Hunger Issue Brief

February 2003

Inside this Report

1 The Growing Elderly Population

2 Poverty and the Elderly

3 Food Insecurity and Hunger Among the Elderly

5 The Consequences of Food Insecurity and Hunger

6 Nutrition Programs for the Elderly

8 Barriers to Participation

8 Protecting Seniors from Food Insecurity and Hunger

Food Security Institute
Center on Hunger and Poverty
The Heller Graduate School for Social Policy and Management
Brandeis University
http://www.centeronhunger.org
hunger@brandeis.edu

Hunger and Food Insecurity Among the Elderly

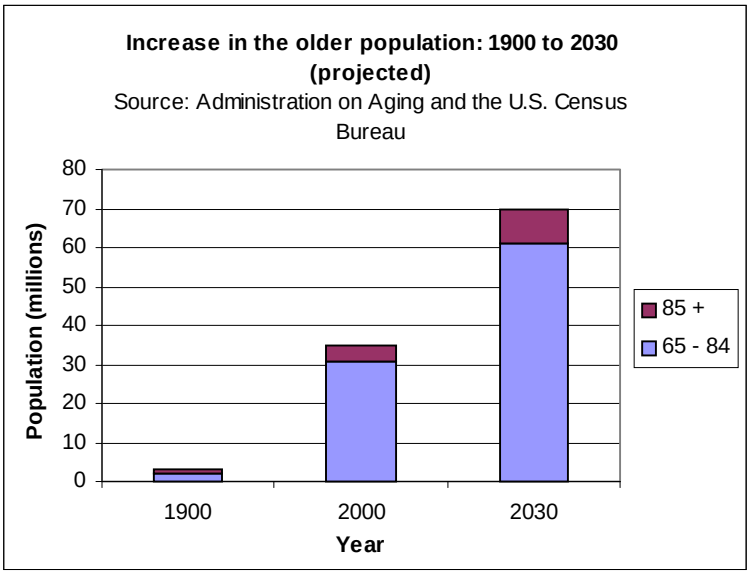
For older adults,[i] adequate nutrition is particularly important for health because of their increased vulnerability to disease and conditions that may impair functionality (the ability to live or cook at home).[1] Inadequate diets may contribute to or exacerbate disease, quicken the advance of age-related degenerative diseases, and delay recovery from illnesses.[2]

Several million older adults in the U.S. lack access to the food needed to sustain health and reduce the risk of disability. Given the large growth trajectory of the elderly population, it is important to understand food insecurity and other factors that may impact the well-being of this high risk population.

This paper examines the prevalence, severity, and impact of food insecurity among the elderly and describes key federal nutrition programs that provide important nutrition support to low-income elderly Americans. With a greater understanding of the problem, the nation can take action to ensure that policies and programs to protect elder Americans from food insecurity and hunger are sufficient and effective.

The Growing Elderly Population

In 2000, 35 million people (12.4%), or about 1 of every 8 Americans, were 65 and older.[3] Women make up almost 60% of the elderly population (20.6 million). By 2030, the 65+ population is expected to *more than double* to about 70 million people, representing 20% of the entire U.S. population.[4]



[i] The words 'elderly,' 'seniors,' and 'older adults' are used interchangeably in this report. Unless otherwise noted, all refer to individuals ages 65 and above.

As the elderly population increases, it grows more diverse.[ii] Minorities will comprise 25% of the entire elderly population in 2030, up from 16% in 2000.[5] Elderly minority populations are expected to increase 219% between 1999 and 2030 compared to 81% for the elderly white population. Large increases are projected for Hispanics (328%), African-Americans (131%), American Indians, Eskimos, and Aleuts (147%), and Asians and Pacific Islanders (285%).

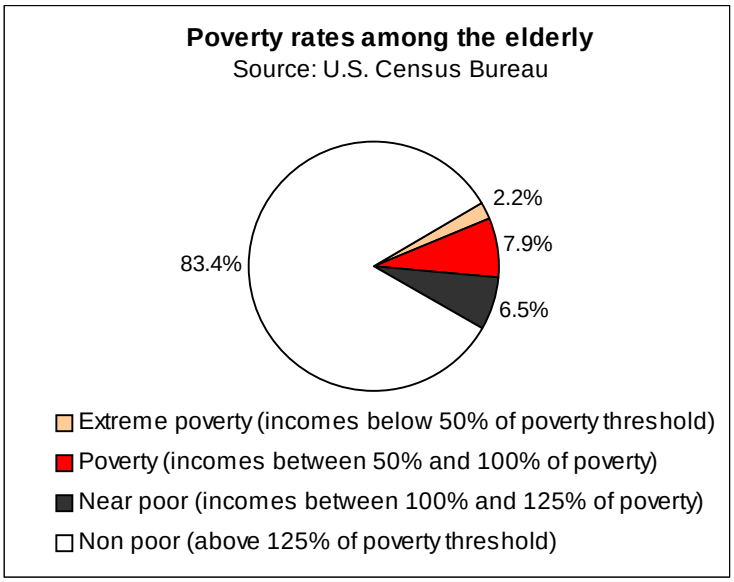
In 2000, about half of all older Americans lived in 9 states - California, Florida, New York, Texas, Pennsylvania, Ohio, Illinois, Michigan, and New Jersey. Over three-quarters (77.5%) of people 65+ lived in metropolitan areas.[6]

Top 10 states with the highest concentration of persons 65+:

FL	17.6%	ND	14.7%
PA	15.6%	RI	14.5%
WV	15.3%	ME	14.4%
IA	14.9%	SD	14.3%
AR	13.9%	CT	13.7%

Poverty and the Elderly

After the elderly poverty rate reached a historic low of 3.2 million in 1999, the number increased to 3.4 million (10.1%) in 2001.[7] Furthermore, in 2001, 2.2% of the elderly population lived in severe poverty (below 50% of the poverty threshold, or below $4,247 for one senior), and 6.5% were classified as near-poor (incomes between 100% and 125% of poverty).[8]



Certain subgroups experience higher than average rates of elderly poverty:

- Older women (12.2%), and older people living alone or with nonrelatives (20.8%) have higher than average poverty rates.[9]
- Elderly non-Hispanic blacks, Hispanics, and Asian and Pacific Islanders (21.9%, 21.8%, and 10.2%, respectively) were more likely to live in poverty in 2001 than elderly non-Hispanic whites (8.3%).[10]
- Elderly living in rural areas have higher poverty rates than the urban elderly. The gap between the number of elders below the poverty level in urban and rural areas is widest for those age 85 and above. Nearly 20% of rural elders age 85 and above are below the poverty line compared to 12% of urban elderly age 85 and above.[11]

[ii] In 2000, 8.0% of individuals 65+ were African-Americans, 2.4% were Asian or Pacific Islander, and less than 1% were American Indian or Native Alaskan. Individuals of Hispanic origin (of any race) made up 5.6% of the elderly population.

A significant number of elderly face poverty at some time during their lifetimes. The probability of a person experiencing a year below the poverty line at some point between the ages of 60 and 90 is 40%. About 1 out of every 2 people will fall below 125% of the poverty line for one year during this period.[12]

One possible reason for the increase in elderly poverty is the decline in retirement wealth and income since the 1980's. [13] The share of households facing the prospect of retirement income below the poverty line increased 7.5% from 1989 to 1998 (17.2% to 18.5%).[14]

While the U.S. elderly poverty rate has improved since the 1960s, it is still unusually high relative to other developed countries. In 1997, the U.S. had the second highest elderly poverty rate among the 19 industrialized countries included in the Luxembourg Income Study, just behind Australia.[15]

Since the poverty thresholds used for people 65 and older are lower than those used for people under age 65, official poverty rates may actually *underestimate* the needs of older Americans. Given that overall nutrient requirements of the elderly are not lower, and that they spend a higher proportion of their budgets on food, health care, shelter, and other necessities, there is no basis for this lower poverty standard.[16]

Food Insecurity and Hunger Among the Elderly

Given the close connection between inadequate income and hunger, the number of elders living in poverty or near-poverty suggests that many American seniors are at risk of food insecurity and hunger. Non-discretionary financial demands, such as high health care costs, on many older people may make it difficult to afford adequate food.[iii]

National estimates of food insecurity among older Americans vary. Recent estimates range from 5.5% to 16%, due to different survey methodologies and populations studied.[17 18]

The most recent national data collected in 2001 by the U.S. Census Bureau for the USDA using the validated 18-item U.S. food security survey module, show that 1.4 million households with elderly members (5.5%) experienced food insecurity due to lack of resources. 1.5% of elderly households experienced the most severe form of food insecurity – hunger.[19] Similar national data show that food insecurity in elderly households did not improve between 1999 and 2001.

Food insecurity and hunger rates among elderly households vary by household composition, income, race and ethnicity, and location of residence:

Food insecurity occurs whenever the availability of nutritionally adequate and safe food, or the ability to acquire foods in socially acceptable ways, is limited or uncertain.

Hunger is defined as the uneasy or painful sensation caused by a recurrent or involuntary lack of food and is a potential, although not necessary, consequence of food insecurity. Over time, hunger may result in malnutrition.

Food insufficiency refers to an inadequate amount of food intake due to lack of resources.

Anderson, S.A. (1990). Core indicators of nutritional state for difficult-to-sample populations. *Journal of Nutrition*, 120 (11S): 1557-1600.

- **Household composition:** Among elderly households, those composed of two or more elderly people are the most food secure (97.6%).[20] Elderly households containing elderly and non-elderly members had the highest level of food insecurity (7.9%).[21] Food insecurity rates are higher in households with elderly men living alone (6.9%) and women living alone (6.6%). Of the elderly who lived alone in 2001, over 600,000 lived in food-insecure households. Over 200,000, or one-third, of these households experienced hunger.[22] Food-insecure households of elderly living alone were more likely to experience hunger than food-insecure households containing more than one elderly member (33% vs. 25%).

[iii] The impact non-discretionary financial demands have on food security is not discussed in this report, but deserves further analysis.

- **Income:** Food insecurity among elderly households with incomes below the federal poverty line was more than 12 times greater than that of elderly households with incomes above 185% of the poverty line (22.6% vs. 1.8%). The relationship between hunger and income was even stronger, with 7.2% of elderly households with incomes below the poverty line and 0.4% of elderly households with incomes above the 185% of the poverty line experiencing hunger.[23]

- **Race and ethnicity:** Hispanic and black seniors are more likely to live in food-insecure households compared to non-Hispanic white elderly adults. Food insecurity prevalence was 18.9% for black elderly households, 15.4% for Hispanic elderly households, and 3.7% for non-Hispanic white elderly households. Nearly half of the differences between these groups can be accounted for by lower incomes among minority households, and by the larger proportion who live in mixed-age households.[24]

- **Location:** Food insecure and hungry elderly households are more prevalent in the South than in other regions of the country, and also more prevalent in central cities compared to suburban areas and locations outside metropolitan areas.[25]

Most elderly households with food access difficulties reported that these hardships were due to lack of income and other resources for food. Some elders, however, said that they had other food access problems resulting in disrupted eating patterns or reduced food intake.[26] (See text box: 'Special Factors Shaping the Food Needs of the Elderly').

Since questions related to these non-economic issues of access are not included in the U.S. food security survey module, some researchers question the ability of existing measures to adequately capture the characteristics and perceptions of food hardship among the elderly.[27] [28] Other research shows that the module accurately measures food insecurity and hunger in elderly households.[29]

Special Factors Shaping the Food Needs of the Elderly

Sufficient food intake requires adequate resources to buy food, but is also determined by the ability to prepare, gain access to, and eat the food available.[30] Factors that contribute to inadequate food consumption among the elderly, in addition to resource constraints, include:

- **Functional impairments** – The inability to acquire, prepare, and eat food is independently associated with food insecurity among the elderly.[31] Limitations on physical mobility interfere with the ability of seniors to shop and prepare food.[32] Consider, for example, that of the non-institutionalized elderly population in 1997, 21.6% (6.9 million) could not carry out instrumental activities of daily living, such as making meals and shopping, without assistance.[33]
- **Social isolation** – Typically, fewer calories are consumed at meals eaten alone than those eaten with other people. A reduction in dietary variety, potentially caused by factors like poverty and living alone, is also associated with reduced energy intakes.[34]
- **Reduced ability to regulate energy intake** – Evidence suggests that aging is associated with an impaired ability to regulate food intake. That is, some elderly adults lack the ability to maintain a constant energy balance. This, coupled with the possibility that elderly men and women do not experience the sensation of hunger as often during episodes of negative energy balance compared to young individuals, as well as other factors that inhibit energy intake in seniors, can result in weight loss.[35]

The combination of these factors, along with a greater susceptibility to depression, reductions in taste and smell sensations, poor health status, and poor dentition, can result in inadequate food consumption among the elderly. Thus, a complex set of factors, in addition to the ability to afford food, affects seniors' access to nutritionally adequate diets for an active, healthy life.

Other national studies also document food hardship among older Americans.

- A 1993 study by the Urban Institute concluded that an estimated 2.5 million to 4.9 million elderly, or about 1 in 20 elders in the overall U.S. population, experienced food insecurity during the 6-month period prior to the survey.[36]
- A survey of Elderly Nutrition Program participants found that 1 in 10 congregate meal participants and 1 in 6 home-delivered meal participants experienced food insecurity during the preceding month.[37]
- In a survey of disabled, elderly women, almost one-quarter had financial difficulty acquiring food. Some level of financial difficulty obtaining food was reported by 13.4% of white women in the sample, compared to half of non-white women. Despite their difficulties, less than 3% of these women received home-delivered meals and less than 5% frequented congregate meal sites.[38]

Other measures of food hardship, such as emergency food demand, also show that many elderly are not protected from food insecurity and hunger.

- In 2001, America's Second Harvest, the nation's largest hunger relief organization, served 23 million low-income Americans. More than one in ten (11%) of the members of households served were elderly.[39]
- Requests for emergency food assistance by the elderly in major U.S. cities increased an average of 19% during 2002, with 92% of cities reporting an increase. (The remaining 8% of cities reported that the number of elders seeking assistance remained the same.)[40]

Among the elderly, financial difficulty acquiring enough food is associated with being low-income, minority, functionally impaired, and socially isolated.[41] The risk of food insecurity is compounded when an individual is part of more than one high-risk group. For example, one study found that food insecurity prevalence rises from 8.6% to 13.4% if an elderly person has functional impairments in addition to being both a minority and poor.[42]

The Consequences Of Food Insecurity And Hunger

Food insecurity and hunger present unique challenges for the elderly. Older people are more likely to have chronic health conditions, deficiency diseases (like osteoporosis), conditions that impair digestion or nutrient absorption, as well as heightened vulnerability to infection. Ensuring adequate food and nutrition is essential to the prevention or delay of chronic disease and disease-related disabilities among seniors.

Older people generally consume less than the RDA for 8 nutrients regardless of food sufficiency status. Food-insufficient elders, however, have consistently lower mean intakes of a dozen nutrients including energy, protein, iron, zinc, vitamins B-6 and B-12, riboflavin, and niacin.[43] Poor nutrient intakes and barriers to eating can increase the risk of hospitalization in vulnerable groups like the elderly.[44]

Food insecurity among the elderly can also lead to deteriorating mental and physical health. Among older disabled women, increased financial difficulty acquiring food can lead to greater symptoms of depression.[45] Elderly classified as food insufficient are at a higher risk of being underweight (having a Body Mass Index below 19), which places them at greater risk of earlier mortality.[46] They are also more likely to self-report fair or poor health status than food-sufficient elders.[47]

> *"Food insecurity contributes to malnutrition in the elderly, which in turn exacerbates disease, increases disability, decreases resistance to infection, and extends hospital stays."*
>
> Wolfe, W.S., Olson, C.M., Kendall, A., Frongillo, E.A. (August 1998). Hunger and food insecurity in the elderly. *Journal of Aging and Health*, 10(3), 327-350.

In conclusion, the research literature shows that food insecurity among elderly adults contributes to malnutrition, which "exacerbates disease, increases disability, decreases resistance to infection and extends hospitals stays."[48] Even compromised food choices can lead to poor nutrition, affecting the health status of many elderly.[49] Malnutrition increases care-giving demands and increases national health care expenditures associated with premature or extended hospital or nursing home stays.[50]

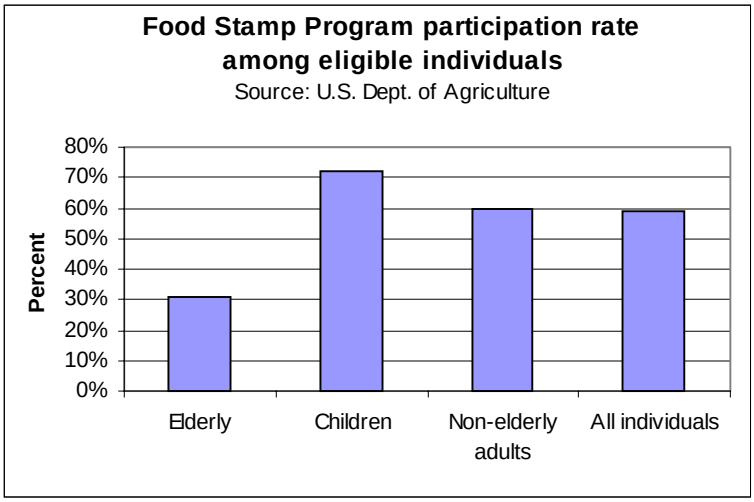
Nutrition Programs for the Elderly

Two major federal programs – the Food Stamp Program (FSP) and the Elderly Nutrition Program (ENP) – provide important nutrition support for low-income seniors.

The **Food Stamp Program** is available to individuals of all ages based on need and asset criteria. In FY2001 there were 1.7 million elderly participants [iv] (9.6% of all participants). Households containing elderly individuals represented one-fifth of all food stamp households. Of food stamp households with elderly members, 80% consisted of an elderly person living alone.[51]

Although overall participation in the FSP declined from 1994 to 1999, and then rose in 2000, this trend did not apply to elderly individuals. The participation rate for elderly individuals fell in 2000 by two percentage points after rising slowly from 1996 to 1999. In 2000, only 31% of eligible elders received food stamps compared to 72% of children, 60% of non-elderly adults, and 59% of individuals in all households.[52]

In addition to lower than average program participation rates, the elderly also receive the lowest average monthly food stamp benefit of all participating household types. The average monthly benefit for an elderly household in FY2001 was $58. For elderly individuals living alone, the average monthly benefit was $45. In households with elderly and other individuals, either elderly or non-elderly, the average household benefit in FY2001 was $112 per month (with 2.4 people in the household, on average). While households with elderly members represented 20% of all food stamp households in FY2001, they only received 7% of all total benefit dollars.[53] While a disproportionately high number of elderly households receive the minimum monthly food stamp benefit of $10.00, over 70% received more than the minimum benefit.[54] Since the FSP is a key federal nutrition program, reaching more elders in need through this program is essential. Efforts should be considered to increase monthly food stamp benefits to at-risk, food-insecure seniors.



The **Elderly Nutrition Program (ENP)** provides congregate and home-delivered meals, as well as other support services, to address problems of dietary inadequacy and social isolation among the elderly. The ENP has provided over 6 billion meals since its creation 30 years ago.[55]

Although federal law requires that ENP be available to all seniors (age 60 and above), it is targeted towards low-income older Americans with special economic and social needs. Evaluations show that the program does reach low-income elders, and food insecure elderly people are more likely to participate in the ENP than food secure individuals.[56 57] An estimated 7% of the older population overall, and 20% of low-income elders, receive congregate and home-delivered meals and other nutrition- and health-related services from the ENP.[58]

[iv] For all food stamp statistics, elderly are defined as age 60 and above.

Title III of the Older Americans Act, Grants to States and Community Programs, and Title IV, Grants for Native Americans, fund ENP services. In FY1999 (the latest year for which complete data are available), ENP under Title III served an estimated 247 million meals to 2.6 million older adults. Over half of these meals, 54% or 134.6 million, were home-delivered; the balance were served in a congregate setting.[59] Under Title VI, approximately 1.7 million meals were served to 23,000 older American Indians, Native Alaskans, and Native Hawaiians in group settings and 1.3 million home-delivered meals were served to 36,000 elderly individuals.[60]

FY2002 funding under Title III is $390 million for congregate meals (an increase of $11 million from FY 2001) and $176.5 million for home-delivered meals (up $24 million).[61] While FY2002 funding is higher than FY2001, current funding for elderly nutrition falls short of meeting needs. Over 40% of Title III home-delivered meal programs have waiting lists, and funding has failed to keep pace with inflation and the growing elderly population.[62] Along with decreasing resources, there is a substantial shift in demand for services from congregate sites to homes.[63] Demand for home-delivered meals will continue to increase in the current environment of health care cost containment and rapid hospital discharges, which often require care that includes home-delivered meals and other nutrition services.[64]

> *"The cost of one year's supply of home-delivered meals is about the same as one day in the hospital."*
>
> U.S. Department of Health and Human Services (March 2002). Focus on Your Health: Senior Nutrition.

Other programs that assist elders in meeting their food needs include the **Commodity Supplemental Food Program (CSFP)**, the **Child and Adult Care Food Program (CACFP)**, and the **Senior Farmers' Market Nutrition Program (SFMNP)**. CACFP provides adults age 60 or older who are enrolled in a participating adult care centers up to two meals and one snack each day. In December 2001, CACFP provided meals to 74,000 adults (including adults with functional impairments and adults age 60 and over).[65] The CSFP provides food and administrative funds for the distribution of food packages to supplement the diets of low-income adults age 60 and above, as well as new mothers, infants, and children. CSFP is only available in 29 states. In FY2001, nearly 80% of all enrolled participants were elderly adults, with more than 323,000 older adults participating each month.[66] The SFMNP provides fresh, locally grown produce from farmers' markets, roadside stands, and community supported agriculture programs to low-income seniors. States and Indian Tribal Organizations can apply for the $15 million in grants available for the SFMNP in FY2003. In FY2002, 26 states and one Indian Tribal Organization received SFMNP grant money.

Research suggests that many of these federal nutrition programs can have a beneficial impact on food-insecure seniors. ENP participants are better nourished (higher mean daily nutrient intakes) and have higher levels of socialization (higher average monthly social contacts) than non-participants.[67] Nutrition programs can also prevent or delay the unnecessary placement of older adults in nursing homes and help people manage chronic conditions, thus avoiding costly hospital stays.[68] Overall, the cost of one year's supply of home-delivered meals is about the same as one day of hospital care.[69]

> *"Without food, the elderly also go to nursing homes prematurely, adding to what is already a huge national expense. The United States spends about $80 billion a year on nursing-home care, nearly half paid by taxpayers through Medicaid. A year in a nursing home averages around $40,000; a year's worth of meals, $1,325."*
>
> Lieberman, T. (March 30, 1998). Hunger in America. *The Nation*, 11-16.

Barriers to Participation

Despite the beneficial impact federal nutrition programs can have on food-insecure seniors, many elderly face significant barriers that lead to non-participation in existing programs. Expanding coverage requires addressing these barriers, some of which include:

- A lack of awareness and information about existing programs;
- Perception that program benefits are too low to warrant the difficulties associated with the application process;
- A reluctance to accept food assistance due to the stigma associated with receipt of public assistance;
- Constraints placed on service programs due to inadequate funding;
- A lack of transportation and/or physical mobility needed to reach program sites. [70] [71] [72]

Protecting Seniors from Food Insecurity and Hunger

To protect seniors from food insecurity and hunger, it is essential to:

- Ensure the adequacy of economic resources and minimize the risk of financial setbacks for seniors by bolstering retirement security through Social Security, pensions and savings, earnings, and health insurance coverage.
- Increase funding to vital federal nutrition programs for seniors to ensure that benefit levels are sufficient to meet their food needs.
- Improve participation in federal nutrition programs through extensive outreach to eligible seniors and by addressing specifc barriers that prevent eligible seniors from utilizing necessary programs.
- Expand and enhance delivery of food and nutrition services to meet the need and demand for services.
- Examine methods of measuring hunger among the elderly to better capture the specific circumstances that lead to food hardship among this population.

As the number of elderly Americans grows, it is crucial to ensure that seniors do not experience food insecurity or hunger. Reducing this risk can benefit their health, nutrition and general well-being, as well as reduce hospitalizations and related health care costs for the nation.

> *"Malnutrition costs. It costs older people by exacerbating disease, by increasing disability, by decreasing their resistance to infection, and by extending their hospital stays. It costs caregivers by increasing worry and caregiving demands. The entire country pays health care costs related to this increase in complication rates, increasing hospital stays, and increasing mortality rates. Malnutrition costs people and it costs dollars."*
>
> Fernando M. Torres-Gil (1996). Malnutrition and hunger in the elderly. *Nutrition Reviews*, 54(1), S7-S8.

Endnotes

1. Administration on Aging. (2002). Fact Sheet: The Older Americans Act Nutrition Programs (Elderly Nutrition Program). Washington, DC: Administration on Aging, U.S. Department of Health and Human Services. http://www.aoa.gov/nutrition/OAANP-FS.pdf
2. Weimer, J.P. (1997). Many elderly at nutritional risk. *FoodReview*, January-April, 42-48. http://www.ers.usda.gov/publications/foodreview/jan1997/jan97g.pdf
3. U.S. Census Bureau. (2001). *Profiles of General Demographic Characteristics: 2000*. Washington, DC: U.S. Census Bureau. http://www.census.gov/prod/cen2000/dp1/2kh00.pdf
4. Administration on Aging. U.S. Department of Health and Human Services. (n.d.). *A Profile of Older Americans: 2001*. http://www.aoa.gov/aoa/stats/profile/2001/2001profile.pdf
5. Administration on Aging. U.S. Department of Health and Human Services. (n.d.). *A Profile of Older Americans: 2001*. http://www.aoa.gov/aoa/stats/profile/2001/2001profile.pdf
6. Administration on Aging. U.S. Department of Health and Human Services. (n.d.). *A Profile of Older Americans: 2001*. http://www.aoa.gov/aoa/stats/profile/2001/2001profile.pdf
7. Proctor, B.D. & Dalaker, J. (September 2002). *Poverty in the United States: 2001*. U.S. Census Bureau, Current Population Reports, P60-214. Washington, DC: U.S. Government Printing Office. http://www.census.gov/prod/2002pubs/p60-219.pdf
8. Proctor, B.D. & Dalaker, J. (September 2002). *Poverty in the United States: 2001*. U.S. Census Bureau, Current Population Reports, P60-214. Washington, DC: U.S. Government Printing Office. http://www.census.gov/prod/2002pubs/p60-219.pdf
9. Administration on Aging. U.S. Department of Health and Human Services. (n.d.). *A Profile of Older Americans: 2001*. http://www.aoa.gov/aoa/stats/profile/2001/2001profile.pdf
10. Proctor, B.D. & Dalaker, J. (September 2002). *Poverty in the United States: 2001*. U.S. Census Bureau, Current Population Reports, P60-214. Washington, DC: U.S. Government Printing Office. http://www.census.gov/prod/2002pubs/p60-219.pdf
11. Rogers, Carolyn C. (Fall 2002). The Older Population in 21st Century Rural America. *Rural America*, 17(3), 2-10. http://www.ers.usda.gov/publications/ruralamerica/ra173/ra173b.pdf
12. Rank, M.R. & Hirschl, T.A. (1999). Estimating the proportion of Americans ever experiencing poverty during their elderly years. *Journal of Gerontology*, 54B(4), S184-S193.
13. Weller, C. (May 2002). *Retirement income adequacy falls*. Economic Snapshot for May 22, 2002. Washington, DC: Economic Policy Institute. http://www.epinet.org/webfeatures/snapshots/archive/2002/0522/snap05222002.html
14. Wolff, E.N. (2002). *Retirement insecurity: The income shortfalls awaiting the soon-to-retire*. Washington, DC: Economic Policy Institute. http://www.epinet.org/books/retirement.pdf
15. Jesuit, D. & Smeeding, T. (January 2002). *Poverty and Income Distribution*. Luxembourg Income Study Working Paper No. 293. Syracuse, N.Y.: Maxwell School of Citizenship and Public Affairs, Syracuse University. http://www.lisproject.org/publications/liswps/293.pdf
16. Rogers, B.L., Brown, J.L., & Cook, J. (1994). Unifying the poverty line: A critique of maintaining lower poverty standards for the elderly. *Journal of Aging & Social Policy*, 6(1/2), 143-166.
17. Burt, M.R. (1993). *Hunger Among the Elderly: Local and National Comparisons*. Washington, DC: The Urban Institute.
18. Nord, M., Andrews, M., & Carlson, S. (2002). *Household Food Security in the United States, 2001*. (ERS Food Assistance and Nutrition Research Report No. 29.) Washington, DC: Economic Research Service, U.S. Department of Agriculture. http://www.ers.usda.gov/publications/fanrr29/
19. Nord, M., Andrews, M., & Carlson, S. (2002). *Household Food Security in the United States, 2001*. (ERS Food Assistance and Nutrition Research Report No. 29.) Washington, DC: Economic Research Service, U.S. Department of Agriculture. http://www.ers.usda.gov/publications/fanrr29/
20. Nord, M., Andrews, M., & Carlson, S. (2002). *Household Food Security in the United States, 2001*. (ERS Food Assistance and Nutrition Research Report No. 29.) Washington, DC: Economic Research Service, U.S. Department of Agriculture. http://www.ers.usda.gov/publications/fanrr29/
21. Nord, M. (2002). Food Security Rates Are High for Elderly Households. *FoodReview*, 25(2), 19-24. http://www.ers.usda.gov/publications/FoodReview/Sep2002/frvol25i2d.pdf
22. Nord, M., Andrews, M., & Carlson, S. (2002). *Household Food Security in the United States, 2001*. (ERS Food Assistance and Nutrition Research Report No. 29.) Washington, DC: Economic Research Service, U.S. Department of Agriculture. http://www.ers.usda.gov/publications/fanrr29/
23. Nord, M. (2002). Food Security Rates Are High for Elderly Households. *FoodReview*, 25(2), 19-24. http://www.ers.usda.gov/publications/FoodReview/Sep2002/frvol25i2d.pdf
24. Nord, M. (2002). Food Security Rates Are High for Elderly Households. *FoodReview*, 25(2), 19-24. http://www.ers.usda.gov/publications/FoodReview/Sep2002/frvol25i2d.pdf
25. Nord, M. (2002). Food Security Rates Are High for Elderly Households. *FoodReview*, 25(2), 19-24. http://www.ers.usda.gov/publications/FoodReview/Sep2002/frvol25i2d.pdf

26. Nord, M. (2002). Food Security Rates Are High for Elderly Households. *FoodReview*, 25(2), 19-24. http://www.ers.usda.gov/publications/FoodReview/Sep2002/frvol25i2d.pdf
27. Guthrie, J.E. & Lin, B.H. (2002). Overview of the diets of lower- and higher-income elderly and their food assistance options. *Journal of Nutrition Education and Behavior*, 34, S31-S41.
28. Lee, J.S. & Frongillo, E.A. (2001). Factors associated with food insecurity among U.S. elderly persons: importance of functional impairments. *Journal of Gerontology,* 56B(2), S94 – S99.
29. Nord, M. "Measuring the Food Security of Elderly Persons." Paper presented at the National Association for Welfare Research and Statistics Annual Workshop. Albuquerque, New Mexico, August 25-28, 2002.
30. Lee, J.S. & Frongillo, E.A. (2001). Factors associated with food insecurity among U.S. elderly persons: importance of functional impairments. *Journal of Gerontology,* 56B(2), S94 – S99.
31. Lee, J.S. & Frongillo, E.A. (2001). Factors associated with food insecurity among U.S. elderly persons: importance of functional impairments. *Journal of Gerontology,* 56B(2), S94 – S99.
32. Nutrition, aging, and the continuum of care – Position of the ADA. (May 2000). *Journal of the American Dietetic Association*, 100(5), 580-595.
33. Administration on Aging. U.S. Department of Health and Human Services. (n.d.). *A Profile of Older Americans: 2001*. http://www.aoa.gov/aoa/stats/profile/2001/2001profile.pdf
34. Roberts, S.B. (April 2000). Energy regulation and aging: Recent findings and their implications. *Nutrition Reviews*, 58(4): 91-97.
35. Roberts, S.B. (April 2000). Energy regulation and aging: Recent findings and their implications. *Nutrition Reviews*, 58(4): 91-97.
36. Burt, M.R. (1993). *Hunger Among the Elderly: Local and National Comparisons*. Washington, DC: The Urban Institute.
37. Ponza, M., Ohls, J.C., Millen, B.E., McCool, A.M., Needels, K.E., Rosenberg, L., Chu, D., Daly, C., & Quatromoni, P.A. (1996). *Serving Elders at Risk. The Older Americans Act Nutrition Programs: National Evaluation of the Elderly Nutrition Program. Volume 1: Title III Evaluation Findings.* Princeton, NJ: Mathematica Policy Research, Inc.
38. Klesges, L.M., Pahor, M., Shorr, R.I., Wan, J.Y., Williamson, J.D., & Guralnik, J.M. (2001). Financial difficulty in acquiring food among elderly disabled women: results from the Women's Health and Aging Study. *American Journal of Public Health*, 91(1), 68-75. Abstract available at: http://www.ajph.org/cgi/content/abstract/91/1/68
39. America's Second Harvest. (2001). *Hunger in America 2001*. Chicago, IL: America's Second Harvest. http://www.hungerinamerica.org/
40. U.S. Conference of Mayors. (2002). *A Status Report on Hunger and Homelessness in America's Cities 2002*. Washington, DC: U.S. Conference of Mayors. http://www.mayors.org/uscm/hungersurvey/2002/onlinereport/HungerAndHomelessReport2002.pdf
41. Klesges, L.M., Pahor, M., Shorr, R.I., Wan, J.Y., Williamson, J.D., & Guralnik, J.M. (2001). Financial difficulty in acquiring food among elderly disabled women: results from the Women's Health and Aging Study. *American Journal of Public Health*, 91(1), 68-75. Abstract available at: http://www.ajph.org/cgi/content/abstract/91/1/68
42. Frongillo, E.A. & Lee, S.L. (March/April 2001). Food insecurity among the U.S. elderly. *Poverty Research News* (The Newsletter of the Northwestern University/University of Chicago Joint Center for Poverty Research), 5(2), 12-13. http://www.jcpr.org/newsletters/vol5_no2/vol5_no2.pdf
43. Lee, J.S. & Frongillo, E.A. (2001). Nutritional and health consequences are associated with food insecurity among U.S. elderly persons. *Journal of Nutrition,* 131, 1503-1509.
44. Mowe, M., Bohmer, T., & Kindt, E. (1994). Reduced nutritional status in an elderly population (>70 y) is probable before disease and possibly contributes to the development of disease. *American Journal of Clinical Nutrition,* 59, 317-24.
45. Klesges, L.M., Pahor, M., Shorr, R.I., Wan, J.Y., Williamson, J.D., & Guralnik, J.M. (2001). Financial difficulty in acquiring food among elderly disabled women: results from the Women's Health and Aging Study. *American Journal of Public Health*, 91(1), 68-75. Abstract available at: http://www.ajph.org/cgi/content/abstract/91/1/68
46. Sahyoun, N. & Basiotis, P.P. (May 2000). *Food Insufficiency and the Nutritional Status of the Elderly Population*. (Nutrition Insight Number 18). Washington, DC: Center for Nutrition Policy and Promotion, U.S. Department of Agriculture. http://www.usda.gov/cnpp/Insights/Insight18.PDF
47. Lee, J.S. & Frongillo, E.A. (2001). Nutritional and health consequences are associated with food insecurity among U.S. elderly persons. *Journal of Nutrition,* 131, 1503-1509.
48. Wolfe, W.S., Olson, C.M., Kendall, A., Frongillo, E.A. (August 1998). Hunger and food insecurity in the elderly. *Journal of Aging and Health,* 10(3), 327-350.
49. Administration on Aging. (1994). *Food and Nutrition for Life: Malnutrition and Older Americans* (Report No. NAIC-12). Washington, DC: U.S. Department of Health and Human Services, Administration on Aging, National Aging Information Center. http://www.fiu.edu/~nutreldr/Aging_Network/malisspa.pdf
50. Torres-Gil, F.M. (1996). Malnutrition and hunger in the elderly. *Nutrition Reviews*, 54(1), S7-S8.
51. U.S. Department of Agriculture. (July 2002). *Characteristics of Food Stamp Households: Fiscal Year 2001 (Advance Report)*. Alexandria, VA: Office of Analysis, Nutrition and Evaluation, Food and Nutrition Service, U.S. Department of Agriculture. http://www.fns.usda.gov/oane/MENU/Published/FSP/FILES/Participation/2001advrpt.pdf

52. Cunnyngham, K. (2002). *Trends in Food Stamp Program Participation Rates: 1994 to 2000*. Washington, DC: Mathematica Policy Research, Inc. http://www.fns.usda.gov/oane/MENU/Published/FSP/FILES/Participation/Trends94-00.pdf
53. U.S. Department of Agriculture. (July 2002). *Characteristics of Food Stamp Households: Fiscal Year 2001 (Advance Report)*. Alexandria, VA: Office of Analysis, Nutrition and Evaluation, Food and Nutrition Service, U.S. Department of Agriculture. http://www.fns.usda.gov/oane/MENU/Published/FSP/FILES/Participation/2001advrpt.pdf
54. U.S. Department of Agriculture. (November 2002). *Elderly Participation and the Minimum Benefit.* Alexandria, VA: Office of Analysis, Nutrition and Evaluation, Food and Nutrition Service, U.S. Department of Agriculture. http://www.fns.usda.gov/oane/MENU/Published/FSP/FILES/Participation/ElderlyPartRates.pdf
55. National Council on the Aging. (n.d.). *Older American Act Appropriations – Nutrition Services*. Washington, DC: National Council on the Aging. http://www.ncoa.org/advocacy/issuebs/nutrition.pdf
56. Lee, J.S. & Frongillo, E.A. (2001). Understanding needs is important for assessing the impact of food assistance program participation on nutritional and health status in U.S. elderly persons. *Journal of Nutrition*, 131, 765-773.
57. Millen B.E., Ohls, J.C, Ponza, M. & McCool A.C. (2002). The Elderly Nutrition Program: An effective national framework for preventive nutrition interventions. *Journal of the American Dietetic Association*, 102(2), 234-240.
58. Millen B.E., Ohls, J.C, Ponza, M. & McCool A.C. (2002). The Elderly Nutrition Program: An effective national framework for preventive nutrition interventions. *Journal of the American Dietetic Association*, 102(2), 234-240.
59. Administration on Aging. (2002). Fact Sheet: The Older Americans Act Nutrition Programs (Elderly Nutrition Program). Washington, DC: Administration on Aging, U.S. Department of Health and Human Services. http://www.aoa.gov/nutrition/OAANP-FS.pdf
60. Administration on Aging. (2002). Fact Sheet: The Older Americans Act Nutrition Programs (Elderly Nutrition Program). Washington, DC: Administration on Aging, U.S. Department of Health and Human Services. http://www.aoa.gov/nutrition/OAANP-FS.pdf
61. Administration on Aging. (2002). Fact Sheet: The Older Americans Act Nutrition Programs (Elderly Nutrition Program). Washington, DC: Administration on Aging, U.S. Department of Health and Human Services. http://www.aoa.gov/nutrition/OAANP-FS.pdf
62. National Council on the Aging. (n.d.). *Older American Act Appropriations – Nutrition Services*. Washington, DC: National Council on the Aging. http://www.ncoa.org/advocacy/issuebs/nutrition.pdf
63. Wellman, N.S., Smith, J., Alfonson, M. & Lloyd, J. (1999). *Nutrition 2030 Grassroots Survey*. Miami, Florida: National Policy and Resource Center on Nutrition and Aging, Florida International University. http://www.fiu.edu/%7enutreldr/Center_Initiatives/nutrition_2030/Grassroots_Survey.PDF
64. National Policy and Resource Center on Nutrition and Aging. (n.d.). *Older Americans Nutrition Program Toolkit*. Miami, Florida: Florida International University. http://www.fiu.edu/~nutreldr/Test_toolkit/SUA_Toolkit_homepage.html
65. U.S. Department of Agriculture. (2002). Facts about the...Child and Adult Care Food Program. http://www.fns.usda.gov/cnd/care/cacfp/cacfpfaqs.htm
66. U.S. Department of Agriculture. (2002). Commodity Supplemental Food Program. Food Distribution Fact Sheet. http://www.fns.usda.gov/fdd/programs/csfp/pfs-csfp02.pdf
67. Millen B.E., Ohls, J.C, Ponza, M. & McCool A.C. (2002). The Elderly Nutrition Program: An effective national framework for preventive nutrition interventions. *Journal of the American Dietetic Association*, 102(2), 234-240.
68. National Council on the Aging. (n.d.) *Older American Act Appropriations – Nutrition Services*. Washington, DC: National Council on the Aging. http://www.ncoa.org/advocacy/issuebs/nutrition.pdf
69. U.S. Department of Health and Human Services. (March 4, 2002). Focus On Your Health: Senior Nutrition. http://www.aoa.gov/nutrition/Focus-On-Senior-Nutrition.html
70. Gabor, V., Williams, S.S., Bellamy, H., and Hardison, B.L. (2002). *Seniors' Views of the Food Stamp Program and Ways to Improve Participation – Focus Group Findings in Washington State*. Washington, DC: Economic Research Service, U.S. Department of Agriculture. http://www.ers.usda.gov/publications/efan02012/
71. McConnell, S. & Ponza, M. (1999). *The Reaching the Working Poor and Poor Elderly Study: What We Learned and Recommendations for Future Research*. Washington, DC: Mathematica Policy Research, Inc. http://www.mathematica-mpr.com/PDFs/reach.pdf
72. U.S. General Accounting Office. (August 2000). *Food Assistance: Options for Improving Nutrition for Older Americans.* (GAO/RCED-00-238). Washington, DC: U.S. General Accounting Office. http://www.gao.gov/cgi-bin/fetchrpt?rptno=RCED-00-238

About the Center

The Center on Hunger and Poverty promotes policies that improve the lives and developmental capacities of low-income children and families in the nation. Established in 1990, the Center conducts applied research and policy analysis, disseminates analytic information on poverty and hunger, carries out public education initiatives, and provides assistance to policy makers and organizations across the country on poverty- and hunger-related issues.

The Center on Hunger and Poverty is part of the Heller School for Social Policy and Management at Brandeis University. The Center's programs are carried out through the Asset Development Institute and the Food Security Institute, and through a series of special projects.

FOOD SECURITY INSTITUTE
Center on Hunger and Poverty
The Heller Graduate School for Social Policy and Management
Brandeis University
Mailstop 077 Waltham, MA 02454-9110
Telephone: 781-736-8885 FAX: 781-736-3925
hunger@brandeis.edu
http://www.centeronhunger.org