![CLSA élcv — Canadian Longitudinal Study on Aging / Étude longitudinale canadienne sur le vieillissement]

CLSA Approved Project

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Project Title
Identification of genetic variants associated with frailty – a genome-wide association study

Project Summary
The world population is getting older, and we are observing the same phenomenon in Canada. Aging population will make up approximately 20% of the total population by 2021 in Canada. This aging population challenges us to investigate the physiological consequences of aging. More importantly, it demands the investigation into the underlying pathways that result in progression to "Frailty" – a multifaceted elderly syndrome. Frailty is characterized by decreased reserves in multiple organ systems, developed by disease, absence of activity, insufficient nutritional intake, stress, and vulnerability to acute and chronic stressors. So far, only a few studies have been conducted to identify the genetic variants associated with frailty. In this study, we will perform a genome-wide association study (GWAS) to identify genetic variants associated with frailty. Further, we will use a machine learning approach to predict frailty using genotype data.

Keywords
chronic obstructive pulmonary disease, COPD, nutrition, physical activity, air pollution, cardiovascular disease