

Comparison of Actual versus Recommended Intake of Collegiate Athletes Across Gender and Season at a Small Division I University

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ABSTRACT

Collegiate athletes often struggle to consume foods that provide adequate energy and nutrition to fuel their demanding physical performance and recovery needs. The increased energy expenditure during in-versus off-season training may further hinder an athlete's ability to meet recommended intake guidelines. **PURPOSE:** to assess Division I student-athlete nutrition intake (calories, protein, carbohydrates, and fat) throughout training seasons of the 2019-2021 school years. **METHODS:** From 2019-2021, 29 athletes (male: n=9, Wt=76.9 ± 2.2kg, LBM=66.0 ± 6.7kg; female: n=20, Wt=68.6 ± 3.7, LBM=51.4 ± 1.7kg) completed 3-day intake (ASA24) logs monthly. Body composition (InBody 570, BIA) and sport nutrition knowledge (NSKQ) were assessed at baseline. Paired samples t-tests were used to assess differences between actual intake and recommended values (based on kg/BW and sport) while repeated measures ANOVAs were used to assess gender by season interactions; data are reported as mean ± standard error. **RESULTS:** Regardless of training season athletes failed to meet recommended intake guidelines for carbohydrates (-319.5 ± 27.5g; P<0.001) and calories (-552.7 ± 144.2kcal; P=0.001). Fat was the only macronutrient consistently overconsumed throughout the year (+19.3 ± 4.7g; P<0.001) while protein intake was not significantly different from recommendations (-1.7 ± 6.7g, P=0.804). Males and females did not differ in their ability to meet recommendations. When comparing training seasons, the carbohydrate underconsumption was greater in-season (-379 ± 26.2g) than off-season (-245 ± 26.4g; P=0.001) while the fat overconsumption was greater in-season (+34.7 ± 5.9g) than off-season (+17.1 ± 6.2g; P=0.002). When comparing gender by season interactions, males significantly overconsumed fat off-season (+12.8 ± 10.3g; P=0.031) while females significantly under consumed protein in-season (-9.3 ± 8.2g; P=0.044). Knowledge scores (51.7 ± 2.3%) were not correlated with matching intake, regardless of season and across macronutrients, however this sample's narrow distribution of scores may have prevented significant findings. **CONCLUSION:** This study suggests that collegiate athletes at a small D1 university can meet protein and fat recommendations yet struggle to meet calorie and carbohydrate guidelines. Gender differences may also exist, and sport nutrition knowledge was not found to influence an athlete's nutrient intake.