

Acid Base Considerations in Stone-Age Farming Sweet Potato Eaters, Modern-Day Sweet Potato Eaters, and High-Protein Consumers

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Net endogenous acid production (NEAP) can be estimated by a primarily anthropometry-dependent organic acid anion (OA) component and the particularly diet-dependent potential renal acid load (PRAL). However, there is evidence that certain foods may also impact on the OA component. Here, we discuss measurements of urinary 24-h OA excretion obtained in healthy subjects, against the background of relevant literature with a special focus on former Papuan New Guinea stone-age farmers eating predominantly highland sweet potatoes. Contrary to the reports in Papuans, we observed only modest increases of 5-12% in 24-h excretion rates of OAs (including the detoxification product of phenolic and benzoic acids, i.e., hippuric acid) in healthy adults consuming commonly available yellow-fleshed sweet potatoes. This and additional results on OA increases after higher protein intakes suggest that a specification of the $NEAP=PRAL+OA$ model for estimating the diet-dependent acid load to the metabolic system might be useful regarding particular foods and their effects on the OA component.