

Nutritional Strategy Application on Ramadan Intermittent Fasting: A Case Study in Soccer

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Introduction

During Ramadan intermittent fasting (RIF) soccer players should abstain from drinking and eating from sunrise to sunset for nearly 30 consecutive days. Dedication to unplanned nutritional patterns during this period may be detrimental for body composition and performance of professional athletes. The aim of this study was to analyze the influence of a nutritional strategy during Ramadan 2023 on body composition and performance on a professional soccer player.

Methods

A 21-year-old male elite player (77,0 kg, 180 cm) followed a nutritional plan to meet his heavy schedule needs during the competitive season. The athlete's Resting Metabolic Rate (RMR) was measured at baseline (PNOE Metabolic Analyser), while energy expenditure of training sessions/ matches and performance parameters were estimated using a GPS tracking system (Stat Sports, APEX- Sonra 2,1,4). A Countermovement Jump test (CMJ) was performed as well as body composition indices and circumferences of arm, thigh and calf were measured according to ISAK protocol before during and after Ramadan. A nutritional and hydration plan was applied according to his needs and the latest recommendations (Collins et al., 2018).

Results

During the observed period the player attended trainings at his national team as well as the team he belonged and participated in 6 matches in total (Mean \pm SD: 58,4 \pm 31,7 min; 6729,4 \pm 3909,9 m). His RMR was 1812 kcal/day and his average total energy expenditure during this period was estimated at 3103,5 kcal/ day. Body mass did not change significantly during RIF (77 kg to 76,8 kg). Body composition measures did not change significantly as well as circumferences. **Table I** summarizes the main body composition measurement outcomes for the three time points.

CMJ test measurements remained the same (50 cm to 50 cm). Match indices of performance did not change significantly during RIF compared to the rest of the season ($p > 0,05$ for all). **Table II** shows indicative match performance parameters averaged for two 90 min matches within the RIF period and two 90 min participation matches before the RIF period.

Table I	Before Ramadan	In the middle	After Ramadan
Body Mass (kg)	77	75,6	76,8
Body fat (%)	8,16	8,17	8,14
Fat Free Mass (kg)	70,72	69,42	70,55
Muscle Mass (kg)	36,09	35,58	35,95
Fat Mass (kg)	6,28	6,18	6,25

Table II	During Ramadan	Before Ramadan
Total distance (m)	10758	10469
Distance/ min	104,5	106,5
High speed (m)	1109,5	991
Sprints	59,5	54,5
Accelerations (n)	97,5	100,5
Decelerations (n)	74	84

Conclusions

In conclusion, during RIF, personalised nutritional and hydration planning may be imperative in order not to deteriorate body composition and performance parameters in elite soccer.

References

Collins, J.; Maughan, R.J.; Gleeson, M.; Bilborough, J.; Jeukendrup, A.; Morton, J.P.; Phillips, S.M.; Armstrong, L.; Burke, L.M.; Close, G.L.; et al. UEFA expert group statement on nutrition in elite football. Current evidence to inform practical recommendations and guide future research. *Br. J. Sports Med.* **2021**, *55*, 416.