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Canadian Longitudinal Study on Aging
Étude longitudinale canadienne sur le vieillissement

CLSA Approved Project

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Project Title
Polygenic Risk Scores for Lipid Levels

Project Summary
Coronary heart disease (CHD) accounts for approximately a third to a half of all cardiovascular disease cases. Plasma LDL, HDL, TG, and total cholesterol levels have been suggested to be risk factors of CHD. These plasma lipid traits are also partially heritable. Lipid screening in early adult life aims to identify individuals with hyperlipidemia and high risk of CHD. However, since it's usually performed in the general population with low hyperlipidemia prevalence, the predictive value is relatively low and this screening leads to considerable waste of money and resources. Therefore, we aim at predicting plasma LDL/HDL/TG/TC level and CHD risk with genotype data to identify the low-risk population that can be excluded from lipid screening. To do so we will use a polygenic risk score, which has been associated with lipid levels. We will then identify people at low genetic risk for hyperlipidemia and test if they can be removed from the screening program.

Keywords
Genome Wide Association Study, Lipid Levels, Screening, Lasso Regression