

Study of Nuns Turns Up Clues to Brain Aging and Alzheimer's Disease

Preliminary findings from a nationwide study of Roman Catholic nuns support the idea that Alzheimer's disease is not an inevitable consequence of biologic aging.

The first 94 autopsies from the "Nun Study" indicate that the senile plaques or lesions and nerve cell tangles in the brain associated with the disease increase in density among those between ages 75 and 89 and decrease after age 90. Thirty-five (37 percent) of the autopsies showed neuropathologically confirmed Alzheimer's disease.

The Nun Study, supported by the National Institute on Aging of the National Institutes of Health, is the largest long-term investigation of a brain donor population in the world. Until now, researchers have lacked sufficient numbers of persons older than age 85 to determine whether the prevalence of the disorder continues to rise, levels off, or declines in very old age. The study indicates that the prevalence of Alzheimer's disease at death peaks at ages 85 and 89 and declines after age 90.

The research confirms the findings of previous investigations that the senile plaques and neurofibrillary tangles originate in the brain's hippocampus and cause the early symptoms of Alzheimer's disease, such as memory loss. Later, the disease produces further decline in mental function and physical disability.

"If Alzheimer's is not a disorder of aging but a distinct disease that only affects a minority of the elderly, then examination of its pathophysiology will improve our understanding of its cause, prevention, and treatment," says lead investigator Dr. David A. Snowdon at the Sanders-Brown Center on Aging, University of Kentucky, Lexington.

"Additional followup of the nuns participating in this study will enable us to test further the relationship between brain lesions and behavior in autopsies of younger nuns and for behavior assessed years before death," adds Snowdon.

The Nun Study, which began in

1990, includes 3,926 members of the School Sisters of Notre Dame congregation born between 1886 and 1916. Most of the women had joined the order at about age 20. Of the total, 1,030 sisters survived, and 678 agreed to participate in annual assessments of their mental and physical function and activities of daily living through 1994. The median age of the 533 nuns surviving today is 85; 6 are 100 or older. They are located in convents in Milwaukee, St. Louis, Chicago, Baltimore, Dallas, Wilton, CT, and Man-kato, MN.

Archival information and previously collected questionnaire data are turning up clues to the sisters' early and mid-life experiences; their autobiographies, school transcripts, and health records are divulging additional information.

"Because of the relatively homogeneous adult lifestyle of the sisters in the study, our findings are not confounded by factors such as smoking and alcohol use, reproductive history, marital status, living arrangements, income, or social isolation that tend to be found in other adult populations," says Snowdon.

Long-term data are being used to test the association of demographic, cognitive, and family mortality-related measures during early and mid-life to longevity and to independence and dependence in activities of daily living in old age.

Earlier results from the research showed that the more highly educated sisters lived about 4 years longer with better mental and physical functioning than the sisters who had less than a bachelor's degree. In fact, the less educated sisters had twice the mortality rates of the more educated nuns.

"We are substituting education for intellectual capacity," says Snowdon, "and since the nuns' lifestyles are so similar, we concluded that the findings about education were not so much linked to poor circumstances in adult life as to something that occurred in youth. We now believe that factor is mental capacity—cognitive ability—and that it is a powerful predictor of Alzheimer's disease in later life," he explains.

Snowdon has another working hypothesis, not based on scientific fact

but one in which he has faith nonetheless. "The sisters live so long because they pursue an active physical, social, and intellectual life," he says. "Over time, they are giving us valuable clues about the biological advantages of their experience."

—BERNARDINE A. MOORE, *Public Affairs Specialist, Office of Communications, National Institutes of Health.*

Largest Global Study on Cocaine Use Undertaken by WHO, UN

The World Health Organization (WHO) and the United Nations Interregional Crime and Justice Research Institute (UNICRI) have published the results of the largest global study on cocaine use ever undertaken. Information was collected from 22 cities in 19 countries about how cocaine and other coca leaf derivatives are used, who uses them, what effects they have on the users and the community, and how governments have responded to the cocaine problem.

From the coca leaf chewers of the Andes to the crack smokers of New York and Lagos, from cocaine injectors in Sao Paulo and San Francisco to cocaine sniffers in Sydney and Cairo, all aspects of the problem have been tackled by the many research workers from various countries who took part in the study, which was supported by the Italian Ministry of the Interior. The sometimes unexpected conclusions of the study do not represent an official position of WHO.

The WHO Initiative on Cocaine, launched in 1991 by the WHO Program on Substance Abuse in collaboration with UNICRI, was designed to collect as much information as possible on cocaine use from a selection of countries around the world and to investigate the effectiveness of policies and strategies that address cocaine-related problems.

Four categories of countries were selected for the study: those that grow coca and now have cocaine-related problems, those that do not grow it but have substantial numbers of cocaine users and cocaine-related problems,

those where cocaine use is not so widespread but is already on the increase, and those where cocaine use as yet presents no problem.

One of the main conclusions of the study is that there is no "average cocaine user." There is an enormous variety in the types of people who use cocaine, the amount of drug used, the frequency of use, the duration and intensity of use, the reasons for using cocaine, and any associated problems that users experience.

The study reveals that the snorting of cocaine hydrochloride is by far the most popular use of coca products worldwide, while the smoking of coca paste and crack and the injection of cocaine hydrochloride are minority behaviors and tend to be found among the socially marginalized. The traditional use of coca leaves is still widespread among some indigenous populations in Bolivia, Ecuador, Peru, northern Chile, and Argentina, as well as some groups in Brazil and Colombia.

Further information can be obtained from Philippe Stroot, Health Communications and Public Relations (INF), WHO, Geneva, Switzerland; tel. 41-22-791-2535; Fax 41-22-791-4858.

WHO Announces 1995-96 Influenza Vaccine Formula

A new composition of the influenza vaccine for the 1995-96 season has been announced by international experts meeting at the World Health Organization headquarters in Geneva. Compared with last year's recommendations for the vaccine, two of the three components have been changed.

One dose of inactivated vaccine should be adequate for persons of all ages except young children. Previously unimmunized children should receive two doses of vaccine, with an interval between doses of at least 4 weeks.

The degree of protection conferred by influenza vaccines is difficult to assess, but it is estimated that up to 80 percent of those vaccinated will be fully protected and that the severity and duration of symptoms occurring in those who have been vaccinated will be reduced.

The latest formulation recommended by WHO is:

World Health Organization's World Health Report 1995 Leading Selected Causes of Mortality, Morbidity, and Disability¹

Mortality

	Rank	Number (millions)
Ischemic heart disease	1	4.3
Acute lower respiratory infections, younger than age 5	2	4.1
Cerebrovascular disease	3	3.9
Diarrhea younger than 5, including dysentery	4	3.0
Chronic obstructive pulmonary diseases	5	2.9
Tuberculosis	6	2.7
Malaria	7	2.0
Falls, fires, drownings	8	1.8
Measles	9	1.2
Other heart diseases ²	10	1.1

Morbidity

	Rank	New cases (millions)
Diarrhea younger than age 5, including dysentery ..	1	1,821
Acute lower respiratory infections, younger than age 5	2	248
Occupational injuries from accidents	3	120
Chlamydial (sexually transmitted)	4	97
Trichomoniasis	5	94
Gonococcal infections	6	78
Occupational diseases	7	69
Measles	8	45
Whooping cough	9	43
Genital warts	10	32

Disability

	Rank	Number (millions)
Mood (affective) disorders	1	59
Lymphatic filariasis	2	43
Hearing loss (41 decibels and above) older than age 3	3	42
Mental retardation (all types)	4	41
Cataract-related blindness	5	16
Epilepsy	6	15
Dementia	7	11
Poliomyelitis	8	10
Schizophrenia	9	8
Obstructed labor	10	7

¹Based on available data; estimates reflect order of magnitude.

²Includes heart failure, nonrheumatic endocarditis, diseases of pulmonary circulation, cardiac dysrhythmias, and other ill-defined conditions.

- an A/Johannesburg/33/94 (H3N2)-like strain;
- an A/Singapore/6/86 (H1N1)-like strain; and
- a B/Beijing/184/93-like strain.

This differs from last year's composition in that the first of these strains replaces an A/Shangdong/9/93 (H3N2)-like strain, and the last one replaces a B/Panama/45/90-like strain.

During the Hong Kong influenza pandemic of 1968, mortality in the United States alone was estimated at around 30,000 deaths, 51 million Americans were ill, and the total economic burden was \$3.9 billion.

Every February, experts advise the national health authorities and pharmaceutical companies on the composition of the virus strains that should be used to produce vaccines for the forthcoming influenza season.

When a new pandemic strain of influenza virus is isolated, rapid production of large amounts of vaccine active against this new strain will be required. New production methods are needed to overcome the limitations of the traditional method that uses chick embryos to grow the vaccine viruses. Production of influenza vaccines in tissue culture on stable cell lines would be a major advance, allowing for large amounts of vaccine to be manufactured at short notice. WHO is now coordinating studies in this area.

Supreme Court Ruling Provides Needed Criterion for Vaccine Injury Claims

A U.S. Supreme Court decision on a claim filed under the National Vaccine Injury Compensation program (VICP) clarifies the legal standard for deciding which cases are eligible for compensation under the VICP, according to the Health Resources and Services Administration (HRSA) of the Public Health Service.

On April 18, 1995, the Supreme court unanimously ruled that certain injury symptoms appearing within 3 days after vaccination qualify for monetary compensation only if they have never previously appeared.

"This decision makes it more likely that only those with injuries truly related to childhood vaccines will be compensated," said HRSA Administrator Ciro V. Sumaya, MD, MPHMT.

"While serious reactions to vaccines are rare, HRSA believes anyone harmed by vaccines should be compensated. But we felt it was important to have a more specific criterion for deciding just who has a vaccine-related injury and who does not. The Supreme Court has now provided that criterion."

HRSA, together with the U.S. Court of Federal Claims and the Department of Justice, administers the VICP. The program was created by Congress in 1986 to provide a no-fault system free of expensive litigation for those suffering injury or death from certain childhood vaccines. To date, \$545 million has been awarded to claimants.

Petitions claiming such compensation are filed with the Court of Federal Claims and reviewed by HRSA to determine if criteria for compensation are being met. Recommendations on eligibility for compensation then are filed with the court by the Department of Justice.

The Supreme Court case involved an Indiana child with microcephaly—an abnormally small head—who received a diphtheria-tetanus-pertussis shot at age 4 months. Although mild seizures followed the shot within a few days, these soon disappeared, and the child later experienced developmental delays, retardation, and cerebral palsy. The parents applied under the VICP for compensation.

Although the VICP won the initial argument in court that the child's symptoms resulted from a pre-existing brain condition and not the vaccination, an appeals court later ruled in favor of her parents. This was the ruling overturned by the Supreme Court.

Occupational Health and Safety Institute Scheduled for Minneapolis

The 13th Annual Occupational Health and Safety Institute is scheduled for August 21–September 1, 1995, on the University of Minnesota campus, Minneapolis.

The Institute is an intensive program offering graduate level credit or continuing education credit within an interdisciplinary setting. Registrants may choose from a wide array of courses in occupational and environmental health. The Institute is taught by

faculty of the School of Public Health at the University of Minnesota as well as guest lecturers and professionals from business and industry with extensive field experience.

Conducting the Institute is the Midwest Center for Occupational Health and Safety in Minneapolis, an Educational Resource Center Serving the Midwest that is sponsored by the National Institute of Occupational Safety and Health.

CDC Clearinghouse Offers New HIV-AIDS Treatment Information Service

The Centers for Disease Control and Prevention (CDC) National AIDS Clearinghouse, a national HIV-AIDS reference, referral, and distribution service, announces a new Treatment Information Service for people living with HIV disease, their families and friends, and health care providers.

The HIV-AIDS Treatment Information Service was developed through a coordinated Public Health Service effort to provide timely, accurate information about federally approved treatment guidelines for HIV-AIDS.

The service offers answers to questions about treatment of HIV disease and recently approved drug therapies, copies of federally approved HIV-AIDS treatment guidelines, and referrals to other appropriate information resources. The staff includes both English- and Spanish-speaking reference specialists. All are health professionals trained to answer questions concerning HIV disease.

The HIV/AIDS Treatment Information Service can be reached at P.O. Box 6303, Rockville, MD 20849-6303; tel. 1-800-448-0440; FAX 301-738-6616.

New Journals on Injury Prevention, Public Health Management Appear

Two new journals—on injury prevention and public health management and practice—made their appearance early in 1995.

The first issue of Injury Prevention was published in March. Its focus is on unintentional and intentional injuries of children and adolescents.

Volume 1, number 1 includes a review of the National Highway Traffic Safety Administration's experience with car safety regulation, original articles on sensory deficit and pedestrian injuries, sex differences in rural youth injuries, head injuries in helmeted cyclists, patterns of injury in a South African township health center, determinants of modern health care use for burns in Ghana, an evaluation of a prevention program in primary care in Israel, a reprint of William Haddon's injury classic, and a review of health education in prevention.

The mission of the Journal of Public Health Management and Practice is to focus on practice-related issues with information that is both practical and application-driven. The underlying objective of the journal is to assist public health providers in delivering services more efficiently and effectively. Readers will find strategy and guidance on conceiving, designing, and managing the new population-based measures that are needed in communities.

"Injury Prevention" is the official publication of the newly formed International Society for Child and Adolescent Injury Prevention.

Information can be obtained from the editor, Barry Pless, CM, MD, Montreal Children's Hospital, C538, Montreal, Quebec H3H 1P3, Canada; tel. 514-935-6819; FAX 514-935-6873.

The editor of "Public Health Management and Practice" is Lloyd Novick, MD, MPH, Director, Office of Public Health, New York State Department of Health and Professor of Epidemiology, School of Public Health, State University of New York, Albany.

Information can be obtained from Aspen Publishers at 1-800-638-8437.

Johnson Program Seeks Community Health Leaders

The Robert Wood Johnson Community Health Leadership Program honors 10 outstanding people each year for their work in creating or enhancing health care programs serving communities whose needs have been ignored and unmet. Each leader receives \$100,000, which includes a \$5,000 personal stipend and \$95,000 for program enhancement over a 3-year period.

The Community Health Leadership Program (CHLP) seeks out people

who have the leadership skills to overcome complex obstacles and find creative ways to bring health care services to their communities. All are largely unrecognized and in midcareer with 5 to 15 years of community health work experience.

The nomination process is open, and nominations can be made by consumers, community health leaders, health professionals, and government officials who have been *personally inspired* by the nominees.

Interested nominators can call CHLP for a brochure and a letter of intent. Letters of intent are reviewed throughout the year up to September 1. If a letter is approved, a nomination packet is sent to the nominator that is due no later than October 5.

Information can be obtained from CHLP, 30 Winter St., Suite 1005, Boston, MA 02108; tel. 617-426-9772.

Oral Health Data Base Fact Sheet and Thesaurus Available from NOHIC

The National Oral Health Information Clearinghouse (NOHIC), a service of the National Institute of Dental Research (NIDR), has developed a new fact sheet describing its bibliographic data base.

The Oral Health Subfile of the Combined Health Information Data Base Fact Sheet includes

- Background information on the Combined Health Information Data base (CHID),
- A description of the information included in the Oral Health subfile,
- How to access CHID and the Oral Health subfile
- An overview of additional information resources for CHID.

NOHIC also has completed a thesaurus for subject indexing of materials in the Oral Health subfile, entitled the NOHIC Thesaurus.

This reference guide includes an alphabetic list of subject descriptors; cross referencing to broad, narrow, and related terms; definitions for more obscure terms, and lists of terms by broad subject categories (that is, anatomy and physiology, and so on). It is an important tool for anyone who searches the Oral Health subfile.

NOHIC serves as a central point for the collection and dissemination of oral health information for special care patients and the practitioners who serve them. Special care patients include people with genetic disorders, systemic diseases, or musculoskeletal conditions that compromise oral health; persons whose medical treatment causes oral problems; and people with mental or physical disabilities that make good oral hygiene practices or treatment difficult.

Single copies of the fact sheet on the Oral Health Subfile of the Combined Health Information Data base may be obtained free of charge, order number OP-31. The 117-page NOHIC Thesaurus may be obtained for \$5 prepaid, order number OP-37. Both are available from the National Oral Health Information Clearinghouse, 1 NOHIC Way, Bethesda, MD 20892-3500; tel. 301-402-7365; FAX 301-907-8830; Internet: nidr@aerie.com.

PHS Slates Conference on Women's Health in Medical Education

The Office of Minority Health and the Office on Women's Health of the Public Health Service (PHS) is sponsoring a conference on "Cultural Competence and Women's Health Curricula in Medical Education" October 27-28, 1995, in Washington, DC.

The conference sessions will cover innovative curricula and explore strategies for including issues related to women, minorities, and other people of diverse cultures in undergraduate and graduate medical education

Additional information can be obtained from Guadalupe Pacheco at 301-443-5084 or Dr. Elena Rios at 202-690-7650.