

# TOP 10 ARTHRITIS SOCIETY RESEARCH ADVANCES OF 2018



Thanks to the generosity and vision of our donors, the Arthritis Society is the leading charity in funding cutting-edge arthritis research across Canada. With this crucial support, innovative minds are answering the most pressing research questions spanning the many types of arthritis. Whether working in the lab, the clinic, or alongside people living with arthritis in their everyday lives, researchers are turning your support into discoveries to help improve care for people with arthritis today, while searching for a cure for tomorrow.

Here are some of the many advances made possible in 2018.

## Unlocking the secrets of inflammation in arthritis

Nicolas Tessandier and Imène Melki, Université Laval

(Supervisor: Dr. Éric Boilard)

**The finding:** Inflammation is the source of joint and tissue damage in many forms of arthritis. Researchers studied how molecules from the immune system trigger inflammation and revealed the unexpected role of blood platelets, usually known for their role in clotting.

**The future:** This discovery is helping to unlock the secrets of inflammation, opening up new avenues to explore for interrupting the inflammation process and preventing damage to joint tissues.



## Why women's arthritis pain is different

Dr. Jason McDougall and Melissa O'Brien, Dalhousie University

**The finding:** While most of today's pain medications target inflammation, some people with arthritis have pain that stems from nerve damage. This is especially true for women. Researchers studied nerve-related pain and showed that a potential drug that blocked nerve pain was more effective in females.

**The future:** This research helps unravel why existing painkillers may not work well for women – who get arthritis more often than men – and could lead to a new, more targeted pain treatment.



## Uncovering a potentially fatal gap in rheumatoid arthritis care

Dr. Diane Lacaille, University of British Columbia

**The finding:** People with rheumatoid arthritis (RA) have a higher risk of cardiovascular diseases (CVD), which can cause heart attacks and strokes that can be fatal. Despite this, researchers found that people with RA are not screened consistently for key risk factors at their doctors' appointments.

**The future:** This study is raising awareness that people with RA need to be better monitored for CVD risk factors, and will help family doctors and rheumatologists work better together to keep their patients with RA healthy.



## Osteoarthritis: One size does NOT fit all

Guomin Ren, University of Calgary

(Supervisor: Dr. Roman Krawetz)

**The finding:** Osteoarthritis (OA) can affect different joints, like those of the knees, hips, hands, and spine. But is OA different in different joints? Researchers mapped patterns of inflammatory molecules in blood from people with knee OA and hip OA and found that there could be distinct disease subtypes.

**The future:** This revealed that OA may need a personalized approach to therapy based on the joints affected, and may also pave the way to developing a simple blood test to detect OA in different joints at its earliest stages.



Photo credit: Nedaa Aljezani

## The safety of biologics in pregnancy

Dr. Mary De Vera, University of British Columbia

**The finding:** Biologics – innovative medicines made by living cells – have transformed treatment for rheumatoid arthritis (RA), but more research into their benefits and risks for pregnant women is needed. Researchers showed that the use of biologic medications before or during pregnancy was not linked to preterm delivery or small babies — two key birth complications.



**The future:** This is an important step in understanding the safety and impact of biologics in pregnancy. Further research will help women with RA make informed treatment decisions around family planning.

## Guiding lupus care across Canada

Dr. Stephanie Keeling, University of Alberta

**The finding:** Systemic lupus erythematosus (SLE) causes inflammation in the joints and other tissues, and can lead to serious complications without the right treatment. The Canadian SLE Working Group collaborated to produce new evidence-based clinical practice guidelines for how SLE should be optimally managed.



**The future:** These guidelines – the first in the world to be created with a newer rigorous method – are now endorsed by organizations and clinical centres across Canada and will promote consistent and effective care for people with SLE.

## Artificial cartilage inspired by nature

Jimmy Faivre, Université de Montréal

(Supervisor: Dr. Xavier Banquy)

**The finding:** For advanced osteoarthritis (OA), joint replacement may be the only choice to relieve pain and restore mobility. To improve joint replacements, researchers developed a new soft synthetic gel that mimics cartilage, taking inspiration from molecules that occur naturally in joints and other tissues.



**The future:** With further testing, this material could be used to lubricate artificial joints to protect them from wearing out, keeping more people moving and enjoying life.

## Making strides despite arthritis

Dr. Carlo Ammendolia, Mount Sinai Hospital

**The finding:** Too many older adults lose their independence due to a form of arthritis in their lower back that can limit their ability to walk. In a clinical trial, researchers found that one-on-one education and treatment sessions with a chiropractor can promote a long-lasting improvement in walking ability.



**The future:** These trial results take a key step towards defining the most effective, evidence-based approaches to empower people with arthritis in the lower back to keep moving.

## An app to help teens with arthritis pain

Dr. Karine Toupin April, Children's Hospital of Eastern Ontario Research Institute

**The finding:** Arthritis pain can have a devastating impact on young lives, and it can be hard to decide how to best manage it. By consulting with teens, parents, and doctors, researchers developed a smartphone app to help teens with arthritis make the best decisions to manage their arthritis pain.

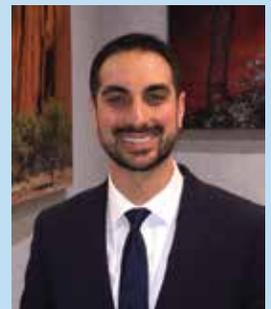


**The future:** A tool that teens with arthritis routinely use to make personalized plans to manage their pain and live life to its fullest.

## Encouraging the next generation of rheumatologists

Dr. Mark Matsos, McMaster University

**The finding:** Specialist clinicians like rheumatologists are needed to take discoveries from the lab and apply them to patient care. But there is a shortage of rheumatologists in Canada. Researchers identified key factors influencing why medical residents choose rheumatology.



**The future:** This knowledge can be used to develop engaging clinical experiences early on in medical training to encourage more people to become rheumatologists, and help change the future of arthritis care in Canada.