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STEPPING UP TO THE CHALLENGE

An interview with Dr. Michel Panisset, Director of the Movement Disorders Clinic at the McGill Centre for Studies in Aging

by Hannah Hoag

What might a politician, the head of the Roman Catholic church, and an actor have in common? At first glance, you might think: not much. However, Pierre Trudeau, Pope John Paul II, and Michael J. Fox all have had Parkinson's disease. And if they all happened to live in Montreal, you would find them at The Movement Disorders Clinic, in the care of Dr. Michel Panisset and his team.

The Movement Disorders Clinic was founded in 1997, when Dr. Judes Poirier became director of the McGill Centre for Studies in Aging (MCSA). Dr. Panisset, a staff-member at the MCSA since 1994 and a veteran in the management of Parkinson's disease, was immediately appointed as the director of the Movement Disorders Clinic. For the past 4 years, Dr. Panisset and his team of 3 nurses and a neuropsychologist have been providing treatment to patients with movement disorders and advice to their family members.

Currently, over 1000 patients receive services or participate in research studies at the Movement Disorders Clinic. The family of movement disorders includes Parkinson's disease, essential tremor (involuntary movements causing tremor in the hands, voice, and head), dystonia (involuntary, sometimes painful, contractions of certain muscle groups), Tourette's syndrome (vocal tics and behavioural problems), chorea (involuntary dance-like movements), myoclonus (shock-like muscle contractions), and tics. However, Parkinson's disease is the most prevalent of these syndromes

treated at the clinic: over 70% of the patients have been diagnosed with Parkinson's disease or a Parkinsonian syndrome. The remaining 30% suffer from dystonia, tremor, or other rare movement disorders.

The clinic's mandate is threefold: to provide services to the patients, to educate healthcare professionals, and to promote research in Parkinson's disease and movement disorders. As director, Dr. Panisset juggles both the management and the medical aspects of the clinic. When asked about the most challenging aspect of his job, he paused, "Making everything work". Dr. Panisset must design information-generating research projects, track down the funding for these projects, and then ensure that each project is providing "top-notch quality data". Unfortunately, the middle part of that series is often the most difficult: "Funding is difficult to find and clinical research remains underfunded in Canada". Luckily, the Movement Disorders Clinic is part of the Canadian Movement Disorders Group and The Parkinson Study Group (a North American consortium of academic centres specializing in Parkinson's disease). Working together with other movement disorders clinics, the MCSA clinic can forge ahead and provide its patients with cutting-edge treatment.



Since the life expectancy of a person with Parkinson's disease is no different from that of the general population, people can be diagnosed with Parkinson's disease in their 30's and must face living with the disease for the remaining two thirds of their lives. "Taking care of patients and providing the appropriate care for each of them is a big challenge that is there day after day". Once a patient is referred to the Movement Disorders Clinic, Dr. Panisset and his staff will work with that patient for the rest of his or her life.

We do tend to think of Parkinson's disease as a disease of the elderly though. This idea probably stems from the fact that the disease becomes more pronounced with age. Not only does Parkinson's disease progress with age, but medications become less effective. Treating a patient for many years involves a constant reevaluation of the treatment and adjustments to compensate for the evolution of the disease. "You have the honeymoon period, then you start having fluctuations. The medication works and

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Spreading the Word about Aging: The MCSA Education Task Force and the "Joining Generations" Project

by Jeff Boyczuk

A major focus of the McGill Centre for Studies in Aging (MCSA) is education, not only for professionals and researchers, but also for seniors, caregivers, and the public at large. This commitment to education was affirmed in 1996 with the

creation of the MCSA Education Task Force.

The task force was initially chaired by Dr. Daphne Nahmiash, who is currently a professor in the School of Social Service at Laval University. Nahmiash, who remains

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HOT TOPICS IN AGING RESEARCH

Mice Respond to Alzheimer's Vaccine

by Alison McTavish

It's well known that plaques of amyloid- β peptide are deposited in the brains of patients suffering from Alzheimer's disease. These plaques build up in large enough quantities to form dense tangles in brain tissue. There has been debate, however, as to whether these plaques are responsible for the dementia experienced by Alzheimer's patients.

By inserting mutant amyloid genes into mouse embryos, researchers have developed strains of mice that mimic human Alzheimer's disease. These mice develop amyloid plaques in their brains, begin to form dense tangles, lose neurons and display changes in their behaviour. Developed only last year, the mice have allowed researchers to investigate the possible link between amyloid deposits and dementia.

Preliminary studies with Alzheimer's mice revealed that if they were vaccinated with amyloid- β , they developed significantly fewer plaques in their brains. These early studies did not reveal if that decrease had any effect on the mice's mental function. Two papers in a recent issue of *Nature* have now answered this question. They reveal that not only are the plaques related to learning and memory deficits in mice, but that immunization helps reduce those deficits.

The two studies tested the learning and memory of both Alzheimer's and normal mice using a water maze with a hidden platform. When placed in the maze, the mice had to find the platform to escape the water. In the first study the location of the platform was moved daily to test short-term memory. The second study tested performance over time by leaving the platform in the same location and testing the mice once a month.

Both studies revealed that the Alzheimer's mice took significantly longer to find the platform than their

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An interview with Dr. Michel Panisset, Director of the Movement Disorders Clinic at the McGill Centre for Studies in Aging

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then it stops. You have to move the pills closer together and take more, then the patient may start having dyskinesia. You do all you can do with medications, then if there are too many problems and the quality of life has decreased, you look at surgery [as an option]."

The surgical treatment of Parkinson's disease is one of the clinic's major research initiatives. In the future, Dr. Panisset would like to be using surgical approaches "that reverse the progression of Parkinson's disease". What he is referring to is a form of transplant surgery that would replace the damaged regions of the brain with new tissue, allowing some aspects of the disease to be repaired.

In conjunction with the Parkinson Study Group, the Movement Disorders Clinic is involved in many pharmacological studies related to Parkinson's disease. One, for example, will evaluate the role of levodopa on the evolution of Parkinson's disease. Without the consortium group this study couldn't be pursued, but because it is carried out under the umbrella of the consortium, a few hundred patients have been enrolled in the study.

Determining the contribution of genetics to the development of Parkinson's disease is also central to the clinic's research endeavours. In addition to the environment, genetics seems to play a role in the development of Parkinson's disease. To date, three genes have been linked to the development of the disease. One, an autosomal recessive gene, appears to be the most promising candidate, in part because its mode of inheritance gives a pattern of disease that appears nearly sporadic. Finding susceptibility genes for Parkinson's could dramatically improve an individual's quality of life. Diagnosing patients in the preclinical stages of the disease would allow clinicians to "try to prevent the symptoms from appearing. This will be a very hot topic in the next few years."

That Dr. Panisset is passionate about research is not surprising. In fact, it was the passion of one of his medical school professors that lured him into neurology. As a medical student, Dr. Panisset worked with Dr. Mihai Botez, "a guru in behavioural cognitive neurology". Afterwards, Dr. Botez sent Dr. Panisset on to Pittsburgh to Dr. François Boller, who was interested in dementia and movement disorders, to do his residency. When Dr. Boller left Pittsburgh for Paris, Dr. Panisset followed. In Paris, Dr. Panisset stayed for a fellowship and began to delve deeper into the cognitive aspects

of Parkinson's disease. He returned to Canada for an additional fellowship under the supervision of Dr. Serge Gauthier where he studied the practicalities of dealing with people with Parkinson's disease. Today, he deals not only with those affected by Parkinson's, but also with their family members.

Parkinson's disease affects each family uniquely. Because it can affect a person at almost any stage of his or her life, no family member is affected in the same way. The effects depend on the patient's age, the "lifestyle, the spousal and parental responsibilities, and the patient's productivity in the working milieu". If the patient is young and active when Parkinson's disease develops, it may affect other family members more severely, especially if the patient is the primary breadwinner of the household. There may be a lot of anxiety within the family. The patient may become depressed and rely on the family members for emotional support. As the disease progresses, family members may find themselves providing more physical support to the patient. He or she may need help performing all activities of daily living and even speaking. Although the clinic does not provide any direct support services for family members, it does act as a referral service for them, identifying the appropriate services available in their community. In addition, the clinic helps to organize numerous support groups and some conferences that target caregivers.

In only four short years, Dr. Panisset and the MCSA have created a movement disorders clinic that diagnoses, treats, and educates patients with movement disorders, that promotes the education of healthcare professionals in this field, and that forges ahead into the research on movement disorders. An enormous task indeed. But a challenge Dr. Panisset is more than ready to accept.

Mice Respond to Alzheimer's Vaccine

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normal litter mates. Additionally, as the Alzheimer's mice got older their performance declined far more than the normal mice. In contrast, Alzheimer's mice that were vaccinated with amyloid-beta peptide were significantly better at finding the platform than non-vaccinated mice. In one study their performance was similar to that of the normal mice. Examination of the brains of the Alzheimer's mice showed that vaccinated mice had developed fewer plaques in their brains than non-vaccinated mice.

Researchers now believe that amyloid plaques play a central role in the learning and memory deficits typical of Alzheimer's disease. Although it still isn't entirely clear exactly how the vaccine works, there is cause for optimism. Amyloid plaques may well prove to be an excellent target for future treatment of the disease in humans.

References:

- 1 Chen G et al. A learning deficit related to age and beta-amyloid plaques in a mouse model of Alzheimer's disease. *Nature* 2000; 408:975-9.
- 2 Janus et al. A beta peptide immunization reduces behavioural impairment and plaques in a model of Alzheimer's disease. *Nature* 2000; 408:979-82.
- 3 Morgan et al. A beta peptide vaccination prevents memory loss in an animal model of Alzheimer's disease. *Nature* 2000; 408:982-5.
- 4 Schenk et al. Immunization with amyloid-beta attenuates Alzheimer-disease-like pathology in the PDAPP mouse. *Nature* 1999; 400(6740):173-7.

Spreading the Word about Aging: The MCSA Education Task Force and the "Joining Generations" Project

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on the task force today, was succeeded by the current chair, Dr. Dolly Dastoor. The membership of the task force is diverse, and includes academics and practitioners from varied disciplines within McGill and other educational institutions, representatives from community-based organizations, and laypeople.

The goal of the task force centers on identifying the educational needs of health care professionals and seniors, and addressing those needs through the initiation of various projects. It also seeks to inform health care professionals and students about research activities at the Centre. Through its efforts in public education, the task force seeks to combat myths and stereotypes about aging.

In its five-year history, the MCSA task force has been busy. Ambulatory care skills programs in both English and French were developed to address the needs of new workers providing home-based services to the frail elderly. A committee was formed with members from the Centre and the McGill School of Social Work to plan and implement a gerontology certificate program that caters to health care professionals. A recent community-based project introduced seniors to computers and the Internet, allowing them to maintain contact through email with friends and relatives, as well as to gain easier access to health care and other information (see Geronto-McGill, Sept. 2000, p.5).

A defining feature of the task force's projects has been collaboration with people and agencies external to the MCSA. The most recent example of this was an intergenerational program led by Daphne Namiash, and developed in collaboration with Nancy Miller from the NDG Community Committee on Elder Abuse.

The project, called "Joining Generations", was sponsored by Novartis and involved promoting positive attitudes among adolescents towards aging and its associated issues. It's no secret that we live

in an ageist society, where mass media will often be guilty of reinforcing negative stereotypes of the elderly, portraying them as feeble-minded, weak, and immobile. Besides providing a distorted image of aging and the elderly to younger generations, such portrayals also have a negative impact on older generations, who may suffer from low self-esteem and poorer general health as a result of these shared attitudes. The "Joining Generations" project sought to combat this negative cycle through education about the elderly and aging, while at the same time gauging whether such a program would be effective over the long term in dismantling negative attitudes among adolescents.

The project is backed by several scientific studies demonstrating that intergenerational programs promote tolerance between generations while defeating negative stereotypes of old age. A key aspect to these programs is providing an opportunity for open interaction and exchange between two generations.

Iryna Dulka from the Centre of Applied Family Studies in McGill's School of Social Work was evaluation coordinator for the "Joining Generations" project. Dulka notes that one shortcoming of some previous intergenerational programs was their setting. "Young children were matched with older adults in nursing homes, instead of with vibrant older adults, who were more physically active." The "Joining Generations" project sought to improve upon this point by presenting a more rounded portrayal of the elderly.

The project involved three 50-minute education sessions delivered to grade nine students in two classes at Montreal area high schools, as part of their moral education component. The 125 students who participated (mean age = 14.5 years) received an initial questionnaire measuring their attitudes about aging and including such agree/disagree statements as "Ability to learn decreases with age" and "Most older

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POLICY AND POLITICS

A New Direction for Health Research in Canada: The CIHR

by Alison McTavish

Canada has taken a bold, new approach to health research. In late 1999, the federal government announced the creation of the Canadian Institutes of Health Research (CIHR). In June of 2000 the CIHR began operating. The creation of this new organization provides researchers with new resources and opportunities that were not available from agencies like the Medical Research Council.

The objective of the CIHR is "to excel, according to internationally accepted standards of scientific excellence, in the creation of new knowledge and its translation into improved health for Canadians, more effective health services and products and a strengthened Canadian health care system."

To realize this objective, the CIHR has taken a multi-disciplinary approach. A network of virtual institutes, each focusing on one research area, has been set up to link and support leading researchers in universities, hospitals and research centres across the country. By including researchers from biomedical, clinical, health services and social backgrounds, the institutes will integrate a broad range of research perspectives.

In total there are 13 institutes, each led by a scientific director who is responsible for building the institute, establishing partnerships among researchers, and ensuring the exchange of knowledge. Selection of the focus of each institute was based on health priorities identified by researchers and health partners. Not surprisingly these priorities included aging, arthritis, cancer, cardiovascular and respiratory health and mental health.

Institute of Neurosciences, Mental Health and Addiction

The CIHR Institute of Neurosciences, Mental Health and Addiction (INMHA) will support research into mental health, neurological health, and sensory and cognitive functioning. The institute will also work towards reducing the burden of related disorders through prevention strategies, screening, diagnosis, treatment, support systems, and palliation. This integrated approach should lead to the development of more effective treatments and improved care for conditions such as Alzheimer's and Parkinson's diseases.

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people feel miserable most of the time". Two more questionnaires were administered, one two weeks after the third presentation, and another two months later, in order to gauge whether attitudes had changed and, if so, whether any changes persisted over time. A further 50 students from another high school acted as a comparison group, not participating in the presentations, but filling out a similar questionnaire.

The first of the interactive sessions presented differing cultural views about aging. Canadian demographics and government initiatives necessary to deal with a rapidly aging population were also discussed. The second session reported on healthy aging in the individual and the physiological/psychological changes that accompany it. Emerging research and technologies that are bringing to light new facts about aging were also presented. The final session explored caregiving, and the responsibilities of both the state and the family in a caregiving situation. The session was wrapped up with a discussion of various career options in gerontology.

The project met its overall objectives, with the students showing a markedly positive change in their attitudes about several aspects of aging. When asked in the pre-presentation questionnaire to list words or phrases that came to mind when thinking of an elderly person, many negative terms such as "sick", "frail", "narrow-minded", and "grouchy" were reported. The post-presentation surveys had a more decidedly positive tone, with terms such as "caring", and "generous" being offered. The students also demonstrated more realistic views of sexuality and the elderly, and learned that memory decline and mental impairments are not inevitable consequences of old age. Encouragingly, some of the changes were still observed in the third questionnaire, suggesting the presentations had a durable effect on the students' attitudes.

Commenting on the outcome of the project, Dulka observed that although the primary objectives were met, students still succumbed to some of the stereotypes surrounding the elderly, most notably the view that older people are frail or physically weak. Such continued beliefs only stress the need for issues of aging to be an ongoing topic for discussion across school curricula. Continued collaboration on education projects between the school systems and community and post-secondary institutions could only have a positive effect. As Dulka notes, such collaboration may be especially important in the coming years as the Canadian demographics change, and today's students become tomorrow's workforce: "There are going to be a lot more jobs with the elderly, not because there will be a lot more older people who are ill, but just because there will be a lot more of them, period."

For further information on the "Joining Generations" project go to: http://www.healthandage.com/edu2/joining_gene

A New Direction for Health Research in Canada: The CIHR

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Dr. Rémi Quirion, Scientific Director of the Douglas Hospital Research Centre in Montreal, has been selected for the directorship of the INMHA. Canada, as Quirion points out, is a world leader in all three fields. "I firmly believe that the timing could not be better to bring together the various disciplines interested in understanding higher brain functions and their relevance to the well-being of our society," said Quirion on accepting his appointment. "The time is ripe to break down barriers between disciplines and to use new knowledge, new technologies and our very best scientists to solve the mysteries of the human brain and mind."

The Institute of Healthy Aging

The Institute for Healthy Aging will support research to promote healthy aging and study the treatment and support systems for a wide range of conditions associated with aging. Dr. Réjean Hébert of the University of

Sherbrooke is the scientific director of the Institute of Healthy Aging. Hébert proposes that the main objective of the institute should be to decrease the disabilities that often accompany aging. The result should be better quality of life for older Canadians and a reduced burden on the health care system.

As with the other institutes, the focus will be multi-disciplinary. "To understand a complex phenomenon like aging," wrote Hébert in a message published shortly after his appointment, "the approaches must be multi-disciplinary and poly-methodological involving qualitative and quantitative as well as fundamental, clinical, epidemiological and psychosocial research." The first step in achieving this goal will be increasing both manpower and infrastructure in aging research. The CIHR has already announced grants of over \$4.6 million to study aging.

CIHR funding

To ensure talented investigators are provided

with the resources and training needed to address the health challenges faced by Canadians, the CIHR's budget will be \$402 million in 2000-2001, and will rise to \$533 million the following year. Of the \$194 million awarded as grants from the March 2000 competition, over \$73 million went to Quebec researchers and institutions. The CIHR hopes their commitment to health will encourage our best and brightest scientists to stay in Canada and produce internationally competitive research.

More information on the CIHR, as well as messages from the directors of all 13 institutes, are available in English and French at <http://www.cihr.ca/>

PRIVATE RELIGIOUS ACTIVITY MAY INCREASE LIFE-SPAN

by Jeff Boyczuk

If you go regularly to your place of worship, you just might outlive your stay-at-home counterparts. Whether this sounds surprising or not, there is a growing body of scientific evidence supporting the notion that active participation in organized religion may increase longevity. But would you reap the same survival benefits from more private religious practices, such as personal prayer and meditation? The largest study to date on this issue suggests it will, as long as your devoutness is a long-term habit.

A research team led by Hughes Helm of Duke University has conducted a six-year longitudinal study looking at the effect of private religious practices on longevity¹. A group of 3,851 adults, aged 65 years or older, completed a survey requiring them to rate the extent of their private religious activity (e.g. prayer, meditation, bible study, etc.) on a 5-point scale ranging from "daily" to "never". Other information regarding personal health practices and physical condition were determined through self-report and/or clinical examination. The subject pool was divided into two groups, one whose members were impaired in one or more activities of daily living (ADL), and an ADL unimpaired group. Activities of daily living include such things as dressing, bathing and meal preparation. This

grouping was necessitated by previous work showing that ADL impairments correlate with increased mortality as well as increased private religious activity.

At the end of the six-year study period, 1,137 subjects (29.5% of the sample) had died. Analysis revealed a significant survival advantage for ADL unimpaired subjects who rated themselves as engaging in private religious activity a few times a month or more, as compared to those who rarely or never engaged in such activities. The ADL impaired group showed no effect of the extent of private religious practices on mortality.

Helm et al. suggest that a protective effect emerged only for those who were unimpaired in ADL because that group may have contained a larger number of subjects who had engaged in long-term private religious activity. It is expected that the ADL impaired group would contain more subjects whose religious activity increased in response to illness, perhaps at a point too late in life to show any survival advantage. As the authors note, the purpose of making the ADL impaired/unimpaired grouping was to distinguish those "praying in a foxhole" from those who had a more sustained practice of personal religious practices.

Although the current study suggests a protective effect of private religious activity, the mechanism by which this activity confers a health advantage remains an area of debate. Helm et al. suggest that an improved psychological state, stress reduction, and better coping methods that are garnered from religious practice may result in physical benefits and enhanced immunity, increasing longevity.

While Helm et al.'s study provides an important advance in our knowledge of the relationship between religious practice and health, it should be noted that over 97% of the respondents in this study were Protestant. Future research directions may lie in seeking out a diverse sampling of world religions in order to gauge whether the positive effects found here may also be seen across faiths.

¹Helm, H., Hays, J., Flint, E., Koenig, H., and Blazer, D. (2000). Does private religious activity prolong survival? A six-year follow-up study of 3,851 Older Adults. *Journal of Gerontology: Medical Sciences*, Vol 55a (7), M400-405.

REGISTRY OF AGING-RELATED WEBSITES

by Hannah Hoag

Association for Gerontology in Higher Education
<http://www.aghe.org>

A division of the Gerontological Society of America that promotes advanced programs in gerontology and geriatrics. A list of current member institutions, along with membership information is available.

GeroWebTM
<http://www.iog.wayne.edu/IOGlinks.html>

A virtual library maintained by Wayne State University's Institute of Gerontology. The library can be browsed by aging-related categories or searched with keywords. Directed towards both professionals and laypeople with an interest in aging.

SENIORSCAN
<http://www.mbnet.mb.ca/crm/>

Touted as the oldest online information site in Canada for seniors and retirees. The site is based in Manitoba but has links for all Canadian provinces. Information on housing, legal, health care and financial issues of import to elderly Canadians.

The American Association for Geriatric Psychiatry
<http://www.aagpgpa.org/>

Organization dedicated to promoting late-life mental health care and caters to professionals in the field of geriatric psychiatry. Site includes health bulletins, information on research meetings, special topics in psychiatry, and publications available from the association.

The Caregiver's Handbook
<http://www.biostat.wustl.edu/alzheimer/care.html>

Complete online version of this publication produced by San Diego County's Mental Health Services. Comprehensive information for both caregivers and care recipients.

The UCLA Memory and Aging Research Centre
<http://www.memory.ucla.edu/>

A research outfit focusing on late-life depression and Alzheimer's disease. Click on the "News" section for links to recent press releases and journal articles of importance in memory and aging.

FDA's Information for Older People
<http://www.fda.gov/oc/olderpersons/>

Information from the U.S. Food and Drug Administration on health issues related to aging, written for the public at large. Some documents are available in Spanish.

Medline Links to Journals
<http://www.ncbi.nlm.nih.gov/PubMed/fulltext.html>

A list of direct links to publishers of journals cited in Medline.

Medical Matrix
<http://www.medmatrix.org/reg/login.asp>

A directory of medical sites on the Internet. Free, but requires registration. Selecting "Geriatrics" gives access to news items, full-text journals, meetings, and educational resources.

Graduate Schools in Gerontology
http://www.gradschools.com/listings/menus/gerontology_menu.html

Directory containing contact information for schools having advanced degrees in gerontology.

These websites are presented as reference tools for readers. Geronto-McGill does not guarantee the accuracy of information found at these sites, nor endorse any of the products found therein.



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