USDA Agricultural Research Service:
Improving Nutrition and Health for Seniors

The Center has made pioneering discoveries about the role of nutrition in improving the health and quality of life for elderly Americans, including ways to reduce risk of heart disease, bone fractures, eye disease, and dementia.

Lead Agency:

USDA Agricultural Research Service (ARS)

Agency Mission:

ARS conducts research to develop and transfer solutions to agricultural problems of high national priority and to provide information access and dissemination in order to:

- ensure high-quality, safe food and other agricultural products,
- assess the nutritional needs of Americans,
- sustain a competitive agricultural economy,
- enhance the natural resource base and the environment, and
- provide economic opportunities for rural citizens, communities, and society as a whole.

Principal Investigator:
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Partner Agencies:
Tufts University
National Institutes of Health

General Description:
The Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University (the Center) was established by an Act of Congress 30 years ago. It quickly became the premier institution in the world conducting research on nutrition in the prevention of age-related chronic diseases. The Center's accomplishments have greatly contributed to the health of the American people. Select examples of recent pioneering research that has impacted public health and served to establish Federal nutrition policy include the discoveries that:

- High vitamin D levels in the elderly are associated with fewer falls.

- Dietary omega-3 fats is a means of preventing dementia.
- Lutein, a pigment found in corn, spinach, and egg yolks, protects the eye against age-related macular degeneration, the leading cause of blindness in the elderly.
- Saturated and trans fats increase serum cholesterol and the risk of heart disease.
- Higher protein intake and exercise can decrease the loss of muscle normally seen in aging.
- Adequate intake of zinc can reduce the incidence of pneumonia in elderly residents of nursing homes.
- Vitamin K—not just calcium and vitamin D—is critical for bone health.
- The requirement for vitamin A is partially met by plant sources of beta-carotene.
- Folic acid can reduce the level of homocysteine in the blood, which is a risk factor for heart and brain disease.

Excellence: **What makes this project exceptional?**

The Center is widely acknowledged as the premier research institution studying the relationship between nutrition and aging. What makes this project **exceptional** are the breadth and strength of the scientists who staff it along with their discoveries. The staff are routinely recognized with prestigious awards from national and international nutrition and health organizations.

Significance: **How is this research relevant to older persons, populations and/or an aging society?**

Because nutrition is one of the few factors for health under our complete control, this field offers people the ability to manage their own health. Many of the discoveries from the Center have stimulated other nutrition scientists to investigate the same questions, and other scientists often replicate the work of the Center. This is an acknowledgement by peers that the studies carried out here are of high impact in the field.

Effectiveness: **What is the impact and/or application of this research to older persons?**

Nutrition research is relatively easily translated into practical applications for older persons. From work done at the Center, we know that vitamin D is more important than calcium for bone health in the elderly. In addition, we know that adequate intake of yellow and dark green vegetables can help prevent both cataracts and age-related macular degeneration. Small changes in the diet can improve health and reduce costs associated with avoidable causes of morbidity and mortality and have led the scientists to recently produce a food guide pyramid specifically for older Americans.

Innovativeness: Why is this research exciting and newsworthy?

This research is both exciting and newsworthy because a series of dietary recommendations can be made for older people to improve their health simply by substituting healthier choices for the foods they commonly consume. Specific recommendations can be made that have the potential for improving bone health, the immune system, the cardiovascular system, brain function (cognition), and the musculoskeletal system. In other words, virtually every system in the body can benefit from the work done at the Center.