



**IMPROVING
LIVES.
CURING
TYPE 1
DIABETES.**

YOUR IMPACT

2019



**Thank you for your generous support.
You are helping us get closer to a world
without type 1 diabetes.**



Lorne Shiff
JDRF Board Chair



Dave Prowten
President and CEO



As we look back at the past year, we now know more than ever that the resilience of the type 1 diabetes (T1D) community is stronger than the disease will ever be. Together, we have been on a relentless journey to find cures and to improve lives, and 2019 was no exception.

This was a banner year filled with momentum, innovation, partnerships and incredible progress.

We would like to extend our heartfelt gratitude to you - all of our dedicated and passionate donors, volunteers and partners. We could not have come this far in 2019 without your support and generosity. With you by our side, each day we are getting closer to better treatments and cures for T1D.



Novel dual-hormone artificial pancreas offers hope for better management of T1D

Type 1 diabetes (T1D) is an autoimmune disorder that is often difficult to manage. Despite recent advances in innovative medical devices and educational tools, many people with T1D often experience blood sugar swings that can put them at risk of complications including hypoglycemia and hyperglycemia. Adding adjunct therapy to existing insulin treatment regimens could soon change that.

The artificial pancreas (also known as a closed-loop) is a promising technology consisting of a system of devices that closely mimics the glucose-regulating function of a healthy pancreas. It comprises a continuous glucose monitor (CGM), an insulin pump, and a computer algorithm that enables these devices to communicate and automate insulin delivery according to a person's needs in real time. The artificial pancreas systems that are currently available automate basal insulin and still require the user to give manual boluses via their insulin pump, but researchers are working to develop a fully automated system. One approach to full automation is incorporating additional hormones or drugs into the system.

Drs. Ahmad Haidar, Laurent Legault, Michael Tsoukas and Jean-François Yale are a team of JDRF-funded researchers at McGill University (Montreal) who are the first to test the addition of pramlintide (a synthetic form of amylin, which is a hormone co-secreted with insulin by the healthy pancreas) to an artificial pancreas system.

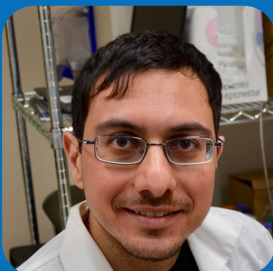
This talented team hypothesized that this combined treatment would help patients achieve optimal glucose control during the day. Previous studies have shown that pramlintide prevents blood sugar spikes following a meal through affecting digestion and the release of other hormones. Pramlintide – which is already approved and available in the USA – can be taken by injection but is rarely used. In this study, the researchers set out to examine the effects of pramlintide when delivered together with insulin in an artificial pancreas system.

During 2019, the investigators tested their hypothesis in a clinical trial in adults with T1D who wore artificial pancreas systems with or without pramlintide during in-patient visits at the Research Institute of the McGill University Health Centre. The results of the trial showed that adding pramlintide to rapid-acting insulin in an artificial pancreas system improved glucose control compared to rapid-acting insulin alone, without increasing hypoglycemia. In the next stage of their research, Dr. Haidar and his team are conducting another clinical trial to assess whether the insulin-plus-pramlintide artificial pancreas system can eliminate the need for carb-counting in adolescents and adults with T1D.

This exciting research into insulin adjunct therapy brings us closer to less burdensome management of T1D and a better quality of life.



Left to Right:
Drs. Haidar
Dr. Legault
Dr. Tsoukas
Dr. Yale



Dear type 1, you won't stop me from advocating for change

Dear type 1,

My name is Noah, and I've lived with you for 6 years. I was preparing for 7th grade when you hit me hard as I began to experience flu-like symptoms and could not breathe. You caused my kidneys to shut down and led me down a path I did not expect.

| Noah Silvaggio

Since then, life has been a whirlwind of activity, and with the help of my family and support network, I was able to turn a scary diagnosis into a chance to help others going through something similar.

I have had the opportunity to become a youth ambassador with JDRF and have been a speaker, fundraiser, and advocate for the T1D community. I'm now 17 and preparing to go to university in the fall, and I've already had experiences that many teenagers my age have not. I've influenced change by meeting with parliamentarians and senators in Ottawa through JDRF's Kids for a Cure Lobby Day and met with Members of the Legislative Assembly in Manitoba to demand insulin pump coverage through JDRF's #AccessForAll campaign. 2019 was an exciting year because I took part in JDRF's #VoteTypeNone campaign to garner support for the T1D community during federal election, and have tirelessly written letters, collected signatures, and spoken at events to ensure decisionmakers at all levels understand what it's like and others who live with type 1.

I know in my lifetime, there will be a cure for you, and that's why I will continue to advocate, fundraise and support this cause.

You do not define me, instead, you have given me an opportunity to be a voice for those who aren't able to speak up and influence real change. I'm not limited by you, I am empowered by you. In spite of you, I play hockey and soccer, and I am an avid snowboarder. I've learned how to manage you because I have access to the right technologies to live in a way that I don't have to worry as much.



Dear type 1, we are not alone

Dear type 1,

It's hard to imagine that there was a point in my life when I didn't know who you were. As a result of your unexpected arrival, I now know about you as a disease, and the community you affect more than ever. Because I'm a part of it.

When I was 26 years old – overseas, away from home and my family – you snuck up on me gradually. It wasn't until I booked a flight back to Calgary after losing almost 70 pounds that I was officially told I would be stuck with you forever.

Today I sit here, 40 years old, writing to you as someone who was once upset – even angry – at how you changed my life, but now I have strong motivation to not let you slow me down.

I am constantly empowered by seeing other children with T1D being so strong, and I cannot imagine being a parent to one of these strong kids...this is why a cure is so important – no child or family should have to go through this.

I came across JDRF years ago while checking in on my Tim Horton's stores in Calgary. The sign across the street reading JDRF called me over, prompting me to learn more about the acronym...only to learn that the door below led to an organization that changed my life – the Juvenile Diabetes Research Foundation.

There, I was greeted by a staff member who put me in touch with someone who used a flash glucose monitor – a piece of diabetes technology I didn't know existed. It was the first time I was put in touch with people who shared the same experiences I did – suffering similar highs and lows.

That's when I knew I wanted to do anything I could to help the T1D community through JDRF.

Since then, I have donated food for JDRF's Walk and Ride events through my company – incorporating healthy 'build your own sandwich' stations for attendees – talked to ambassadors who needed support and acted as a helping hand wherever I could be one. Having the opportunity to talk with others who have had the same diagnosis I've had, gives me hope – we're not alone.

I'm so happy to be involved in an organization that connects people to resources and people on the other end of the line.

Any small way I can help, whether through support or donations – to enable great people to find a cure adds a lot of value to my life.

T1D is not easy, but I'm reminded of how sharp, brave and smart I am because of it.

This disease needs to be cured...but in the meantime I know that dealing with this disease makes all of us stronger than anyone will ever know. When JDRF finds a cure, as a group, we will be unstoppable.

Thank you for that.

Sincerely,

AARON MACCALLUM

Living with T1D since the age of 26

Aaron
MacCallum





Hypoglycemia Prevention - Testing a disposable patch that delivers glucagon

One of the greatest fears among many people living with type 1 diabetes (T1D) is insulin therapy-associated hypoglycemia (low blood sugar). Marked by symptoms such as trembling, sweating, confusion and dizziness, severe episodes can lead to seizures, or a coma – and even death.

Dr. Xiao Yu (Shirley) Wu, a JDRF-funded investigator at the University of Toronto, is developing a glucose-responsive, microneedle [patch](#) for the delivery of glucagon to prevent hypoglycemia in people with T1D. In 2019, her group published results in the journal [Advanced Materials](#) showing how the patch worked in

a preclinical model, paving the way for testing the new approach in humans.

Applied to the skin during sleep, exercise or when performing full-attention tasks such as driving, the patch senses when blood glucose levels are falling into a dangerous range, and then automatically releases the counter-regulatory hormone glucagon.

With further development, Dr. Wu's glucagon patch could minimize the risk of hypoglycemic episodes and death among people living with T1D, and alleviate the psychological burden of hypoglycemia anxiety, thereby improving quality of life.



With the generous support from JDRF, our team will continue advancing the development of the glucose-responsive glucagon patch, aiming for clinical trials in the near future.



- Dr. Xiao Yu (Shirley) Wu

Mobilizing for Change

Kevin Peters will never forget the first time he had his finger pricked to test his blood sugar. It wasn't for him so much as it was for his daughter, Sophia, who at 7 was diagnosed with type 1 diabetes.

In managing the disease, Kevin and his wife, Kim, took all the necessary steps to keep Sophia healthy, including examining their family's eating habits.

"Low carbs, low sugar and I lost 20 lbs!" the St. John's, NL businessman recalls of his efforts to support Sophia.

"I instantly felt better and saw an opportunity to create T1D awareness by educating people about the importance of maintaining a healthy lifestyle."

From this, Kevin created "[Diabetes for a Day](#)," a fun fundraising challenge that encourages participants to make healthy lifestyle choices in support of T1D. For the initial program, which ran for three months, Kevin brought together thirty friends and community leaders who donated to JDRF to participate. For 90 days, they followed a healthy eating plan, engaged in educational seminars and fitness activities. Through social media

and a group app, participants connected with others for inspiration and support. They also had their blood sugar levels tested at the beginning and end of the challenge.

"It was eye opening for so many and we've seen extremely positive lifestyle changes as a result," he explains.

In its first year, "Diabetes for a Day" was an enormous success, raising \$35,000. Through a Federal Government fund matching program, more than \$67,000 has now gone to JDRF in support of T1D research.

Given its success, Kevin plans to continue the unique fundraiser, with the hopes of, one day, getting other provinces involved.

"Teaching healthier habits that help reduce healthcare costs while raising funds for better treatments and cures for T1D," he says. "This fundraiser is a win-win for everyone."



Kevin Peters
and family

Making a difference one paper sneaker at a time



Pizza Hut has helped families affected by type 1 diabetes (T1D) since PH Restaurants LP teamed up with JDRF 11 years ago.

Pizza Hut has a very personal connection with JDRF as the owners, Roberto Aquilini and the now retired Mike Cyr, both have children living with T1D. "We saw a relationship with JDRF as a true win-win for our store teams and our customers who have both been immensely generous in supporting our fundraising efforts", said Mike Cyr, former President of PH Restaurants LP.

A BC franchisee with 51 locations, PH Restaurants LP has been involved in several fundraising efforts benefitting JDRF, but in 2019 the introduction of the paper sneaker program has taken their support to the next level. Paper sneakers are offered at check-out for \$1 or more to support type 1 diabetes research. When a customer buys one, they sign their name on the sneaker, employees display these on the restaurants' walls to honor clients, friends and family members who live with T1D. In 2019, Pizza Hut reached a new milestone with the Paper Sneaker program raising an incredible \$105,000 for JDRF.

But the partnership between JDRF and Pizza Hut stretches beyond fundraising. The restaurant chain supports their communities by engaging more supporters for JDRF, raising awareness about T1D and consulting with JDRF's team of youth ambassadors to better understand the realities of living with this 24/7 disease.

"JDRF is such a powerful, grassroots driven charity due to the passion and commitment of its volunteers and it's truly been inspiring for our people to help support it," Cyr added. In that spirit, Pizza Hut and their families are committed to making the impossible possible by propelling research forward and driving remarkable progress.

A relationship that has evolved to shape Pizza Hut's team culture has **raised almost \$500,000** towards finding a cure.



Sheida: JDRF's Champion at PH

PH Restaurants' Sr. Director of Human Resources, Sheida Shakib-Zadeh has played an integral role in championing our cause with her colleagues and every Pizza Hut Restaurant Manager and Team Member in BC. She has not only been volunteering as the Co-Chair of our Walk National Cabinet for 6 years, but has also participated in every local JDRF event and been honoured at our Vancouver Gala for her philanthropy and volunteerism.

With a strong sense of commitment to deepen corporate social responsibility within the organization and employee support for our mission, Sheida definitely feels like a part of the JDRF team. She always knows how to engage Pizza Hut employees, inspiring a higher sense of purpose to make a difference in the lives of 300,000 Canadians living with T1D.

Thank you, Sheida for your incredible support throughout the years and for being our best champion!

Two decades of support

For nearly two decades, Boston Pizza has been a dedicated partner in the fight to cure type 1 diabetes. Its investment in research and commitment to supporting the community has dramatically impacted the lives of more than 300,000 Canadians and their families.

In 2006, when JDRF launched the [Artificial Pancreas Program \(APP\)](#), Boston Pizza was first in line to help fund the research. A ground-breaking technology, the APP offers individuals with T1D a new way to treat the disease and improve quality of life. Since then, advances have been made that enable artificial pancreas technology to automatically regulate and deliver insulin. This tool is a game-changer for individuals living with T1D.

Its investment in research and commitment to supporting the community has dramatically **impacted the lives of more than 300,000 Canadians** and their families.



In addition to generously supporting research, Boston Pizza Foundation Future Prospect's investment in the Youth Ambassador program has allowed JDRF to train and prepare young volunteers to advocate for the cause. Through public speaking, community events and other initiatives, JDRF Youth Ambassadors inspire others to create change. For newly diagnosed individuals, they offer support and guidance.

In 2019, Boston Pizza donated \$105,000 for the creation of [The Boston Pizza Foundation Future Prospects Award Program for JDRF](#). The initiative awarded 21 deserving students living with T1D grants of \$5,000 each to assist with academic tuition costs. In addition, [The Boston Pizza Future Prospects T1D Research Fellowship](#) (\$100K) awarded a young researcher the opportunity to explore the next generation of technology to improve the management of T1D. Thanks to Boston Pizza's total investment of \$3.1 million and its steadfast commitment to individuals and families living with type 1 diabetes, Canada's T1D community is stronger than ever.

JDRF will forever be indebted to Boston Pizza and its staff for its support over the last 19 years.

[See the winners of the 2019 Award Program.](#)

Riding for Research



A longstanding JDRF partner, RBC has donated over more than \$8.2 Million to the organization since 1999, by corporate sponsorships of our Galas and events, through the bank and Foundation and by employee giving through our Walk and Ride fundraising events.

RBC's incredible support of JDRF's mission through personal donations, fundraising campaigns, volunteering on leadership committees and cabinets and event attendance in huge numbers across the country, speaks volumes of their longstanding commitment to help improve the lives of everyone with type 1 diabetes.

Each year, JDRF selects an Honouree to recognize at our A Night of Promise Toronto galas. This award is bestowed to an individual or organization that has demonstrated a high degree of support to JDRF and overall philanthropic giving. In 2019, it seemed fitting that we look to honour RBC. It was the year when dozens of RBC staff members volunteered at the [Toronto Sun Life Walk to Cure Diabetes for JDRF](#) helping with the registration process to ensure the event ran smoothly and contributing to its huge success. RBCers also took part in the [2019 Sun Life Ride to Defeat Diabetes for JDRF](#) putting in teams of 5 for Ride events across the country. **RBC's call centre teams come out in full force every year at the Peel Ride.**

But the biggest success has been undoubtedly the RBC WaterPark Micro Ride in Toronto. The Ride brings Canadians together in a friendly stationary bike-athon to see who can get loud and raise the most money for T1D research. The RBC Micro Ride only began in 2018, and what started with a conservative fundraising goal of \$50,000, ended in an incredible \$125,000 raised for diabetes research, finishing up as the largest JDRF Micro Ride ever in all of Canada.

After this an amazing accomplishment, RBC knocked their fundraising out of the park once again in 2019 raising another \$125,000 and proving one more time their success as an established leader supporting the T1D community. There is no doubt that the RBC Micro Ride is here to stay as a fun event with committed individuals who are helping fuel incredible research progress that will improve the lives of everyone with type 1 diabetes.

We could not be more proud and thankful to have RBC as a valued JDRF partner to help us move our research forward every year!



2019 Toronto RBC WaterPark Micro Ride

Diabetes Champions



Our alignment comes from the **hard work** and **dedication of the Sun Life employees and advisors.**

A longstanding partner of JDRF in our commitment to diabetes awareness, prevention, care and research, Sun Life has played an instrumental role in making our

signature Sun Life Walk to Cure Diabetes for JDRF and Sun Life Ride to Defeat Diabetes for JDRF events possible as title sponsors.

Sébastien Machabee, 38, is a communications specialist at the Client Care Centre at Sun Life in Quebec, and a long-time JDRF champion. He was introduced to JDRF after becoming a member of the Marketing team at Sun Life – tasked with simplifying and mastering the registration process used when signing up for the Sun Life Walk to Cure Diabetes for JDRF.

His role began with internal communications – spreading JDRF's message and promoting prizes and contests to get people excited about the annual Walk.

"I started doing anything I could to spread the word for JDRF," he said, "each year I tried to do better."

Having friends and family who live with type 1 diabetes, Sébastien says that working with JDRF means the world to him.

"Type 1 diabetes is not something everyone understands fully, and I'm happy that I can spread awareness through my work," Sébastien says. "I love this part of my job and look forward to working with JDRF each year."

Sébastien is only one of the many key champions at Sun Life in the fight against diabetes. He is a testament to the strength of this alliance and our common goal to accelerate the pace of research. We'd like to extend a huge thank you to the entire Sun Life community for their **continued support of our mission to turn type one into type none.**



The Sun Life team at the 2019 Toronto Ride

Your Impact



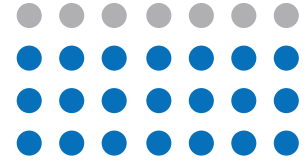
\$8.1 million

invested in T1D research in Canada,
a 5% increase over 2018.



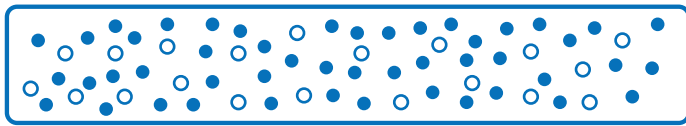
37

cutting edge projects and clinical
trials supported in Canada.



21 Countries

the scope of JDRF's 2019
international research portfolio.



20

new Talk T1D mentors oriented and trained in 2019,
bringing the total to 75 rolling volunteers who
connect with families and adults on an ongoing basis.



30+

#AccessForAll meetings between our advocates
and their provincial representatives to demand
affordable and accessible technologies for
everyone living with T1D.



100+

Federal election candidates who participated in our #VoteTypeNone campaign pledging support for Canadians touched
by type 1 diabetes, 40 of which were elected or re-elected.

Thank you to our amazing sponsors.



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This report represents a small portion of the full 2019 annual report. View the full online report at jdrf.ca/2019impactreport

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