fig 2, $p = 0.55$).

Fig 1

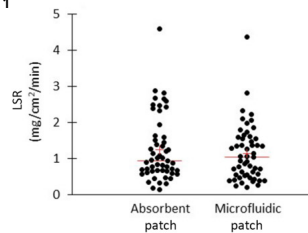
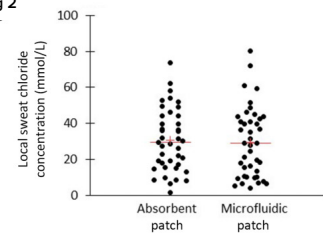
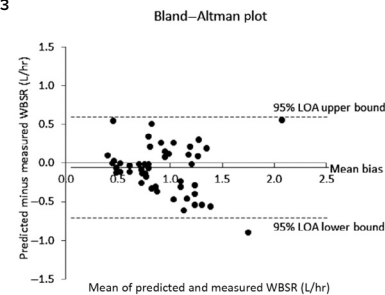


Fig 2



There was **no difference** between measured and predicted WBSR (0.97 ± 0.41 L/hr vs. 0.89 ± 0.35 L/hr, $p = 0.22$; 95% limits of agreement = ± 0.61 L/hr) (Figure 3).

Fig 3



CONCLUSION

The Gx Sweat Patch and smartphone application algorithms provide similar LSR, local sweat $[Cl^-]$, and WBSR results compared with the standard field-based methods in elite male basketball players, with or without tattooed skin, during typical moderate-intensity practice sessions that include a mix of noncontact drills and live high contact scrimmages.

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