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## Maximum Water Temperature Limit in Open-Water Swimming Events

Filippo Macaluso, PhD<sup>a</sup>, Rosario Barone, PhD<sup>a</sup>, Ashwin W. Isaacs<sup>b</sup>, Felicia Farina, MD<sup>c</sup>, Giuseppe Morici, MD<sup>c</sup>, Valentina Di Felice, PhD<sup>c</sup><sup>a</sup> Dipartimento di Biomedicina Sperimentale e Neuroscienze Cliniche (BioNeC), University of Palermo Palermo, Italy<sup>b</sup> Department of Physiological Sciences, Stellenbosch University, Stellenbosch, South Africa<sup>c</sup> Dipartimento di Biomedicina Sperimentale e Neuroscienze Cliniche (BioNeC), University of Palermo Palermo, Italy

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 **Heat Stroke Risk for Open-Water Swimmers During Long-Distance Events**
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*To the Editor:*

In a recent review published in *Wilderness & Environmental Medicine*, we highlighted the concept of the potential risk of heat stroke for swimmers during long-distance events in warm or hot water.<sup>1</sup> After reviewing the scientific literature relevant to the topic, we indicated the factors that may accentuate the risk in open-water swimmers, namely high exercise intensity, specific body composition, heat gain by sunlight radiation, and low potential for convective cooling during swimming.<sup>1, 2, 3 and 4</sup> A death during a FINA (Federation Internationale De Natation) competition (10-km Marathon Swimming World Cup race that took place in Fujairah, United Arab Emirates, on October 23, 2010) has been imputed to heat stroke because the water temperature exceeded 31°C. The FINA and ITU (International Triathlon Union) regulation books did not have rules that defined a maximum water temperature, although a minimum water temperature was set.

It is with great interest that we learned about the new regulation maximum water temperature limit of 31°C in the FINA rule book regarding open-water swimming events (effective from September 17, 2013, to 2017).<sup>5</sup> The decision was announced on July 16, 2013, by the FINA president at the Technical Open Water Swimming Congress in Barcelona, based on a study conducted at the University of Otago in New Zealand in collaboration with the FINA and ITU. Although the experimental data obtained by this research group are yet to be published, the established maximum water temperature set by the FINA is not too different from the temperature extrapolated from the literature by our research group (33°C).<sup>1</sup> Moreover, the cooler water temperature limit established by the FINA is likely safer for swimmers.

In conclusion, the assessment of the risk for heat stroke by examining physiological responses of swimmers during long-distance events assists sports organizations to update rules to safeguard athletes. We maintain that the Journal and the editors have accomplished an important task of the sciences to disseminate knowledge and scientific findings to the broader community.”

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