

Nutrients. 2011 Feb;3(2):200-11.

Dietary acid-base balance in adolescent sprint athletes: a follow-up study.

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Sprinters are advised to include additional protein sources in their diet. Basal metabolism and vigorous physical activities generate hydrogen ions that need to be buffered. The present follow-up study estimates the dietary potential renal acid load (PRAL) and net endogenous acid production (NEAP) in adolescent sprint athletes. Seven-day food diaries and anthropometrics of 60 adolescent sprint athletes (mean age at start 14.7 ± 1.9 years) were collected every six months over a three year period. Comparisons were made between athletes with a negative (PRAL(-)) versus positive PRAL (PRAL(+)). For the entire sample, mean PRAL values of up to 6 mEq/day were slightly positive despite a relatively high protein intake of around 1.5 g/kg. The NEAP ranging between 42 and 46 mEq/day remained stable during the study period. Athletes with a PRAL(-) (-8 to -10 mEq/day) consumed significantly more fruit and fruit juice than athletes with a PRAL(+) (+9 to 14 mEq/day). Athletes with a PRAL(+) did not consume more meat, fish and poultry than athletes with a PRAL(-). Grains and dairy products were only discriminative between the two groups on one measurement occasion. Lowering the PRAL can be obtained by increasing the consumption of potatoes, fruits, vegetables and vegetable soup.