Purpose: To evaluate the influence of water drinking test (WDT) on retinal and choroidal thicknesses using spectral domain optical coherence tomography (SDOCT). Materials and Methods: 30 healthy male adult subjects, with a mean age of 26.73 ± 3.77 years (range, 22 to 37) and having 5 diopters of spherical and 3 diopters of cylindrical refractive error, participated in this study. The retinal and choroidal thicknesses of the subjects were measured using 30° line scan enhanced depth imaging mode of Spectralis® SDOCT before, 15, 30 and 45 min after water loading. Retinal and choroidal thickness measurements were taken at the fovea and at two points that were 1500 µm nasal and temporal to the fovea. Results: Thirty eyes were included in the study. An increase in IOP was observed during WDT but only IOP increase between 0 and 15 min was statistically significant (p=0.005). We did not observe any statistically significant changes in retinal and choroidal thicknesses (p values were ranging between 0.306-0.917). Spearman’s coefficient test did not identify any significant correlation for changes in IOP, retinal and choroidal thicknesses between 0 and 15 min (p values were ranging between 0.150-0.559). Conclusions: This study revealed increase in IOP after WDT. However, retinal and choroidal thicknesses did not differ significantly during WDT. There was no association of changes in IOP, retinal and choroidal thicknesses.