

Effects Of Environmental Conditions On Marathon Performance And Heat Illnesses In The Tropics

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There are limited studies on the effects of environmental conditions on marathon performance and heat illnesses. This presentation will depict the effects of the environmental conditions on running performance (n=1000 per race) and heat illnesses across five Standard Chartered Singapore Marathons in the tropics. Performance indicators include percentage of overall finishers and finishing times of the top 1000 runners and elite runners (top 5 athletes per race). Heat illnesses were categorised into heat exhaustions and heat strokes. Maximum dry-bulb temperature was negatively associated with the percentage of overall finishers. Positive association between dry-bulb temperature and marathon finishing time was observed across runners of differing abilities. Relative to dry-bulb temperature, there was no association with heat strokes but a positive association was found with heat exhaustions. The finishing time of marathon runners was degraded by small increments in dry-bulb temperature. High dry-bulb temperature in the tropics was a limiting factor for finishing times in the elite runners. Dry-bulb temperature did not affect the number of heat strokes but induced higher number of heat exhaustions. These results have potential implications in terms of pacing strategies for race participants and event management for organisers.