

Deciphering the Underlying Biology of Precision Exercise Therapy in Health and Disease

Graeme J. Koelwyn, PhD

Assistant Professor, Simon Fraser University, Faculty of Health Sciences

Affil. Asst. Professor, UBC, Division of Cardiology, Faculty of Medicine

Principal Investigator, Centre for Heart Lung Innovation

James Hogg Chair at St. Paul's Hospital and

Tier 2 Canada Research Chair in Public Health Omics in Exercise and Disease

The logo for Simon Fraser University (SFU), featuring the letters "SFU" in white on a red rectangular background.

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Centre for
Heart Lung Innovation
UBC and St. Paul's Hospital

Research Background

LETTERS

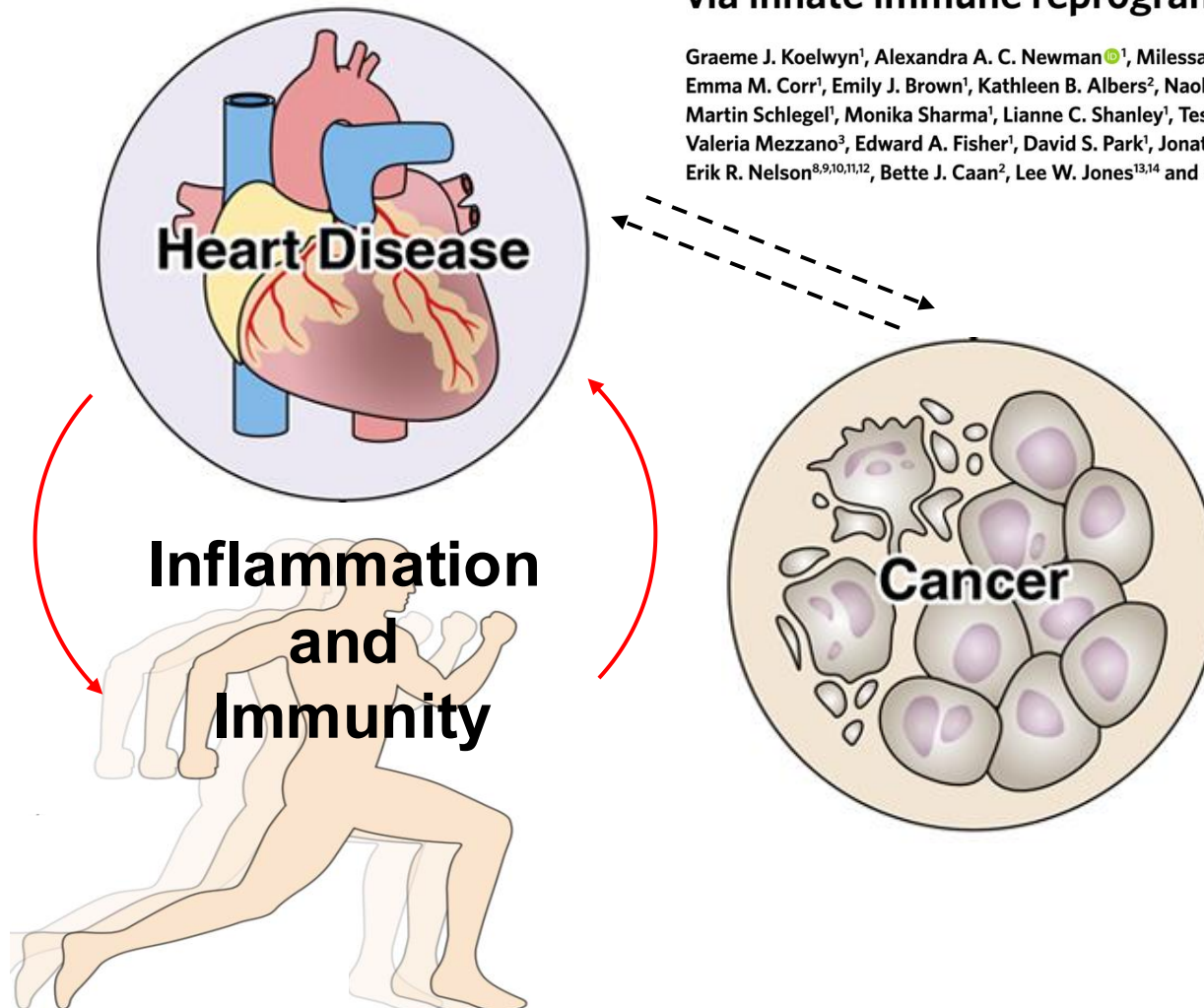
<https://doi.org/10.1038/s41591-020-0964-7>

nature
medicine

Check for updates

Myocardial infarction accelerates breast cancer via innate immune reprogramming

Graeme J. Koelwyn¹, Alexandra A. C. Newman¹, Milessa S. Afonso¹, Coen van Solingen¹, Emma M. Corr¹, Emily J. Brown¹, Kathleen B. Albers², Naoko Yamaguchi¹, Deven Narke¹, Martin Schlegel¹, Monika Sharma¹, Lianne C. Shanley¹, Tessa J. Barrett¹, Karishma Rahman¹, Valeria Mezzano³, Edward A. Fisher¹, David S. Park¹, Jonathan D. Newman^{1,4}, Daniela F. Quail^{5,6,7}, Erik R. Nelson^{8,9,10,11,12}, Bette J. Caan², Lee W. Jones^{13,14} and Kathryn J. Moore^{1,15} ✉



Preventing Cardiovascular Complications of Breast Cancer Treatment: The Utility of Effective Exercise Prescription

Jessica M. Scott · Graeme J. Koelwyn ·
Michel G. Khouri · Pamela S. Douglas · Lee W. Jones

nature
metabolism

REVIEW ARTICLE

<https://doi.org/10.1038/s42255-020-00277-4>

Check for updates

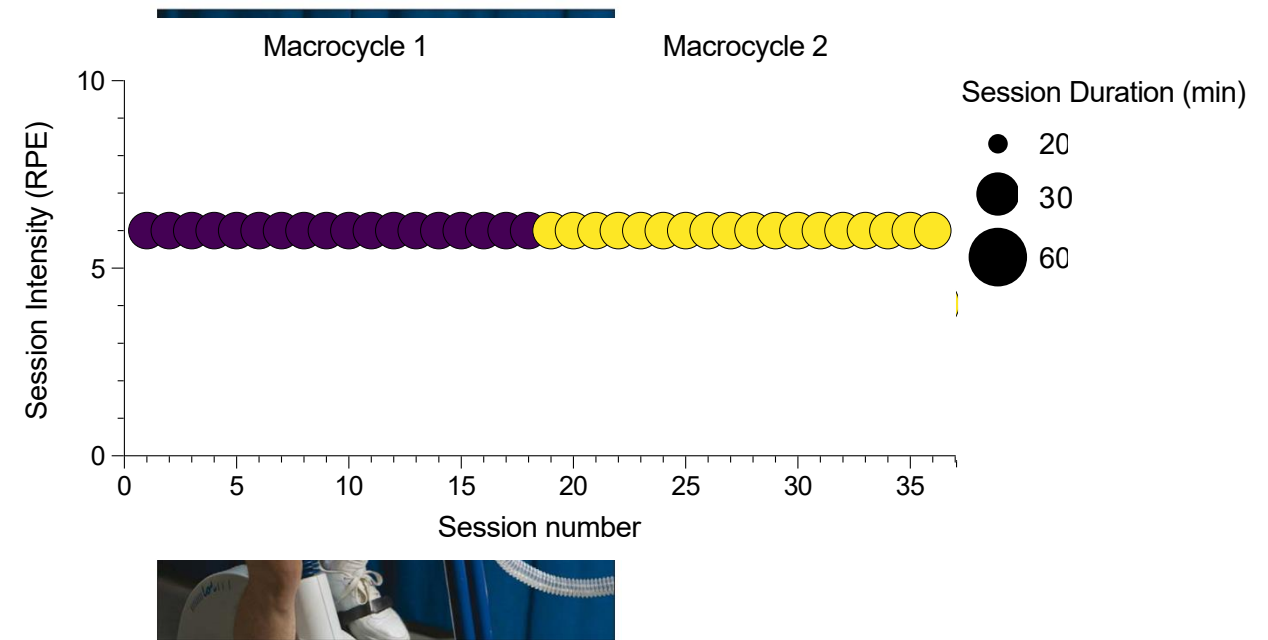
Exercise and immunometabolic regulation in cancer

Graeme J. Koelwyn¹, Xueqian Zhuang², Tuomas Tammela^{2,3}, Andrea Schietinger^{4,5} and
Lee W. Jones^{1,6} ✉

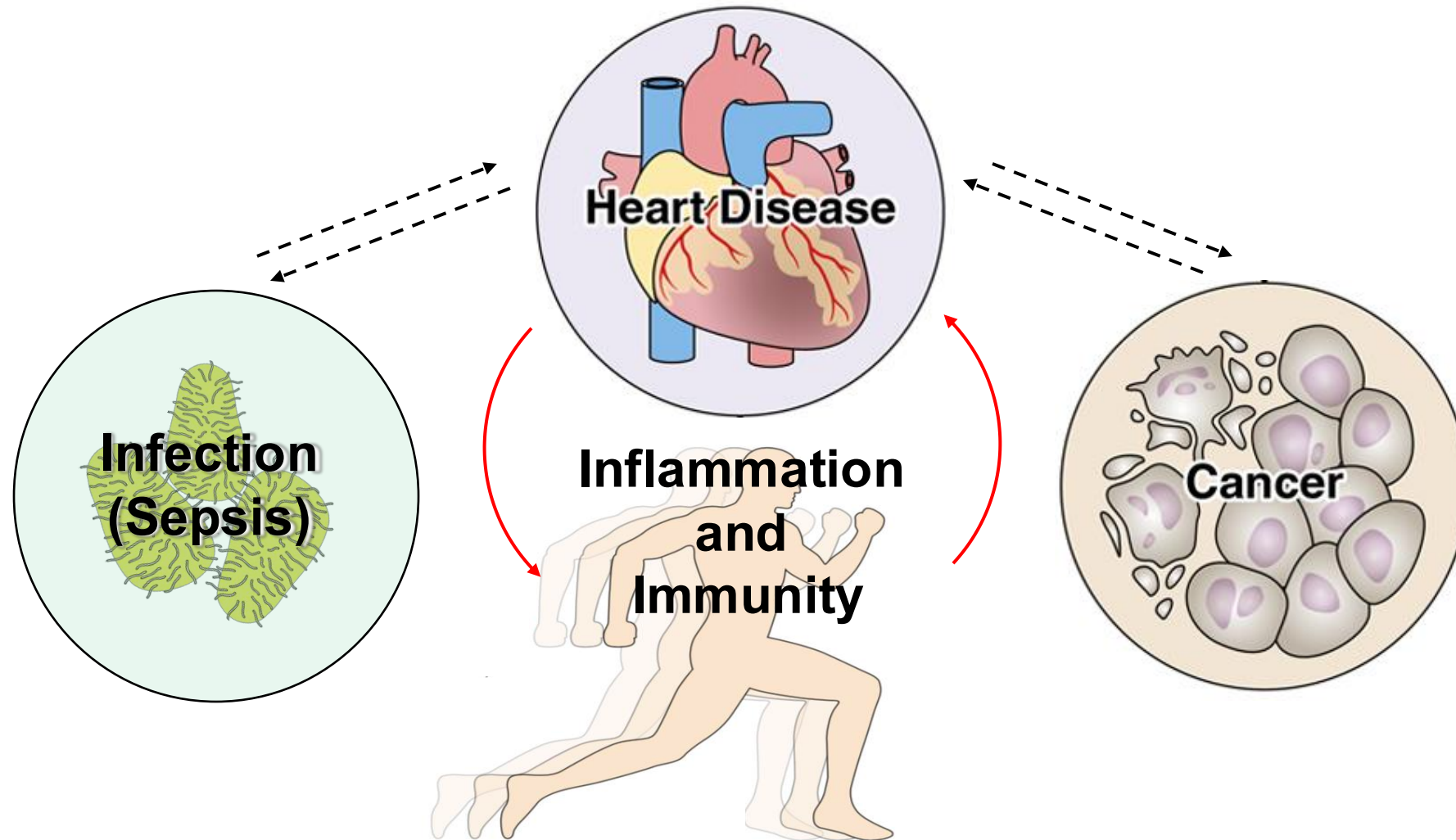
Targeted Exercise Approach



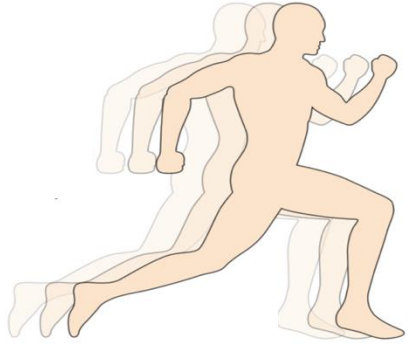
Cardiopulmonary Exercise Test



Ongoing Projects



Ongoing Projects



Targeted Exercise Following Sepsis



Safety/Feasibility Studies
Observational Studies

Cardiorespiratory fitness
Continuous lifestyle monitoring
Longitudinal immune profiling
Patient outcomes

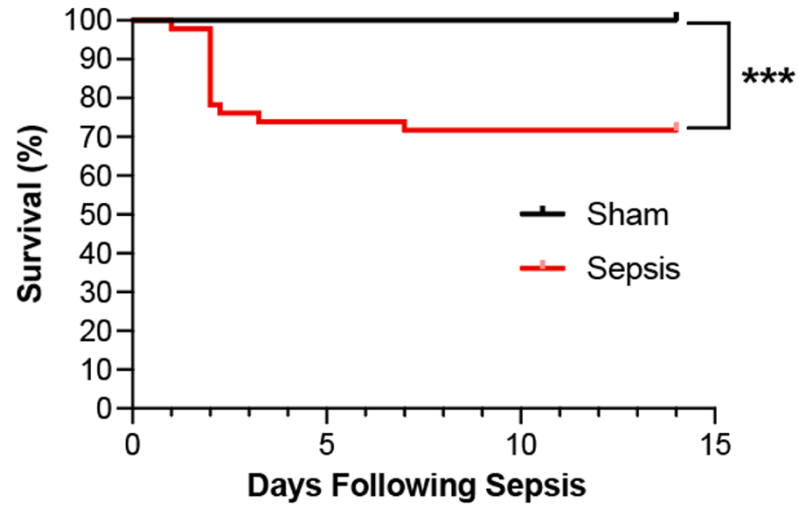
Models of sepsis-induced
hyper inflammation and
immune suppression

Identify candidate factors and
mechanisms of action

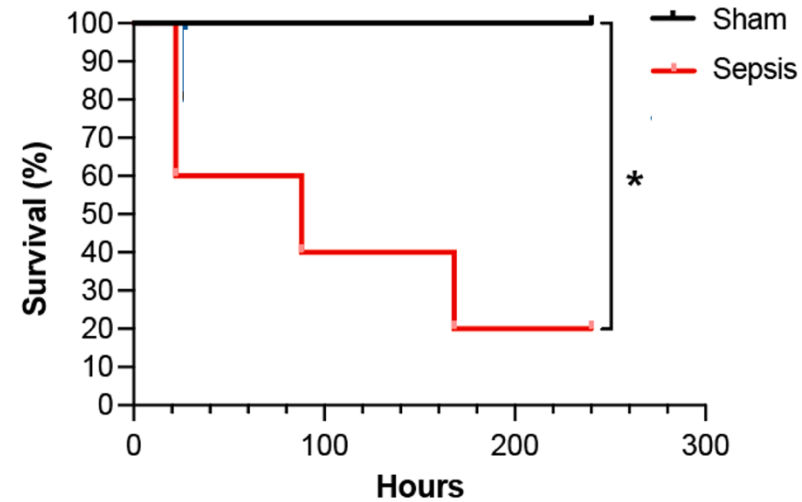
Biomarker-driven
Clinical Trials

Preclinical model of sepsis-induced hyper inflammation and immune suppression

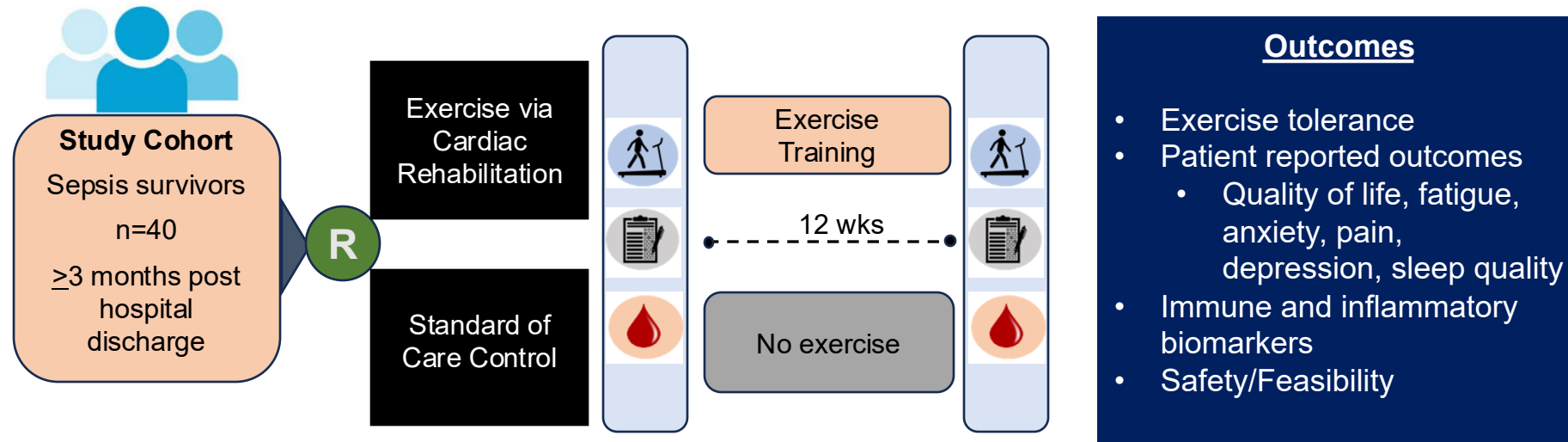
Response to Sepsis



Response to Secondary Pneumonia



PRrecision ExerCIsE to improve patient outcomes in SEpsis survivors: PRECISE Study



How are we doing this?

Precision Exercise Research Program

Cardiology and Cardiac Rehabilitation



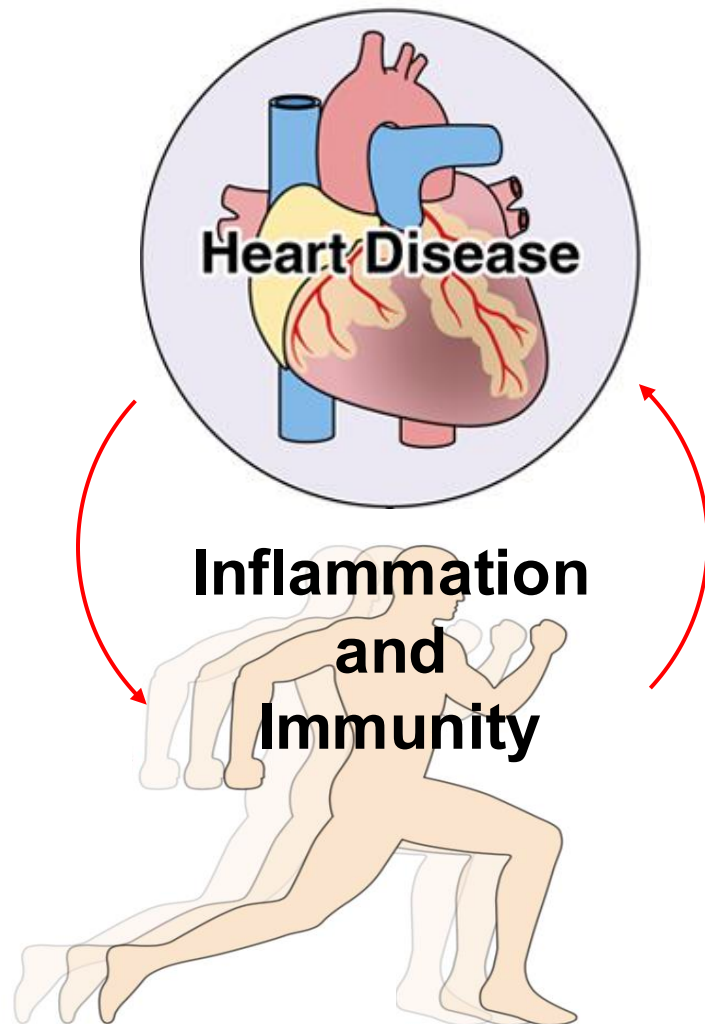
Dr. Carolyn Taylor, Dr. Nate Moulson, and
Dr. Thomas Roston

Infection and Critical Care



Dr. John Boyd, Dr. Jim Russell, and
Dr. Keith Walley

Other Ongoing Funded Projects



Cardiology and Cardiac Rehabilitation



Dr. Carolyn Taylor, Dr. Nate Moulson, and
Dr. Thomas Roston



Contents lists available at [ScienceDirect](https://www.sciencedirect.com)
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Cardiology Research and Practice**
journal homepage: [www.sciencedirect.com/journal/
american-heart-journal-plus-cardiology-research-and-practice](https://www.sciencedirect.com/journal/american-heart-journal-plus-cardiology-research-and-practice)

Research Paper

The design and rationale of the cardiac REHABilitation to improve metabolic health in Hypertrophic CardioMyopathy (REHAB-HCM) Study

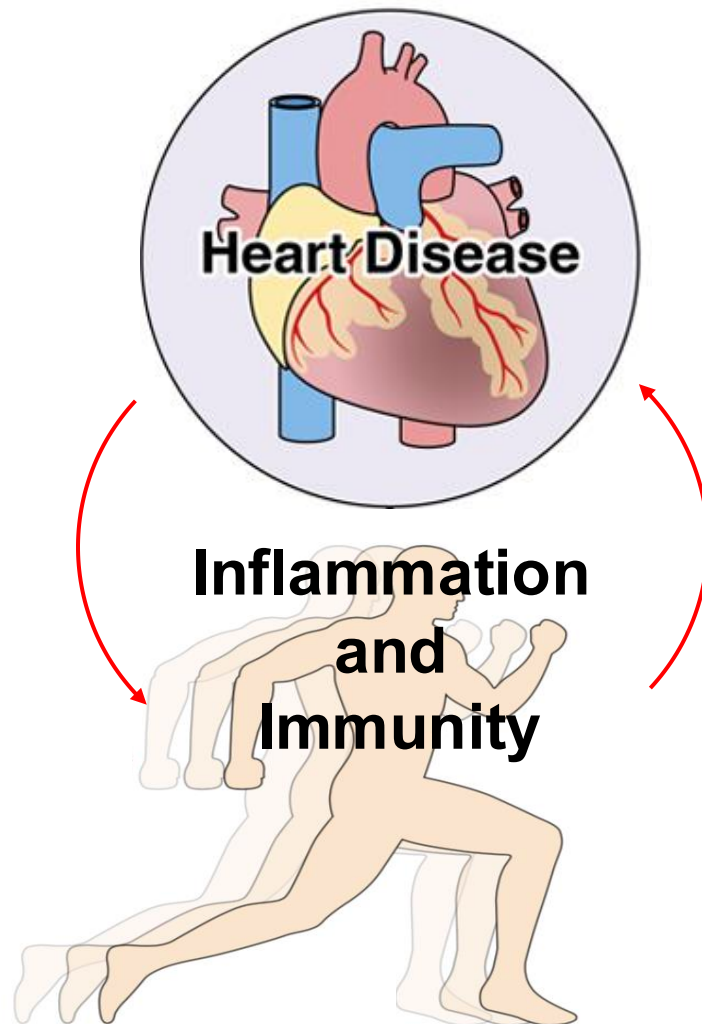
Matthew Cheung^a, Nathaniel Moulson^{b,c}, Jinelle C. Gelinas^d, Ali Daraei^{d,f},
Sarah M. Bradwell^{d,e}, Carolyn Taylor^b, Neil D. Eves^f, Graeme J. Koelwyn^{d,e},
Thomas M. Roston^{b,c,*}

Other Ongoing Funded Projects

Cardiology and Cardiac Rehabilitation



Dr. Carolyn Taylor, Dr. Nate Moulson, and
Dr. Thomas Roston



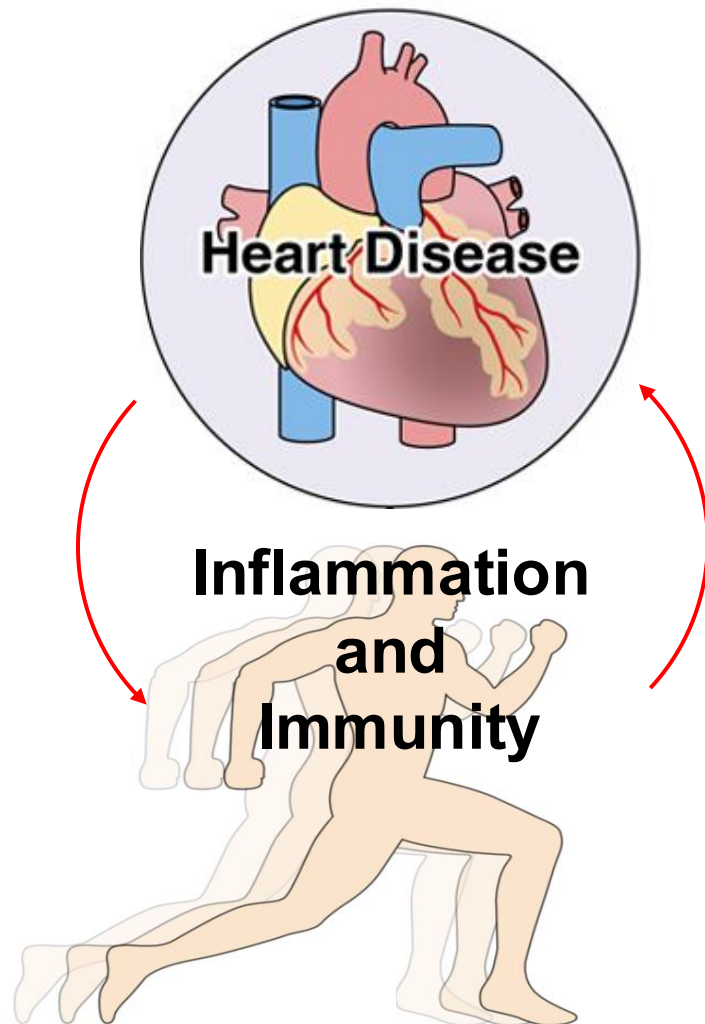
**Exercise reprogramming of myeloid cells to
mitigate residual inflammatory risk following
myocardial infarction**



Other Ongoing Funded Projects



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Acknowledgements

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SPH/Cardiac Rehabilitation

Nathaniel Moulson
Carolyn Taylor
Thomas Roston
Scott Lear

Centre for Heart Lung Innovation

John Boyd
Jim Russell
Keith Walley
Don Sin
Janice Leung

UBC

Action on Sepsis
Neil Eves
Rob Shave

Patient Partners:

Susan Korstad
Richard Doll

