

Methods: In a double blind cross over trial, healthy adults ($n = 13$) randomly received a F&V concentrate (emulating the base within 3.5 F&V serves/meal) or placebo at breakfast, lunch and dinner for three days each, with diet standardized throughout. Measurements of 24 hour (24-hr) pH, NAE, and spot-tests were taken throughout. Regression analysis determined relationships between pH and NAE while T-tests and ANOVAs elucidated the concentrate's influence on samples.

Results: The 24-hr pH indexed 24-hr NAE ($r^2 = 82.5\%$) yet first morning, second morning and last evening spot-tests poorly indexed 24-hr NAE ($r^2 = 10.9\%$, 3.5% and 30.8% respectively). Following supplementation, 24-hr NAE and 24-hr pH changed by -25.8 mEq (95%CI: -44.3 , -7.4 , $p = 0.01$, $d = 0.94$) and $+0.51$ (95%CI: 0.25 , 0.79 , $p = 0.002$, $d = 1.3$) respectively. Conversely, no significant changes occurred in the first or second morning spot-tests yet, a treatment effect occurred in the last evening spot-test by $+0.31$ (95%CI: 0.06 , 0.56 , $p = 0.02$, partial $\eta^2 = 0.55$).

Conclusions: Urine pH spot-tests do not index NAE and inconsistently detected the F&V concentrate which clearly modulated 24-hr pH and NAE. This inconsistency would likely increase if participants consumed a non-standardized diet. Spot-tests are not recommended.

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ASSESSMENT OF DIETARY BEHAVIOURS BY SPOT-TESTING URINE PH

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Background/Aims: Dietary biomarkers which are non-invasive, rapid and accurate may be useful to objectively assess dietary behaviours. The bases within fruits and vegetables (F&V) largely modulate net acid excretion (NAE); a laboratory intensive biomarker related to urine pH. As spot-testing pH is simple, we aimed to assess if spot-tests could index NAE while also exploring the influence of a F&V concentrate on these variables.