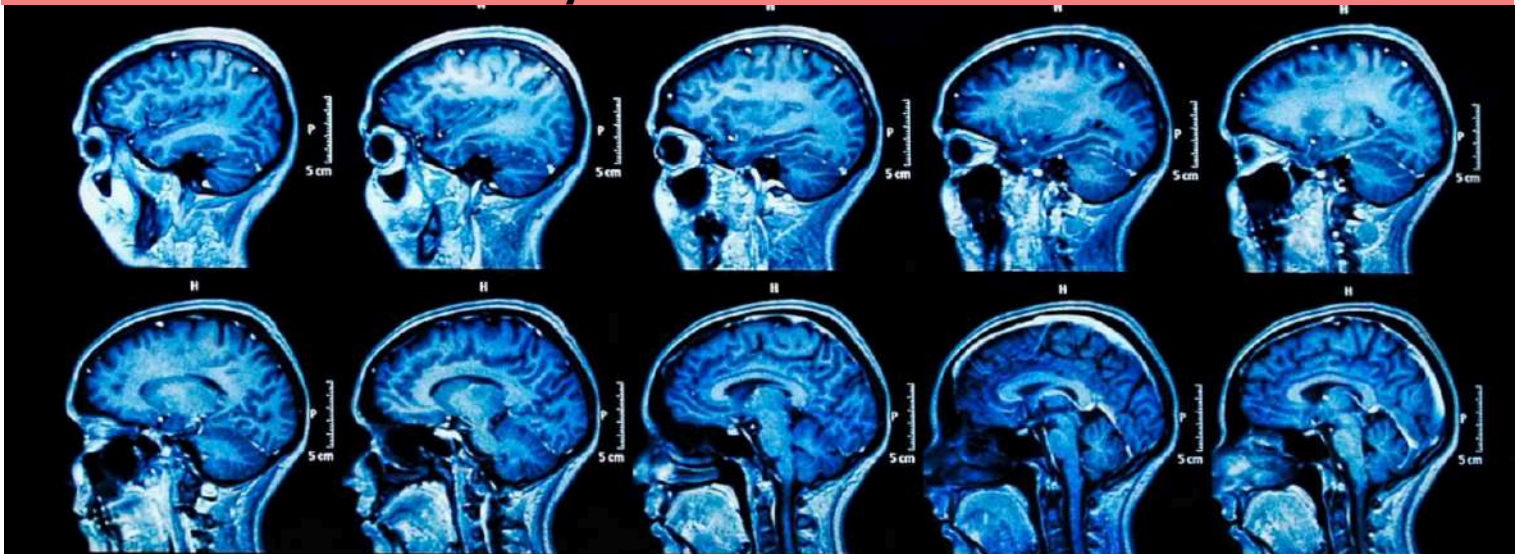




Keeping you updated on the latest news, events, and research achievements!

The scientific achievements from last year were possible thanks to the active participation of our patients, their relatives, and friends. Together, we advance clinical science towards new therapies for Alzheimer's Disease.

## The New Alzheimer's Disease Medication: Lecanumab By Dr. Pedro Rosa-Neto



On Friday, January 6th, the American Food and Drug Administration (FDA) approved a new medication for Alzheimer's disease called Leqembi (also known as Lecanemab). This new therapy was specifically designed to remove toxic forms of amyloid proteins believed to cause Alzheimer's disease. A recent clinical trial conducted on patients showed that Leqembi removed from the brain amyloid, abnormal tau and other indicators of brain disease. Importantly, after 18 months of use, Leqembi retained 27% of memory and thinking compared with patients without it.

### **What is the difference between Leqembi and other drugs used to treat AD?**

Medications like Leqembi are called biologicals, meaning they need to be manufactured by living cells. For these reasons, the price of the therapy is higher than medications based on chemical compounds. Leqembi acts as an antibody against undesired toxic amyloid called protofibrils. The medication is administered as

infusions in the vein. Another important difference is that Leqembi is designed to remove an abnormal protein called amyloid, believed to cause Alzheimer's disease, rather than improve the symptoms.

### **Is Leqembi safe?**

There are a series of safety concerns regarding Leqembi. Patients might present allergic reactions during the infusions. In addition, just like any other anti-amyloid medication, Leqembi can cause a side effect called ARIA (Amyloid related imaging abnormality). ARIA refers to some degree of brain swelling or microscopic bleeding around the brain blood vessels detected in the routine safety MRIs conducted in patients taking Leqembi. In the Leqembi study, nearly 13% had ARIA, which occurs more frequently in people genetically predisposed. While most patients did not feel symptoms, some patients had headaches. Thirteen out of 1784 participants died during the Leqembi study, six deaths in people receiving Leqembi (0.7%) while seven (0.8%) in people participating in the trial without receiving Leqembi. For these reasons, patients receiving Leqembi must have a brain magnetic resonance imaging (MRI) prior to initiating treatment and prior to the 5th, 7th, and 14th infusions.

### **What does Leqembi represents in the fight against Alzheimer's disease?**

Although the clinical effects can be considered modest, and the risks associated with Leqembi are not trivial, this approval constitutes a very important step forward in treating Alzheimer's disease.

### **When Leqembi will be available in Canada?**

We will be following up with Eisai Canada the progression of Leqembi application to Health Canada and provide to our patients, research participants, colleagues, and friends updates.

## **Examination for Early Diagnosis of Alzheimer's Disease By Dr. Pedro Rosa-Neto**

Alzheimer's disease is an important topic for many families, who wonder how to prevent it. Can Alzheimer's disease be detected before symptoms appear? When are these tests useful?

### **What is Alzheimer's disease today?**

Until 2011, Alzheimer's disease could only be diagnosed in patients with dementia, meaning they had cognitive impairment. Since then, Alzheimer's disease has been redefined as a disease characterized

by the deposition of two abnormal proteins in the brain, amyloid and tau protein. The disease has three phases: preclinical (silent), mild cognitive impairment (MCI) and dementia. In preclinical cases, people have abnormal protein levels but no symptoms. In MCI, abnormal proteins are associated with symptoms but do



not cause loss of independence. Patients with dementia have memory and thinking problems that affect their independence.

### **What are the tests?**

Amyloid and tau can be detected in the brain by positron emission tomography or lumbar puncture. During a lumbar puncture, doctors examine the cerebrospinal fluid, a fluid that circulates in the brain and can reveal a lot of information about brain problems. These tests allow doctors and researchers to detect the presence of toxic proteins that accumulate in the brain over time, even in people who have no symptoms. Recently, other colleagues and I have developed blood tests that can detect the presence of amyloid and tau in the brain; however, these blood tests remain in the research realm. All of these tests are collectively called biomarkers.

### **Who needs these tests?**

PET and cerebrospinal fluid tests are currently useful when doctors are not entirely sure of the diagnosis of Alzheimer's disease. For example, for patients with many memory problems or whose symptoms appear too early. With the prospect of new interventions such as anti-amyloid therapy, these tests will be mandatory to identify people who can benefit from these interventions.

## **Healthy Lifestyle Habits Reducing the Rate of Age-Associated Memory Decline By Dr. Serge Gauthier**



**Dr. Serge Gauthier**

The MCSA has a long history of collaboration with academic clinicians in China, particularly with Dr Jianping Jia's team in Beijing. Dr Jia led a 10-year research program studying the effects of healthy lifestyle in persons over age 60 across China, with or without the apolipoprotein E4 genotype, which conveys an increase risk of memory decline and dementia. The good news is that persons who have four or more healthy habits show a reduction of the rate of



**Dr. Jianping Jia**

memory decline compared to persons with only one good habit or none. This reduction of risk is also present in persons who are ApoE4 carriers.

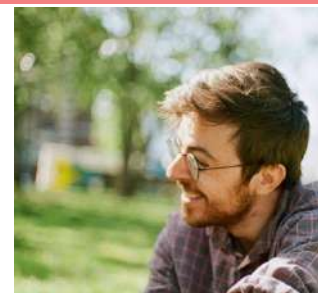
The six healthy habits are a healthy diet (7 or more of eligible food items including fish, eggs and tea), regular physical exercise ( $\geq 150$  min of moderate intensity per week), active social contact ( $\geq 2$  per week, including chatting online), active cognitive activity ( $\geq 2$  per week, including reading, playing cards or mahjong), never or former smoking, never drinking alcohol.

What does this mean for people in Canada? The principles of using a combination of healthy lifestyle habits is valid as well. We can also check with information already collected in the Canadian Longitudinal Study on Aging if these habits and possibly others are protective.



## Congratulations to MCSA PhD Student, Joseph Therriault, on his Acceptance to Medical School!

The MCSA would like to extend our sincerest congratulation to PhD Student, Joseph Therriault, on his acceptance to McGill Medical school! Joseph has been part of the MCSA since 2017, and to honor his recent accomplishments and acceptance, we spoke to him about his time at MCSA, his research, and his plans for the future!



### **When did you join the MCSA and what have been your roles throughout the years?**

I joined the MCSA around 2017. My roles have changed throughout the years: at the beginning we were a much smaller team, and as students we gathered some data ourselves. As the team grew, as students we had the opportunity to spend more of our time analyzing data and writing up our findings for publication in scientific journals. I'm fortunate to work with a great team who gather so much high-quality data which allows us to focus on doing the science itself.

### **Describe your research, the importance of your project, and how MCSA helped you on your journey.**

My research has evolved a lot over the years, as the field of Alzheimer's disease research has evolved. In previous years, we focused much of our energy in validating and characterizing new PET scans to be able to diagnose Alzheimer's disease in living people - something that is still fairly recent, because Alzheimer's could only be diagnosed "officially" once someone had died and an autopsy was carried out. More recently, we are focusing on blood biomarkers, which we hope will allow Alzheimer's to be detected with a simple blood test, which is much more accessible than very technical brain scans (most people around the world cannot access these).

### **What are your plans for the future?**

The long-term goal is to run a lab and have a clinical practice, similar to what Pedro has done over the last few years! Working with patients will allow me to stay in touch with what people's actual needs are, and to be able to interpret research findings in a realistic/meaningful way.

## Congratulations to Dr. Cécile Tissot on a Successful PhD Defence!

It is with great pleasure to inform the MCSA community that former MCSA PhD student, Cécile Tissot, has successfully completed her PhD defense, and is now officially **Dr. Cécile Tissot!** On March 24<sup>th</sup> 2023, MCSA staff, students, colleagues and community gathered to attend Dr. Tissot's defense and to celebrate her dedication, hard work, and incredible achievements.



### **When did you join the MCSA and what have been your roles throughout the years?**

In January 2018, I joined MCSA as an undergraduate and quickly developed a passion for the work and projects done at TNL. The people I met through this experience have become close friends over the years. In September of the same year, I started my master's program under the supervision of Dr. Rosa-Neto and transitioned to a fast-track PhD program in January 2020. Throughout my time at TNL, I have been involved in various research projects, taking care of the ethics, as well as writing and

refining grant applications. Additionally, I have taken on the role of welcoming new students and researchers to the lab, assisting them in navigating the data collected in the TRIAD cohort.

### **Describe your research and how the MCSA has helped you on your journey.**

During my PhD studies, I had the opportunity to work on various projects, but I primarily focused on Alzheimer's disease. This disease is characterized by the accumulation of amyloid-beta plaques, tau tangles, and the loss of neurons. My thesis topic explored the use of tau markers found in both blood and cerebrospinal fluid to better understand the progression of the disease in individuals. By analyzing these markers, we could gain insights into the stage of the disease and the presence of pathologies. In recent years, I have been fortunate enough to witness significant progress in the field of Alzheimer's disease, with readily available blood tests proving effective in diagnosing the disease. This is a valuable asset, as it enables us to stage individuals along the disease spectrum, predict their cognitive decline, and possibly invite them to participate in clinical trials to evaluate the efficacy of drugs. TNL provides a collaborative environment, and I am grateful for the help of my colleagues in producing all my manuscripts. We frequently share insights and ideas, allowing us to think more deeply about our research projects. I received training from senior students, which I have passed on to newer students. I am grateful to have conducted my PhD studies in Dr. Rosa-Neto's lab due to the excellent collaboration not only among students but also with collaborators worldwide.

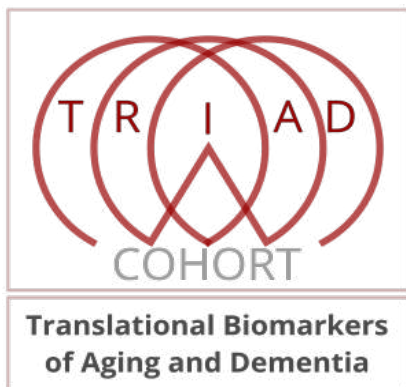
### **Now that you have successfully defended your PhD, what are your future goals/plans?**

My next step is a move to Berkeley (USA), as I have been accepted to start a postdoctoral fellowship at the University of California Berkeley, where I will be working under the guidance of Dr. Suzanne Baker. My focus will be on her and Dr. Tharick Pascoal's project, which involves comparing the two most commonly used tau-PET tracers along the Alzheimer's disease spectrum. I will be lucky enough to still be in close collaboration with



everyone at TNL. This is such an exciting journey and I cannot wait to see what the future holds! My heart will always be at TNL though, and I will definitely come back often to visit.

## WHAT IS THE TRIAD COHORT?



The Translational Biomarkers in Aging and Dementia (TRIAD) cohort is a longitudinal observational cohort specifically designed to study mechanisms driving dementia. The cohort studies dementia markers and their progression from pre-symptomatic stages to the onset of Alzheimer's disease or other types of dementia. TRIAD participants are followed in a longitudinal manner with clinical and neuropsychological assessments, fluid and imaging biomarkers every 24 months. Results generated from the TRIAD cohort help advance scientific knowledge and develop better targeted clinical trials to cure Alzheimer's Disease and dementia. The TRIAD cohort is actively recruiting participants, for more information about the participation criteria

and the different measures please refer to <https://triad.tnl-mcgill.com>, to get additional information or to participate call our research centre 514-761-6131 ext: 6321. For research participants and sponsors that are interested in donating to the TRIAD Cohort Research Study, please contact Jenna Stevenson by email [jenna.stevenson2@affiliate.mcgill.ca](mailto:jenna.stevenson2@affiliate.mcgill.ca)

## WHY YOUR DONATIONS ARE SO IMPORTANT

Between 2020-2022, our fundraising activities were impacted by the pandemic. Your continued support and encouragement were crucial and have played a central role in the continued success of the Centre's outreach, research infrastructure objectives, and medical research initiatives for the community. **We thank you for your loyal and on going support!** Thank you for helping us advance our mandate towards prevention, aging research, and education. Income tax receipts shall also be issued for all donations exceeding \$15.00. If you would like to donate by mail, phone or email, please contact Silvana Aguzzi at 514- 761-6131 X 6308 or by email [silvana.aguzzi@mcgill.ca](mailto:silvana.aguzzi@mcgill.ca) or Alexandra Triantafillopoulos at 514-761-6131 X 6311 or by email [alexandra.triantafillopoulos1@mcgill.ca](mailto:alexandra.triantafillopoulos1@mcgill.ca)



## DEMENTIA, YOUR COMPANION GUIDE

**A free new educational resource, *Dementia, Your Companion Guide*, was designed to help provide answers.** With engaging illustrations and a friendly writing style, this approachable guide covers a wide array of topics to assist both the person living with dementia (PLWD) and their care partners. It includes

McGill  
**Dementia**  
Your Companion Guide



information on the science and progression of dementia as well as practical advice on safety and self-care. The Book is available in English, French, Spanish, Chinese and Greek.

The guide was created by a multidisciplinary team at the McGill University **Dementia Education Program** (DEP) in the Faculty of Medicine and Health Sciences (FMHS). The content was provided by the Program's founder and former care partner **Ms. Claire Webster**, geriatrician **Dr. José A. Morais** and neurologist **Dr. Serge Gauthier**, along with partners from the McGill University Research Centre for Studies in Aging, the Division of Geriatric Medicine, the School of Physical and Occupational Therapy, and the School of Social Work.

**Ask for a copy of the book at your next appointment at MCSA or Crossroads! Or Visit:**  
<https://www.mcgill.ca/medsimcentre/community-outreach/dementia>

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## STAY UP-TO-DATE WITH MCSA

Good day,

We hope that you are all enjoying the good weather!

We are presently updating our files and would appreciate knowing if there are any changes in your **address, telephone number or email address**. If yes, please contact us at T:514-766-2010 ext 6308.

You have received this month our Newsletter of April 2023. We are interested in having your feedback. Call us at the above number or send us an email with your comments to [kaitlyn.butt@mail.mcgill.ca](mailto:kaitlyn.butt@mail.mcgill.ca) or [silvana.aguzzi@mcgill.ca](mailto:silvana.aguzzi@mcgill.ca).

In case you haven't joined us for our Brainy Boomer Lectures (BB), please send us your email address and we will add you to our BB lectures email list. In case you are interested and would like to check out our BB YouTube lectures please check out the following link:  
<https://www.youtube.com/c/MCSA2021>



