



The evolving landscape of MS research: latest updates and future goals

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MS Society of Canada







1. What areas of research do we fund?

2. How do we decide what gets funded?

3. How will the research we fund bring us closer to a cure?





Funding the highest quality research

- MS Society funds approximately \$11-13M of MS research each year, largely conducted in Canada
- Overall, since 1948, MS Society has provided over \$160M of funding for MS research and researchers in Canada
- Thanks in part to this support, Canada has developed a pipeline of exceptional MS researchers and has become a leading contributor to discovery in the field of MS

Areas of interest

Symptom Management & Quality of Life (14%)

- Healthcare utilization
- Cognition
- Exercise & rehabilitation
- Population patterns
- Co-existing conditions
- Pain and fatigue

Progression & Therapies (38%)

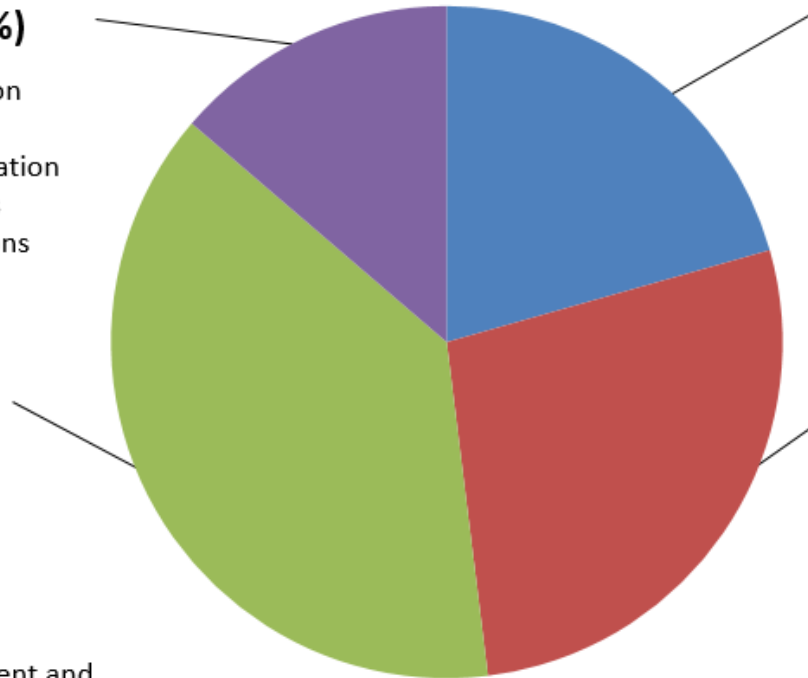
- Stem cells
- Clinical trials
- Imaging
- Drug repurposing
- Neuroprotection
- Treatment assessment and development

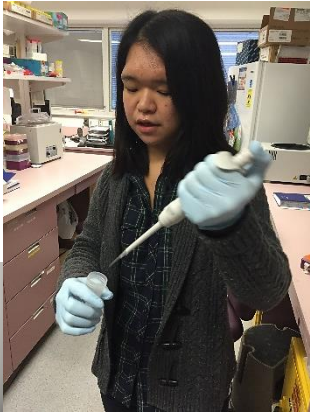
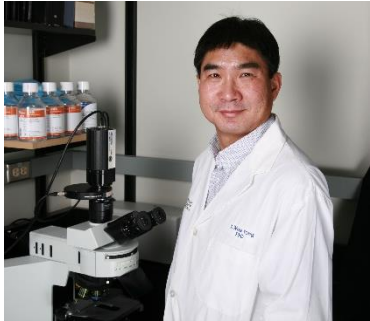
Cause & risk factors (21%)

- Genetics
- Immune triggers
- Modifiable risk factors
- Viral infection

Nerve Damage & Repair (27%)

- Remyelination
- Neuropathology
- Imaging
- Immunology
- Cell signaling





Transforming Discovery into Opportunity





Decision Making Process

Applications are submitted by researchers and checked for completeness

Grant review committees and chairs are selected

Applications are assigned to reviewers based on expertise

Applications are reviewed at home and comments are submitted online





Decision Making Process

Committees meet in person to discuss comments and score each application

Scores are reviewed and a cut-off for funding is identified

Funding decisions are brought forward by the chairs to Medical Advisory Committee (MAC)

MAC presents final recommendation for funding to Board of Directors



MS[®]



MS[®] Multiple Sclerosis Society of Canada



Decision Making Process

**Funding
announcements
and notifications**

**Review comments
are sent back to
the applicants**

**Grant agreements
are issued and
signed**

Progress reporting





Research Priorities Discussion





RESHAPING THE RESEARCH AGENDA

The MS Society of Canada has stood by its commitment to invest in research that will produce the greatest benefit for all those deeply affected by MS.

⋮
SINCE 1948
↓





Our **NEXT**
endeavour?

To bring people who
are affected by MS into
the conversation.

We flew across
the country and
listened to what
YOU had to say
about **RESEARCH**.



7 Regions

200 Participants



WE ASKED

“What does MS research mean to you?”



IDENTIFYING RESEARCH PRIORITIES

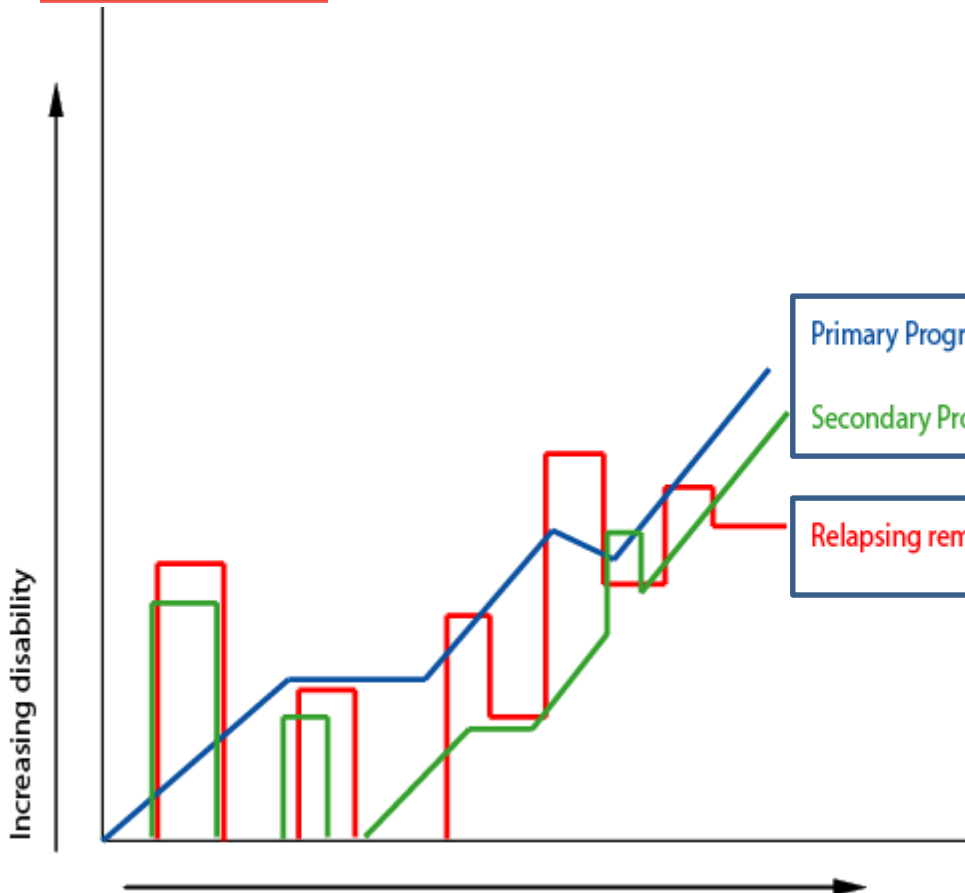
Each person shared their view on MS research and identified areas of **top priority for the future**.



NOW



Accelerating the pace of research is just as critical to the hope of people living with MS as the research itself.



0 therapies available



Primary Progressive
Secondary Progressive

- Reduce rate of progression
- Stop progression
- Reverse progression

Relapsing remitting

- Reduce relapse disability
- Reduce relapse rate



11 therapies approved in Canada with more in the pipeline

Time





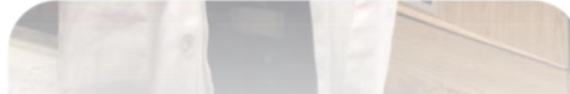
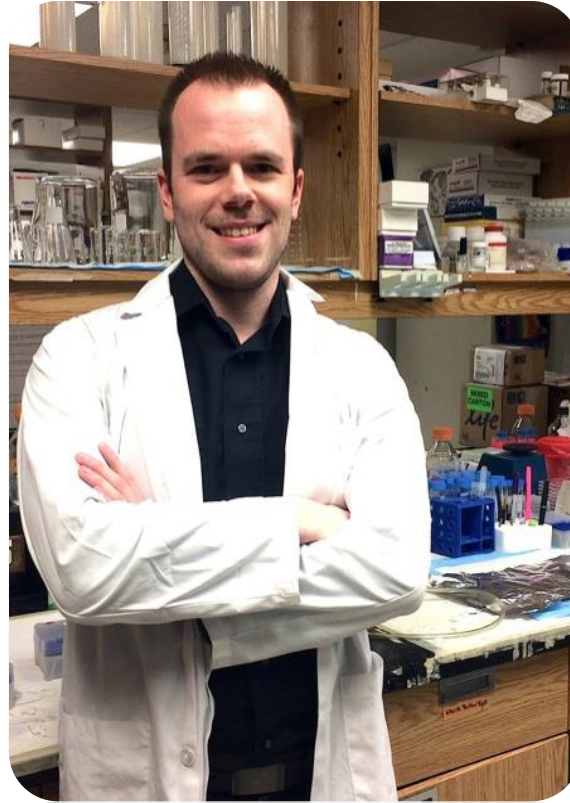
INTERNATIONAL PROGRESSIVE MS ALLIANCE

CONNECT TO END PROGRESSIVE MS





Forming collaborations to accelerate research





Multiple Sclerosis Society of Canada

August 21 at 12:42pm · 🌐

There's still time to have your voice heard by the MS research community! Take 10 minutes to fill out our wellness survey, and let us know what areas you'd like future MS research to focus on. #WellnessMS #endMS



Wellness Questionnaire Survey

Web survey powered by SurveyMonkey.com. Create your own online survey now with SurveyMonkey's expert certified FREE templates.

WWW.SURVEYMONKEY.COM

👍 Like 💬 Comment ➦ Share

80 people like this.

25 shares



Karen Lee @Dr_KarenLee · Aug 12

Be researcher for a day and tell us how YOU would design a study on wellness and MS. svy.mk/1lz4PGx #WellnessMS

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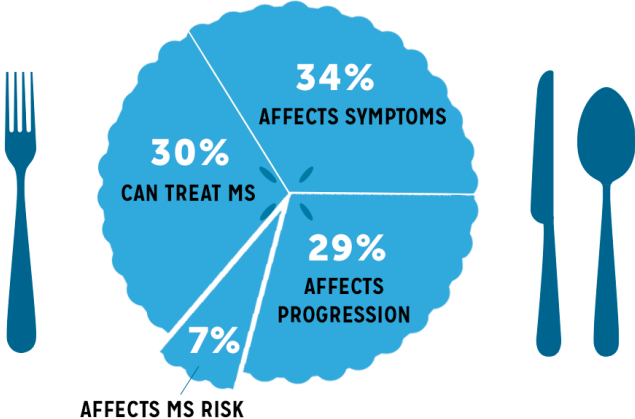




MS Wellness Survey

MS Wellness Survey: Nutrition

People want to know how nutrition:



5 IN 10 IDENTIFIED **EMOTIONAL WELLBEING** AS THEIR TOP WELLNESS PRIORITY

When they need to talk, people turn to:

- 1 FAMILY AND FRIENDS
- 2 DON'T WANT/NEED TO TALK
- 3 HEALTHCARE TEAM
- 4 NOBODY TO TALK TO
- 5 SUPPORT GROUPS/ONLINE COMMUNITIES

To maximize the health benefits of nutrition, people want:

- 39% INFO & RESOURCES
- 30% MOTIVATION & SUPPORT
- 31% REDUCTION OF FOOD BARRIERS







Hermès Canada | MS Society Wellness Research Innovation Grant

Objective: To fund projects that aims to translate research findings into innovative wellness solutions that will improve health and quality of life for people affected by MS.

Amount: **\$40,000** per grant

Results:

- 11 pre-applications received
- Applicants must address feedback from *MS Wellness Survey*
- Subject to review by wellness expert committee – 3 applications selected
- Areas of focus include: integrated care, self-management tools, physical activity programs & rehabilitation, and wearable technology/mobile apps
- Notification of successful applicants: October 2016





About the studies:



Dr. Charity Evans



Dr. Katherine Knox



Dr. Ann Yeh



Vitamin D

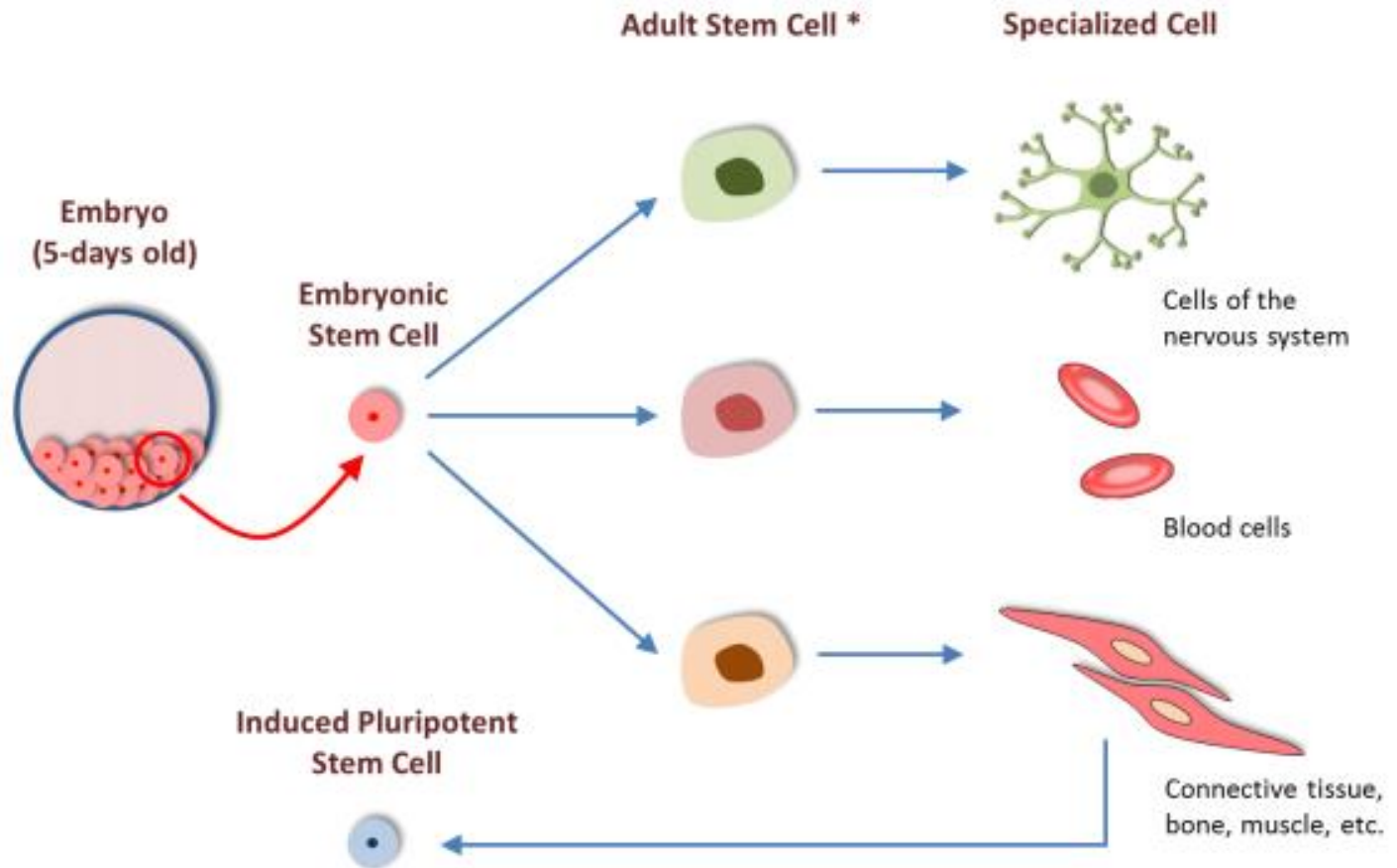




Stem cell treatment for multiple sclerosis



Stem cells 101




* Includes Mesenchymal Stem Cells

Figure 1: Schematic illustrating the different types of stem cells and their paths of development. Note that these are only a few examples of the many specialized cells in the body that come from stem cells.




Stem cell treatment for MS


 **cdnstemcell** @cdnstemcell · 29 Jan 2015
Ottawa and Winnipeg researchers to begin testing new stem cell treatment for MS. bit.ly/1yaTFQV @MSSocietyCanada and #MESCAMS

↩️ ↻️ 13 ❤️ 2 ⋮

 You Retweeted

 **Kim McDonald-Taylor** @kimmcldt · 29 Jan 2015
First #Canadian #clinical #trial studying ability of #mesenchymal #stem #cells to treat #multiple #sclerosis - YES!! bit.ly/1yamBs6

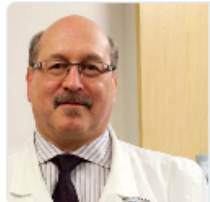
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 **Karen Lee** @Dr_KarenLee · 29 Jan 2015
"Stem cell research gave me my life back, & there is more to be learned. I am excited by the news of #MESCAMS" - Alex bit.ly/15LFzhg

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 You Retweeted

 **The Globe and Mail** @globeandmail · 29 Jan 2015
Researchers to test whether a type of stem cell can help MS patients



Researchers to test whether a type of stem cell can...

Mesenchymal stem cells found in bone marrow, fat, skin tissue and umbilical cord blood have the ability to modify the immune system and reduce inflammation

theglobeandmail.com

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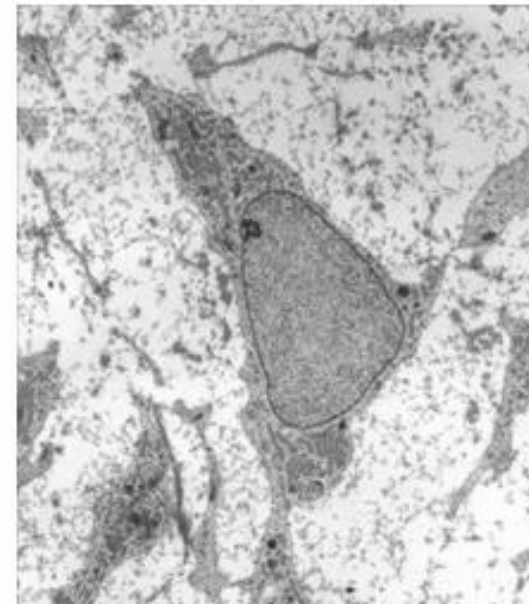
369,792 people reached

Boost Post

 **Multiple Sclerosis Society of Canada**
January 29, 2015 · 🌐

Breaking News: Today we are proud to announce the first Canadian clinical trial studying the ability of mesenchymal stem cells to treat multiple sclerosis. Mesenchymal stem cells (MSC) – found in many places in the body including the bone marrow, skin and fat – have been demonstrated to suppress inflammation and repair nerve tissue, positioning them as promising candidates for the treatment of MS.

Read more: <http://ow.ly/I9SfU>





MESCAMS

- Aim: To test if infusion of a person's own mesenchymal stem cells can control inflammation in multiple sclerosis, promote repair of damaged areas in the brain and spinal cord, and is safe.
- Phase II, randomized, double-blind, placebo-controlled cross-over study.
- 40 participants
- 2 sites:
 - The Ottawa Hospital
 - Health Sciences Centre Winnipeg





MESCAMS

Design: Two treatment groups:

- Participants receive stem cell infusion at beginning of study, then placebo (mock treatment) infusion 24 weeks later (early treatment)
- Participants receive placebo infusion at beginning of the study, then stem cell infusion 24 weeks later (late treatment)

Progress to Date:

- Study is ongoing
- 10 participants enrolled at Ottawa site; 3 have completed study
- 2 participants enrolled at Winnipeg site
- www.msresearch.ca



Canadian BMT Study

(i.e. “rebooting” the immune system)

Immunoablation and autologous haemopoietic stem-cell transplantation for aggressive multiple sclerosis: a multicentre single-group phase 2 trial



Harold L Atkins, Marjorie Bowman, David Allan, Grizel Anstee, Douglas L Arnold, Amit Bar-Or, Isabelle Bence-Bruckler, Paul Birch, Christopher Bredeson, Jacqueline Chen, Dean Fergusson, Mike Halpenny, Linda Hamelin, Lothar Huebsch, Brian Hutton, Pierre Laneuville, Yves Lapierre, Hyunwoo Lee, Lisa Martin, Sheryl McDiarmid, Paul O'Connor, Timothy Ramsay, Mitchell Sabloff, Lisa Walker, Mark S Freedman

Lancet, 2016

Key findings

- IAHSCT led to no new relapses or brain lesions in 23 of 24 participants on long-term follow-up.
- 70% of participants showed no sign of disability progression.
- 40% of participants experienced unexpected recovery of function.
- One participant died of complications.

Status of treatment in Canada

- Ottawa Hospital is accepting referrals for eligible patients for this procedure. People living with MS are encouraged to speak to their neurologist if they are exploring this treatment option.
- Intended for select group of people with highly aggressive inflammatory MS that is unresponsive to treatment



Research Landscape

- Cell-based therapeutic strategies under investigation, with different risks, benefits and goals.
- IAHSCT clinical trials suggest procedure is effective in active relapsing remitting MS:
 - 10 trials completed to date generally suggest long-term disease stabilization or improvement, especially in people with highly active disease activity and relatively recent onset.
 - Procedure considered experimental at this stage, full effects and safety under review
- Mesenchymal stem cell therapy currently undergoing evaluation in international clinical trials





- MS Updates
- MS Research Summaries
- Blog: www.drkarenlee.ca
- Twitter: [@Dr_KarenLee](https://twitter.com/Dr_KarenLee)
- MS Research & Research in Action e-bulletin

