



Tender
Loving
Research

Cancer Research

The world turns to The Ottawa Hospital for answers to its most complex healthcare challenges.

Research breakthroughs at The Ottawa Hospital mean better care and life-saving medicine. Everyday we look beyond the laboratory and see the results of what we do – lives saved, better care, suffering stopped. We relentlessly pursue answers to the world's most challenging health care problems and we do so with knowledge, experience and care. Our research is fuelled by a passion to create made-in-Ottawa solutions for a healthier world.

Join our campaign and let's give the world a little Tender Loving Research.



PAULA HELMER
"I just needed a little TLR."

The best cancer treatment begins with research

New drugs, personalized treatment plans and groundbreaking clinical trials are the hallmarks of cancer research at The Ottawa Hospital.

Recognized around the world as a leader in cancer research, the Ottawa Hospital Research Institute is focused on biological therapeutics, which use molecular science to build better treatments with the goal of one day finding a cure. Researchers are also focused on improving patient care by developing innovative approaches for the assessment, treatment and prevention of cancer. These twin pillars of research – creating new therapies and improving patient care – are benefiting cancer patients every day.



MADE IN OTTAWA RESEARCH FOR A HEALTHIER WORLD

THE OTTAWA HOSPITAL FOUNDATION
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Made-in-Ottawa cancer therapies for a healthier world

In the next few years the Ottawa Hospital Research Institute will undertake some of the most important clinical trials in the history of the collective battle with cancer. Researchers will also conduct groundbreaking genetic research to map the pathways of certain cancers and develop personalized therapies.

That's why we're raising **\$20 million** to expand the research team and research facilities. We will:

- Increase financial support for research teams and attract top recruits from around the world
- Retrofit research facilities to ensure researchers have the latest tools to compete and work with top global research centres
- Renovate facilities for manufacturing cancer therapies used in patient clinical trials
- Purchase new equipment to purify, visualize and study cancer cells, and conduct clinical trials

Researchers and clinicians at The Ottawa Hospital are advancing the future of cancer care - now

Last year alone, 2,200 cancer patients in our region took part in clinical trials at the Ottawa Hospital Research Institute, and thousands more around the world participated in trials led by our researchers. Our commitment to bringing research from the lab to the bedside means new drugs, new treatments, and better care for cancer patients at The Ottawa Hospital and around the world.

- Dr. John Bell discovered a number of **viruses that attack cancer cells** without harming healthy cells. These oncolytic viruses have been tested in more than 100 patients around the world, including many at The Ottawa Hospital, and with promising results. Dr. Bell and his colleagues initiated another round of clinical trials, and they are also working in the laboratory to develop strategies to make this kind of therapy even more effective.
- Dr. Derek Jonker led the world's largest clinical trial of a targeted **colorectal cancer** therapy called cetuximab. Patients who received this treatment survived 23% longer and had significant improvements in quality of life. Dr. Jonker's research showed that cetuximab was only effective for people with a certain genetic marker. Testing for the gene is now fairly standard, allowing patients to get personalized treatments.
- Several researchers at the Ottawa Hospital Research Institute, including Drs. Ian Lorimer, Glen Goss, Christina Addison and Jim Dimitroulakos, are developing and testing novel therapies for **lung cancer**, including targeted drugs and combination treatments. Their research is also helping with the development of molecular tests to predict which patients will respond best to these drugs. This will help with the development of personalized treatment plans for patients.
- Dr. Rebecca Auer is investigating approaches to improve the success of **cancer surgery**, including administering treatments around the time of surgery to prevent the cancer from spreading. Her work spans the full spectrum of health research, from basic laboratory science to clinical trials in patients.
- Dr. Mark Clemons is developing personalized treatment approaches for **breast cancer**, and his research is having an impact around the world. One of his recent clinical trials showed



"Made-in-Ottawa cancer discoveries are already making a difference in the lives of cancer patients, and we are part of a worldwide effort to find safe and curative treatments. I believe we can bring this disease to its knees. Science holds the answer, and research funding is the key."

*Dr. John Bell,
Senior Scientist, Cancer
Therapeutics Program,
Ottawa Hospital
Research Institute*



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that in 40% of women, **breast cancer** changes its molecular profile when it spreads to other organs. Clinicians now do a second biopsy to check the profile of the secondary cancer and to develop more exact treatment plans.

- Dr. Marc Carrier is investigating a **cancer-screening strategy** for people with unexplained venous blood clots. Previous research suggested these clots are sometimes linked to an undiagnosed cancer, so he initiated a clinical trial to determine if CT scanning may help catch cancers earlier in these patients.
- A number of researchers at the Ottawa Hospital Research Institute, including Drs. Marjorie Brand, Barbara Vanderhyden, and Bill Stanford are using **stem cells** to understand cancer and cell regeneration. Their research could lead to therapies for cancers that affect the blood, ovaries, lungs and other organs.

Cancer therapy today: The promise of personalized treatment

Whether it's testing for a specific genetic marker or protein in an individual patient and/or mapping the molecular pathway of a particular type of tumour, this is cancer research that means an end to one-size-fits-all cancer treatments. Our research will help determine who will benefit from genetic testing, how individual patients will metabolize cancer drugs, and how a tumour will respond to a targeted treatment.

Research changed a life

When retired economist Paula Helmer was told she had a deadly form of breast cancer that had spread to her neck and spine, there was no time for trial-and-error treatments. Doctors analyzed the molecular makeup of her tumour to identify which drugs would work best for Paula's particular cancer. Using the tumour's genetic profile meant she avoided chemotherapy and its side-effects. Now, years after her devastating diagnosis, Paula's cancer remains under control. She has an excellent quality of life and continues to participate in research. Due to the therapy that was tailored to her genetic makeup, she has suffered no major side-effects. Dr. Mark Clemons, a breast cancer specialist and researcher at The Ottawa Hospital, says that's what personalized medicine really means: "It's about giving the right drug to the right patient at the right dose at the right time, so the patient can live longer and better."

About the Ottawa Hospital Research Institute

Our goal at the Ottawa Hospital Research Institute is to make tomorrow's health care possible today; bringing new hope to our patients, while advancing health research at a global level. The Ottawa Hospital Research Institute is the research arm of The Ottawa Hospital and an affiliated institute of the University of Ottawa, with more than 1,700 scientists, clinical investigators, trainees and staff. In 2013, The Ottawa Hospital ranked in the top five per cent of more than 4,000 academic institutions worldwide for impact of research publications, and we are currently ranked third among more than 600 Canadian hospitals for research grants from the prestigious Canadian Institutes of Health Research. With the Ottawa Hospital Research Institute's unique commitment to having PhD researchers work alongside clinicians, new discoveries are quickly brought to the patient's bedside. Whether it's new drugs, new protocols or new medical practices, patients at The Ottawa Hospital benefit from research every day.



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