

Inadequate diet can lead to anemia in postmenopausal women

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A new study published in the April 2011 issue of the *Journal of the American Dietetic Association* indicates that inadequate nutrition is linked to a greater risk of anemia in postmenopausal women.

"This study suggests that inadequate nutrient intakes are a significant risk factor for anemia in this population of older women and use of multivitamin/mineral supplements is not associated with lower rates of anemia," reports lead investigator Cynthia A. Thomson, PhD, RD, Associate Professor Nutritional Sciences, University of Arizona, Tucson. "Overall mortality is increased in relation to a diagnosis of anemia, and anemia, particularly [iron deficiency](#), has been associated with reduced capacity for physical work and [physical inactivity](#), injury related to falls and hospitalizations, making this an important health care concern in the aging." The authors also point out that there have been few studies of anemia and diet of independently living women in the past 20 years.

Using data from 72,833 women in the Observational Cohort of the Women's Health Initiative (WHI-OS), researchers found that deficiencies in more than a single nutrient were associated with a 21% greater risk of persistent anemia while three deficiencies resulted in a 44% increase in risk for persistent anemia. Inadequate intakes of multiple anemia-associated nutrients were less frequent in non-Hispanic whites (7.4%) than other race/ethnic groups (15.2% of Native Americans/Alaskans, 14.6% Asian/Pacific Islanders, 15.3% of African Americans and 16.3% of Hispanic/Latinos reported all three nutrient inadequacies). Women with anemia reported lower intakes of energy,

protein, folate, vitamin B12, iron, vitamin C and red meat. In fact, inadequate intake of dietary iron, vitamin B12 and folate were each associated with approximately 10% to 20% elevated risk for incident anemia among WHI-OS study participants and the odds increased for persistent anemia to 21%. Age, [body mass index](#) and smoking were also associated with anemia.

According to the authors, the WHI study represents one of the most comprehensive sources of diet, health and general information ever collected in the U.S., including data over a 9-year period. Dietary intake data were collected using a Food Frequency Questionnaire (FFQ), while not precise in terms of nutrient exposure, can be completed independently by study participants with minimal instruction. The FFQ estimates intake of over 85 nutrients.

The authors conclude that, "Efforts to identify anemia that may be responsive to modifiable factors such as diet to improve health outcomes are needed. Additional efforts to regularly evaluate [postmenopausal women](#) for anemia should be considered and should be accompanied by an assessment of dietary intake to determine adequacy of intake of anemia-associated nutrients including iron, vitamin B12 and folate. While the type of anemia is often designated by a more comprehensive biochemical assessment than hemoglobin alone, nutritional therapy to improve overall nutrient-density and quality of the diet should also be a clinical focus."

In an accompanying editorial, Lisa Tussing-Humphreys, PhD, RD, Research Nutritionist, U.S. Department of Agriculture-Agricultural Research Service, Baton Rouge, and Carol Braunschweig, PhD, RD, Assistant Professor, Department of Kinesiology and Nutrition, University of Illinois, Chicago, comment that "the study by Thomson and colleagues extends the literature by providing one of the largest prospective assessments of diet and anemia in US postmenopausal

women." They acknowledge that anemia in older individuals is frequently linked to non-nutritional causes. Data required to interpret and classify the type of anemia and evaluate non-diet-related factors associated with anemia were not assessed in all women enrolled in the WHI-OS cohort, as acknowledged by Thomson and colleagues, and therefore not evaluated or reported. In addition Tussing-Humphreys and Braunschweig discuss the varieties of anemias common in the elderly, including anemia of chronic disease (ACD), and expand on the dietary and non-dietary factors that raise [anemia](#) risk.

More information: The article is "Nutrient Intake and Anemia Risk in the WHI Observational Study" by Cynthia A. Thomson, PhD, RD, Jeffrey Stanaway, MPH, Marian L. Neuhouser, PhD, RD, Linda G. Snetselaar, RD, PhD, LD, Marcia L. Stefanick, PhD, Leslie Arendell, MS, and Zhao Chen, PhD, MPH. The editorial is "Anemia in Postmenopausal Women: Dietary Inadequacy or Nondietary Factors?" by Lisa Tussing-Humphreys, PhD, RD, and Carol Braunschweig, PhD, RD. Both appear in the Journal of the American Dietetic Association, Volume 111, Issue 4 (April 2011).

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