Comparison of three different optical coherence tomography models for total macular thickness measurements in healthy controls

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BACKGROUND/AIMS
Conventional time domain optical coherence tomography (OCT) has become an important diagnostic tool to measure retinal thickness in clinical routine. Recently, different models of high-speed, high-resolution frequency domain OCTs have been introduced by various manufacturers. The purpose of this study was to compare 3 commercially available OCT models for retinal thickness measurements in healthy controls.

METHODS
OCT scans were performed on 28 healthy eyes with the RTVue-100 FD-OCT (Optovue Inc., USA), the Cirrus HD-OCT (Carl Zeiss Meditec Inc., USA) and the Stratus OCT 3000 (Carl Zeiss Meditec Inc.). Retinal thickness values were calculated and compared between OCT models.

RESULTS
Differences in mean retinal thickness measurements between OCT models were statistically significant. Mean retinal thickness measurement with Cirrus OCT, RTVue OCT and with Stratus OCT was 300, 265 and 257 microm, respectively.

CONCLUSION
Measurements with different OCT models lead to significantly different retinal thickness values.