

The Effect of Lower-body Negative Pressure on Exercise Tolerance and Mechanisms of Dyspnea in Heart Failure with Preserved Ejection Fraction

Location: People living in interior British Columbia (Kelowna/Central Okanagan)

Description: Heart failure is a major public health problem that affects over 600,000 Canadians. In the past 20 years, we have learned that half of these individuals have a form where the heart muscle stiffens and cannot relax fully, which impairs heart filling. In contrast to heart failure where the heart muscle weakens and emptying becomes reduced, heart failure due to impaired filling tends to affect a greater number of women and presents more often in older individuals. Feeling out of breath is the major symptom experienced by people living with this condition, and difficulty exercising is highly related to how out of breath the person feels. This study will examine breathlessness and exercise tolerance in older men and women living with this form of heart failure and hope our findings will help individuals living with this condition.

Language: Speakers of either official language are eligible for the study and the team will make every effort to engage translational services for diverse languages.

Eligibility:

- 40 years of age or older
- your doctor has told you that you have clinical heart failure (with preserved ejection fraction)
- you have not had a significant worsening of your symptoms in the last 3 months
- you are otherwise healthy and without any major chronic conditions.

Participant requirements:

- Participants will be asked to come to Kelowna General Hospital for 1 visit lasting 2-2.5 hours, to visit a Valley Medical Laboratories clinic for a blood test, and to come to the Integrative Clinical Cardiopulmonary Physiology Laboratory at the University of British Columbia – Okanagan Campus for 3 visits lasting 1-1.5 hours each.
- In each of these 3 visits, participants will perform an exercise test where they will pedal at a moderate intensity for as long as they can (usually 3-8 minutes). Exercise will be on a special stationary bike within a box (like a fish tank) that fits around the lower body and is sealed at the hips (like a kayak).
- During exercise, we will take images of the heart and the lungs, measure lung volumes and the pressures generated by the breathing muscles and ask participants to describe how their breathlessness feels. This will allow us to see how the heart is functioning, how it affects breathing, and how heart and lung function relate to how women and men experience breathlessness.

Institution: The University of British Columbia

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