

UNIVERSITI TEKNOLOGI MARA

**MACULAR THICKNESS VARIATIONS WITH
REFRACTIVE ERROR IN HEALTHYS EYES**

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requirements for the**

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AUTHOR'S DECLARATION

I declare that the work in this thesis/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Macula is the center of the retina which produces the sharpest vision. Thickness of the macula will affect the production of image. This study is conducted to measure the macular thickness in healthy eyes using spectral domain optical coherence tomography (SD-OCT) in Malay subjects. This cross-sectional study included 73 Malay subjects recruited from Ui Vision Optometry Clinic for measurement of macular thickness using Topcon 3D-1000 Spectral Domain OCT. Subjects were those who have 6/6 best corrected vision and aged from 18 to 40 years old. One-way annova is used to measure the difference of macular thickness in three refractive groups and Pearson Correlation is used to examine the association between macular thickness and refractive error. This study included 73 subjects (20 males and 53 females) with mean of spherical equivalent of -1.00 ± 2.58 . The total average macular thickness shows myope have the thinnest macular thickness (269.63 ± 29.01) while hyperope and emmetrope have macular thickness of 271.81 ± 28.80 and 271.39 ± 29.73 respectively. The thinnest region is central macula (224.44 ± 22.11), followed by average outer macula (259.50 ± 18.34) and the thickest is average inner macula (293.78 ± 15.63). Distribution of macular thickness is tested using Shapiro Wilk Normality Test ($p > 0.005$). Macular thickness is not significantly variety with different refractive error ($p = 0.666$). The macular thickness and macular volume is not significantly different with spherical equivalent when tested with One-way Annova. However, there is significant correlation between outer superior, outer inferior and average outer macula when tested using Pearson Correlation.

Keywords: macular thickness, refractive error, spectral domain OCT