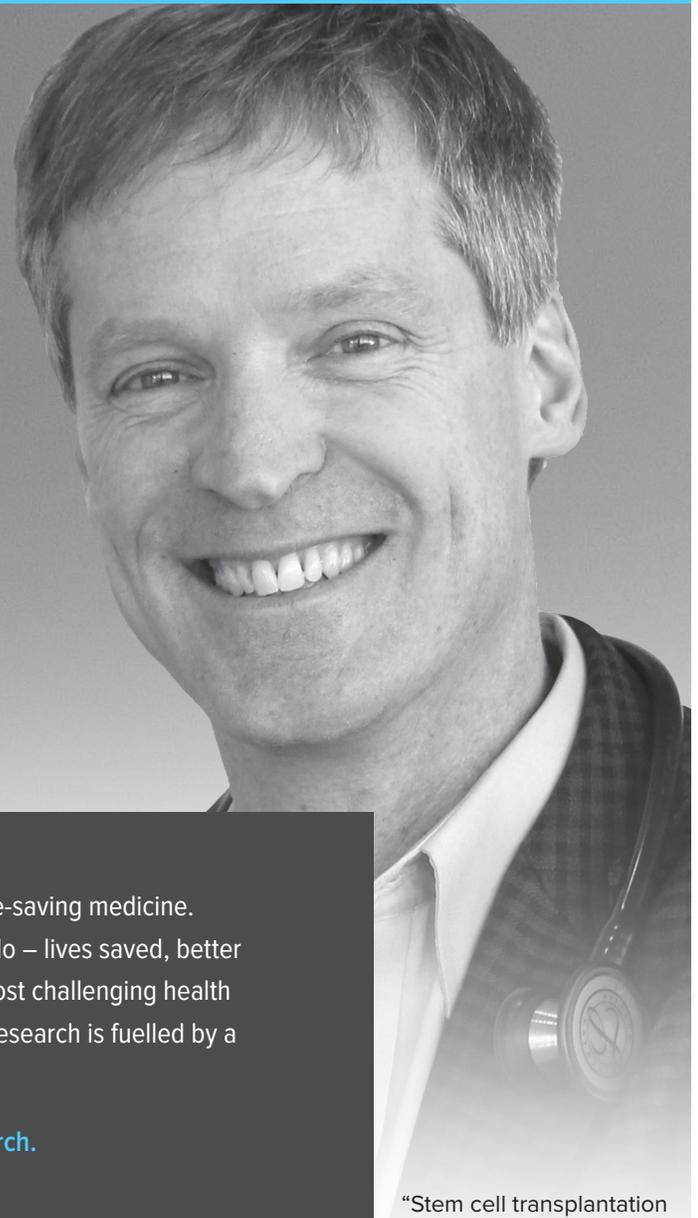




Tender
Loving
Research



Research Chair in Advanced Stem Cell Therapy

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**.

Novel forms of blood stem cell therapies are treating many kinds of diseases that – until now - have had no cure or effective treatment.

What is Bone Marrow Transplantation?

Bone marrow is the soft tissue inside bones, which contains blood-forming cells called blood stem cells. The red cells, white cells, and platelets found in the blood develop from stem cells. Blood stem cells in the marrow are also responsible for the making body’s immune system.

Healthy marrow and blood cells are necessary for normal life, but humans can develop a vast number of genetic or acquired disorders that affect the marrow’s ability to function normally. When this happens, an effective treatment to replace the unhealthy blood stem cells with healthy ones is a bone marrow transplant. Bone marrow transplants are predominantly performed to treat common blood cancers, such as leukemia, lymphoma and myeloma.

“Stem cell transplantation and targeted cellular therapies are rapidly changing. What was once thought of as science fiction is currently in clinical trials. A Chair in Advanced Stem Cell Therapies will help The Ottawa Hospital transform new approaches from local victories to standard therapies delivered around the world.”

Dr. Christopher Bredeson, Head, Hematologic Oncology and Bone Marrow Transplantation, The Ottawa Hospital



MADE -IN-OTTAWA RESEARCH FOR A HEALTHIER WORLD

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How Does a Bone Marrow Transplant Work?

There are two kinds of bone marrow transplants. Allogeneic transplants use healthy marrow cells from a matched donor, either family member or more commonly a volunteer unrelated donor. Autologous transplants use the patient's own marrow cells, sometimes after undergoing a purification process. In both cases, the patient undergoes chemotherapy and/or radiation to destroy any existing cancer cells and to eliminate their immune system and bone marrow. This prevents the patient's body from rejecting the marrow that has been transplanted. The patient then regenerates new marrow and develops a new immune system.

While offering hope for many ill patients, bone marrow transplantation is still far from perfect. Treatments are expensive, prolonged and risky, and in some cases, still experimental. The Ottawa Hospital is identifying how to use transplants for more diseases and for more kinds of patients.

Bone Marrow Transplants at The Ottawa Hospital

In 1981, the General Campus of The Ottawa Hospital was one of five health care centres in Canada to start performing bone marrow transplants. Initially, treatment was limited to patients under 40 years of age with a sibling donor. However, with improvements in transfusions, antibiotics, intensive care unit procedures, and other medical practices, the number of eligible patients now includes patients over 70. With the establishment of a bone marrow donor bank with more than 20 million donors worldwide, patients who cannot use their own bone marrow or that of a related donor now often have the ability to receive a potentially curative transplant.

The Ottawa Blood Disease Centre at the General Campus now provides care for more than 30,000 Ottawa-area patients and many from Northern Ontario. The Centre performs about 150 transplants a year (each one taking months to complete), and treats about 25 out of province patients. A long-time leader in developing transplant treatments, The Ottawa Hospital was a founding member of the Canadian Bone Marrow Transplant Group, which leads education and research initiatives nationally and collaborates with other professional societies internationally.

Patients at The Ottawa Hospital have access to more transplants for a wider set of illnesses than most countries in the world. Patients come from across Canada for transplant approaches pioneered or only available at The Ottawa Hospital. In fact, more experimental marrow transplants for immune disorders are performed at The Ottawa Hospital than in all of Great Britain.

The Ottawa Hospital also began using bone marrow transplant procedures for other deadly illnesses, particularly for crippling immune diseases. For example some patients with multiple sclerosis (MS) have their immune system regenerated from purified stem cells: the regenerated immune system no longer attacking the patient's nervous system.

The Ottawa Hospital has had great success with this therapeutic approach. over the last 15 years. Based on success with MS patients the team has branched out to treat other devastating autoimmune diseases such as Stiff Person Syndrome, Crohn's disease, myasthenia gravis and other MS-like illnesses.

Regenerative medicine is blazing a new direction in the treatment of chronic and fatal diseases. It has had astounding outcomes of halting some diseases, but it has not always reversed the damage already caused by the diseases. More stem cell therapy research is needed to develop effective ways to undo the damage caused by immune diseases, as well as target diseases more precisely. Our scientists and research clinicians are also focussing on this aspect of stem cell therapy.



“Traditionally, doctors have used blood stem cell transplantation to get rid of cancer in blood or bone marrow or lymph nodes. More recently, researchers are demonstrating that we can also use blood stem cell transplantation to reset the immune system. This offers huge potential for curing many cancers and immune-related diseases.”

Dr. Marc Rodger, Chief,
Hematology and Senior
Scientist, The Ottawa Hospital



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Ottawa Hospital researchers and clinicians are also working to boost the ability of patients' immune systems to combat their cancer cells, especially in the areas of leukemia and lymphoma. While these immune cells are present in healthy donor bone marrow, the ability to give only immune cells that kill cancer and spare normal tissues is not always successful. While the future of cancer treatments using targeted stem cell therapies is still in its infancy, it holds the promise of much greater success, with less toxicity than traditional treatment methods.

Why a Research Chair in Advanced Stem Cell Therapy?

Innovative stem cell therapy is already being done with great success at The Ottawa Hospital without a researcher dedicated to leading the clinical research in this area. However, huge potential exists under the guidance of a research chair to oversee the clinical application of new and novel techniques and treatments for fatal blood immune diseases and cancers.

A research chair will be a senior clinician-researcher who will play a key role in leading the first human clinical trials for innovative transplant-based therapies for some of the world's most devastating diseases, including blood cancers, muscular dystrophy, and spinal cord injury. The Chair will also be instrumental in overseeing larger multicentre national and international trials from implementation to completion, which will result in new solutions to fight disease.

With this Chair position, the potential exists for The Ottawa Hospital to further participate in global research into curing devastating acute and chronic illnesses for which there are no curative options.

"It is clear that without a research chair, a dedicated leadership position, it will be difficult to keep up, yet alone lead in this rapidly evolving field."

--Dr. Chris Bredeson

We are treating the most severe cases – patients who otherwise have no treatment options – and successfully treating them with revolutionary, innovative health care measures.

You Can Help

We are raising **\$3 million** to establish an innovative research chair position in Advanced Stem Cell Therapy at The Ottawa Hospital, in order to facilitate better treatment options for patients with untreatable and incurable diseases. Our research is fueled by a passion to create made-in-Ottawa solutions for a healthier world.

For more information, please contact Rob Gottschalk, Senior Director, Philanthropy at the Ottawa Hospital Foundation, 613-798-555, x 19498, www.ohfoundation.ca



"I still have MS, but I don't. I have no symptoms. Thanks to the work being done by incredible doctors in the field of stem cell research, I am standing here today. I am living proof that stem cell research can change lives."

Jennifer Molson is an MS patient who was wheelchair bound and had run out of treatment options. She underwent a stem cell transplant in 2002 and has been symptom-free for nearly 10 years.



"Before the transplant, I had no hope for a future. Now I have a future of hope. I was given a gift. I am so grateful to Dr. Atkins and his team of most extraordinary doctors and nurses. It is an amazing hospital. I am now an advocate for stem cell research."

Tina Ceroni had a rare disease called Stiff Person syndrome, a neuromuscular disease with an autoimmune component. It was life-threatening. Tina underwent a bone marrow stem cell transplant and has been symptom free for three years.

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