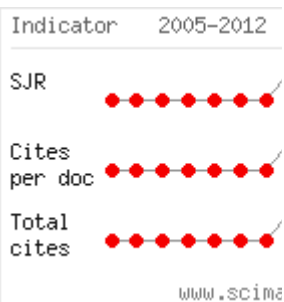


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Does a 24-hour ultra-swim lead to dehydration?

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Abstract

We investigated the change in body composition and hydration status in one male ultra-endurance swimmer during a 24-hour swim. Body mass, percent body fat and skeletal muscle mass using the anthropometric method as well as total body water using bioelectrical impedance analysis were determined pre race, every 6 hours and after the race. Parameters of hydration status (urinary specific gravity, haematocrit, plasma sodium) and skeletal muscle damage (plasma urea) were measured at the same time. The swimmer achieved

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a total distance of 41.1 km. Body mass decreased by 1.6 kg, skeletal muscle mass by 1.5 kg, body fat by 2.4 kg and total body water by 3.9 l. Urinary specific gravity remained unchanged at 1.015 g/ml.


Haematocrit increased from 46 to 47, plasma volume decreased by 4 % and plasma sodium by 4.0 mmol/l. We found in this ultra-swimmer a decrease in body mass of 1.7 % and a consistent urinary specific gravity of 1.015 g/ml. According to the general concept of dehydration, this corresponds to minimal dehydration.

Key words: Ultra-Endurance; Body Mass; Fat Mass; Skeletal Muscle Mass

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