RESEARCH
IMPACT REPORT

The Le Royal

SPRING 2025

"My mental illness has taken over so much of my life. It stole who I was and prevented me from being who I so desperately wanted to be. Seeking help was the scariest thing I've ever done, but it saved my life. For the first time, I feel I have a purpose. I am in control of my life. I have a bright future."

— JULIA

Progress & Possibility, Thanks to You

The Royal's **2025 Research Impact Report** is the reflection of a year of significant progress and new possibilities for people living with mental illness and addiction.

The need for mental health research has never been greater, and the momentum behind it has never been stronger. With visionary leadership, cutting-edge technology, and a dedicated community of supporters, we are advancing discovery, improving care, and ensuring more people receive the mental health care they need.

The following pages highlight the progress The Royal is making, from pioneering breakthroughs to closing critical gaps in care, and the essential role you have played in making all this, and more, possible.

At the heart of this progress is our guiding vision: Research *is* Care. Every breakthrough, every initiative, and every brain scan brings us closer to a future where more people receive the mental health support they need. And because of you, research at The Royal isn't just shaping the future—it's making a real difference today.

Inside, you will read about:

How research is improving access to care right now

Reaching a milestone of 5,000 scans completed at the Brain Imaging Centre

The launch of a new research centre dedicated to music and mental health

Our new Strategic Research Plan, shaping a patient-centered and evidence-informed future

Making cutting-edge care accessible to more people

For individuals and families facing complex, difficult-to-treat mental illnesses, hope lies in discovery. The goal of mental health research at The Royal is to bring new opportunities to life by seamlessly integrating groundbreaking research into everyday care.

At the core of this effort is interventional psychiatry, an emerging specialty that bridges the gap between pioneering research and patient care. Using specialized techniques and centralized infrastructure, this field provides transformative solutions for those who have not responded to traditional treatments.

Thanks to the power of research and the generous support of donors, The Royal is developing an Interventional Psychiatry Program. This program integrates and improves cutting-edge approaches like neuromodulation, precision therapies, and enhanced brain imaging to make mental health care more accessible to those who need it.

ACCELERATING RESEARCH WITH A NEW CARDIO-NEURO-MIND DATA PLATFORM

Mental, neurological, and cardiovascular health are deeply intertwined, yet gaps in data sharing and analysis have long slowed the pace in which breakthroughs are accessible to the patients that need them.

The Royal is tackling this challenge with the Cardio-Neuro-Mind Data Platform (CNMDP), a sophisticated hub that centralizes data collection, storage, and analysis across these fields. The CNMDP consolidates research data from The Royal, the University of Ottawa Heart Institute, and other leading local and provincial institutions to accelerate the pace of discovery, inform policy, and improve care.

HOSTING AN ONTARIO-WIDE PSYCHEDELIC RESEARCH RETREAT

The Royal hosted a Psychedelic Research Retreat, bringing together scientists and clinicians from across the province to discuss the future of psychedelic research and psychedelic-assisted therapy. The event sparked dynamic conversations, showcased cutting-edge research on novel treatments like ketamine for mental health, and highlighted The Royal's leadership in advancing these innovative therapies. This retreat underscored The Royal's commitment to driving progress and positioning itself at the forefront of this transformative area of research.

PHOTO ABOVE: Members of the Cardio-Neuro-Mind Data Platform (CNMDP) team: Katie Dinelle, Owen Clarkin, Rami Hamati, and Christie Aguiar

ADVANCING NEUROMODULATION WITH NEW RESEARCH PROJECTS

Neuromodulation, including repetitive transcranial magnetic stimulation (rTMS), uses targeted magnetic pulses to stimulate areas of the brain affected by mental illness. This innovative treatment provides a new treatment option for individuals who have not responded to other available options, and is being further advanced through new research initiatives:

HARNESSING EXERCISE TO ENHANCE TREATMENT

Why do some patients respond better to rTMS than others? A new study found that those who were physically active before treatment experienced significantly greater reductions in depressive symptoms. This discovery has led to a new study exploring the correlation between exercise and rTMS uptake, while continuing to analyze emerging patterns in their data.

"We know exercise is good for the brain. We were expecting an effect, but the difference we saw was remarkable," says Dr. Sara Tremblay, scientist at The Royal.

EXPLORING ACCELERATED rTMS AND EXPANDING TO YOUTH

Recent research has already led to major improvements in rTMS delivery, such as reducing treatment time from 45 minutes to just three.

Now, a new study is testing an accelerated treatment schedule, involving three sessions per day over two weeks, compared to the traditional one session per day over six weeks. This study also expands the demographic to include adolescents aged 16 to 18, aiming to broaden the treatment's availability and effectiveness for younger populations.

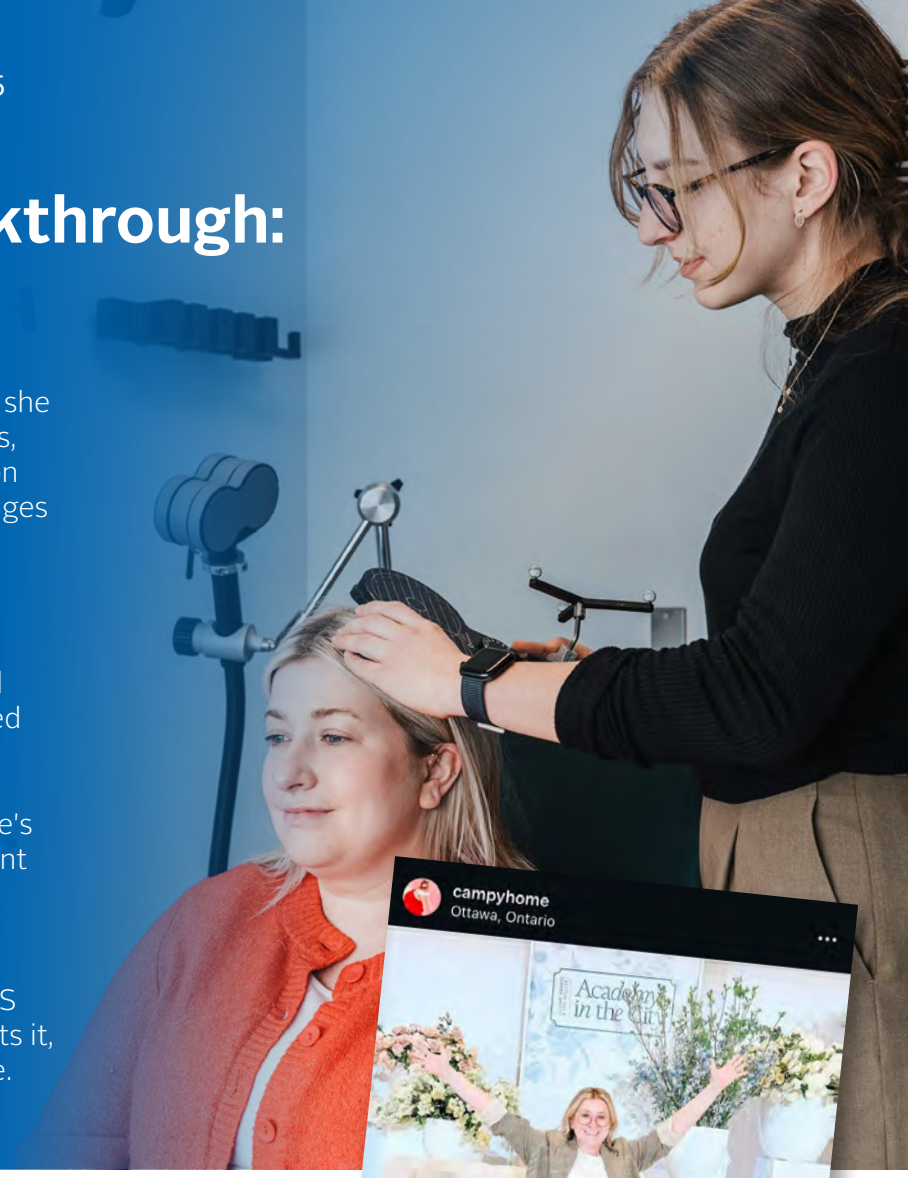
An unexpected breakthrough: Michelle's story

For 15 years, Michelle lived with depression, but she never let it silence her. She built a small business, shared her mental and physical health journey on social media, and stayed open about the challenges of entrepreneurship. She gave back to her community, even during difficult times.

But on Christmas Eve 2023, at just 29, Michelle faced a mental state she had never experienced before. She could no longer cope. She attempted suicide.

Desperate to find help for her daughter, Michelle's mother discovered rTMS, an innovative treatment for depression, offered at The Royal.

For people like Michelle, whose depression had not responded to conventional treatments, rTMS offered an unexpected breakthrough. As she puts it, it's "unbelievable" how much it improved her life.

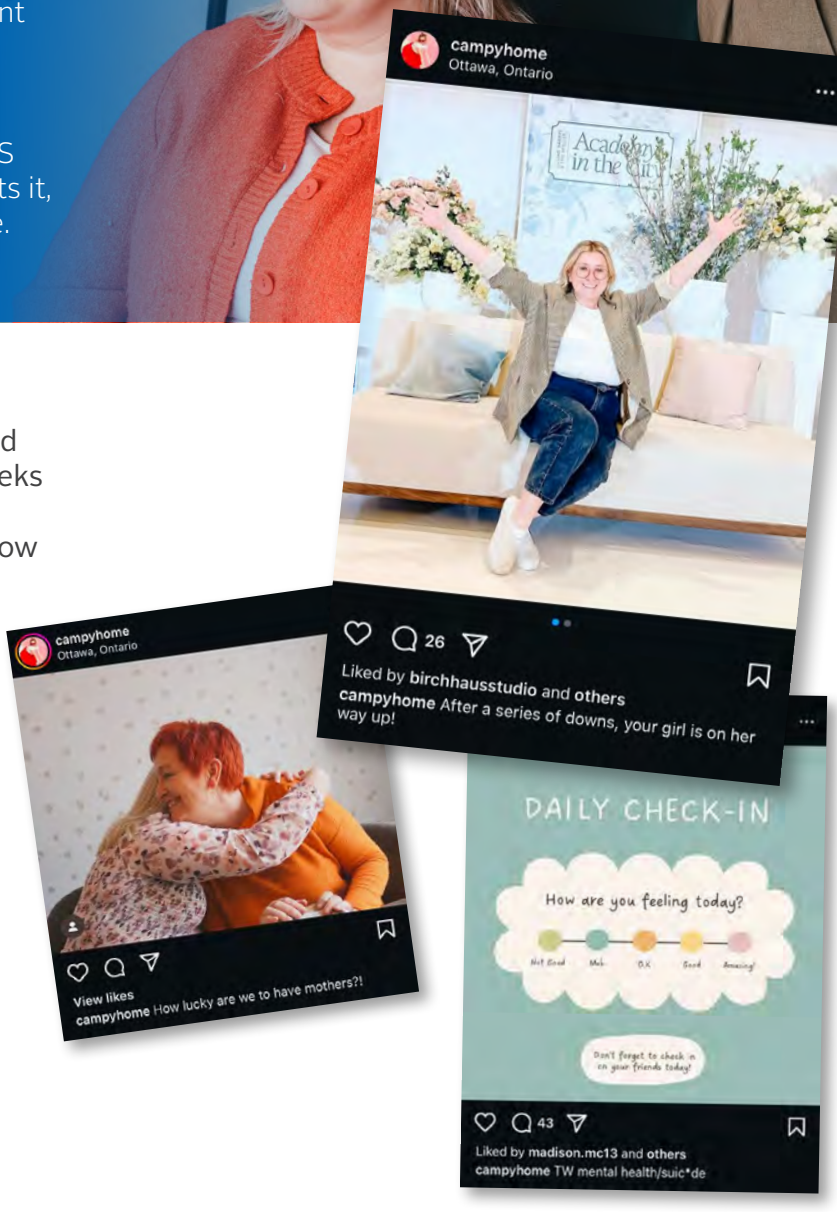


REDISCOVERING HAPPINESS

At first, she was skeptical. "Magnets? How could that possibly work?" However, within three weeks of starting treatment, Michelle felt something she had not felt in years: happiness. "I didn't know happiness could feel like that."

Michelle continues to speak openly online. "There has been nothing more comforting to me than sharing my story," she says. "Not enough people know about rTMS. I hope that by talking about it, more people will be able to access it."

Because of donor support, stories like Michelle's are possible. Your generosity has helped expand The Royal's rTMS research centre, giving even more people new tools to rediscover happiness and reclaim their lives.



5,000 scans and counting

The Royal's Brain Imaging Centre (BIC) is a regional hub of excellence for neuroimaging, using its combined positron emission tomography–magnetic resonance imaging (PET-MRI) machine to study brain structure, connectivity, and function. These capabilities provide critical insights into mental illness and addiction and drive innovations in care.

Since opening in 2016, the BIC has been at the forefront of discovery, and in early 2025, it reached a major milestone: 5,000 completed brain scans. Each scan contributes to a growing body of data that is shaping how we understand, identify, treat, and prevent mental illness.

A HUB FOR COLLABORATION AND INNOVATION

The advanced technology and expertise at the BIC is leveraged by researchers at The Royal and across the broader community. At an inaugural neuroimaging retreat, The Royal hosted nearly 100 scientists, clinicians, engineers, and physicists from across Eastern Ontario to deepen our understanding of the brain and lay the groundwork for future discoveries. The event's success highlights the incredible possibilities that emerge when diverse minds come together with a shared commitment to transforming care.

PHOTO: The organizing committee of the Ottawa Neuroimaging Retreat includes The Royal's Dr. Jennifer Phillips, Patricia Burhunduli, Katie Dinelle, Dr. Tram Nguyen, and Jessica Drodge

EXPANDING THE POTENTIAL OF PET IMAGING

Thanks to donors, The Royal recruited a PET radiochemist, who has quickly accelerated regional collaboration and advanced the capabilities of the PET-MRI machine.

"PET imaging is a powerful tool that allows us to visualize brain activity and function, offering essential insights into the development of mental illnesses and the effectiveness of treatments. This technology relies on specialized radiotracers, which are challenging to produce and require the expertise of a dedicated radiochemist. Having this specialized knowledge available at The Royal's Brain Imaging Centre is invaluable, enabling us to maximize the potential of PET imaging for pioneering mental health research."

— DR. HUSSEIN BDAIR,
PET Development and Production Radiochemist

Opening a New Music and Mental Health Research Centre at The Royal

On November 5, 2024, The Royal opened its Music and Mental Health Research Centre with an event emceed by renowned health journalist André Picard and a keynote address by General Roméo Dallaire.

The new Centre, under the leadership of its Director, Dr. Gilles Comeau, will focus on demonstrating how community-based music programs can improve wellness for individuals facing mental health challenges. Dr. Comeau hopes that by gathering robust data on the health benefits of music, healthcare professionals will one day have the evidence they need to integrate—and even prescribe—musical programming as a proven way to enhance mental health and well-being across all ages.

With several innovative research projects already underway, the Centre is exploring how music can establish new pathways for preventing and helping to treat mental illness.

EXPLORING THE HEALING POWER OF INDIGENOUS DRUMMING

Drumming and singing are central to Indigenous culture, fostering healing and community connection. In partnership with the Wabano Centre for Aboriginal Health, researchers at The Royal are studying the transformative mental health benefits of drumming. This collaboration blends traditional practices with modern research.

MUSIC AND MENTAL HEALTH FOR OLDER ADULTS

Researchers at The Royal are exploring the impact of Music and Movement Groups for older adults to improve mood, sleep, social interaction, and physical health. These gentle, social activities provide a way for participants to connect and express emotions, even after experiencing loss in function that can come with aging.

SUPPORTING MENTAL HEALTH IN MUSICIANS

Musicians face some of the highest rates of mental illness. To address this, The Royal is launching a mental hygiene program tailored for music students and professionals. The program promotes daily mental health practices and collects data to better support the music industry's unique challenges.

PHOTO: From left, General Roméo Dallaire; Cara Vaccarino, President and CEO, The Royal; Dr. Florence Dzierszinski, President, Institute of Mental Health Research (IMHR), The Royal; and Dr. Gilles Comeau, Director, Music and Mental Health Research Centre, The Royal

Research Spotlight

Research at The Royal takes many forms, using innovative techniques that are gaining attention both locally and internationally. These diverse approaches highlight our commitment to advancing mental health care through collaboration, technology, and groundbreaking research. Here are a few more examples of our team's transformative work:

MAPPING DIGITAL SIGNATURES TO PREDICT SUICIDE RISK

Artificial intelligence (AI) is a prevalent and, for many, a daunting topic, but one of its greatest areas of impact will undoubtedly be in healthcare. A research team, led by Dr. Jennifer Phillips, Interim Scientific Director, and Dr. Zachary Kaminsky, DIFD Mach-Gaensslen Chair in Suicide Prevention Research, is using AI to predict suicide risk using electronic health records. By analyzing 350,000 electronic health records from Ontario, covering all psychiatric inpatient admissions from 2008 to 2020, these researchers are identifying patterns in suicide risk to better inform when and how to intervene.

AMBULATORY SLEEP MONITORING WITH AN INTEGRATED WEARABLE SYSTEM

Quality sleep is essential for brain function and restoration, but many people with mental illness struggle to get the rest they need. An increasing demand on sleep clinics is pushing researchers to find alternative ways to measure and personalize sleep care. A team at The Royal, led by Dr. Rébecca Robillard, is utilizing wearable technology to monitor sleep patterns at home. Research like this promises to improve both mental and physical health, particularly for individuals with mental illness, by enhancing and personalizing treatment options for better sleep management.

RECOGNIZING DR. PIERRE BLIER AS A TOP SCHOLAR WORLDWIDE

Dr. Pierre Blier, a clinician-scientist at The Royal, is internationally acclaimed for his pioneering work in treating mood and anxiety disorders. He was recently ranked among the top 0.03 per cent of scholars in medicine and third worldwide in antidepressant research by ScholarGPS, a highly regarded analytics platform.

With over 35 years of contributions to mental health research, including 20 years at The Royal, Dr. Blier's work has been instrumental in advancing the field. His groundbreaking work at The Royal includes being the first in Canada to study ketamine as a treatment for depression. Since then, donor support has been crucial in expanding the boundaries of his work.

Sharing our new Strategic Research Plan

In 2024, The Royal launched its Strategic Research Plan, setting the course for research progress through 2033 and beyond.

Research is Care: Empowering Lives through Mental Health Solutions for All outlines a bold plan to maximize The Royal's impact in research, innovation, patient care, and community engagement, driving real change for those affected by mental illness and addiction.

We invite you to explore the Strategic Research Plan, and are grateful to you for joining us in shaping the future of mental health care.

Thank you

Research *is* care. With every breakthrough, new initiative, and brain scan, we are moving forward together, proving that remarkable progress is possible.

As you reviewed this report, we hope you saw how your support is making a difference—whether it's predicting suicide risk through AI or advancing ketamine treatments for depression. These initiatives are bringing us closer to a future where mental health care is not only more effective but also reaches more people in need.

Your support also empowers us to set ambitious research goals—for this year, and for the next five years and beyond, as outlined in our Strategic Research Plan. This roadmap builds on years of progress and sets the stage for even greater breakthroughs.

None of this would be possible without your belief in the transformative power of research. Thank you!

CHRIS IDE
President, Foundation at The Royal

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President and CEO, IMHR and Vice-President of Research at The Royal

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