National Institutes of Health

Fact Sheet — *Disability in Older Adults*

Thirty Years Ago

- America was steadily aging. In 1970, some 21 million people were 65 years of age or older, compared with 3 million in 1900. And Americans were living notably longer than they had in the past – average life expectancy for a child born in 1970 was 70.8 years, up from 47.3 years in 1900. Disability was on the rise among older people. Studies from the 1970s and early 1980s pointed to modest increases in the prevalence of disability. In 1976, 4.8 million older people reported limitations in the number or kinds of major activities they could undertake.

- It was widely believed that aging invariably brought with it frailty and loss of independence. One study, for example, predicted that technology would save people's lives, but still leave them disabled and an increasing burden on society. However, groundbreaking research from projects such as the Baltimore Longitudinal Study of Aging, initiated in 1958, were among the first to suggest that disease and disability were not inevitable consequences of aging.

- The growth in the aging population, the increase in life expectancy, and concerns about disability led to the founding in 1974 of the National Institute on Aging (NIA) within the National Institutes of Health (NIH). The Institute was charged with "the conduct and support of biomedical, social, and behavioral research, training, health information dissemination, and other programs with respect to the aging process and diseases and other special problems and needs of the aged."

Today

- The upsurge in longevity is accelerating. The leading edge of the Baby Boom turns 60 in 2006, part of a rapid growth in population aging in the United States – and worldwide. Nearly 36 million people in the United States are age 65 or older, and life expectancy at birth has reached 77.5 years. Most notable is the growth in the population of individuals age 85 and older that are at highest risk for disease and disability.

- Research demonstrates that disease and disability are not an inevitable part of aging. Disability rates can be reduced, as evidenced by data from the National Long Term Care Survey, which found that between 1982 and 1999, the prevalence of physical disability in older Americans decreased from 26 percent to 20 percent.

- Factors thought to have contributed to this decline in disability rates include improved medical treatment, positive behavioral changes, more widespread use of assistive technologies, rising education levels, and improvements in socioeconomic status. The NIH is supporting research to understand the underlying causes of the decline in order to develop behavioral and multi-level interventions to maintain and accelerate the trend.

- Scientists are identifying the factors that contribute to healthier aging and longer life expectancy. Epidemiologic studies suggest that lifespan and health are determined by both genetic and environmental influences, with genetics accounting for about 35 percent of lifespan and modifiable environmental factors contributing most to this complex interaction.

- Interventions are being developed to improve how older people function. Researchers at the NIH-supported Claude D. Pepper Older Americans Independence Centers, for example, have developed effective ways to prevent falls and reduce delirium related to hospital stays, conditions that increase the risk of disability. One NIH study dramatically demonstrated that even 90-year-olds can improve muscle strength and mobility with simple weight training exercises.

- The downward trend in disability may be in danger of reversal as obesity threatens the gains that have occurred.

According to the National Health Interview Survey, the disability rate among people ages 18 to 59 rose significantly from the 1980s through the 1990s, with the growing prevalence of obesity an important factor in this trend. Obesity and overweight put people at increased risk for potentially disabling chronic diseases such as heart disease, type 2 diabetes, high blood pressure, stroke, osteoarthritis, respiratory problems, and some forms of cancer.

Tomorrow

NIH research can address the challenges brought on by aging in America by improving our ability to *predict* the risk of disability, *personalize* interventions, and *preempt* the adverse outcomes of disability.

- *Predicting disability*. Researchers will find ways to predict those most at risk for specific types of disability. One NIH-funded effort is examining the natural history of and risk factors for the onset of physical disability in older women, with the goal of identifying new ways to screen women at high risk, paving the way for early interventions. Another study is looking specifically at physical changes that precede the loss of ability to walk independently.

  The Health and Retirement Study, a nationwide NIH-funded survey of more than 20,000 people age 50 and older, is allowing researchers to examine the interactions among physical and mental health, insurance coverage, financial well-being, family support, work status, retirement planning and their impact on disability. Improved ability to forecast disability trends will help give policymakers more accurate projections for national expenditures for the Social Security and Medicare programs.

- *Personalized interventions.* Research may bring new treatments to prevent or minimize disability from stroke, diabetes, and other acute and chronic health problems. For example, the recent discovery by NIH researchers that the Notch protein is critically involved in the death of nerve cells following stroke led to studies in mice, which found that treatment with an agent that inhibits Notch activation resulted in reduced brain cell damage. Studies suggest that the protein could be a target for treatment of stroke and common neurodegenerative conditions such as Alzheimer's and Parkinson's disease.

  Other NIH-supported research determined that disability in older people is often recurrent but reversible, and that transitions between states of disability and independence are common among people age 70 and older. Based on this evidence, a follow-up study is now gathering information that may be useful in developing interventions designed to maintain and restore older adults' independent function.

- Preemptive approaches. Several studies suggest that physical exercise may prevent decline in physical functioning in older people. Large-scale clinical trials will help determine whether physical exercise is effective in preventing major disability in older people. The Lifestyle Interventions and Independence for Elders (LIFE) Pilot Study, completed in January 2006, suggested that studies of exercise and lifestyle interventions in the older population should be vigorously pursued.