# In Motion

Highlighting Articles Advancing Pain Research in Canada and the World

## Featured article:

Parisien, M., Lima, L. V., Dagostino, C., El-Hachem, N., Drury, G. L., Grant, A. V., ... & Diatchenko, L. (2022). **Acute inflammatory response via neutrophil activation protects against the development of chronic pain.** Science Translational Medicine, 14(644), eabj9954. https://doi.org/10.1126/scitranslmed.abj9954

## Key insights from the study:

- **Neutrophils and Pain Prevention:** The study highlights the role of neutrophils, a type of immune cell, in preventing the transition from acute to chronic pain.
- **Impact of Anti-Inflammatory Drugs:** Common anti-inflammatory drugs like NSAIDs (nonsteroidal anti-inflammatory drugs) can delay pain resolution and increase the risk of chronic pain when used in the early stages of injury.
- **Potential Treatments:** Findings suggest that managing acute inflammation properly could prevent chronic pain, leading to better long-term outcomes for patients.

CPN CHRONIC PAIN NETWORK

**Quick Article Link:** https://www.science.org/doi/10.1126/scitranslmed.abj9954

## What happened?

Researchers followed 98 participants with acute low back pain for three months, comparing those whose pain resolved with those whose pain persisted. They analyzed gene expression in the immune cells of these patients to identify differences. The study also included experiments on mice to understand how different drugs affect pain resolution. Specifically, they looked at the effects of neutrophil depletion and the administration of common pain relievers like NSAIDs, steroids, and other analgesics.

## Why is it important?

This study provides important insights into the biological processes that stop acute pain from becoming chronic pain. For example, the research shows that an active inflammatory response, driven by neutrophils, is crucial for resolving pain and that using anti-inflammatory drugs like NSAIDs early on can prolong pain. These findings are important for developing better pain management strategies that avoid the unintended consequence of turning temporary pain into a chronic condition.

## What now?

The study suggests that it is important to be careful with the use of anti-inflammatory drugs during the early stages of pain. Instead, promoting a controlled inflammatory response may help resolve pain more effectively. Future research should focus on identifying the best ways to manage inflammation and explore new treatments that use the body's natural healing processes. By understanding and applying these insights, healthcare providers can improve pain management practices and make patient outcomes better, reducing the risk of chronic pain development.