

## **ABSTRACT**

### **GLAUCOMA DIAGNOSTIC ABILITY OF DIFFERENT IMAGING DEVICES**

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Glaucoma is the leading cause of irreversible blindness worldwide. This disease damages the eye's nerve system and has an asymptomatic characteristics. Because it targets the nerve system, currently this disease is incurable. The best possible action is to diagnose it in the early stage and try to prevent it from getting worse.

This study focuses on the ability of imaging device in detecting glaucoma. A total of 10 eyes is measured with three imaging devices which is GDx VCC, HRT3, and Spectralis OCT and with a gold standard device which is Octopus 900 Perimeter. The overall result from the imaging devices was compared against the gold standard device to determine which of the imaging device is most reliable.

The result showed that the measurement result from Spectralis OCT is strongly similar to the gold standard. Therefore, it is concluded that Spectralis OCT is the most reliable device among the three imaging devices. However, there are some missing measurements in the dataset making it hard to compare the development over the years and the result from the local parameters are not included in this study. Therefore, further study with using a more complete dataset and including the local parameters needs to be done.

*Keyword: Glaucoma, Optic Nerve Head, Retinal Nerve Fiber Layer, Octopus 900 Perimeter, GDx VCC, HRT3, Spectralis OCT*