

Medicine & Science in Sports & Exercise:

[May 2007 - Volume 39 - Issue 5 - p S315–S316](#)

doi: 10.1249/01.mss.0000274226.95270.48

C-31 Free Communication/Poster - Hydration and Fluid Balance in Sport: MAY 31, 2007 7:30 AM - 12:30 PM ROOM: Hall E

Motorcycle Enduro Race in Heat: Fluid Balance and Thermoregulation: 1867: Board #155 May 31 8:00 AM - 9:30 AM

Javornik, Ricardo¹; Aragon-Vargas, Luis Fernando FACSM²; Reinaldo, Garcia Pedro³



Author Information

¹Valle Arriba Athletic Club, Caracas, Venezuela.

²Universidad de Costa Rica, San José, Costa Rica.

³Universidad Central de Venezuela, Caracas, Venezuela. Email: javornik@telcel.net. ve

(Sponsor: Luis Fernando Aragon, FACSM)

PURPOSE: To evaluate the hydration status, fluid balance and core temperature changes during an enduro motorcycle race.

METHODS: 12 professional male enduro drivers gave written informed consent to participate. Data were collected between 10:00 AM and 5:00PM (Race time). Average environmental conditions were 28 °C (23–31) and 35,4 rh (32–50), for a WGTB heat stress index of 26,9 °C. Upon arrival at the race place, urine samples were collected and players were weighted nude. Fluid intake was monitored and urine production was collected from this point until driver were weighted nude after the race. Core temperature (Tcore) was obtained before the race, during the pits time, and at the end of the race from disposable temperature sensor swallowed by the drivers 4 hours before the race. Data are means ± SD (range)

RESULTS: Initial Urine specific gravity (USG) was 1,018 ± 0,008 (1008–1033). Six drivers shown USG > 1.020. Body mass (BM) lost was 1,33±0,819 kg (0,05-2,34 kg), equivalent to a dehydration of 1,68± 1,11%BM(0,05–3,0% BM). Sweat loss was 6266 ± 1445 ml, (4355-8654) while fluid intake totaled 5114,27 ± 937ml, (3723-6293). Only 155 (0-500) ml of urine were collected. Tcore ≥ 39.0 was registered in 33,36 % of the drivers at the end of the 1st lap of the race, 45,45% at the end of the 2nd lap of the race, 40% at the end of the 3th lap of the race and 50% at the end of the 4th lap of the race.

CONCLUSIONS: Compared to other sports (Long distance running, soccer, football) these motorcycle enduro drivers presented only a slight dehydration level, possibly due to the high replacement of fluids carried out during the competition (83,6%±14,65; 61-109%) due to the easy fluids accessibility during the race (Camelbag) and during the pit time. However, there is evidence that almost half of the drivers increase their temperature over 39°C in some moment of the race. A possible factor can be the reduction of the corporal evaporation determined by the race uniform.