

Risk of low energy availability and level of nutrition knowledge in recreational trail runners in Aotearoa/New Zealand

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Trail running is an endurance sport growing in popularity. It is characterised by long event durations and extreme environments that are likely to result in high exercise energy expenditure. Energy availability is defined as the amount of energy available to support normal physiological functions after subtracting the energy cost of exercise from energy intake. Insufficient energy intake, increased exercise, or a combination of both can result in a state of low energy availability (LEA). While research shows a weak positive association between nutrition knowledge and diet quality, results are conflicting regarding associations between nutrition knowledge and LEA. Research has demonstrated a high prevalence of risk of LEA (~33%-85%) among both elite and recreational athletes, across both sexes and in endurance sports such as running. However, little is known about risk of LEA and nutrition knowledge in trail runners. The aim of this study was to determine the risk of LEA prevalence in recreational trail runners and investigate associations with nutrition knowledge. Risk of LEA was assessed using the 'Low Energy Availability in Females Questionnaire' (LEAF-Q)⁽¹⁾, and the 'Low Energy Availability in Males Questionnaire' (LEAM-Q)⁽²⁾. Nutrition knowledge was measured via the 'Platform for Evaluating Athlete Knowledge in Sports – Nutrition Questionnaire' (PEAKS-NQ)⁽³⁾. Demographics and trail-running experience questions were integrated into the survey. Data was analysed in SPSS version 29 (IBM Corporation). Comparisons between groups (e.g. 'low risk' vs 'not low risk') were performed using a chi-square test for categorical variables, and an independent samples t-test for continuous variables. The final survey sample was 217 (140 females, 42.01 ± 10.72 years; 77 males, 47.86 ± 12.05 years) for the LEAF-Q, LEAM-Q, and trail running questions; and 152 for the PEAKS-NQ. Thirty-one percent of females (n = 43) were classified as 'not low risk' of LEA based on the LEAF-Q cut-off of ≥8. Twenty-three percent of males (n = 18) were identified as having low sex drive, a marker of LEA risk. The LEAF-Q/sex drive score was higher in those 'not at low risk' (10.72 ± 2.28/4.50 ± 1.95) compared to those at low risk (3.94 ± 2.34/1.53 ± 1.12, p < 0.001). Three quarters of general nutrition knowledge responses were correct (females, 78.60 ± 10.09%; males, 75.78 ± 10.67%). However, sports nutrition scores were lower (females, 66.31 ± 13.44%; males, 63.18 ± 15.53%) with the lowest mean scores observed for 'fuel for during events'. There was no significant association between nutrition knowledge and risk of LEA in both sexes. The findings suggest that recreational trail runners are a group of active individuals who are at risk of LEA and that they might benefit from more sports-specific nutrition education.

Keywords: energy availability; RED-S; nutrition knowledge; trail runners

Ethics Declaration

Yes

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References

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