



Centre de recherche
sur le vieillissement
Research Centre
on Aging

Health and Social Services-University
Institute of Geriatrics of Sherbrooke



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 (see page 4).

New Study to Unlock the Mysteries of Aging

By the CLSA Team, Sherbrooke Site



On May 21, the Government of Canada announced the launching of the Canadian Longitudinal Study on Aging (CLSA) and provided funding amounting to \$30 million. The CLSA is a large, national, long-term study designed to follow about 50,000 Canadian men and women between the ages of 45 and 85 at the time of recruitment over a period of 20 years. This will be one of the most complete studies of its kind undertaken to date, either in Canada or elsewhere in the world. The expertise of the Research Centre on Aging (RCA) will be put to use, since it is one of the ten data-collection sites across the country. Statistics Canada will select people and ask them to take part in this study. Our center will conduct clinical interviews with 3,000 participants over three years and will also be responsible for telephone interviews with all of the study's French-speaking participants. Clearly, the team at the research center has its work cut out for it.

Which Aspects of Aging Will Be Studied?

In order to get the clearest possible picture of the aging process, the CLSA will study the many facets of aging such as:

- Functional changes in memory and physical/mental capacities
- Biological aspects of aging (oral health, eyesight and hearing loss, hormonal changes, muscle loss, etc.)

- Development of chronic disease (arthritis, diabetes, cancer, heart disease, etc.)
- Access to health-care services
- Transition between work and retirement
- Adjustment to new roles and responsibilities

The design and extended follow-up of the CLSA will enable the study team to look at more than a brief snapshot of the adult Canadian population. They will also gain a better understanding of aging's various aspects and view each participant as a whole, taking into consideration their cells, physical and mental health, and even social life. All Canadians will benefit from the findings of this research in health practices, programs, and policies.

The CLSA is a collaborative effort by a team of more than 160 researchers representing a variety of disciplines from 26 Canadian universities, including the University of Sherbrooke. The principal investigators are Dr. Parminder Raina from McMaster University (Ontario), Dr. Christina Wolfson from McGill University (Quebec), and Dr. Susan Kirkland from Dalhousie University (Nova Scotia).

DID YOU KNOW?

Did you know that you can find out from the Web site at www.CLSA-ELCV.ca?

The CLSA is not accepting new participants.

While there's no miracle cure, staying healthy as you grow older is not just luck.

See ...NEW STUDY TO UNLOCK THE MYSTERIES OF AGING on page 4...

Understanding How the Brain Ages

By Mélanie Fortier and Jennifer Tremblay-Mercier, Research Assistants



Jennifer Tremblay-Mercier



Mélanie Fortier

elderly are able to produce them as well as younger people. We also know that increasing the ketone levels in Alzheimer's patients for a few hours enables them to perform better on certain memory tests.

Snapshot of Research in Professor Cunnane's Lab

Finding ways to constantly increase ketone levels without drastically altering eating habits or creating health problems is a major challenge. Our laboratory is currently focusing on approaches using certain medications and dietary supplements specifically to increase ketone levels.

Brain imaging is a key part of our research. This sophisticated method allows us to see how the brain takes up these two energy sources (glucose and ketones). As a result, we hope to determine if aging and memory deficit affect the brain's uptake of ketones and glucose in the same way. The project's first part, carried out with healthy young and old people, is already under way. We should be able to extend the project to people with memory deficits as early as next winter. Future projects will include assessing memory, which will enable us to better understand relationships between age, brain functioning, and memory.

Our research team comprises three master's students, two doctoral students, three research assistants, and a research nurse, all under the direction of Stephen Cunnane, the laboratory's director. We have a lounge where volunteers can relax (armchairs, television) when they come in to take part. The laboratory also has cutting-edge technology for analyzing the breath and blood samples collected from participants. The brain imaging work is carried out in collaboration with the Sherbrooke Center for Molecular Imaging, which is

See ...*UNDERSTANDING HOW THE BRAIN AGES* on page 4...

As the population ages, the number of people with memory disorders continues to climb. As a result, understanding how the aging brain functions is important if we are to find potential avenues for preventing and treating memory disorders so as to improve the quality of life of the elderly. The Brain Metabolism and Aging Laboratory, headed by Professor Stephen Cunnane, focuses on the sources of energy available for brain functioning and how the availability of these fuels changes as we age.

How the Brain Gets Nourishment

The brain's two main energy source is glucose (a sugar). Glucose comes from the diet or can be made in the body and is transported by the blood to the body's organs for energy. In people with Alzheimer's disease, the brain's capacity to take up glucose is impaired. This problem can start in young adults and long before memory problems. We believe that low fuel availability to the brain therefore appears to contribute importantly to the development Alzheimer's disease.

Ketones are naturally produced by the liver from fats. This compensates for a glucose shortfall in the body and allows the brain to continue to function normally. Just how important ketones are as a secondary energy source for the aging brain is not yet clearly understood. We do know, however, that the



DID YOU KNOW?

Habitually eating 1 or 2 servings per week of fish high in omega-3 (DHA) reduces the risk of memory disorders.

Species such as mackerel, sardines, herrings, and salmon are high in DHA.

The brain requires a great deal of energy to function properly. In fact, it alone consumes about 100 g (½ cup or a ¼ pound) of glucose a day!

Olive Oil for a Healthy Heart

By Abdelouahed Khalil, Investigator, and Olfa Helal, Postdoctoral Fellow, FMSS



Abdelouahed Khalil, Ph.D. Coordinator of the Biological Mechanisms of Aging Axis at the Research Centre on Aging (CDRV); associate professor at the department of medicine, division of geriatrics of the faculty of medicine and health sciences of the Université de Sherbrooke.

According to Health Canada, heart disease is the leading cause of death among Canadians. More than 17% of Canada's population have cholesterol rates in the "high-risk" category. The development of heart disease can be accounted for by a number of factors. For example, smokers, the obese and sedentary, and people with chronic stress are more likely to have heart disease. Aging can also lead to increased risks of heart disease. Abdelouahed Khalil, an investigator at the Research Centre on Aging of the HSSC-UIGS, believes, however, that olive oil can help fight against cholesterol's negative impacts on the body.

Cholesterol: Good or Bad?

Cholesterol is a naturally occurring component of human and animal cells that can be transported naturally by proteins in the body: high-density lipoproteins (HDLs) and low-density lipoproteins (LDLs).

Two thirds of the cholesterol in the body, however, is harmful. It enters the body through foods that are high in fat (deli meats and other fatty meats as well as dairy products, such as butter and fresh cream) that we eat every day. When "bad" cholesterol, also referred to as LDL cholesterol, accumulates in blood vessels over the years, it can lead to the buildup of fatty plaques on the walls of arteries. As plaque builds up, it blocks arteries and increases the risk of infarction, in particular. An unhealthy diet—specifically, a diet that contains large quantities of fat—is a high risk factor for heart disease.

The body also contains "good" cholesterol, sometimes referred to as HDL cholesterol. Good cholesterol plays a very specific role in the body: it transports bad cholesterol to the liver, where it is broken down and eliminated. As a result, increasing HDL cholesterol can provide some protection against heart disease.

Olive Oil: a Good Fat

It has been shown that reducing intake of certain dietary fats or consuming "good fat," such as olive oil, can significantly lower cholesterol LDL levels.

Through the LipAge study he is currently conducting, Professor Abdelouahed Khalil is attempting to demonstrate that olive oil can improve cholesterol levels, thereby reducing the risk of heart disease in healthy men and women. Indeed, diets high in olive oil would account for the low heart-attack rate in countries where olive oil is the main source of fat. The LipAge study aims to demonstrate that dietary olive oil can prevent narrowing of the arteries in individuals at risk by boosting HDL's protective properties.

If you are interested in our research and want to take part as a volunteer, call Olfa Helal at 819-780-2220, Extension 45378. 📞

DID YOU KNOW?

Olive oil uses good cholesterol to reduce your bad cholesterol.

Mediterranean countries, which are the world's leading consumers of olive oil, have the lowest rates of heart disease.



Photo credit: Michel Caron, Université de Sherbrooke

...NEW STUDY TO UNLOCK THE MYSTERIES OF AGING (continuation of page 1)

Center's Contribution to the CLSA

Many of the center's researchers took part in the work over the last five years. Hélène Payette, Director of the Research Centre on Aging, is also site director and can count on the collaboration of two other RCA investigators (Isabelle Dionne and Hélène Corriveau). In addition to starting at mid-life, the CLSA is the first study of its kind to collect social and economical retirement factors as well as clinical and biological measures. As a result, the CLSA will serve as a catalyst in developing expertise in the fields of population health, biology of aging, and adaptation/rehabilitation, which are all longstanding themes at the Research Centre on Aging. This research platform will also serve as an invaluable resource for secondary research and in providing interdisciplinary training to our students.

Participants will have the reward of knowing that they are contributing to new knowledge about health and to the improvement of quality of life of Canadians as they age. Despite the study's national scope and length, the information provided by participants will be kept confidential at all times. The CLSA takes great care to maintain stringent security requirements to protect the confidentiality of the people who participate and the information they provide

Participant information will be kept confidential at all times. The decision to take part in the study is voluntary and participants may decide to withdraw from the study at any time. Through the CLSA, we will be able to identify means to improve our health by better understanding the processes and issues involved in aging. We at the Research Centre on Aging are therefore quite proud to play a part in this important study.†

...UNDERSTANDING HOW THE BRAIN AGES (continuation of page 2)

part of the Centre de Recherche Clinique at the Fleurimont CHUS site.

We hope that these different models and innovative techniques will enable us to advance knowledge about energy sources in the aging brain. Our discoveries may eventually lead to the development of interventions aimed at maintaining a healthy memory throughout life.

If our research interests you and you would like to take part as a volunteer, please call:

*Mélanie Fortier, Research Assistant for Stephen Cunnane
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