



Centre de recherche
sur le vieillissement
Research Centre
on Aging

Sherbrooke Geriatric
University Institute



Encr **âge**

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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.

What the Road Tells Us!

By **Thérèse Audet, Ph. D.**



Thérèse Audet is a researcher at the Research Centre on Aging, a professor at the Department of Psychology and vice-dean of graduate studies and research of the Faculty of Literature and Human Sciences of the Université de Sherbrooke

Traffic signs on Quebec roads provide valuable information to drivers. They allow us to know what the speed limit is or to anticipate dangers in the road construct. We must, however, be able to see and interpret the information on the signs for them to be useful.

Are there too many signs in certain locations that can prevent proper processing of information? The matter becomes urgent when we consider the number of elderly drivers on Quebec's roads. It is recognized that aging can lead to a slowdown in the processing of information and in the quantity of information that can be simultaneously visualized and interpreted.

Our research team's objective was to evaluate the impact age could have on processing traffic signs by taking the number of signs into consideration. We traveled across Quebec to film driving locations where there were one, three, five or more traffic signs. Some of the filming took place in both commercial and non-commercial environments. We solicited help from 80 drivers aged 65 and over as well as from more than 80 drivers aged 30 to 45.

Participants in the study who came to the Research Centre on Aging were asked to answer questions on road signs in 81 different scenes, which in turn numbered 1, 3, 5 or more traffic signs (with or without a commerce). Half the participants saw images on-screen in film format, while the other half viewed still photographs of the scene.

Results of the study revealed interesting things. First, the number of traffic signs increases the response time to the question both among the 65 and older group and the 30 to 45 year old group. The number of signs hinders the capacity to spot a "target sign" only among elderly drivers, especially if the scene was presented in film format. Mistakes among elderly drivers occurred because they forgot the question, they didn't see the "target sign", they understood the question well but failed to provide the right answer (i.e., stating it's a pedestrian crossing instead of a snowmobile crossing).

Results of our study seem to reveal that we are not always capable of understanding what the road is telling us. It takes more time for all drivers to process traffic signals when there are many signs. The slowdown in processing

DID YOU KNOW
that people aged 60 and over will represent the age segment in which the number of registered drivers will increase most significantly over the upcoming years?

Between 2002 and 2015, the SAAQ expects a 10 per cent increase in the number of registered drivers aged 60 and older, while the number of 25 to 49 year olds will drop by 11.4 per cent during the same period.

See **WHAT THE ROAD TELLS US!** on page 4...

Living a Better Menopause!

By Mylène Aubertin-Leheudre, M.Sc. (Kinanthropology)



Mylène Aubertin-Leheudre is completing her doctorate in gerontology at the Research Centre on Aging and at the Université de Sherbrooke under the supervision of Ms. Isabelle Dionne, Ph.D., researcher at the Research Centre on Aging and associate professor at the Université de Sherbrooke's Faculty of Physical and Sports Education; and Abdel Khalil, Ph.D., researcher at the Research Centre on Aging and assistant professor at the Université de Sherbrooke's Faculty of Medicine.

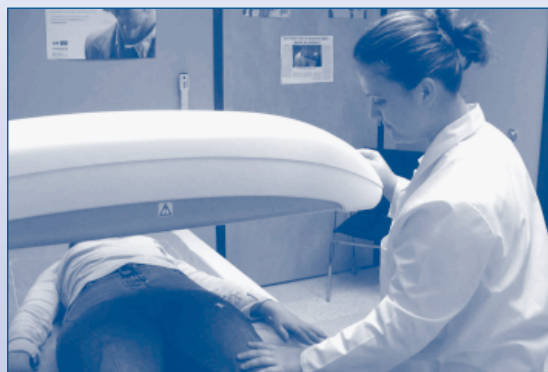
The occurrence of menopause can be defined as starting when a woman no longer has menstruations for 12 consecutive months; this occurs at an average age of 51 in Canada.

Menopause is linked to various body composition changes, including a reduction in muscular mass and bone density as well as an accumulation of body fats in the abdomen. Reductions in estrogen levels provoke the changes.

Hormone replace therapy using synthetic estrogen and/or progesterone (Premarine, Provera) is a recognized treatment to reduce the loss of bone mass, body fat and cholesterol levels, as well as other symptoms that are associated with menopause (hot flashes). A British study recently showed that progesterone used in hormone replacement therapy is linked to an increase in the risk of cardiovascular disease, without providing the underlying mechanisms. Many women undergoing menopause have since then abandoned treatment without having necessarily found an alternative.

It is also recognized that physical activity plays a role in maintaining body composition such as muscle mass and bone density after menopause. Incidentally, it is especially during menopause that women reduce their expenditure of energy, meaning the number of calories that they burn in a single day. According to Health Canada, 62 per cent of menopause-aged or menopausal women no longer do any physical activities.

In one of our studies, we wanted to find out if hormone replacement therapy combined with physical activity had any effect on preserving muscle mass. We found that it is important to promote physical activity among menopausal women, regardless of whether they take hormone replacements, to maintain lean body density and to prevent a reduction in muscle mass (sarcopenia).



Adjusting the machine that allows us to evaluate mass, fat, muscle mass and bone density.

Our work and other studies also showed that stopping the use of synthetic hormones appeared to have a negative impact on protecting bone density, while osteoporosis already affects 20 per cent of women who have undergone menopause.

A possible alternative?

An alternative therapy could be an interesting option for women who have undergone menopause.

Studies have shown that phytoestrogen (a natural hormone) supplementation for a period of six months could have the same effect as hormone therapy on bone mass and on other menopause symptoms such as hot flashes. Phytoestrogens resemble estrogen, which allows them, like replacement hormones, to act positively on problems related to menopause.

Moreover, it is acknowledged that exercising intensely (70 per cent of the maximum heart rate) can reduce body fat if it is done three times per week.

However, the effect of phytoestrogens, alone or in combination with exercise, has not been measured on other factors of cardiovascular disease such as total body and abdominal fat.

In order to find out if this treatment can be an alternative, our team is conducting a study on phytoestrogens. We are evaluating the effects over a period of six months on women who have undergone menopause. Over the following six months, a fitness programme will be added in combination to the phytoestrogen consumption.

The goal is to understand the impact of this combination on the symptoms of menopause, body composition (body fatness and muscle mass) and on the risks of developing cardiovascular disease (cholesterol and so on) among overweight women who have undergone menopause. ♀

DID YOU KNOW

That an increase in body fat around the abdomen brings about an increase in cholesterol levels and the risk of developing type 2 diabetes? To find out if that person's health is at risk, we often measure her body mass index [BMI = weight (kg)/ height (m²)].

However, the best indicator of cardiovascular disease is not the BMI but the waist line measurement (at the belly button level). That's because muscle weighs more than fat.

Preventing Balance Problems

By Myriam Jbabdi, M.Sc. (kinanthropology)



Myriam Jbabdi is completing her doctorate in gerontology at the Research Centre on Aging and at the Université de Sherbrooke under the supervision of Mr. Patrick Boissy, Ph.D., researcher at the Research Centre on Aging and assistant professor at the Université de Sherbrooke's Faculty of Physical and Sports Education; and of Ms. Hélène Corriveau, Ph.D., researcher at the Research Centre on Aging and associate professor at the Université de Sherbrooke's Faculty of Medicine.

Who has not lost their balance and inadvertently fallen onto the ground? In our aging societies, approximately 30 per cent of people aged 65 and older and living in the community are victims of at least one fall per year. It is now recognized that loss of balance is one of the leading causes of falls among the elderly. The incidence increases with age. Injuries caused by a fall vary and can lead to a stay in the hospital in the worst cases. The resulting loss of autonomy is critical and increases the likelihood of being permanently institutionalised. Trauma is not only physical or functional. It can be psychological, leading to a fear of falling again and consequently significantly reducing one's activities.

These facts alone must give us the initiative to find solutions to reduce the rate and impact of falls among the elderly suffering from, or about to develop, balance problems.

Preventing falls requires being able to identify people who are at risk in order to give them adequate treatment. Clinical evaluations have been developed for this purpose. They allow health professionals to evaluate people's balance as they conduct everyday chores such as getting up from a chair without using their hands. Although they are valid, these tests are not sensitive enough to distinguish people who have minor balance problems but who are not yet exposed to the risk of falling.




Evaluating postural control deficit at the limit of stability. Thanks to a display screen, the subject can view his range of movement throughout the exercise.

A Research Centre on Aging team led by Mr. Patrick Boissy, Ph.D., believes that fall prevention operates through this distinction. The team's work is based on the development of a new approach. Instead of evaluating disabilities when the person is standing in a balanced position, their approach measures postural control deficiencies among the elderly just at the limit of their stability. The muscles and sensorial system [vision, inner ear, sole receptors (beneath the feet), and so on] send information to the nervous system, which allows an individual to be oriented and maintain stability. That's what we mean by postural control. It tends to diminish with age, well before balance problems occur.

This approach should make it possible to detect early postural control problems among elderly individuals who are healthy. It should also accelerate case management of those people through enrolment in customized fitness programmes, and co-incidentally slow down the progression of balance problems and falls. Developing a measurement instrument is a long process that

requires many steps before it is considered valid. A preliminary study, conducted among 32 people aged 62 to 85 and living in the community, allowed for the confirmation of the feasibility of this approach among an elderly population and for the lay out of the foundations for future validation studies.

We must take interest in people who have fallen in order to better understand the mechanism that led to their mishap and to prevent it from happening again. However, concern for healthy elderly in order to prevent balance problems is a future project. The benefits are undeniable at the physical, psychological and social levels. The community's economic health will also profit from this. 

DID YOU KNOW

that falls are responsible for 65 per cent of injuries among the elderly each year?

We wish to thank those who participated in our study and who allowed this project to see the day through their generosity and time.

...WHAT THE ROAD TELLS US!

makes things more difficult for elderly drivers because their performance is in turn affected.

There are ways to reduce the problem linked with an excess of traffic signs. For example, it is possible to change our driving habits in a new environment where we are less familiar with the road signs. If we are looking for a specific commercial establishment in a new environment, then simultaneously processing the traffic signs can become problematic. It is

preferable to drive by the first time to retrieve traffic sign information and then to go back to find the commercial spot. When it is possible and legal to do so, one can park on the side of the road to examine the traffic signs. Therefore, minor driver behaviour adjustments can help solve the excess traffic sign problem and lead to better road safety for everyone. 🚦

Don't miss the next conferences of the Board of Governors:

Fats for a Healthy Aging Brain!

By **Stephen Cunnane, Ph.D.,**

Researcher at the Research Centre on Aging, Full Professor at the Faculty of Medicine of the Université de Sherbrooke and Holder of the Canada Research Chair on Metabolism and Brain Aging

Wednesday, May 18, 2005, 2:00 p.m.

Comfort Care at the "End of Life" for Persons with Alzheimer's Disease

By **Dr Marcel Arcand,**

Head of Long Term Care Program at the Institute and Full Professor at the Faculty of Medicine of the Université de Sherbrooke

Wednesday, June 8, 2005, 2:00 p.m.

At the Amédée-Beaudoin Community Centre
10 Depot St., Lennoxville

Admission is free for all attendants.



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Thank you to Patrick Boissy and Abdel Khalil, researchers who are completing their mandate on the committee of the newsletter *Encrâge*.

Greetings to Nancy Leclerc, research officer who is joining the team.

**Committee: Patrick Boissy,
Nadine Fortin, Abdel Khalil,
Nancy Leclerc**

If you are moving or no longer wish to receive *Encrâge*, you can contact Lucie Duquette at (819) 829-7131.