

# Analysis of Nutritional Habits and Intake of Polyunsaturated Fatty Acids in Veterans with Peripheral Arterial Disease

## PUBLICATION

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## ABSTRACT

“Inadequate nutrient intake may contribute to the development and progression of peripheral arterial disease (PAD). This study’s aim was to assess intake of essential fatty acids and nutrients among veterans with PAD. All 88 subjects had ankle-brachial indices of <0.9 and claudication. A validated food frequency questionnaire evaluated dietary intake, and values were compared to guidelines established by the American Heart Association (AHA) and American College of Cardiology (ACC), as well as the AHA/ACC endorsed Dietary Approaches to Stop Hypertension (DASH) eating plan. The mean age was  $69 \pm 8$  years. Compared to the AHA/ACC guidelines, subjects with PAD had an inadequate intake of long-chain polyunsaturated fatty acids (n -3 PUFA; 59% consumed >1 gram daily). Our subjects with PAD had an increased intake of cholesterol (31% met the cut-off established in the DASH plan), total fat (5%) and sodium (53%). They had an inadequate intake of magnesium (3%), calcium (5%), and soluble fiber (3%). Dietary potassium intake met the recommended guidelines. In our subjects with PAD, intake of critical nutrients deviated substantially from the recommended amounts. Further prospective studies should evaluate whether PAD patients experience clinical benefit if diets are modified to meet the AHA/ACC recommendations.”

## RESEARCH HIGHLIGHTS

- Past researchers reporting on the nutritional intake of patients with peripheral arterial disease (PAD/PVD) have found that leg pain associated with PAD is often related to consuming a diet high in fat, sodium, and cholesterol and low in fiber, folic acid and polyunsaturated fatty acids. Expanding upon previous studies, this study evaluates the nutritional intake of 88 veterans with PAD at the San Francisco Veterans Affairs Medical Center (VAMC) by the suggested dietary intakes of the American Heart Association (AHA) and American College of Cardiology (ACC).
- Consistent with prior research, the authors found that 59 percent of veterans with PAD consumed the recommended daily dose of omega-3 polyunsaturated fatty acids and that less than 10 percent consumed the daily suggested amounts of magnesium, soluble fiber, and calcium. Thirty-one (31) percent of the veterans met the AHA/ACC recommended cut off for cholesterol intake, and 53 percent met the cut off for sodium intake. Ninety-five (95) percent of patients had a sodium intake that was greater than the recommended level.
- These results confirm that there is a relationship between nutritional intake and PAD. Future researchers and health care providers should use these results to determine how improving the diet of veterans with PAD might improve their quality of life.



## IMPLICATIONS

### FOR PRACTICE

To improve their health outcomes, all veterans should follow the diet suggested by the ACA/AHA and continue to discuss their current intake with their primary care providers (PCPs). In order to ensure veterans have access to information that promotes long-term positive health, PCPs should educate veterans about the relationship between their current nutritional intake and their later health. PCPs should also determine veterans' current nutritional intake through surveys or blood testing and compare it to suggested health standards to determine if further intervention is needed. This will assist in ensuring that veterans have the ability to take preventative measures to stay in good health. When applicable, to ensure that proper dietary changes are attainable, PCPs and veterans should work alongside nutritionists to develop a dietary plan. Nutritionists should encourage diets low in sodium, fat, and cholesterol, as well as provide recommendations on diets or supplements which help veterans meet the suggested dietary levels of fiber, omega-3 polyunsaturated fatty acids and vitamins C and E. PCPs should also provide information about community resources which might aid in diet modification and healthy decision making.

### FOR POLICY

To foster independence related to making good dietary choices, the Department of Defense (DoD) and the Veterans Health Association (VHA) might collaborate to design a transitional educational program related to diet and nutritional intake. Designing such a program could encourage veterans to begin the process of healthy eating and help prevent future health concerns. Through these programs, the DoD and the VHA might teach the importance of a balanced diet and provide meal suggestions to help veterans and their families prepare healthy meals. Policymakers may allocate funding to run media campaigns or events dedicated to informing veterans and the general population on the importance of preventative health care. Policymakers might also improve access to nutrition-based programs by allocating funding to community groups for veterans who may not have access to VHA centers.

### FOR FUTURE RESEARCH

One limitation of the current research design is that the nutritional data from the veterans was based on self-reports that required the veterans to recall their average food intake over the past year. Future researchers should include daily or weekly food diaries or blood tests to increase accuracy of reporting. Another limitation noted by the authors is that the 88 veterans included in the study were almost solely Caucasian males. To better understand the connection between nutrition and PAD, future studies should include female veterans and veterans from different races/ethnicities. Including women veterans and more racial/ethnic diversity in subsequent studies could allow for a better understanding of how diet and PAD affect these communities. Additional studies should control for other variables that might impact the circulatory system, such as physical activity and alcohol use. An additional limitation of this study is that only veterans who were mildly impacted by PAD were included in the analysis. Future studies should include and compare the diets of patients who have asymptomatic cases of PAD along with veterans who have more advanced stages of PAD. Future researchers should conduct randomized control studies to track health outcomes after veteran groups increase their intake of health promoting foods such as nuts and fish. Tracking health outcomes after changes to diet could provide valuable information on how dietary changes impact side effects of PAD, such as leg pain. Researchers should compare any reported changes in health outcomes to the outcomes of veterans who took supplements or did not make any dietary changes. Longitudinal research should be conducted to determine what types of treatment can promote dietary changes and decrease the negative health concerns related to PAD.

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