

Why we need our own accredited Hematology/ Stem Cell Transplant Program

- We need rapid access to specialists in blood and immune system cancers and related conditions.
- We need uniformity of care and expertise in one Saskatchewan-based centre.
- We need to improve access to treatment, and reduce money spent on health care in other provinces and/or the USA.
- We need to be treated in our own home province where family and friends can provide support.
- We need to reduce the personal non-medical costs associated with travel and relocation to medical centres outside the province or country.
- We need Saskatchewan to be part of the network of Canadian transplant centres, so that our residents have access to state-of-the-art knowledge and opportunities to participate in clinical trials and other research.
- We need a centre that not only carries out stem cell transplants, but provides diagnostic expertise plus pre- and post-transplant care within our province.

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Background Information

- The Provincial Hematology/Stem Cell Transplant Program was established in 1998 in Saskatoon to provide integrated services in both hematology (diseases of the blood system) and stem cell transplants.
- Comprehensive care is provided through an interdisciplinary team headed by specialist transplant hematologists.
- Patients are referred to the Program by physicians from around the province.
- More than 10% of all new Saskatchewan cancer cases are hematological in nature.
- There is an annual 2-3% increase in blood and immune system cancers and increasing provincial demand for stem cell transplants.
- Based on current treatment approaches, there is a need for 60 – 70 stem cell transplants per year in Saskatchewan. However, current funding and/or infrastructure for in-province care is limited to 30 – 40 transplants. As a result some patients, who could otherwise be treated within the province, have to be sent for treatment to other centres in Canada or the USA.
- The current Program does not meet emerging Health Canada regulations or international accreditation standards

STEM CELL (BONE MARROW) TRANSPLANTS SAVE LIVES



THE ABCs OF A STEM CELL TRANSPLANT

What are Stem Cells and Why are they Important?

Stem cells are the basic cells from which all our blood cells and immune system develop. These stem cells divide and mature into any one of three main types of blood cells found in an individual's body: red cells (which carry oxygen), white cells (which fight infections), and platelets (which assist in clotting). In adults most stem cells are found in the bone marrow.

When are Stem Cell Transplants Needed?

In some situations an individual needs to have the blood or immune system replaced. The treatment of choice in these situations is a stem cell transplant. Following treatment such as high-dose chemotherapy and/or total body irradiation, donated stem cells or an individual's own stem cells (if they have been extracted and stored prior to treatment) need to be infused into the patient after treatment to revive the blood cell production system.

Who Benefits?

Individuals with life threatening hematological (blood) cancers or other disorders of the blood system:

- **Leukemia** - acute and chronic cancer of the blood
- **Lymphoma** - cancer of the lymphatic system
- **Multiple Myeloma** - cancer of the bone marrow
- **Immune System Disorders, and some anaemias**

What are the Steps in a Stem Cell Transplant?

Step 1 - Collection and Processing

Stem cells are collected from the bone marrow or from the blood system of the patient or suitable donor. The stem cells are processed and prepared so they are in a suitable state for freezing or immediate transplantation.

Step 2 - Cryopreservation

If the patient's own stem cells are used, they are stored in a deep-frozen state. When donor cells are used, fresh cells are usually obtained at the time they are needed.

Step 3 - Preparatory Treatment

The patient undergoes conditioning treatment such as high-dose chemotherapy, total body irradiation and/or immune therapy which destroys both diseased and healthy cells. Depending on the type of cancer or disease, several cycles of treatment may be required.

Step 4 - Infusion

Healthy stem cells are introduced into the blood system. This is done by infusing the thawed stem cells or fresh donor cells in a process similar to a blood transfusion.

Step 5 - Engraftment and Recovery

The transplanted stem cells migrate to the bone marrow and begin to produce replacement blood cells, a process called engraftment. This provides the body with a new blood system and the start of recovery.

What Kinds of Stem Cell Transplants are There?

Stem cell transplants can be categorized according to the source of the cells:

Autologous Transplants

Stem cells are collected from a patient and infused back to that same patient after the patient receives treatment such as high-dose chemotherapy.

Allogeneic Transplants from a Related Donor

Stem cells are collected from a related donor, such as a sibling with a matching tissue type.

Allogeneic Transplants from an Unrelated Donor

Stem cells are taken from an unrelated donor (a volunteer registered with a bone marrow registry), who matches the patient's particular tissue type.

For further information contact:

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Additional Resources:

Canadian Cancer Society Information Service

1-888-939-3333 or Google the phrase:
"Canadian Cancer Encyclopedia"

Blood & Marrow Transplant Information Network

1-888-597-7674 or www.bmtnews.org

The Leukemia and Lymphoma Society of Canada

1-416-661-9541 or www.leukemia.ca

Multiple Myeloma Research Foundation

1-203-972-1250 or www.multiplemyeloma.org

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