CLSA Approved Project

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Project Title
Retinal imaging in prediction and diagnosis of cardiovascular diseases

Project Summary
Cardiovascular diseases (CVD) have remained the leading cause of death in the Canada and worldwide. The substantial burden of CVD promotes enduring interest in new ways of screening for early disease diagnosis and prediction. Fundus retinal imaging is a non-invasive and cost-effective procedure. Since the ophthalmic medium is translucent, it allows retinal vessels to be viewed with relative ease. The objectives of our study are: (1) to identify age- and sex-specific retinal parameters that are independently associated with CVD, using the data from the Canadian Longitudinal Study on Aging (CLSA); (2) to develop CVD risk scores based on retinal parameters and other biological and lifestyle measures to detect concurrent and predict future incident cardiovascular diseases, respectively. This study will be the first Canadian population-based study exploring the use of retinal imaging in diagnosis and prediction of CVD.

Keywords
cardiovascular disease, machine learning, retinal imaging