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Dietary assessment and education improve body composition and diet in NCAA female volleyball players

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Intercollegiate volleyball is a powerful sport that consists of two to three-hour matches; therefore, optimal physical condition is critical for top performance. This study assessed nutrition and anthropometric parameters at the start and conclusion of both the spring 2009 (no intervention) and spring 2010 (intervention off-seasons) as well as additional measurements four months after the intervention. The subjects' body composition, total energy, carbohydrate and protein needs were calculated, and intakes were assessed. The intervention consisted of monthly individual nutrition counseling sessions based on analysis of intake from three-day food records. Food records were analyzed using Nutrient Data Systems for Research software verified by interview. Dependent T-tests were conducted on anthropometric and dietary measurements. The results revealed that during the 2009 off-season, there were no significant change in any parameters and 89% of subjects were not within recommended anthropometric and dietary guidelines. During 2010, body composition significantly decreased to optimal levels for the sport. In addition, energy and macronutrient intake significantly improved toward recommended guidelines. Four months later, the subjects' intakes and body composition were assessed, and results were compared to the spring 2010 results with no significant changes. These results indicate the providing nutrition assessment and intervention plays a critical role in physical conditioning of athletes.