



Centre de recherche
sur le vieillissement
Research Centre
on Aging

Health and Social Services-University
Institute of Geriatrics of Sherbrooke



Encr **âge**

VOLUME 13, ISSUE 1, WINTER 2011

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*This newsletter is intended
for people who participated
in the Research Centre on
Aging's projects*

*It is also distributed to
anyone who wants to receive
it. Please contact us for more
information (see page 4).*

Elder abuse: major changes

By Marie Beaulieu, PhD



Marie Beaulieu, PhD,
full professor, Department of Social Work,
Faculty of Arts and Human Sciences,
Université de Sherbrooke; holder of
the Research Chair in Elder Abuse,
Research Center on Aging



**Quebec has the world's first research
chair in elder abuse, whose work
will be directed at the Research
Center on Aging**

You may have seen Yvon Deschamps (French-language television) and Bill Haugland (English-language television) tell viewers to "Help, Love, Act" in public-service announcements about elder abuse. Their messages reach out to say that not only does elder abuse exist in Quebec, but, more importantly, but there is help and support for victims of it.

This awareness campaign is the first of four structuring actions of the first *2010–2015 Government Action Plan to Fight Elder Abuse*, announced in June by Marguerite Blais, Minister Responsible for Seniors. The plan has been built around collaboration between 13 government departments and agencies. In producing it, the Secrétariat aux Aînés, a provincial-government agency, appointed a team of four experts, including Marie Beaulieu



Announcement of the creation of the Research Chair
in Elder Abuse

from the Research Center on Aging. Beaulieu has been given the task of validating the plan's scientific basis.

This plan proposes directions around which a series of tangible actions will be structured to foster a major shift in the way that society views the elderly. It will be backed by significant funding (\$20 million), so the actions should be adequately supported.

1-888-489-ABUS

The second of the government's four actions was the implementation in October of a new provincial elder-abuse helpline: 1-888-489-ABUS (2287). From 8:00 a.m. to 8:00 p.m., every day of the year, elderly persons can call to share their experiences or to ask for help. If they provide their consent, the information will be shared with a professional in their region so that they do not have to retell their story a number of times. This will make it easier to organize rapid follow-up. This helpline is also available to professionals in various areas who need support in their work or who want to have an outside opinion to shed light on their practice with the elderly.

Research chair

The third structuring action will be carried out at the Research Center on Aging through the work



DID YOU KNOW?
In three months, the new provincial helpline 1-888-489-ABUS received more than 1500 calls. This toll-free telephone line lets the elderly speak directly to a health and social-services professional.

See ELDER ABUSE: MAJOR CHANGES on page 4...

Better understanding the origins of neurodegenerative diseases

Medical imaging sheds light on understanding the processes underlying neurodegenerative diseases. The question, of course, is will we be able to one day detect these brain diseases early enough to either slow or stop their progression before the first symptoms appear.

Researcher and neurologist Christian Bocti, who came to the Research Center on Aging just a year ago, joined the center's research clinical thrust and takes part in the work of the HSSC-UIGS's memory clinic. His research focuses primarily on using biomarkers to detect neurodegenerative diseases. Biomarkers are molecular substances that adhere to certain elements in the brain and that can be traced to detect their activity. These biological signs could point to the presence of a disease in the brain even before clinical symptoms become apparent.



Until recently, researchers and physicians were only able to act once certain conditions such as Alzheimer's disease manifested themselves clinically. They did not have the tools for detecting these diseases until they were well established, and practitioner intervention was aimed primarily at slowing or limiting the effects of the disease. With all the developments in medical imaging over the last few years, research teams can now identify typical patterns of certain dementias based on the areas of the brain affected. These research teams are attempting to understand the mechanisms underlying these diseases before clinical symptoms appear so as to disrupt their progress.

Both a researcher and physician, Bocti uses positron emission tomography (PET scan), which is a at the university hospital's cellular-imaging center (CIMS). In particular, Dr. Bocti works with a molecular biomarker for beta amyloid, which will soon be produced in Sherbrooke. This biomarker, developed in 2004, makes it possible to identify the abnormal presence of amyloid in the brains of patients. Amyloid is one of the two proteins found abundantly and abnormally in the brains of patients who died from Alzheimer's disease.

As Bocti stated, "Brain imaging, however, reveals that this substance can also be found in the brains of certain people who *do not* have Alzheimer's. We are attempting to discover the boundary between normal aging and the appearance of degenerative diseases such as Alzheimer's."

Bocti also wants to look at the role that many health variables—such as blood pressure, cholesterol, and mini-strokes—can play in the development of cognitive disorders. These conditions reduce the brain's oxygen supply, and an increase in amyloid might also be linked to a lack of oxygen.

Lastly, Bocti has joined forces with Maxime Descoteaux, a computer science professor at the Université de Sherbrooke specialized in magnetic resonance imaging. Descoteaux has developed a system to measure neural highways, which connect the various regions of the brain.

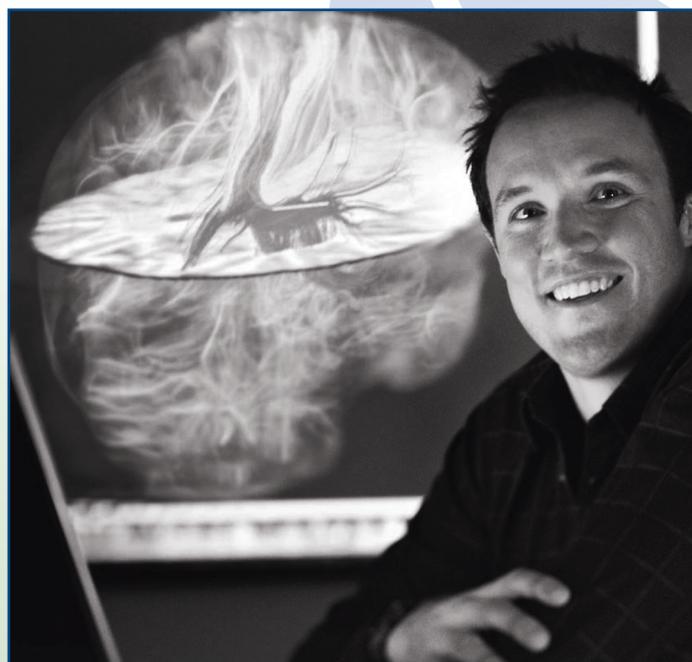
This method is called white-matter tractography. These measurements complement the information provided by other imaging tools that focus more on the activity within each region. "His technique," pointed out Bocti, "will allow us to measure integrity of the brain's highways. It's highly probable that, if a degenerative disease attacks a region of the brain, there should be a measurable change in the connected pathways associated with it. This might be a means of providing for the early detection of cognitive disorders and treating them before damage occurs."



Positron emission tomography

Perspectives

In December 2010, the Fonds de la Recherche en Santé du Québec (FRSQ) awarded a major grant to the Research Center on Aging to support clinical research in partnership with the biopharmaceutical industry. As a result of this grant, several researchers will be able to work on projects, particularly in the areas of dementia, sleep, depression, diabetes, immunology, and behavior disorders. [i](#)



Maxime Descoteaux viewing the results of brain tractography
Photo: Martin Blache, UdeS

Metabolic Unit: Fast-Moving Research

The Research Center on Aging has had a metabolic unit since 2008. Its component laboratories measure the effects of nutrition, dietary supplements, and physical activity on body composition, health, and physical capacities of the elderly.

The most visible part of this research ensemble is the fitness room, funded with a major grant from the Canada Foundation for Innovation. The room is equipped like a state-of-the-art gym, including bodybuilding equipment and several treadmills. This equipment enables participants in research projects following a physical-fitness program over several weeks to determine the long-term effects of exercise on their health.

For example, investigator Isabelle Dionne conducted a research project with menopausal women who were over 50 years of age and overweight. These women took part in a year-long exercise program, combined with Phyto Soy-based (isoflavones) dietary supplements, instead of hormone-replacement therapy. Dionne wants to determine if this type of program can reduce the risk of cardiovascular disease for menopausal women.

Another study, headed up by investigator Martin Brochu, aims at evaluating the impact of an exercise program alone or in combination with a low-calorie diet for overweight women over age 55. Brochu is interested in measuring the program's effect on the mobility of menopausal women and the risk of cardiovascular disease and type 2 diabetes in this population.

"Many of our exercise programs," explained Brochu, "could be used in the home or conventional fitness rooms. Having patients come into the metabolic unit's research-dedicated fitness room allows us to closely control how the program is carried out and eliminate factors that might bias the research findings."



In 2011, Brochu's interest will also turn to combining diet and exercise to study the effects of a diet high in animal protein on the health of the obese when used alone or in combination with a physical-fitness program. The goal is to measure the program's effects on muscle, body composition, and strength in the obese.

A few steps down the hall from the fitness room take you to the resting metabolism room. The equipment in this room is used to measure the quantity of energy



Eric Goulet, Isabelle Dionne, and Martin Brochu

used by the body when resting, that is, just to maintain vital functions. A device in a neighboring room measures bone mass, lean body mass, and body fatness in body composition. Researchers can also check cardiac output under stress or blood pressure as well as take samples to measure glucose (sugar), insulin, and lipids in the blood.

In addition to Isabelle Dionne and Martin Brochu, other researchers, such as Eric Goulet and Stephen Cunnane, use the metabolic unit for their work. For example, Cunnane studies the effect of coconut-based dietary supplements as alternative energy sources that have a positive impact on the brain. In cooperation with researchers Dominique Lorrain and Mélanie Plourde, he is also assessing the effects of omega-3 supplements on brain metabolism and cognitive function during aging. 

DID YOU KNOW? You don't have to join a gym to lose weight. An active lifestyle or exercising at home also does the job.



Treadmill and treadmill stress test, Metabolic Unit

...ELDER ABUSE: MAJOR CHANGES *(continuation of page 1)*

of Marie Beaulieu under a research chair in elder abuse created by the provincial government. The chair, with funding for five years, aims at proposing concrete action that can be validated scientifically. In all likelihood, this stands out as the world's first research chair dedicated to the fight against elder abuse! Beaulieu's team will focus on developing theoretical, empirical, and practical knowledge; supporting the training of highly qualified personnel; evaluating intervention strategies (prevention, screening, and case management); and supporting knowledge transfer while developing innovative research projects.

The new research chair in elder abuse will also be responsible, starting in spring 2011, for a Web site to make study findings available to the public. Seniors associations will be called on to create research partnerships to ensure that the work performed corresponds to seniors' expectations and needs.

Coordinating action

Lastly, the fourth structuring action will consist in setting up a network of 17 coordinators, 1 in each of Quebec's 17 administrative regions. Its purpose will be to forge links and foster joint action between stakeholders in the health and social-services system, the various government departments, community organizations, social-economy stakeholders, and private-sector services. In taking this action, the government recognizes each region has its own organization and even operating procedures, which must be taken into account to reduce elder abuse.

In addition to these four structuring actions, several government departments and agencies have also committed to enhancing what they already do and developing new expertise. Improvements are expected in various fields of endeavor: improving knowledge, increasing information, improving training opportunities and better equipping practitioners, and strengthening and extending actions to better combat abuse and bolster joint action. To illustrate, the provincial department of justice will head up a committee on the issue of privileged communication. They will deal with questions such as how to enable practitioners from various areas to discuss a case of abuse without jeopardizing the professional secret associated with their oaths.

Lastly, this first *2010–2015 Government Action Plan to Fight Elder Abuse* includes a place for the elderly themselves. They will be asked to give opinions or take part in action-research projects under the research chair to propose new practices responding to their needs. All of these actions are not of importance only to the elderly among us. As the Chinese proverb would have it, "To mock your elders is to destroy the house where you have to stay tonight." ♫



Left to right: Hélène Payette, RCA director; Marie Beaulieu, researcher; Marguerite Blais, Minister Responsible for Seniors; and Luce Samoisette, Rector of the Université de Sherbrooke



**Centre de recherche
sur le vieillissement**
Research Centre
on Aging

1036, rue Belvédère Sud
Sherbrooke, Québec J1H 4C4
Tel.: 819 780-2220, poste 45131
Contact: lucie.duquette@usherbrooke.ca
Web site: <http://www.cdrv.ca>

Committee:
**Véronique Boutier, Marie-France Dubois,
Laurent Fontaine and Nancy Leclerc**

Graphic design: Graphic-Art
Printing: Imprimerie Martineau

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Enquête, please contact Lucie Duquette

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Unless otherwise indicated, all our researchers are
Université de Sherbrooke faculty members.

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