

CLSA Approved Project

Applicant

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Project Title

Diabetes mellitus-related hearing loss prevalence and association between hyperglycemia and hearing loss in adults participating in the Canadian Longitudinal Study of Aging

Project Summary

There is growing medical evidence regarding an association between changes in retinal vascular size and the risk of cardiovascular diseases. However, the results of previous population-based studies are dependent upon the chosen population sample and on factors such as age, sex, blood pressure level and ethnicity as well as other risk factors that may interact to contribute to variations in retinal vascular size. The most common measures used to identify changes in retinal vessels are the AVR (the ratio between the arteriole and venule diameters) and the tortuosity of vessels. An important current limitation of these studies is that those measures are computed in specific retinal areas while signs of cardiovascular diseases could be present elsewhere in the retina. The main objective of this project is to develop an interpretable machine learning approach for an early diagnosis of cardiovascular diseases from retinal images that can be used in a clinical setting.

Keywords

Canadian Longitudinal Study on Aging, CLSA, hearing loss, age-related hearing loss, diabetes mellitus, diabetes-related hearing loss