

Research Impact: A Stem Cell Discovery

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Nutrition & Eye Health

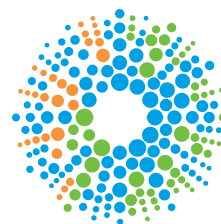
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FIGHTING
BLINDNESS
CANADA

Charitable Registration Number: 119129369 RR0001

LETTER FROM PRESIDENT & CEO DOUG EARLE



Dear friend,

The last twelve months have changed the world. During these challenging times, Fighting Blindness Canada (FBC) reached out to you, to give generously and help us continue our mission to advance vision research. What happened next was nothing short of remarkable...

Our community's drive to fund new treatments and cures for blinding eye diseases became stronger than ever. Thanks to you, vision research moved forward during one of the most challenging years. With yours and the entire vision loss community's support, today we are making massive change happen to restore sight and prevent blindness.

New for 2021

We're launching new research competitions to identify the best and brightest Canadian vision research. From supporting new trainees to investing in ground-breaking discovery science to helping researchers take the final step towards a clinical trial, you are helping make a difference. We can't wait to share more about the competitions and the results later this year.

Join the Excitement

With the success of our virtual education events last year, we're excited to bring you even more learning this year. Join us at an upcoming View Point webinar featuring top vision experts, and at our Young Leaders Virtual Program. Reserve your virtual seat at fightingblindness.ca/events.

We're also thrilled to announce the return of our **Screens Off for Sight** challenge taking place March 20th in support of eye health awareness, and our highly-anticipated **Cycle for Sight** virtual fundraising event taking place June 19th in support of sight-saving research. Register at fightingblindness.ca/events.

We are so grateful for your support. If you're in the position to do so, please consider making a donation today to help improve the lives of over 1.5 million Canadians living with vision loss and over 5.5 million Canadians living with a blinding eye disease putting them at risk of blindness.

From all of us at FBC, we hope you and yours keep well and safe,

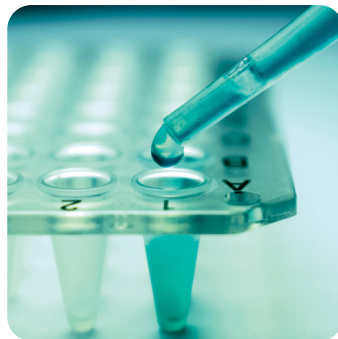
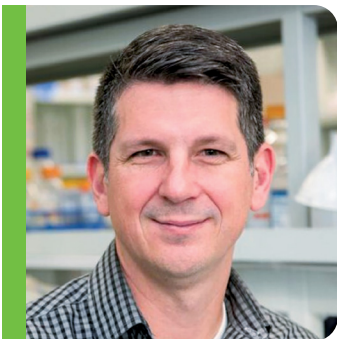
A handwritten signature in black ink that reads "Doug Earle". The signature is fluid and cursive.

Doug Earle

President & CEO, Fighting Blindness Canada

A STEM CELL DISCOVERY

We caught up with FBC-funded researcher Dr. Michel Cayouette (Montreal Clinical Research Institute) to learn more about stem cells, key findings from his recent study, and how your support has made this ground-breaking work possible.



1. What sparked your interest in vision research?

I started working in vision health as a graduate student. While looking for a Ph.D. advisor, I came across a lab at Université Laval that researched gene therapy approaches for retinal degeneration. I thought their research was fascinating and I never looked back!

2. Why is there so much interest in stem cells as treatments for blinding eye diseases?

Largely because cell therapy offers the potential to restore vision. Other therapies, like gene therapy, may slow or even stop degeneration, but for them to work, a person must have enough remaining cells in their retina. This is not always the case. Stem cell therapy offers the possibility to replace cells that have been lost, even late in the disease. This is exciting, but there are still many hurdles to overcome, which is why research in this area is so active.

3. What was the key finding from your study and what are its implications?

We recently found novel genes that are critical to the generation of cone photoreceptors during retina development. This finding is important because it tells us how Mother Nature makes cone photoreceptors, which are responsible for central and detail vision, and we hope this will teach us how to make these cells for replacement therapies in conditions where cone cells die, like in macular degeneration and inherited retinal diseases.

4. How has funding from FBC donors supported this project?

Funding from FBC helped cover costs that led to this discovery, including the costs of the experiments and supporting a graduate student to work on this project. FBC funds have contributed not only to a new scientific discovery, but also to the training of a new generation of vision scientists in Canada!

5. What are you most looking forward to this spring?

I can't wait to get on my bike again! I am looking forward to participating in FBC's Cycle for Sight Virtual fundraising event in June. I also want to play more golf. I used to be a good golfer, but stopped playing due to my busy schedule. Every year, I tell myself I need to make time to play, hopefully this year!

To learn more about FBC-funded research visit, fightingblindness.ca/research

NUTRITION & EYE HEALTH

A healthy diet is important for overall health. Your eyes, like the rest of your body, may also benefit from a healthy diet. Below, we discuss healthy eating and vitamins in relation to overall eye health.

How does nutrition affect eye health?

While there is no clear link between a specific diet and particular eye conditions, research has shown that a poor diet can increase the risk of several health problems, including high blood pressure, type 2 diabetes, and some cancers which can cause eye disease and vision loss.

Overall, a regular healthy diet, exercise, and sufficient sleep all help manage diabetes, which may in turn help slow the progression of a diabetic eye disease like diabetic retinopathy or diabetic macular edema. While vitamin supplementation can reduce disease progression in some cases of dry age-related macular degeneration (dry AMD).

For other forms of eye diseases, including inherited retinal diseases, maintaining a healthy diet and lifestyle is important to prevent other health complications that could affect vision or impact the pre-existing eye disease.



Tips for healthy eating that may help manage disease:

- **Plan:** Planning your meals helps save time and money, and helps prevent food waste. It also helps ensure you have a variety of healthy foods available that you enjoy.
- **Time:** Take time to enjoy and savour your meal. Chew your food well, not only will you taste more flavours but it will help your digestion too.
- **Variety:** Eat different foods to benefit from a variety of vitamins and minerals. If your diet includes several meat options, try switching things up with a vegetarian or vegan night, incorporating fish and more plant based options.
- **Choose:** You have the power to choose healthy options. For example, water instead of sugary beverages.

Note: some diseases that affect vision, such as hypertension, diabetes, or cardiovascular disease, require specific diet recommendations. It's important to speak with your doctor or a registered dietitian before making any significant dietary changes.

What vitamins are important for eye health?

For most eye diseases, there isn't strong evidence of a specific diet or supplement that will protect or improve vision however, there is some research for some forms of dry age-related macular degeneration (dry AMD). The age-related eye disease study (AREDS) showed that consistent, daily intake of a specific multivitamin known as AREDS helped prevent progression in some individuals with dry AMD.

This multivitamin includes:

- Vitamin C
- Vitamin E
- Beta carotene (only in AREDS)
- Zinc
- Copper
- Lutein and zeaxanthin (only in AREDS2)

Some studies have also suggested vitamin supplementation can slow progression of other eye diseases, such as inherited retinal diseases. Speak with your doctor before starting any vitamins or a new diet. Some vitamins are not recommended for people on certain medications or who have pre-existing conditions, including certain inherited retinal diseases.

Common foods that support overall health:

The following foods are rich in vitamins, minerals, and healthy fats...

- Dark blue and purple fruits and vegetables
- Leafy greens
- Nuts and seeds
- Beans
- Orange fruits and vegetables
- Fish, including salmon or herring
- Dark chocolate

Additional healthy foods can be found in **Canada's Food Guide**.

Incorporating healthy food options into your diet helps add variety, nutrients, and more flavour. Check out our Superfood Smoothie Recipe to get inspired!

Superfood Smoothie Recipe

Serves 2

- 1 cup frozen blueberries
- Handful frozen mango
- Handful fresh or frozen spinach
- 1 tbsp ground flax
- ½ tsp grated ginger
- 1 ½ cup regular or plant-based milk
- Splash of orange juice

Add all ingredients to a blender and blend until smooth.

Enjoy!



If you have eye health related questions, connect with our Health Information Line at healthinfo@fightingblindness.ca or 1.888.626.2995.

GENETIC TESTING & FBC'S IRD PATIENT REGISTRY



What is genetic testing?

Genetic testing involves taking a sample of your DNA (from your blood) and analyzing your genes to find any changes that may cause an inherited retinal disease (IRD).

Why should I get genetic testing?

Genetic testing helps confirm a diagnosis and may provide information about how an eye disease will progress. In addition, many new treatments being studied, like gene therapies, are gene specific. Knowing the gene mutation increases the chance you will be eligible for a clinical trial or gene-specific treatment. Genetic testing can also share how the gene mutation is passed through family and if other family members are at risk of inheriting the condition.

Do I have to pay for this test?

Every Canadian provincial government covers genetic testing for IRDs. There are a few steps to this process. For more information about how to get genetic testing done in your province, check out our Genetic Testing for Inherited Retinal Diseases resource page. fightingblindness.ca/research/resources.

What do I do with my results?

Consider joining our IRD Patient Registry! The Registry is a secure anonymous clinical database where information about your clinical and genetic information is collected. This is an opportunity to be connected with clinical trials that may be appropriate for you. To learn more, visit fightingblindness.ca/patient-registry

How FBC's support is bringing clinical trials to Canada...

FBC's helped launch the IRD Patient Registry in 2005. Since then, the database has grown into a valuable resource for researchers. Thanks to your support, Dr. Elise Héon, Dr. Ian MacDonald, Dr. Robert Koenekoop, Dr. Cynthia Qian, Dr. Kevin Gregory-Evans, and Dr. Johane Robitaille, members of the Registry Steering Committee have leveraged the Registry to identify patients for clinical trials both in Canada and the U.S. Donor support has increased the capacity of Canadian researchers and clinical trials for Leber congenital amaurosis, retinitis pigmentosa, and Usher syndrome, with more launching in 2021.

To learn more about FBC-funded research visit, fightingblindness.ca/research

AMBASSADOR SPOTLIGHT: DR. BRIAR SEXTON

Dr. Briar Sexton has been a dedicated supporter of FBC for over a decade. As an ophthalmologist and Clinical Assistant Professor in the Department of Ophthalmology at the University of British Columbia, Dr. Sexton is passionate about vision health, patient care, and advancements in vision research.

Having a young god-daughter and her god-daughter's brother both diagnosed with Usher syndrome type I (a rare inherited disease causing loss of vision and hearing over time), Dr. Sexton's personal and professional connection to the cause ignited her relationship with FBC in February 2012, organizing Dinner in the Dark, a community event in support of raising funds for vision research.

In 2013, Dr. Sexton joined FBC's Comic Vision Vancouver committee, chairing the fundraising event in 2014 and 2015. Dr. Sexton is also an avid FBC Cycle for Sight participant, cycling in the "Anson and Some" team in 2014, 2015, and 2018! Her support also extends in a variety of speaking engagements at FBC's in-person Vision Quest education events, and most recently co-presenting at FBC's View Point education webinar Social Distancing in the Dark: A Blind Person's Perspective on COVID-19.

"We are so thankful for Dr. Sexton's generosity and commitment to support our cause. Her dedication and hard work to help raise funds for new treatments and cures for blinding eye disease brings hope to so many Canadians living with blindness. We're grateful to have her as a member of the team, and most importantly friend to those in need."

- Doug Earle, FBC President & CEO



What will your legacy be?

Consider leaving a gift to Fighting Blindness Canada in your Will to help future generations.

For information, contact Ann Morrison

1.800.461.3331 x 232

amorrison@fightingblindness.ca

Bring a bright future into focus with monthly giving!

Help change the lives of people living with vision loss by joining our monthly giving program.

For information, contact Josie Koumandaros

1.800.461.3331 x 262

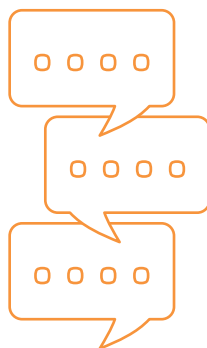
jkoumandaros@fightingblindness.ca

FBC COVID-19 RESOURCES



To support you, we've developed a variety of helpful COVID-19 resources, including Frequently Asked Questions (FAQs) articles on eye health and mental health. Access the resources at fightingblindness.ca/news/covid-19-resources.

OUR HEALTH INFORMATION LINE IS HERE



Our Health Information Line provides you with someone to connect with on vision health questions. It can be reached at:

1.888.626.2995

healthinfo@fightingblindness.ca

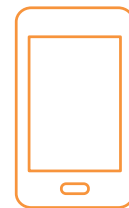
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If you need assistance registering for any of our virtual events, please call us at 1.800.461.3331

UPCOMING VIRTUAL EVENTS



View Point Education Series

We are excited to announce that our View Point virtual education series is returning with more great webinars in 2021! The series features leading researchers and vision health experts. Join us in exploring new cutting-edge research, treatments for blinding eye diseases and more. Register for an upcoming webinar at fightingblindness.ca/events.

Young Leaders Program

Our Young Leaders program is a career-oriented initiative that provides young adults who are blind or partially sighted with tools to develop skills and pursue rewarding careers. This year, the Young Leaders Program will offer three webinars and two virtual summits. Stay tuned for details at fightingblindness.ca/events.

Screens Off for Sight Saturday, March 20, 2021

Take part in FBC's Screens Off for Sight challenge by turning-off your digital screens for 24-hours on March 20th to raise awareness of the importance of eye care and vision research. Learn more about the challenge and sign up today at FBCscreensoff.ca.

Cycle for Sight Virtual Saturday, June 19, 2021

Support raising funds for sight-saving research by joining Cycle for Sight Virtual on June 19th! Hop on a bike, grab your yoga matt, unwind the zsskipping rope, and more to get active. Learn more and register at cycleforsight.ca.