



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



*En*crâge

NEWSLETTER

on current research projects

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Students

Special Edition



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hospitalier universitaire
de Sherbrooke**

Québec



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THE IMPORTANCE OF THE ADVANCEMENT OF KNOWLEDGE

The pandemic has helped us realize the importance of the advancement of knowledge to ensure informed decision-making, as well as to maintain a healthy population. This contribution to the development, experimentation and improvement of theoretical and practical knowledge involves many individuals, including students.

The current edition of *Encrêge* showcases the work of our student population that is essential, not only for the advancement of knowledge, but also to ensure the future of science, the researchers of tomorrow. Whether to encourage the inclusion of older adults, to optimize their pain management, to support their loved ones or their transition to a new living environment, or to prevent chronic illness or cognitive decline, it is important to contribute to knowledge development, even in the context of a pandemic.

Since last March, our students have been on the front lines to take part in safe research projects, respecting sanitary measures and physical distancing. Moreover, for several years, researchers and students at the Research Centre on Aging (CdRV) have evaluated or used many technological solutions to promote virtual participation.

Proud of supporting their achievements and involvement, the CdRV is taking the opportunity of this edition of *Encrêge* to thank and congratulate our students for their involvement in scientific endeavours and their contribution to the advancement of knowledge aiming at encouraging “healthy aging”.



Mélanie Levasseur, Ph.D., Researcher
and Scientific Director of the CdRV 2019-2020



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THE STUDENT COMMITTEE OF THE RESEARCH CENTRE ON AGING



Student committee: *Tanie Gobeil, Marie-Philippe Harvey, Marylie Martel, Alexis Marcotte Chénard, Hillary Chappus-McCendie, Jean-Christophe Lagacé, Jasmine Paquin and Francis Houde*
(Catherine Girard and Maude Viens are absent)

Since 2018, the Student Committee of the Research Centre on Aging (CdRV) has highlighted the success and involvement of students' community within the research on aging.

Comprised of masters' and graduate students who are all passionate about research on aging, the Student Committee has set mandates to support the academic success of CdRV students by promoting their involvement in CdRV scientific life and in highlighting its community's research work.

Among its principal realisations, we can mention the organisation of an appreciation event for the participants in CdRV research projects, the implementation of training activities aiming at supporting student success, as well as hosting science vulgarization events for the public.

The Student Committee can also take pride in being an excellent facilitator for the communication and broadcast of research work with their target population, namely the aging population of the Eastern Townships.

We are therefore quite proud to mention the dynamic participation of the CdRV students to this special edition of *Encrâge*, this initiative being perfectly aligned with one of our goals for 2020-2021, namely, to maintain our contacts with older adults and members of the community in the Eastern Townships.

Members of the Student Committee

COLLECTIVISATION OF “HEALTHY AGING” IN LOCAL EXCHANGE TRADING SYSTEMS

By François Racicot-Lanoue, Ph.D. student, CdRV and UdeS



“Manpower, we need manpower”. This call, made by Quebec’s Premier, François Legault, during the COVID-19 crisis is clearly etched in people’s minds. Since then, major investments have been made to help with the shortage of labour in services and care for older adults. However, an important part of these investments is essentially part of a logical plan of the “business of healthy aging”, where we focus mainly on professional resources to find solutions for the difficulties that we encounter. This observation also works for homecare. In this sense, there is no doubt regarding the essential aspect of professionals offering care to older people. However, it would be beneficial to add all this “manpower” from countless citizens that could help older adults living within their community

Local exchange trading systems: A fitting solution

Through a “community currency”, local exchange trading systems aim at promoting the exchange of services between people. In some systems, this currency takes on the form of a “time bank”, as in *les Accorderies du Québec*. The person dispensing the service receives time units that will be credited to their account and debited from the beneficiary’s account. Each participant can receive and/or give services, according to their interests/talents.

For example, during this pandemic, an older member could receive required support from a young member to learn how to use video calls, making it possible for this person to communicate with loved ones. In exchange, this older person could offer their help to another member with schoolwork.

A study documenting local exchange trading systems with older adults

Different studies seem to show that local exchange trading systems are social development models that can promote social participation and intergenerational solidarity. For this purpose, a study will take place at the CdRV in close collaboration with *l’Accorderie de Sherbrooke* to document how this system can strengthen the support system for older adults and make it easier to “grow old at home”. Expected results may convince decision-makers to push the creation and promotion of structured social development projects and local exchange trading systems.

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WHAT IF OLDER ADULTS HELPED OTHER OLDER ADULTS TO PLAN THEIR NEXT LIVING ENVIRONMENT?

By Catherine Girard, master's student, CdRV and UdeS



Most older people want to stay at home as long as possible. Sadly, as they age, many are confronted with a living environment that no longer meets their needs. However, a large proportion of them only start looking for a new place once they are forced to do so, for example when their health declines. Moving is then done urgently, and becomes a source of anxiety and stress. In such a situation, options are limited for older adults and this reduces their chances of finding a living environment that suits their preferences. Transition and adaptation to this new environment is thus more difficult.

How to support their decision and transition?

According to the literature, when the time comes, older adults who take the time to think about the situation and obtain information before deciding, live better with the decision and transition process toward their new living environment.

In a practical sense, these older people tend to look for answers to questions such as “When should I decide to move? What are my options if I choose to move? Who can help me make this decision? What information should I have to help me make my decision and where can I get this information?”. That said, few studies allow us to understand exactly how this planning experience feels and what planned elements will make this decision easier, when it is time.

Learning from the experiences of older adults who have planned their transition to a new living environment

An ongoing research project at the CdRV will give a voice to 10 older adults who have already planned and experienced their transition to a new living environment. It will help us understand the key moments in their planning process, as well as the way their thoughts and preparations helped them to appreciate their new place. This study will also enable some older people to help others plan their next living environment so that they will ultimately feel sooner at home after the move.

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A NEW MODEL OF LIVING ENVIRONMENT FOR QUEBEC OLDER ADULTS WITH COGNITIVE IMPAIRMENT?

By Sarah Rahimaly, master's student, CdRV and UdeS

Older adults living with cognitive impairment (for ex., with Alzheimer's Disease) can experience some difficulties when performing activities of daily living (for ex. taking a shower, preparing coffee). Residential resources, such as private residences or nursing homes, can offer the required support. However, the organisation of some residential resources could be revisited to better respond to the needs of their older residents.

Two new models of residential resources have recently appeared, creating a "homelike" environment through microhabitats. For example, the Dutch village of Hogeweyk offers a small-scaled community with several houses where six to eight persons with cognitive impairment reside. Each house reflects the interests of the people who live there, as well as the roles that they have occupied during their lifetime, by adapting the décor, music, meals, and leisure activities. Businesses in the village (for ex., grocery store, café, restaurant) are open to the outside community members.



Gardeners and cooks are trained to offer guidance to any disoriented or anxious residents. Thanks to a personalized approach, careworkers dressed in civilian clothing (no medical uniforms) help them with their groceries and daily cleaning. This type of approach gives the residents a familiar and normalizing living environment.

This environment offers them opportunities to take part in meaningful daily activities that are adapted to their abilities. The founders have observed several benefits, including decreased agitation, increased appetite, and a decrease in medication.

How do we implement a microhabitat-inspired living model in Quebec?

To our knowledge, this question has not yet been studied, although it represents an important step in ensuring the success of this type of project. Our ongoing study aims to adapt this type of living environment so that it can be implemented into Quebec residential resources.

On a practical level, our results will highlight the "favorable conditions" considering the opinions of older adults themselves, of their loved ones, of healthcare professionals and managers. It is our hope that small-scale environments will contribute to the well-being of Quebec older adults who are living with cognitive impairment.

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LIFESTYLE REDESIGN®: A PLAN TO SUCCESSFULLY IMPLEMENT!

By Marie-Hélène Lévesque, Ph.D. student, CdRV and UdeS



Developed in California, the Lifestyle Redesign® program is a promising preventive occupational therapy intervention aimed at developing healthy lifestyles. Proposing an ambitious vision of aging well, this program focuses on meaningful activities to promote health and well-being among older adults.

When carefully selected, these activities reveal an unsuspected potential to delay the onset of chronic disease and reduce the risk of mortality. But what are these activities? How to integrate them into a daily routine? What elements facilitate or hinder their realization? Based on 12 themes (e.g., nutrition, stress management, home safety) and the different activities of the program (e.g., presentations, peer exchanges, outings), all these questions are discussed. Older adults thus find personalized answers that will serve as a stepping stone to experiment new ways of doing things. Through this combination of reflection, action and meaning, the program can lead to sustainable changes in older adults' lifestyle.

What do the experts think?

To prepare the program's implementation in Quebec's context, 11 discussion groups were conducted, bringing together 58 participants, including occupational therapists, graduate students in occupational therapy, decision-makers, and community partners. The aim of these exchanges was to develop an efficient implementation strategy and to take a closer look at the factors influencing the program's implementation.

The main conclusions that came from these discussions are listed below:

- Despite its complexity (e.g., duration), the program is promising and well adapted to the reality of older adults;
- Although the program received a warm welcome and is in line with new social trends (e.g., the high value of good health), the interest of older adults remains to be confirmed;
- Because of the different organizational cultures in the areas of practice, it could be easier to initially implement the program in a private clinical setting;
- Regardless of the implementation environment, developing partnerships is essential.

In short, after having rigorously planned the implementation of the Lifestyle Redesign® program, it is now time to validate its feasibility, and mostly, to hear the voice of older adults.

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CITIZEN ASSISTANCE TO MAINTAIN SOCIAL ACTIVITIES AND AVOID MENTAL HEALTH DECLINE IN OLDER ADULTS WITH DISABILITIES

By Janie Gobeil, master's student, CdRV and UdeS

Social activities are essential to good mental health. With aging, disabilities can occur and limit the realization of these activities. Interventions supporting social participation are thus necessary to maintain good health in older adults, including mental health. *L'accompagnement citoyen personnalisé d'intégration communautaire (APIC; Personalized Citizen Assistance for Social Participation)* is a promising initiative.

What is APIC?

Over the course of one year, a volunteer meets with an older adult for three hours a week to explore social activities and help overcome any interfering obstacles. The goal is to promote the older adult's independence and integration within the community. APIC is currently implemented in four community organizations in the province of Quebec, and the team is studying its effects on the physical health, mental health, and life satisfaction of older adults.

Promising preliminary results

Concerning mental health, preliminary results from five volunteer-older adult dyads are promising. Mental health improved for 60% of older participants following the APIC intervention. Four out of five volunteers also noted that their presence was beneficial, especially through significant discussions and encouragements. The different perspectives that they brought could also help older participants to see the positive side of certain situations. One volunteer mentioned: *"What I brought to Mrs.____, is active and attentive listening to all her problems. She would tell me: 'I tell you things that I don't even tell my kids'".*

The project is still in progress. Future analysis will include a total of 12 dyads. The team is still searching for older adults and volunteer participants in the APIC study, particularly in the Sherbrooke, Montréal (Anjou), Drummondville and Lévis areas. Better understanding the effects of APIC will help optimize its implementation in community organizations to promote older adults' social participation.



Please do not hesitate to contact us for more information.

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OFFERING RESPITE THAT TRULY MEETS THE NEEDS: BUILDING A SOLUTION TOGETHER, WITH AND FOR CAREGIVERS IN THE EASTERN TOWNSHIPS

By Maude Viens, Ph.D. student, CdRV and UdeS

Denise, 69, cares for her husband, Roger, 74, who suffers from Alzheimer's disease. Recently, Roger has started to get up each night, repeating that he must go to work. Denise is afraid that her lack of sleep may exhaust her: She needs to rest. She would like to find a night watch service that would give her a break. This is essential for her husband to be able to remain at home; Roger, like his wife, would prefer to remain at home for as long as possible.

Kathy, 54, cares for her uncle Claude, 77, who suffers from chronic pain. In addition to her work and other obligations, Kathy visits her uncle quite often; he lives alone in his home in the country. Kathy is worried about her uncle's well-being and does not want him to be isolated. Kathy and Claude would like to find someone who will play cards with him on Saturday evenings.

Many caregivers in Quebec have needs that are similar to those of Denise and Kathy. Sadly, there are no current resources in the Eastern Townships to support them. These situations are a testimony to the urgency to develop a new form of respite that would be flexible in terms of frequency, duration, intensity, and that will adapt to the evolution of older adults' needs. Therefore, researchers are working with the organization *l'Appui pour les proches aidants de l'Estrie* to support the implementation of a practical solution to offer family caregivers a respite "when they need it".



L'APPUI POUR LES PROCHES AIDANTS

To build this solution, our research project will bring together professionals offering respite services, as well as managers and family caregivers. Our goal is to build bridges between these homecare organizations in the Eastern Townships so that they can join forces to bring this solution to life.

Roger would thus benefit from a night watch service that would enable Denise to get some much-needed sleep. Claude could have a friendly visit from an orderly every Saturday evening, which would reassure his niece Kathy.

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FACILITATING ACCESS TO SOCIAL AND HEALTHCARE SERVICES FOR THE ENGLISH-SPEAKING OLDER ADULTS FROM THE EASTERN TOWNSHIPS

By Alexandra Ethier, master's student, CdRV and UdeS

The Eastern Townships area counts 8 601 English-speaking older adults who, like others, have social and healthcare service needs. Many of these English-speaking older adults do not speak French. It is thus complicated for them to obtain social and healthcare services, especially when the employees of these services are unable to speak English or have difficulty doing so. It is therefore relevant to determine what can facilitate access to social and healthcare services for them.

Interviews done from September 2019 to March 2020 with 10 English-speaking older adults highlighted the following aspects:

- English-speaking older adults learn of the existence of available services through **exchange of information**. This exchange takes place in the local newspaper The Sherbrooke Record and from word of mouth. For example, phone trees remind older adults of available social activities.



- **The community spirit** that is present among English-speaking residents contributes to their well-being.
 - First, members of the community exchange information on social and healthcare services.
 - Then, members of the community help each other to obtain the required services.
 - Finally, the community offers occasions for social contact for older adults, which has a positive effect on their health.
- When older adults and social and healthcare service employees **both speak English** or when each of them **makes an effort** to speak the other's language, this facilitates communication. For example, an English-speaking older woman reports that she generally tries to say a few words in French while her doctor uses a bilingual dictionary during consultations.

According to our study's results, involving the community of the English-speaking older adults helps to inform them on available social and healthcare services. Promoting a new service during community events, such as health information clinics, is an interesting example. Our research also highlighted the importance of good communication between older adults and social and healthcare services employees so that older people clearly understand the information that concerns them. Thus, English-speaking older populations will be able to benefit from social and healthcare services that are truly tailored to their needs.

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VIRTUAL REALITY, A PROMISING AWARENESS TOOL FOR OLDER ADULTS

By Kevin St-Martin, master's student, CdRV and UdeS



Virtual reality is a technology that we usually associate with leisure activities and videogames. And yet, it is also an instrument that can be used to improve the health and well-being of older adults.

The Jasmin Roy Sophie Desmarais Foundation, whose mission is to create positive and caring environments, has innovated by implementing a virtual reality project called *les Ateliers 360 aînés*. This activity is designed to increase awareness about mistreatment, bullying and ageism towards older adults.

By placing participants as witnesses of scenes of mistreatment, bullying or ageism, the activity aims at generating empathy and sparking discussions with older participants about the strategies to put in place to react to these situations.

A research project to evaluate the effects

We have implemented a research project to study the reactions of older people during an activity in virtual reality. This study has three objectives:

1. Identify the elements of the activity that are perceived as positive or negative by older participants;
2. Give recommendations and avenues of improvement for future projects that would use virtual reality and be designed for older adults;
3. Contribute to a reflection on the place of virtual reality in the practice of social work.

Promising early results

The project is still ongoing, but initial results are interesting. The few older participants who took part report:

- That the experience was engaging and realistic;
- That the content was rich, but that they would have liked to see more;
- That they felt safe even if they were trying a new type of technology;
- That they now have a better understanding of the importance of reacting to situations of abuse.

An inspiration for future projects

There are very few virtual reality awareness activities designed specifically for older people. We hope that the results of this project will inspire others to create new innovative activities using this type of technology to improve older adults' well-being.

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TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION (TENS) TESTS FOR A PERSONALIZED APPROACH IN THE TREATMENT OF CHRONIC PAIN

By Monica Sean, master's student, CdRV and UdeS

In Canada, nearly one out of two elders suffers from chronic pain. With the aging of the population, problems related to chronic pain will increase over the upcoming years. It is therefore essential to improve care for individuals who suffer from chronic pain.

Clinicians often use a trial-and-error approach before finding the right medication to relieve people suffering from chronic pain. Obviously, this can cause many adverse effects in the person with chronic pain. Many studies suggest that it could be possible to identify the treatments that are most likely to relieve pain by evaluating pain modulation mechanisms. Within our body, these mechanisms enable us to reduce or increase pain perception, in a natural way. To evaluate these mechanisms, tests are usually performed using a hot-plate and cooling system that immerses part of the body in cold water.



Standard technique:
Hot-plate and cooling system

Unfortunately, this method is not easily applicable for clinicians since it requires the use of costly and complex equipment. Considering this, it would be essential to develop a new option that is easily applicable in a clinical context.

One interesting solution would be to use transcutaneous electrical nerve stimulation (TENS), a device that produces electrical impulses that is affordable, and easily accessible for clinicians.

Our project aims at determining if TENS can replace more complex and costly techniques to evaluate the pain modulation mechanisms.

Alternate technique
(replacement):
Transcutaneous
electrical nerve
stimulation (TENS)



Early results are encouraging

To date, we have obtained results with 14 participants. Pain tests performed with a standard technique (hot-plate and cooling system) seem to give similar results to those obtained with TENS, suggesting that TENS could become a reliable technique to evaluate the mechanisms that modulate pain.

In the end, this project should enable us to establish a simple, affordable method for clinical settings to evaluate the mechanisms of pain. The development of this approach will help clinicians assess individuals suffering from persistent pain and to determine which treatments are the most likely to be efficient in alleviating this pain.

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DOMESTIC VIOLENCE ACCORDING TO OLDER AFRICAN-SUB-SAHARAN WOMEN LIVING IN QUEBEC

By Fanta Fané, Ph.D. student, CdRV and UdeS

Domestic violence can affect any person who is or has been in an intimate relationship, including older women, immigrant women and women from ethno-cultural communities. Although knowledge on this type of violence has vastly advanced, we still have limited knowledge on the experience of older women and even less on older African women.

In 2016, 27.2% of landed immigrants in Quebec were African.



As a Ph.D. student in gerontology, immigrant from Sub-Saharan Africa and case worker in a shelter for women and children who suffered domestic violence, it is important for me to understand the domestic

violence situations and the service track outcomes of the older Sub-Saharan women who live in Quebec.

Because of their migratory experience, these women are stuck between two cultures: Africa and Quebec. It is thus necessary to include the socio-cultural aspect into the analysis and understanding of domestic violence, to have an adequate portrait of their personal perspectives.

This research project has four objectives:

1. To **describe** the domestic violence experience from the perspective of older African Sub-Saharan women;
2. To **question** the effect of life course (and migratory experience) on the experience of domestic violence;
3. To **expose** their concepts of experienced domestic violence (in terms of type, causes, consequences, etc.);
4. To **report** the experiences of these women with services received for domestic violence in Quebec.

To reach these goals, our study solicits the participation of women with personal experience of domestic violence or who have witnessed this in the past five years.

This data, collected through one-on-one interviews, promote the production of new knowledge on this social issue.

Publication of our results to public policy planners and key players in domestic violence will enable us to better prepare case workers during their interventions with older women from ethno-cultural communities.

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LET'S TALK ON SKYPE? BREAKING ISOLATION THANKS TO VIRTUAL INTERGENERATIONAL INTERACTION

By Eugénie Emond, master's student, CdRV and UdeS



Skype, Zoom, Facetime, Messenger... so many applications are now used to speak with family members and friends. But what about their usefulness to promote intergenerational dialogue outside friends and family, to break older adults' isolation? This research project aimed at pairing 5 youths aged 18

to 30 years old and 5 older adults aged 75 and over. Each duo that was formed spoke via Skype for 3 sessions, from May to September of 2019.

To take part in the study, older participants had to live alone and speak French. Their ability or skills with technology were not considered. The researcher was present at the older adults' home to assist in case of a problem and to take notes.

Results of this exploratory research project suggest that the quality and content of the exchanges is more important than the technical questions linked to how the technology works, despite the participants' knowledge of technology. This is true, even if some participants found the idea of speaking with a stranger via Skype somewhat unattractive in the beginning.

"If you go the beach and jump into the cold water, it won't be comfortable right away, but at some point, come on, you're having fun!", explains an 83-year-old participant. The experiment also heightened the youths' awareness about isolation. *"It made me think that there are many more than we know, older people who are isolated",* said an 18-year-old participant.

This research project also sheds light on the importance for older adults to have access to an Internet connection to be able to socialise. This access is an issue, especially in private residences, where residents must pay an extra if they want to have their own secure Internet connection in their apartment.

Since the beginning of the COVID-19 pandemic, we have seen many new initiatives to keep older adults in contact with their family, whether in CHSLDs or at home. This research project explores other avenues to link youths and older adults who do not know each other. This alternative is interesting and complementary for community organizations that sometimes have difficulty recruiting young people for friendship visits to older people. Not having to travel for these intergenerational encounters made it undeniably easier for young participants.

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A MORE UNITED COMMUNITY TO PROMOTE SOCIAL PARTICIPATION OF QUEBEC'S OLDER ADULTS, THANKS TO APIC

By Karine Gagnon, Ph.D. student, CdRV and UdeS

To promote healthy aging and preserve the older adults' autonomy, their social participation must be encouraged, whether in the presence or absence of disabilities. The Personalized Citizen Assistance for Social Participation (*Accompagnement citoyen personnalisé d'intégration communautaire*; APIC) is an intervention involving weekly monitoring for six months carried out by attendants who accompany older adults as they carry out social activities in the community.

The current study explores the influence of APIC on quality of life, mobility, functional independence, social participation, and leisure activities of older adults with disabilities. The study also explored the assistance experience of 12 older adults and 6 of their attendants, through questionnaires and individual interviews.



Evaluations 12 months after APIC showed that the older adults' quality of life, and specifically, the functioning dimension, had improved, and that their mobility habits had been

maintained. However, they presented reduced functional independence and social activities and did not wish to increase their participation in leisure activities. During APIC, the presence of attendants to accompany older adults made it possible for them to enjoy moments of complicity and to think more about their life and the importance of taking part in social activities.

For their part, attendants developed a significant relationship with older adults, improved their knowledge about themselves and thought about their life and their own aging. They contributed to the older adults' autonomy, motivation, and participation. Some attendants faced challenges requiring that they adapt, for example, some older adults refused to take part in community activities, or had a closed attitude that limited the possibility of social exchanges.

APIC promotes the older adults' well-being, their autonomy and health, in addition to contributing to respond to the challenges related to aging. APIC optimizes the services offered by community organizations, according to older adults' needs. This study adds to the knowledge on the benefits of this intervention and could spark interest from community organizations that wish to implement it in their environment, making it available to a larger proportion of older adults.

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A CURE FOR KINESIOPHOBIA?*

By René Maréchal, Ph.D. student, CdRV and UdeS

Is anyone without fear? Even with their magic potion, Gauls in Astérix were worried that the sky may fall on them. Did you know that fear is essential to our survival, but that it becomes a problem when it leads to anxiety? We are then faced with a phobia, a fear so great that it affects a person's professional and social life. Phobias can be counteracted through different methods, such as supervised intervention. This is what was noticed by one group from the CdRV, who witnessed a little-known form of phobia: kinesiophobia. This fear is caused by being afraid that movement will cause pain or worsen one's condition.

Marguerite is afraid to move

Twenty older participants, including Marguerite (pseudonym), took part in a research project evaluating the effect of exercise during cancer treatments. Marguerite was randomly assigned to the control group, i.e., the group in which participants executed a stretching program known to have no specific effect on physical fitness. The 26 sessions were supervised by a kinesiologist.

From the first consultation, Marguerite's behavior hinted at kinesiophobia. She particularly expressed concerns several times regarding the possibility that the side effects from her chemotherapy treatments might worsen if she participated in the project. Marguerite also mentioned that she stopped before completing the maximal leg strength test because she was afraid of hurting herself.

Marguerite magically improves

During the final evaluation, Marguerite was the only person in the control group to show improvement in her physical condition, with similar and sometimes superior improvement to those of the exercise group participants. Marguerite's surprising response to the stretching program suggests that her initial evaluation with an unusually low performance, was potentially affected by kinesiophobia. In turn, we believe that the kinesiologist's intervention helped alleviate Marguerite's fear of movement.



Somewhat like the Druid Getafix, the kinesiologist prepared a magic potion made of reassuring and encouraging words to help Marguerite overcome her fear. Thus, just like the Romans, Marguerite's fear seems to have made a hasty retreat.

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**Author's adapted version of his winning text for the UdeS 2020 science popularization contest*

UdeS has an annual science popularization contest to encourage career choices in scientific popularization and increase the performance of basic or applied research projects at the University. For more information: <https://www.usherbrooke.ca/etudiants/actualites/nouvelles/nouvelles-details/article/42956/>

AN EXERCISE PROGRAM SPECIFICALLY FOR PERIPHERAL ARTERIAL DISEASE: WALKING FOR HEALTH!

By Renaud Tremblay, undergraduate student, CdRV and UdeS

Walking for only a few dozen meters before sharp pain appears is a daily reality for many people suffering from peripheral arterial disease. This pain is caused by the accumulation of fatty plaque in the blood vessels, reducing the amount of blood, and therefore of oxygen, that makes its way to the muscles. People will experience pain and cramps that will cease only when they stop walking, which can be restricting. This is the situation for over 27 million people in North America and Europe.

Physical exercise as a solution

Fortunately, physical exercise is very efficient to reduce the severity of symptoms. Walking regularly raises the threshold of pain occurrence, therefore increasing the distance that a person can walk. Nevertheless, because the pain is intense, patients are not very inclined to implement this new habit. On the other hand, taking part in a rehabilitation program supervised by professionals in physical activity would encourage this new habit. However, according to the Canadian Foundation of Vascular Health, there are currently no programs focusing specifically on the treatment of peripheral arterial disease in Quebec hospitals.



IPAD Project to test the feasibility of this type of program

To determine the feasibility of this type of exercise program at the CIUSSS de l'Estrie – CHUS, physicians and a researcher collaborated on the IPAD Project. Participants will be invited to undergo supervised training sessions at the rehabilitation center three times per week for a period of three months. They will be able to walk on a treadmill under supervision and according to a protocol designed for the disease. The team will determine the feasibility according to several elements, including recruitment rate, participation rate and adhesion to the prescribed exercise program, as well as program appreciation.

And then?

This project aims at promoting the implementation of this type of rehabilitation program to help people suffering from peripheral arterial disease. It could also be used as a reference for other hospitals in Quebec that want to set up this type of program.

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OLIVE OIL: A HEALTHY FAT TO REDUCE THE RISK OF CARDIOVASCULAR DISEASES

By Wael Lachiheb, master's student, CdRV and UdeS



Cardiovascular diseases are one of the major health problems in Canada and around the world. The development of this type of disease can be multifactorial. For example, people suffering from obesity, smokers, and seniors are more likely to develop this condition.

The build-up of fatty deposits inside the arteries increases the risk of cardiovascular diseases. On the other hand, elevated blood levels of good cholesterol are considered as a cardioprotective factor. Therefore, most pharmacological interventions aim at increasing bloodstream levels of good cholesterol to reduce the risk of cardiovascular diseases. Nonetheless, their results remain inconclusive. At the same time, the beneficial effect of a Mediterranean diet based on extra virgin olive oil on the risk of cardiovascular disease has been well demonstrated in the literature. However, few data exist regarding its effect on the blood activity of a specific inflammatory marker, called Lp-PLA₂, whose increased blood activity predicts cardiovascular risk.

Our research objective is to fill this gap. This project is part of the LipAGE study (Lipids-age). 57 seniors and 27 young adults were invited to enrich their daily diet with a supplement of 25 mL of raw extra virgin olive oil for 12 weeks.

Our results show some positive effects, namely: reduced blood pressure and reduced triglycerides blood levels (bad fats) in seniors. However, regarding the effect of this diet on the Lp-PLA₂ marker, no significant difference was observed between the two groups. These results are partially in line with other studies but remain controversial. This could be attributed, in part, to the choice of our participants.

In short, our results suggest new mechanistic pathways through which extra-virgin olive oil can provide a beneficial effect on the cardiovascular system, without modifying Lp-PLA₂ blood activity in healthy seniors.

In our future work, it will always be interesting to focus on the seniors with cardiovascular diseases.

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WHAT IF A BLOOD TEST COULD HELP REDUCE PAIN?

By Matthieu Vincenot, Ph.D. student, CdRV and UdeS

Chronic pain affects nearly one out of two older adults, significantly compromising their autonomy and quality of life. The first weapon against chronic pain remains medication. However, for 70% of patients, treatment does not improve their condition. In fact, analgesics are usually prescribed in a trial-and-error mode, as it remains complex to know which molecule will work the best.

It is also important to know that our body has its own mechanisms to modify pain intensity, either by increasing it (exciting mechanisms) or by reducing it (blocking mechanisms).



What happens in the case of chronic pain?

Several studies have shown that these internal modulation mechanisms are altered in chronic pain condition. The pain experienced by certain people could be linked to exciting mechanisms that are too strong and, for others, to blocking mechanisms that are too weak. Thus, a better understanding of these mechanisms would be a target to improve treatments by personalizing them. For example, let us imagine a person whose blocking mechanisms to reduce pain do not work efficiently.

Logically, this person would benefit from medication that can increase these pain blocking mechanisms. Conversely, a person who has overactive exciting mechanisms could be more receptive to a treatment aiming at reducing them.

How do we improve treatment?

To improve treatment by personalizing it, we must identify which mechanism is deficient. A protocol to address this issue has been developed at the *Université de Sherbrooke*. However, its use remains limited to laboratories, due to its high cost and the complexity of its realization.

The aim of this Ph.D. project is to find markers for these mechanisms with practical and easily accessible tools for physicians such as blood tests, measuring blood pressure, or questionnaires. Thus, just as high blood sugar could be a sign of diabetes, certain molecules that are present in the blood could help determine which mechanism is involved in chronic pain. This study could have considerable effects on the management of patients with chronic pain. On one hand, we would be able to assess these internal mechanisms without the use of complex tools. On the other hand, we could specifically focus on therapeutic management, thus improving the management of patients with chronic pain, particularly older adults.

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MUSCLE AGING AND SPACE FLIGHTS: HOW A STUDY WITH OLDER ADULTS CAN HELP ASTRONAUTS?

By Philippe St-Martin, undergraduate student, CdRV and UdeS

A natural reduction in muscle mass has been observed as people age. However, this process can be accelerated in the context of long-term immobilisation, for example in the case of a hospital stay. In such circumstances, a rapid reduction of functional capacity can be seen, an important determining factor in autonomy. Interestingly, the same kind of decline can be observed in astronauts during prolonged periods in a weightless environment. Could a similar mechanism explain these two situations? This is what a Sherbrooke research team is trying to find out.



National Aeronautics and Space Administration (NASA)

The muscular atrophy observed in astronauts and immobilized individuals seem to be caused by a lack of muscle stimulation. To slow down the process, or avoid losing muscle mass and function, there is an obvious solution: physical exercise. Researchers Isabelle J. Dionne and Eléonor Riesco are convinced of the benefits of physical activity in a context of immobilisation. They seek to better understand which mechanisms explain these effects.

The SAFE Project

The main aim of the SAFE (SpAce, Frailty, Exercise) project is to determine how exercise can reduce the loss of muscle mass and function in a context of immobilisation or weightlessness.

To simulate the effects of weightlessness on the human body, the exercises will be performed in a head down tilt bed rest position (head slightly lower than the feet, as shown in the photo). This model is also used as an accelerated aging model and enables to better understand the loss of muscle mass associated with aging.

The project, jointly funded by the Canadian Space Agency and Canadian Institutes for Health Research, will explore the other side of long-term bed rest. Study participants, aged 55 to 65, will be submitted to bed rest for 14 days during which they will undergo regular rehab treatments alone or coupled with an exercise program. Several data will be collected, notably measuring muscular function and markers of inflammation.

Anticipated results

This project could contribute to improve hospitalisation practices to help maintain autonomy as well as to optimize the daily life of astronauts on extended space flights. One thing is for sure, physical activity is an ally, whether you fly to the stars or do it to improve your physical fitness: One small step for man, one giant step for health!

Several other projects on physical activity are ongoing; please do not hesitate to contact our team for more information.

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A RESEARCH PROJECT TO DEVELOP AGE-FRIENDLY COMMUNITIES FOR OLDER ADULTS WITH COGNITIVE IMPAIRMENT AND THEIR CAREGIVERS

By Émilie Dugré, project coordinator, CdRV



A research team from the Research Centre on Aging, in partnership with the Nation huronnewendat, the Alzheimer Society from the Eastern Townships, *L'APPUI pour les proches-aidants de l'Estrie*, *l'Accorderie de Sherbrooke*, caregivers and older adults themselves, is interested in creating caring communities by mobilizing a diversity of actors from various sectors to better support older adults with cognitive impairment living at home and their families.

The main goal of this project is to better meet the needs of older adults with a loss of cognitive autonomy, and thus enable them to participate as fully as possible in all spheres of life in society.

Two communities are now involved: Wendake and Sherbrooke. However, we are presently looking for members of an English community who might be interested by this project.

Would your community be interested?

Please contact Émilie Dugré the project coordinator by phone or email with the information below:

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We need your help to advance our knowledge and understanding of aging. All our research projects are conducted according to strict ethical protocols which ensure the safety and consent of all participants. Men and women of all ages contribute to the development of programs which are subsequently applied in many social spheres to improve the health, care, and living conditions of older people.

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1- Respond to a call for a particular project

Consult our Web site for more information about recruitment under way: www.cdrv.ca

2- Register with the CdRV's participant-recruitment centre

Give your consent to allow a representative of the Research Centre on Aging to contact you if you fit the requirements for taking part in a specific research project. To register:

Telephone: 1 819 780-1832

Toll free: 1 888 780-1832

Web Site: www.cdrv.ca



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