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**Project Title**

Social, lifestyle, genetic and epigenetic determinants of sex-specific multimorbidity clusters in middle-aged and older Canadian adults

**Project Summary**

Multimorbidity is defined as the co-existence of two or more chronic conditions in a single individual. Individuals with multimorbidity experience increased disability and functional decline and decreased quality of life and wellbeing. As a result, patients with multimorbidity account for higher societal and healthcare burdens and pose unique challenges for clinicians. Clinical guidelines tend to be disease-specific and randomized clinical trials generally exclude patients with multiple conditions. Consequently, evidence generated from clinical trials may not be relevant to patients with multimorbidity. Although the mechanisms of multimorbidity are not completely clear, it is commonly believed that many social, lifestyle, genetic and epigenetic factors are involved in the dynamics and synergies between the individual conditions in multimorbidity. The results from this study will enhance our understanding of multimorbidity and have great implication on prevention and treatment.

**Keywords**

multimorbidity, social determinants, genetic risk factors, epidemiology, genetic epidemiology