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Dehydration has no direct effect on appetite loss during a 160 km trail running race

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In ultrarunning events, energy substrates are important due to the long duration of the event. However, anorexia that occurs during the event can pose a challenge to nutritional strategy[1]. The risk of dehydration due to limited access to fluid is increased in trail running, but the association between dehydration and appetite loss due to reduced fluid intake is unclear. This study aims to clarify the relationship between exercise-induced appetite loss and dehydration during prolonged physical activity. The study included 47 healthy adults who provided prior consent and participated in a trail running race with a distance of 169 km and a cumulative elevation of 10,500 m. Dehydration status was ascertained by Urine Specific Gravity (USG), and fluctuations in hydration status were tracked through the race. Subjects with no missing data (n = 40) were classified into severely dehydrated (n = 33) if ≥ 1.030 or mildly dehydrated (n = 7) if < 1.030 based on USG at the finish line[2]. Subjective evaluation of anorexia level and gastrointestinal condition was made in a post-race self-administered questionnaire, in which symptoms were rated on a 5-point scale for each race segment. In this questionnaire, participants were also asked to indicate the amount of food and water they consumed during the race. The parameters measured before the race, at the mid-race aid station, and at the finish line, as well as the responses provided in the questionnaire for each race segment, were analysed using a two-way ANOVA with factors for group and time. Multiple comparisons were performed to examine differences across time points and between groups. The mean USG at the finish line was 1.027 ± 0.002 in the mildly dehydrated group and 1.034 ± 0.003 in the severely dehydrated group, both showing a significant increase from before the race, with the severely dehydrated group being higher ($p < 0.0001$). Body weight decreased significantly in both groups by the finish line, with no difference. There was no significant difference in the rank between groups ($p = 0.36$). 57.9% of participants experienced appetite loss, but there was no difference in the frequency of appetite loss during the race between the group ($p = 1.000$, Fisher's Exact Test), the severely dehydrated group exhibited increasing symptom levels as the race progressed. There was a tendency for the severely dehydrated group to have a higher frequency of nausea during the race ($p = 0.095$). Fluid intake was similar between groups, both in total and per hour. The results of this study suggested that dehydration and appetite loss are independent incidents and that appetite loss has not been a cause of dehydration. Dehydration in runners during 160km trail running races may have caused appetite loss by producing nausea[3].

References

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