

Leading the way in cancer research

Research Impact Report 2024–25



Dr Sharon Gorski

CCS-funded researcher



Canadian
Cancer
Society

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SOCIETY**

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“There are unexpected gifts along this journey and I really look at donors like one of those gifts. It’s just such a blessing to know that there are people out there who care enough to give what they can and to be a part of something bigger than they are.”

— Cynthia Mitchell, 2023 Breakthrough Team Grant - Patient Partner

“Without the donors, without these contributions, none of us would be able to do what we do. What we can achieve in 5 years could take 20 or 30 years. So the contribution that you might think is not that big actually makes a difference. And this is not a cliché – it’s a reality.”

— Dr Islam Elkholi, CCS-funded researcher, Jewish General Hospital



“I am forever in debt to those who allow me and my team to pursue our life mission to improve outcomes for cancer patients. Receiving financial support is a privilege and a humbling expression of trust in our work and goals.”

— Dr Leandro Venturutti, CCS-funded researcher, BC Cancer

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Big challenges, bold thinking – powered by you

It’s an incredibly exciting time for cancer research. Unprecedented cross-sector collaboration, technology-powered discoveries and strong patient involvement in research are accelerating advancements that are saving and improving lives – both at home and around the world.

Thanks to your generosity, the Canadian Cancer Society (CCS) is playing a vital role in driving this progress. Last year, we invested \$50.8 million in world-class research and innovations. We challenged our research community to boldly tackle cancer’s toughest questions.

In this report, you’ll read about how CCS-funded research is changing lives and transforming cancer care. Because of your support in 2024-25, almost 4,000 people in Canada were able to participate in clinical trials. We invested in critical research into metastatic cancer, research to advance health equity, and research with the potential to revolutionize cancer prevention, detection and treatment.

Our rigorous, independent funding approach allows us to invest in the most promising research of today, with confidence that it will lead to tomorrow’s breakthroughs. This report also includes stories about historic, practice-changing research that your continuous support has enabled.

For the 2 in 5 people in Canada who will be diagnosed with cancer in their lifetime, we are determined to increase cancer survival, stop cancer before it starts and improve the lives of those affected by cancer. But we can’t do it alone – it takes a society. Together, we are creating a world where hope and progress go hand in hand, and a future in which no one faces cancer alone.

We are deeply grateful for your support.

Thank you.



Andrea Seale

Chief Executive Officer
Canadian Cancer Society



Dr Stuart Edmonds

Executive Vice President
Mission, Research and Advocacy
Canadian Cancer Society



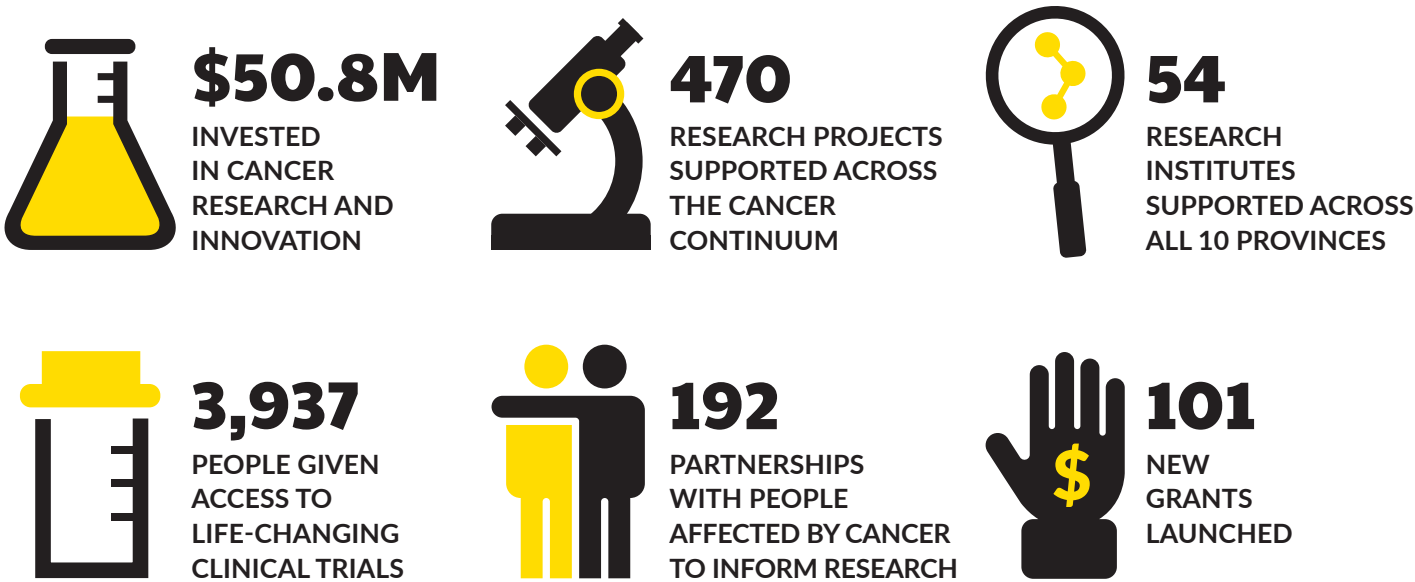
Dr Jennifer Jones

Scientific Chair
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Our research at a glance

The Canadian Cancer Society brings together researchers, donors, communities and people with lived and living cancer experience to drive collective action against cancer. Your donations fuel life-saving cancer research across Canada – giving us better prevention, testing, treatments and care for those facing cancer. In 2024-25, thanks to your support, we invested over \$50.8 million in research and innovation. This vital funding has helped scientists hire expert teams, access cutting-edge technology and equipment and bring new discoveries to the people who need them most.

Thanks to your generosity, here are some of the steps we took in 2024-25:



“We are truly working our hardest every day to reduce the incidence and burden of this terrible disease. We believe, with your support, that we will continue to be successful in this pursuit.”

– Dr Gillian Hanley, CCS-funded researcher,
University of British Columbia

CCS-funded practice-changers

The ultimate goal of cancer research is to save and improve more lives by transforming how we tackle cancer – not just in one lab or one clinic, but across the cancer care system. Important progress is made when experimental research is shown to be more effective than our current approaches to cancer prevention, detection and treatment.

Thanks to continued donor support, CCS has a history of funding research that has changed standard practice. Here are 3 examples of CCS-funded practice-changing research from the past 25 years.

Better breast imaging

Some breast cancers are hard to detect with a mammogram alone, especially in people with *BRCA* gene mutations who are at higher risk. In the past, many of these individuals were advised to consider preventive mastectomy – surgery to remove healthy breast tissue – because earlier screening tools weren’t reliable enough. Dr Ellen Warner studied whether adding MRI scans to regular screening could help.

She found that combining mammograms with MRI can detect almost all early-stage breast cancers in people with *BRCA* mutations. This gives people at higher risk of breast cancer a safe, effective option that can reduce the need for preventive mastectomies.

Today, thanks to this important research, MRI is part of the standard screening protocol in some regions for people with a high risk of breast cancer.



Dr Ellen Warner



Guiding lung cancer treatment decisions

About 32,000 people in Canada will be diagnosed with lung cancer each year. Adenocarcinoma is a common type of lung cancer – but not all cases are the same. Some grow quickly, while others respond better to certain treatments. To understand these differences, Dr Lesley Seymour and Dr Ming-Sound Tsao studied what adenocarcinomas look like under a microscope. They identified five distinct subtypes, each with its own behaviour and treatment response.

Doctors now use these subtypes to help predict how a person’s lung cancer will act and to choose the treatment most likely to be successful.

Watching and waiting

Not all prostate cancers need to be treated right away. Some types grow very slowly and may never cause serious problems. But in the past, even people with low-risk prostate cancer often received immediate treatment, like surgery or radiation, which can cause serious side effects. Dr Laurence Klotz and his team studied whether people with low-risk prostate cancer could safely choose active surveillance (regular check-ups with no treatment unless the cancer grows) instead.

Their results were impressive: 10- and 15-year survival rates of 98% and 94%. This shows that active surveillance is a safe alternative to immediate treatment for low-risk prostate cancer – an approach that is now the global standard of care, improving lives all around the world.



Celebrating research progress

Because of your generosity, CCS-funded researchers are driving remarkable advancements that are transforming the future of cancer. Here are three examples of recent breakthroughs that are making a meaningful difference for people facing cancer.

Customizing cancer care

Dr Julia Burnier's research is making new cancer tests more sensitive so that treatment can be personalized safely, easily and quickly

What if a simple blood test could tell your doctor everything they needed to know to personalize your cancer treatment?

That's the goal Dr Julia Burnier, a CCS-funded researcher at McGill University, is working towards with a new type of test called a liquid biopsy.

"We are in an era of targeted therapies – moving away from a one-size-fits-all approach and moving towards giving the right treatment at the right time," says Dr Burnier, whose work aims to offer better ways of deciding what treatments are needed when.

"One of the challenges is that cancer is constantly evolving and changing. Traditional biopsies are invasive, costly and only give us a static view of a patient's disease. Liquid biopsy fills this gap – offering a non-invasive alternative that can be repeated over time."

Traditional biopsies involve surgery to remove pieces of tissue from the tumour to analyze. Liquid biopsies use samples of blood, saliva or urine instead. Because these samples are easier to collect, the procedure is faster and more comfortable. It carries much less risk because there's no need for surgery.

"Using these samples, we can detect cancer-related biomarkers like cancer cells or the DNA that comes from those cells," Dr Burnier explains. "This approach enables earlier detection, real-time monitoring of treatment response and better understanding of how cancer changes over time. All of this can lead to more personalized and effective care."

Dr Burnier's goal is to make liquid biopsies better by understanding how tumour DNA changes in response to treatment. That way, people who are in treatment

for cancer can have regular blood tests to check their progress and change treatments if needed. With tissue biopsies, this is difficult – sometimes even impossible.



Jennifer Coish

"As a cancer patient who had to undergo multiple biopsies, the idea of a painless liquid biopsy with zero downtime for healing and zero chance of infection or complications would be a game changer for so many patients," says Jennifer Coish, a patient advocate and CCS advocacy volunteer. "All too

often, patients have to wait multiple weeks for the results to come back on their samples. By doing liquid biopsies, we could save time, money and invasive procedures for cancer patients who already face enough challenges in today's healthcare system."

Thanks to Dr Burnier and other researchers in the field, we can now detect tiny fragments of tumour DNA more sensitively than ever. "This allows us to monitor disease over time using highly sensitive approaches," Dr Burnier explains. "For example, after a patient finishes treatment, we can now check if they have what we call molecular disease – tiny evidence of cancer that would not be detected on imaging."

Detecting molecular disease early means it can be treated before it progresses.

"By understanding disease at this molecular level in real time, we can customize – or personalize – treatment," Dr Burnier explains. "This means we give only the treatment needed when it's needed. This will improve care but also have significant impact on quality of life of those living with cancer."



Dr Julia Burnier
CCS-funded researcher
McGill University

An IDEAL solution

CCS-funded researchers Dr Renelle Myers and Dr Rayjean Hung are advancing lung cancer diagnosis to enable earlier treatment and save lives

Murray, a 67-year-old Vancouver resident, believes participating in a CCS-funded study saved his life. Thanks to the work of Dr Renelle Myers and Dr Rayjean Hung, Murray was diagnosed and treated for lung cancer much earlier than he would have been if they'd used standard screening protocols.

"Today, I am 100% recovered," says Murray. "For me, bouncing back was easy because this was caught so early. I am so grateful this is in the rear-view mirror."

Lung cancer is the most commonly diagnosed cancer in Canada and the leading cause of cancer death. When lung cancer is detected and treated early, over 80% of people survive five years or longer – but, without screening, that rate drops to just 19%. Dr Myers, Dr Hung and their colleagues want to make sure as many people as possible are in that first group.

That's why, in 2021, Dr Myers began her CCS-funded research with a grant to study breath and sweat tests for lung cancer. By analyzing the chemical composition of breath, she and her colleagues were able to spot changes that signalled the presence of cancer.

Building on that early work, Dr Myers and Dr Hung received a Breakthrough Team Grant in 2023 to tackle lung cancer diagnosis from all sides. With support from CCS and the Lotte & John Hecht Memorial Foundation, they brought together a team of around 20 researchers, patient partners and knowledge users across Canada to improve early lung cancer detection.

Using AI, the researchers are working on markers in the breath and blood that can flag potential lung cancer before people show any symptoms. At the same time, they have developed an AI-assisted tool to help determine whether incidental pulmonary nodules – lung growths seen on scans taken for other reasons – are cancerous or not.

The researchers now have breath-testing devices in place at three clinics across Canada, with about 800 people enrolled in testing. Their new process for analyzing CT scans is also in use via the IDEAL (Improving Detection of EARly Lung cancer in a diverse population) clinical trial. So far, the process has detected lung cancer in 4% of participants – double the rate detected by standard screening.

"The majority of our participants are not eligible for lung cancer screening because they are not tobacco users," Dr Myers explains. "This is exciting and demonstrates that it is important to have concurrent screening and incidental pulmonary nodule programs to expand the reach of early lung cancer detection."

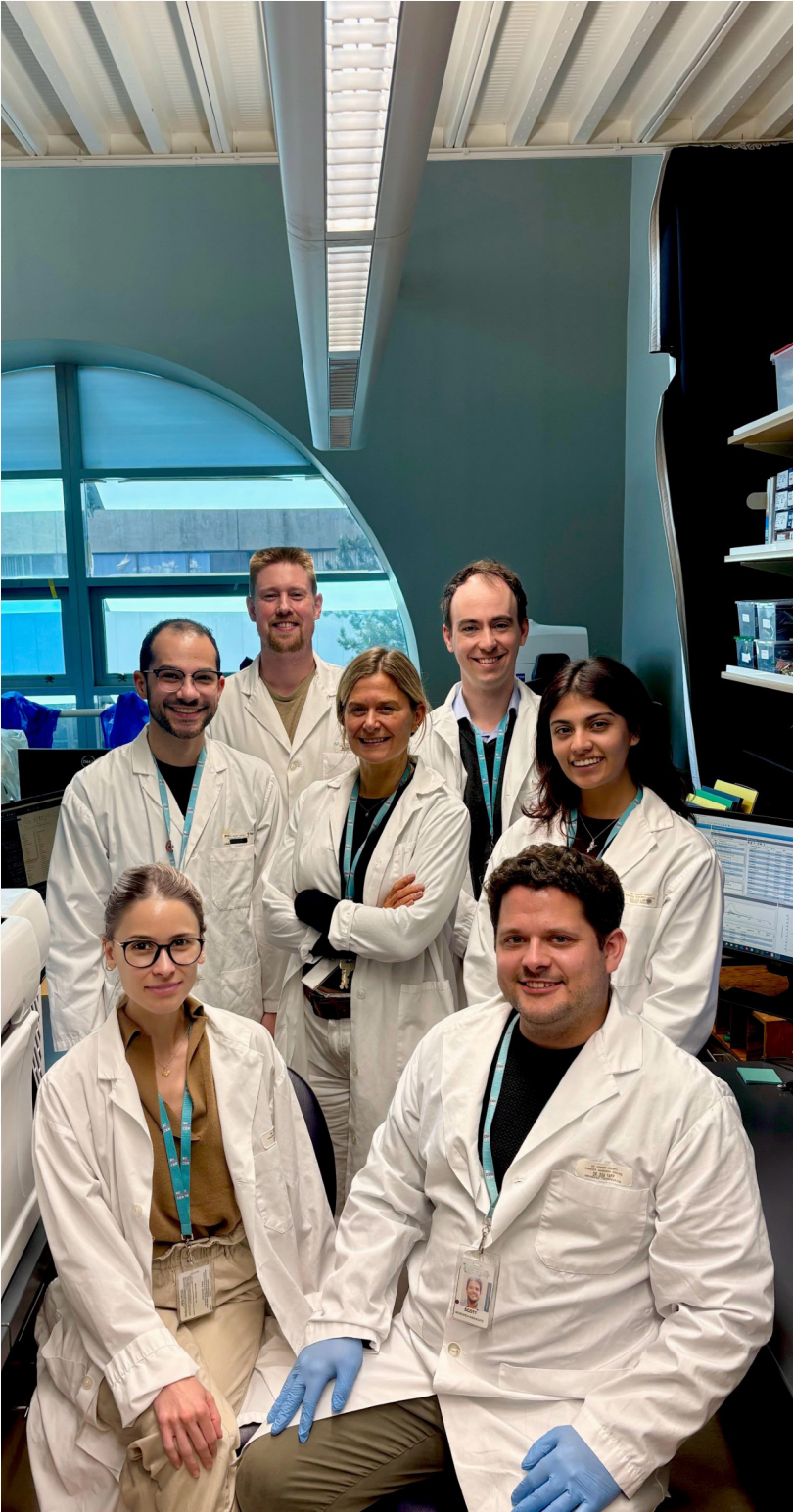
The next step for Dr Myers, Dr Hung and their team is to roll out their new pulmonary nodule clinics at three sites across Canada. These clinics are designed to care for people who have had lung growths found incidentally on CT scans.

"This is true research translation – using the results and knowledge gained through the study to create a real clinical pathway that will alter patient care for the better," Dr Myers says. "This is the ultimate success in research."

Today, Murray says he is 100% recovered and back to activities like cycling. "This has been almost off my radar because the team took such great care of me start to finish," he says. "I couldn't ask for a better outcome. Having Dr Myers's team find my scan and detect my cancer as early as possible was life-saving."



Dr Rayjean Hung (blue coat) and her research team
Mount Sinai Hospital



Dr Renelle Myers (centre) and her research team
BC Cancer

Improving eye cancer diagnosis

Dr Zaid Mammo is developing scans that make diagnosing eye tumours easier, safer and less painful – driving timely treatment for cancer

A diagnosis of eye cancer can come as a shock. “You never think something like eye cancer could happen to you,” says one 54-year-old diagnosed with uveal melanoma, the most common eye tumour in adults. “It was overwhelming, and I had so many questions.”

Eye cancer can be difficult to diagnose. Many eye tumours are benign and, often, the only ways to tell which ones are cancerous are to monitor them for growth or perform a biopsy, which involves removing cells from the tumour or the eye using a needle. Doctors prefer to do this only when necessary because it can be hard to get a sample of the tumour without damaging the eye or spreading the cancer – and even successful biopsies can be painful or invasive for the people receiving them.

To give people an alternative, Dr Zaid Mammo and his team at the University of British Columbia have used a CCS Challenge Grant to develop a new form of eye imaging called polarization-diversity optical coherence tomography (PD-OCT). These scans seek to identify cancerous tumours in the eye and even spot benign tumours that show signs of turning into cancer.

“This technology helps doctors see what’s happening inside the eye in much more detail without needing surgery,” explains the patient, whose cancer has been monitored using PD-OCT. “That means they can catch problems earlier and treat them before things get worse.”

Uveal melanoma is a serious diagnosis – and its prognosis hasn’t changed much in over 50 years. That’s why support for studies like these is so important. “CCS funding allowed us to build the prototype, validate it in clinical settings and support the research team to push the technology forward,” says Dr Mammo. “Every dollar helps bring us closer to a real-world impact for patients.”

Now, the researchers are testing how well it performs in their clinic, hoping to bring it to clinics across Canada. “Our pilot studies have shown promising potential to distinguish changes within recurrent melanoma that were not reported before,” says Dr Mammo. “We hope to be able to use these changes in diagnosing patients with suspicious lesions.”

Dr Katherine Paton, head of the ocular oncology service at the Eye Care Centre in Vancouver, is already using Dr Mammo’s system. Instead of waiting to see eye tumours grow over time, the technique could allow doctors like her to diagnose and treat eye cancer early and non-invasively. “There will be fewer metastases and improved long-term survival if cancers are identified early,” she explains.

But research is vital to continuing this progress. “Innovations like PD-OCT won’t happen without investment in niche, high-impact research,” says Dr Paton. “Funding helps us move from clinical suspicion to precise, real-time diagnostics that save sight and lives.”



Dr Zaid Mammo
CCS-funded researcher
University of British Columbia



Clinical trials: Turning discovery into hope

Clinical trials rigorously test the effectiveness of new ways to prevent, detect and care for people with cancer. Through clinical trials, we achieve more accurate tests, more effective treatments and better support for people living with and beyond cancer. They are the key to continually validating and advancing our knowledge of cancer.

Through your donations, CCS supports independent clinical trials and provides foundational funding to the Canadian Cancer Trials Group (CCTG), Canada’s largest cooperative group for cancer clinical trials. In 2024, we invested over \$16 million, enabling almost 4,000 patients to access new interventions through 119 clinical trials. But we can’t stop here – tomorrow’s wave of game-changing treatments depends on our investment in clinical trials today.

Here are 3 CCS-funded trials whose groundbreaking results have made headlines in the past two years.

Dropping lung cancer’s defenses

For people diagnosed with mesothelioma – a rare and aggressive type of cancer – treatment options have long been limited, especially when the disease is found late. CCTG and Dr Quincy Chu led an international clinical trial focusing on improving outcomes for these patients. The team tested whether adding pembrolizumab (Keytruda), a drug that helps the immune system recognize and attack cancer, could improve outcomes when used alongside standard therapy. The results were significant: this combination reduced the risk of death by 21% compared to standard treatment alone. The treatment is now approved in Canada, the United States, Europe and Japan – an encouraging step forward for people facing one of the toughest cancer diagnoses.



Safer, simpler surgery

Around the world, people with early-stage cervical cancer are often treated with a radical hysterectomy, a major surgery that can have a lasting physical and emotional impact. To determine whether an easier procedure could work just as well, Dr Marie Plante and her colleagues conducted a clinical trial involving 700 women from 12 countries. They compared outcomes between two types of surgery: the traditional radical hysterectomy and a simpler, less invasive version. The results were clear and encouraging – both procedures had similar recurrence rates, but those who received the simpler surgery experienced better overall survival and improved quality of life. Now, people with early-stage cervical cancer can be effectively treated with this less invasive approach.



“Without a clinical trial, you can’t bring a medical development into the clinic. They’re essential.”

— Dr Elijah Van Houten, CCS-funded researcher, Université de Sherbrooke

Exercise for life

In a world-first clinical trial that spanned 17 years, Dr Christopher Booth, Dr Kerry Courneya and their international colleagues explored whether adding regular, guided exercise to treatment plans could improve long-term outcomes for people with colon cancer. Participants in this CCTG-led clinical trial either received standard health education materials or a 3-year structured exercise program.

The results were remarkable: those who received the exercise support had a 28% lower risk of cancer returning or a new cancer developing and lowered their risk of death by 37%. The effectiveness of exercise programs is impressive and the trial validates this as a bold new avenue of care.

Terri Swain-Collins

Participant in Dr Booth and Dr Courneya’s clinical trial

Our latest research programs

Throughout 2024-25, we continued to fund scientifically excellent and impactful research. With support from donors and partners like you, CCS-funded researchers are working with people who have experienced cancer to make new discoveries, elevate current care standards and pursue a better tomorrow for everyone affected by cancer.

Disruptive Innovation Grants

Due to the complexity of cancer research, bold ideas that could revolutionize cancer prevention, detection and treatment often struggle to secure initial funding. In partnership with the Lotte & John Hecht Memorial Foundation, we invested \$3.6 million into the 2025 Canadian Cancer Society/Hecht Foundation Disruptive Innovation in Cancer Research Grants. This program supports 15 innovative early-stage research projects – unique because they are high-risk, high-reward ideas with the capacity to disrupt existing methods and transform the future of cancer.

Breakthrough Team Grants

It takes big ideas – and bold researchers – to help more people live well with and beyond advanced cancer.

Building on the success of the program’s 2023 debut, CCS launched the 2025 Breakthrough Team Grants: Transforming the future of metastatic cancer to encourage big-picture thinking and collaboration. These projects aim to reshape how we care for people with advanced cancer and tackle critical gaps in our understanding of how cancer recurs, so we can save more lives. We invested \$17.8 million in three research teams – a total of 103 scientists, clinicians and patient partners – to help them better understand and manage advanced cancer. Each grant focuses on priorities identified by people with lived experience of cancer, who are also key participants in the research.



“What I’d really like to say to the donors who funded the Breakthrough Team Grants is: Thank you. Thank you for providing this opportunity and the vision for us to really make a profound change and a difference in the lives of people suffering from advanced cancer and their caregivers, and the healthcare system as a whole.”

— Dr Linda Carlson, CCS-funded researcher, University of Calgary

Health Equity Grants

Cancer can affect anyone, but it doesn’t affect everyone equally. That’s why advancing cancer-related health equity is critically important. For this purpose, we committed \$5.5 million to the 2024 Health Equity Grants, supporting 14 projects created in collaboration with people affected by both cancer and structural marginalization. The program is designed to address systemic and institutional barriers to cancer prevention, detection and care by working hand in hand with members of marginalized communities in Canada.



Data Transformation Grants

Developed in collaboration with the Canadian Partnership Against Cancer and the broader cancer community, our Pan-Canadian Cancer Data Strategy supports the mobilization of data to improve information quality, efficiency and accessibility across research networks. As part of this strategy, we invested \$2.1 million into the 2024 Data Transformation Grants, supporting 9 projects that will unlock the power of data for more equitable, affordable and higher-quality cancer prevention and care.

Thank you to our funding partners and the trusted research institutions who make this important work possible

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Research Institutions

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CHU Sainte-Justine Research Centre
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IWK Health
Jewish General Hospital



Thank you!

Your support of cancer research is helping us drive meaningful progress that can save and improve lives. Together with our donors, partners and supporters, we are leading the way to a future without cancer.

To learn more about our research or make a donation, visit cancer.ca or call 1-888-939-3333.

Contact us

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