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Central corneal thickness as a risk factor for glaucoma

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Abstract

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Glaucoma is the second leading cause of blindness worldwide. It has many risk factors such as age, race, sex, intraocular pressure, optic nerve changes, corneal thickness, refractive error, systemic diseases, family history and trauma. Central corneal thickness plays an important role in risk stratification among patients in whom glaucoma was of concern. Scleral thickness and central corneal thickness have a moderately positive correlation. Stress is responsible for glaucoma and causes deformations of the retinal layers and the consequent high levels of neural tissue strain. Stress and scleral thickness have inverse relation together and since scleral thickness is related to central corneal thickness positively, stress is related to central corneal thickness inversely. Risk of progression of glaucoma damage has an inverse relation with the central corneal thickness. This hypothesis is provable via two ways: (1) Based on formula of stress, when central corneal thickness decreases, the amount of stress increases inversely. This leads to more interruption of retinal layers and consequent higher levels of neural tissue strain that increases the risk of suffering glaucoma. (2) Variations of central corneal thickness lead to misestimation of intraocular pressure with Goldmann applanation tonometry. Underestimation of intraocular pressure may lead to underdiagnosis and consequently undertreatment of glaucoma. In conclusion central corneal thickness is a powerful predictor for risk of progression of glaucoma in population. So it should be added to routine clinical examinations for screening of glaucoma. Our hypothesis answers the question about relationship between increased susceptibility to glaucoma damage in patients with thinner corneas. © 2007 Elsevier Ltd. All rights reserved.

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- 1 [The number of people with glaucoma worldwide in 2010 and 2020](#) (2006) British Journal of Ophthalmology, 90 (3), pp. 262-267. Cited 895 times. doi: 10.1136/bjo.2005.081224

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