A Vegan Diet Is Associated with a Significant Reduction in Dietary Acid Load: Post Hoc Analysis of a Randomized Controlled Trial in Healthy Individuals.

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 4641868
Author(s) Müller, Alexander; Zimmermann-Klemd, Amy Marisa; Lederer, Ann-Kathrin; Hannibal, Luciana; Kowarschik, Stefanie; Huber, Roman; Storz, Maximilian Andreas
Author(s) at UniBasel Zimmermann-Klemd, Amy Marisa ;
Year 2021
Title A Vegan Diet Is Associated with a Significant Reduction in Dietary Acid Load: Post Hoc Analysis of a Randomized Controlled Trial in Healthy Individuals.
Journal International journal of environmental research and public health
Volume 18
Number 19
Pages / **Article-Number** 9998
Keywords diet; dietary acid load; health; meat; net endogenous acid production; nutrition; plant-based; potential renal acid load; vegan; vegetarian
Mesh terms Acids; Diabetes Mellitus, Type 2; Diet; Diet, Vegan; Food; Humans

The composition of diet strongly affects acid-base homeostasis. Western diets abundant in acidogenic foods (meat and cheese) and deficient in alkalizing foods (fruits and vegetables) increase dietary acid load (DAL). A high DAL has been associated with numerous health repercussions, including cardiovascular disease and type-2-diabetes. Plant-based diets have been associated with a lower DAL; however, the number of trials exploring this association is limited. This randomized-controlled trial sought to examine whether an isocaloric vegan diet lowers DAL as compared to a meat-rich diet. Forty-five omnivorous individuals were randomly assigned to a vegan diet (; n; = 23) or a meat-rich diet (; n; = 22) for 4 weeks. DAL was determined using potential renal acid load (PRAL) and net endogenous acid production (NEAP) scores at baseline and after 3 and 4 weeks, respectively. After 3 weeks, median PRAL (-23.57 (23.87)) and mean NEAP; R; (12.85 ś 19.71) scores were significantly lower in the vegan group than in the meat-rich group (PRAL: 18.78 (21.04) and NEAP; R; : 60.93 ś 15.51, respectively). Effects were mediated by a lower phosphorus and protein intake in the vegan group. Our study suggests that a vegan diet is a potential means to reduce DAL, whereas a meat-rich diet substantially increases the DAL burden.

ISSN/ISBN 1660-4601
Full Text on edoc ;
Digital Object Identifier DOI 10.3390/ijerph18199998
PubMed ID http://www.ncbi.nlm.nih.gov/pubmed/34639299