



Stem Cell
Network

Réseau de
Cellules Souches

Powering Regenerative Medicine
Propulsons la médecine régénératrice

ALBERTA BY THE NUMBERS

SCN REGIONAL PROFILE

For nearly 25 years, the Stem Cell Network (SCN) has led the way in building national capacity in the field of stem cell and regenerative medicine by supporting world-class research and empowering leading researchers and trainees from coast to coast.

Stem cell and regenerative medicine researchers in **Alberta** are making important advancements in areas such as diabetes, cancer, genome engineering as well as in the study of Ethical, Legal, and Social Issues (ELSI).



FUNDS INVESTED IN ALBERTA RESEARCH

\$5,966,283

21

TOTAL PROJECTS
FUNDED

2

CLINICAL TRIALS
FUNDED

15

INVESTIGATORS
SUPPORTED

2

INSTITUTIONS
SUPPORTED

MATCHING FUNDS FROM PARTNERS

\$5,763,373

194

TRAINEES
SUPPORTED

Data from 2016 onward

SCN RESEARCHERS ARE WORKING ON:



DIABETES



CANCER



GENOME
ENGINEERING



ETHICAL, LEGAL,
AND SOCIAL ISSUES

WATCH US IN ACTION



STEMCELLNETWORK.CA



PATIENT-DERIVED STEM CELLS (SELF-ISLETS) AS A POTENTIAL CURE FOR DIABETES

Type 1 diabetes is a chronic autoimmune disease that affects more than 300,000 Canadians and costs the health care system approximately \$29 billion annually. Although lifesaving, insulin injection is not a cure for diabetes. The positive news is that innovative stem cell therapies may be the best answer for future treatment and a functional cure – and some of the most advanced research is taking place in **Alberta, Canada by Dr. James Shapiro and his team.**

Diabetes is caused by the lack of insulin, a hormone produced by the islet beta cells in the pancreas that is responsible for regulating blood sugar. Efforts to transplant islet beta cells have been successful in regulating blood-sugar levels in some patients with type 1 diabetes, but doing so means patients have to deal with lifelong anti-rejection drugs, and a shortage of donor organs hampers a wider rollout.

Dr. James Shapiro, Professor of Surgery at the University of Alberta and Canada Research Chair in Transplantation Surgery and Regenerative Medicine, is using his 20+ years of experience in islet transplantation (including his ground-breaking Edmonton Protocol for islet cell transplants) to replace the damaged beta cells in people with various forms of diabetes. His team's strategy is to use beta cells grown from a patient's stem cells to replace the damaged beta cells in people with various forms of diabetes, including type 1, type 2, and surgical diabetes caused by the partial removal of the pancreas. Using a patient's own stem cells to make "self-islets" would help the transplanted cells to be accepted by the patient's immune system and remove the need for anti-rejection drugs.

Ultimately, Dr. Shapiro and his team hope to develop a scalable solution to advance therapies for millions of people living with diabetes across the globe.

SINCE 2016, THE STEM CELL NETWORK HAS INVESTED NEARLY \$11.7M IN DIABETES RESEARCH in Canada for 24 research projects, including four clinical trials.



“Our research goal is to produce the world’s first functional cure for diabetes, enhancing the lifespan and quality of life for those diagnosed with this disease.”

Dr. James Shapiro
Professor, University of Alberta,
Canada Research Chair,
Transplantation Surgery
and Regenerative Medicine



**Stem Cell
Network**

Powering
Regenerative
Medicine

**Réseau de
Cellules Souches**

Propulsons
la médecine
régénératrice

The Stem Cell Network (SCN) is a national not-for-profit that funds stem cell and regenerative medicine (RM) research; trains the next generation of talent; enables knowledge mobilization of research; and enhances the commercialization readiness of stem cell and RM innovations. From the lab to the clinic, the SCN community is connected by a common vision: to transform lives through regenerative medicine.

STEMCELLNETWORK.CA     