

FEAR

SLEEPLESS NIGHTS

LIMITATIONS

STRESS

MONITORING

CHECK-UPS

**NO MORE TYPE 1 DIABETES**

COUNTING

BAD DAYS

COMPLICATIONS

TESTING

DAILY BURDENS

HOLDING BACK

We are getting closer and closer to finding the cure.

We are delivering life-changing breakthroughs, inventing new treatments and driving scientific progress faster than ever before.

We will get there, with your help. We will see the day when type 1 diabetes is no more.

## CONTENTS

OUR MISSION	2
LEADERSHIP MESSAGE	3
OUR REACH & IMPACT	4
RESEARCH & INNOVATION	6
IN OUR LIFETIME CAMPAIGN	12
IN THE COMMUNITY	13
OUR PARTNERS	16
BOARD OF DIRECTORS	17



OUR MISSION

ACCELERATING LIFE-CHANGING BREAKTHROUGHS TO CURE, PREVENT AND TREAT T1D AND ITS COMPLICATIONS

Type 1 diabetes (T1D) is an autoimmune disease that occurs when the body's immune system attacks and destroys the cells in the pancreas that make insulin. Unlike type two diabetes, T1D is not linked to being overweight, lack of exercise or other lifestyle factors. T1D is a life-threatening disease that is not preventable and at present, it is not known what causes it.

WHY IS JDRF NEEDED?

More than 300,000 Canadians have T1D. In Canada, the average incidence rate has been growing at an estimated 5.1%<sup>1</sup> per year, higher than the global average.

T1D needs constant attention, affects children and adults and cannot be prevented.

Until there is a cure, people living with T1D are at risk of developing life-threatening and debilitating complications.

JDRF-funded researchers have been a vital part of all major T1D breakthroughs over the past 40 years. We are on the cusp of incredible life-changing advances that have potential to exponentially alter the treatment and management of this disease, with the ultimate goal of curing it.

<sup>1</sup>DIAMOND Project Group. Incidence and trends of childhood Type 1 diabetes worldwide 1990-1999. *Diabet Med.* 2006;23(8):857-866.

LEADERSHIP MESSAGE



Dave Prowten  
President & Chief Executive  
Officer, JDRF Canada

Matt Varey  
Chair, JDRF Canada

ACCELERATING MORE T1D RESEARCH

It is an honour and privilege to work alongside each of you, to accelerate T1D research and turn type one into type none. Your passion motivates and inspires us each day. It is your passion that fuels our organization forward – accelerating the pace of research. We are pleased to provide an update to you on what your support has helped accomplish.

Our mission is to accelerate the pace of the most life-changing breakthroughs to cure, treat and prevent T1D and its complications. Our clear focus on this mission and the dedication of our employees were critical to driving our performance. In 2015, with your support we invested \$12.4M in our mission related activities.

Our mission activities include research, public education and advocacy. Of this mission investment, \$11.25M was invested in T1D research. Globally, JDRF has committed over \$2B in research funding since 1970 and currently funds research in 18 countries.

In addition to this investment in research, we want to support and build a strong T1D community. JDRF helped provide a Bag of Hope to 800 families with a T1D

diagnosis in 2015. Over 300 youth living with T1D were Ambassadors for JDRF, empowering them to speak publicly and connecting with other youth living with T1D.

We aim to continuously strengthen our organization in order to improve our operational excellence, increase our efficiency and accelerate T1D research. Sometimes non-profits play it safe, defend the status quo or manage momentum. Not JDRF Canada. We have too much work to do to settle for status quo. Because you demand more of us – to accelerate the most promising T1D research. Not tomorrow or many years in the future. Accelerate research today! And bring clinical outcomes to those who are waiting.

With your support, we can change the future of T1D. Thank you.

Sincerely,

**Matt Varey**  
Chair,  
JDRF Canada

**Dave Prowten**  
President &  
Chief Executive Officer,  
JDRF Canada

For over 40 years, JDRF has been a global leader in the search for an end to T1D, through both research funding and advocacy.



5,200 volunteer advocates lobbying the government for research



45,000 individuals participated in JDRF's TELUS Walk to Cure Diabetes

**300**

Youth living with T1D were Ambassadors for JDRF, empowering them to speak publicly and connecting with other youth living with T1D



14,500 individuals participated in JDRF's ride events



800 Bags of Hope were given out to families with a new T1D diagnosis

**1,065**

Individuals living with T1D were matched with a T1D mentor by JDRF

**#T1DLOOKSLIKEME**

Was used 5.4M times throughout JDRF's National Diabetes Awareness Month campaign in November

**31,949**

People "engaged" through social media

**7,500**

Volunteers support JDRF's mission



**7 international JDRF affiliate locations**

USA, Canada, UK, Israel, Australia, Denmark, The Netherlands



Awarded 121 new research grants in 2015



Funding research in 18 countries globally



Currently funding 50 active clinical trials globally



39 research projects funded in Canada through JDRF

**\$2Billion +**

Committed to research funding since 1970

**200**

Institutions currently receiving JDRF funding globally

**350**

Principal investigators currently funded by JDRF

**Clinical Trials**

JDRF operates a clinical trial network focused on funding the most promising T1D research



Chiyo,  
diagnosed at age 2

## NO MORE SLEEPLESS NIGHTS

### RESEARCH & INNOVATION

New pioneering research is making beta cell replacement therapy widely available to people with T1D.

#### CURE

##### ENCAPSULATION

Imagine a future where people with T1D won't need to take insulin for months, and maybe even years at a time. Encapsulated beta cell replacement therapies could be the breakthrough that makes it possible.

Beta cells are the islet cells responsible for producing insulin. Currently, islet cell transplantation is seen as holding the potential to offer a durable cure for T1D. But there are obstacles to this therapy that limit its application as a treatment: not enough donors for transplantable islets, as well as the high risk of transplanted cells being destroyed by the body's immune system.

In 2015, your support enabled JDRF Canada to launch a very promising trial in the JDRF Canadian Clinical Trial Network (JDRF CCTN). ViaCyte's encapsulation trial was expanded under the direction of Dr. James Shapiro at the University of Alberta. Dr. Shapiro's

previous success and expertise in developing the Edmonton Protocol for islet transplants makes this a natural fit for his team in Edmonton. In the fall of 2015, the first cohort of Canadian participants began testing the safety of the encapsulation product with the aim to optimize surgical and post-surgical procedures. Over the coming months, we're hoping that the findings from this first enrollment will allow transitioning to testing the tolerability and efficacy of the product in a second cohort. This promising tool could enable those with T1D to live free of insulin injections for up to 18 months.

##### CONVERTING STEM CELLS

Notable advances have been made thanks to the work of Dr. Tim Kieffer and his team at the University of British Columbia. Dr. Kieffer is working on a protocol to convert stem cells into insulin producing cells. This protocol is expected to transform cultured stem cells into insulin-secreting pancreatic cells. The cells have the capacity to rapidly reverse diabetes following transplant.

### RHIANA & CHIYO'S STORY



#### THE END OF STRESS

"Chiyo was 2 years old when she was diagnosed, nearly five years ago. We have barely slept through the night since then. It's hard to imagine what life would be like without T1D. Imagine no more lurking in a corner at a birthday party, trying to count carbs in a room full of kids. The knowledge that important research is progressing is what gives us hope on the hard days when your child's blood sugar is high for no reason and won't come down. When you've been up every 2 hours for the past week and are running on caffeine and adrenaline. Or when you're afraid to sleep because you fear your child might not wake up. This is what research represents for us – the end of all that stress."



NO MORE LIMITATIONS

JDRF-funded research in progress

## RESEARCH & INNOVATION

Researchers are developing an artificial pancreas system that will monitor glucose levels around the clock.

### TREAT

#### ARTIFICIAL PANCREAS

Today, managing T1D is a daily challenge. Even the most diligent efforts to keep blood sugar levels normal can be resisted by the body. This can be onerous for people with T1D to manage throughout the day and causing anxiety when they sleep at night as this is often when low blood sugar episodes occur.

JDRF launched the Artificial Pancreas Project (APP) to accelerate the development of a commercially-viable artificial pancreas that can maintain glucose control automatically around the clock. The system works by mimicking the biological function of the pancreas, easing the burden of glucose control all day and allowing people with T1D to sleep easier at night.

#### IMPROVING GLUCOSE CONTROL

A Canadian research team in Montreal working on the development of an external artificial pancreas has received a grant of \$2.5 million USD from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) of the U.S. National Institutes of Health (NIH). The objective of the project, led by Dr. Rémi Rabasa-Lhoret at the IRCM (Institut de recherches cliniques de Montréal), is to compare the effectiveness of different variants of the artificial pancreas with conventional insulin pump therapy for

the treatment of T1D. This is a milestone investment in research JDRF has been funding since 2009. This additional investment will enable Dr. Rabasa-Lhoret to accelerate his research at a much faster pace.

“Most patients with type 1 diabetes show difficulty in maintaining their glucose levels within recommended target ranges,” says Dr. Rabasa-Lhoret, endocrinologist and clinical researcher at the IRCM. “High blood glucose can lead to devastating complications such as blindness, kidney failure and heart disease, while low blood glucose can cause malaise and even comas. The artificial pancreas has a great potential to improve glucose control by reducing both high and low glucose levels, which should consequently improve health outcomes and patients’ quality of life.”

#### AROUND-THE-CLOCK CONTROL

Researchers at the University of Virginia have been working for nearly a decade to turn the artificial pancreas (AP) system into working medical technology by adding automation to the pump that will help reduce the blood glucose fluctuations for people living with T1D. Their work has resulted in the creation of the Diabetes Assistant (DiAs), an experimental AP system that in clinical trials proved capable of providing tight, around-the-clock control over blood-sugar levels. Tighter control helps to reduce the risks for deadly low blood-sugar episodes and high blood-sugar episodes that can lead to long-term complications such as eye, heart, nerve and kidney diseases.

## MARIO'S STORY



### TRANSITIONING TO A PUMP HAS CHANGED HIS LIFE

“I was the first patient that Dr. Rabasa-Lhoret and Dr. Ahmad Haidar recruited for their study. After that, I took part in all of their studies. I did this – and I have often said it – because 20 or 30 years ago, somewhere, someone like me took part in studies that aimed to develop insulin pumps, and today, it’s the reason I have an insulin pump and a better quality of life. So, it’s my way of giving back. I like to help the researchers develop the artificial pancreas so that one day, the next generation of young diabetics can benefit from those studies. I might even have that chance myself.”



Niels,  
diagnosed at age 2

## NO MORE HOLDING BACK

## RESEARCH & INNOVATION

A promising treatment for T1D may eventually eliminate the need for insulin injections.

### PREVENT

#### PREVENTING T1D: PROTECTING THOSE AT RISK OF DEVELOPING THIS DISEASE

Canada has one of the highest incidence rates of T1D for children under 14 years of age. Parents, offspring and siblings of individuals with T1D also have a tenfold greater risk of developing the disease than the rest of the population. To help protect individuals at risk of developing T1D, JDRF scientists are examining both biological and environmental factors that may cause or trigger the T1D autoimmune attack.

#### UNDERSTANDING WHAT TRIGGERS T1D

Dr. Jan Dutz, a professor at UBC's Department of Dermatology and

Skin Science, and Dr. Tom Elliot, an endocrinologist and diabetes specialist at Vancouver General Hospital, are currently testing a drug that is used to treat another autoimmune condition to determine if it can slow or even reverse beta cell destruction and T1D progression in new onset T1D patients. The drug being investigated, ustekinumab, is currently used in Canada for the treatment of psoriasis, and comes with extensive clinical and safety data.

"This pilot study marks an exciting time for type 1 diabetes research in British Columbia," says Dr. Jan Dutz, principal investigator for the clinical trial. "As one of the first clinical trials to target the immune cells that cause type 1 diabetes, we are hopeful that this treatment will be a step towards finding a way to stop or slow the destruction of the body's own insulin-producing cells. If it proves successful, it may dramatically improve the lives of patients with type 1 diabetes."

## SAVELI'S STORY

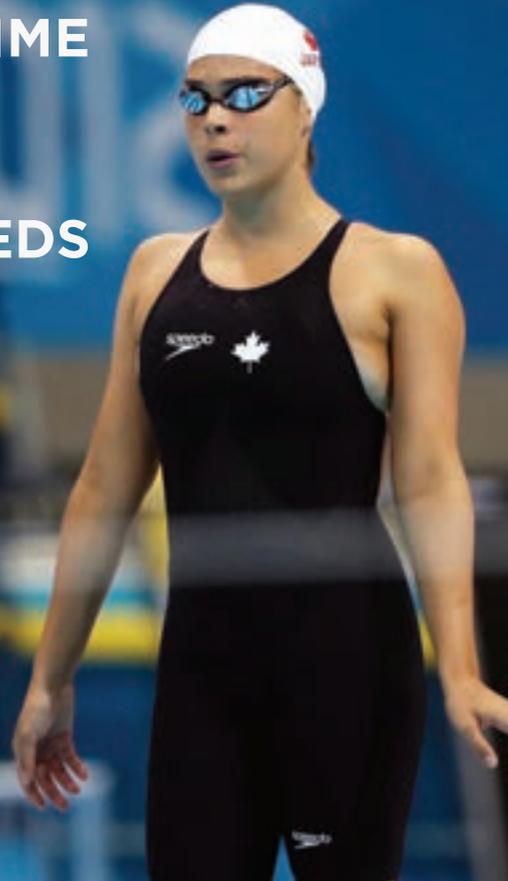


### USTEKINUMAB TRIAL

"I was diagnosed with type 1 diabetes when I was 35 years old. I didn't believe that it could be diabetes. I exercised several times a week, ate healthy and took care of myself. But I ended up in the emergency room in diabetic ketoacidosis. My eldest daughter was also diagnosed with T1D a few days after me. It was surreal. Not only would I have to adjust to life with diabetes, but had to navigate this challenging disease for my daughter as well. Joining the Ustekinumab trial was a way for me to get back control over my life and ultimately help my daughter. Participating in clinical trials helps move research forward to a world without diabetes. This research gives us hope that one day the disease could be prevented."

IN OUR LIFETIME  
CAMPAIGN

“ IN OUR LIFETIME  
MEDALS WILL  
BE THE ONLY  
THING SHE NEEDS  
TO COUNT ”



Barbara,  
diagnosed at age 22  
Photo credit:  
Ian McNicol

“We are on the brink of a potentially transformative period in the history of type 1 diabetes research; through the In Our Lifetime campaign JDRF has the vision and plan to make it a reality.”

**Peter Oliver**

Chair,  
In Our Lifetime  
campaign

In 2015, JDRF launched a \$55 million fundraising campaign to inspire philanthropic leadership support to accelerate T1D research. The campaign entitled In Our Lifetime will advance the pace of research so a cure or major breakthrough can occur in our lifetime. This 5-year campaign is driven by the collective efforts of committed and experienced donors and volunteers across Canada who are dedicated to significantly increasing JDRF’s major giving program and supporting a world without T1D.

This campaign will enable JDRF to expand our research footprint across Canada and around the world: \$20 million to fund the best T1D research globally as well as right here in Canada; \$30 million to expand JDRF’s Canadian Clinical Trial Network & Research providing greater access for Canadians to the latest in clinical trials and treatment options and; \$5 million to expand the development and training of the best and brightest researchers and scientists, right here in Canada.

To find out more about this campaign, email: [general@jdrf.ca](mailto:general@jdrf.ca)

IN THE  
COMMUNITY



WALKING IN  
70 LOCATIONS  
ACROSS CANADA

For more information,  
visit [jdrf.ca/walk](http://jdrf.ca/walk)

In 2015, over 45,000 people participated in the TELUS Walk to Cure Diabetes, raising \$6.7M.

The TELUS Walk to Cure Diabetes unites the T1D community and encourages families to connect and get to know each other. Friendships, support networks and connections are formed each year at the Walk. TELUS has generously donated more than \$8M to date to support diabetes research.

A very special thank you to our national partners who share the commitment to find a cure for T1D. The employees of TELUS, Sun Life Financial, LifeScan, and SunRype Products Ltd. along with their friends and families continue to show their support of the Walk each year.



CELEBRATING  
DIABETES  
ADVANCEMENTS

For more information,  
visit [jdrf.ca/gala](http://jdrf.ca/gala)

In 2015, JDRF hosted gala events in seven cities in Canada.

Each Gala across the country has a unique theme for their celebration where guests enjoy entertainment, dancing, silent and live auctions and JDRF’s signature Fund-a-Cure. In total, over 3,179 guests across the country helped raise \$2.9M.

Thank you to the many volunteers and supporters for your valuable time, generosity, and for making these exceptional fundraising evenings possible.



IN THE  
COMMUNITY



A FACE  
TO T1D

JDRF recognizes  
National Diabetes  
Awareness Month  
each November.

This past November, JDRF commemorated the month by taking part in a new global awareness campaign entitled, T1D Looks Like Me. This awareness campaign celebrates that T1D can look like anyone. It united the T1D community across Canada to join together to increase/build awareness of T1D.



Kenadie,  
diagnosed at age 7



RIDING TO  
ACCELERATE  
RESEARCH

For more information,  
visit [jdrf.ca/revolution](http://jdrf.ca/revolution)

In 2015, over 14,500 people from across the  
country took part in Ride events raising \$4.6M.

Each year, this high-energy stationary ride encourages friendly competition amongst corporate Canada to see who can show the most team spirit and raise the most funds for T1D research.

We're pleased to announce that in 2016 the Ride has been refreshed and rebranded. The JDRF Revolution Ride to Defeat Diabetes, presented by Sun Life Financial, offers the same exciting atmosphere, but with more options for all fitness levels.



IN THE  
COMMUNITY



MOVING  
OUR MISSION  
FORWARD

To find out how you  
can be a JDRF advocate,  
email: [advocacy@jdrf.ca](mailto:advocacy@jdrf.ca)

Federal investment is  
essential to achieving  
our efforts to cure,  
treat, and prevent T1D.

Across Canada, more than 5,200 JDRF advocates are working together to make their voices heard in the federal, provincial and territorial governments. We are delivering a message to the government - the need for a cure and the need to accelerate the pace of research through funding from our federal government.



ENGAGING  
THE T1D  
COMMUNITY

From diagnosis to living  
with T1D, JDRF provides  
a community setting  
for all people living with  
T1D to connect and  
exchange ideas.

JDRF provides Bags of Hope; a bag filled with great referrals/information to help newly diagnosed individuals under 18. We arrange mentors for those to connect with others. JDRF also has an Ambassador program where youth are empowered to speak publicly about living with T1D. Lastly, JDRF has a hub of great tools online to support the T1D community.



Maya,  
diagnosed  
at age 4

Sage,  
diagnosed  
at age 3

OUR PARTNERS

We thank all of our corporate partners for their leadership and dedication in helping JDRF find a cure for diabetes and its complications through the support of research.

Their involvement, financial support, and corporate giving demonstrate commitment to investing in world-class research that is helping to transform the lives of over 300,000 Canadians living with T1D. In addition, our partners are helping to raise awareness of T1D in communities across Canada with the goal of improving lives today and tomorrow.

For more information on partnership please visit our website: <http://www.jdrf.ca/our-supporters>



JDRF CANADA

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