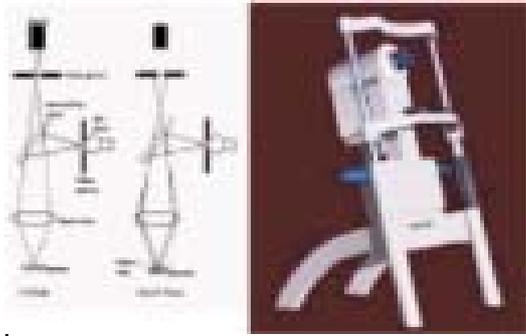


# OPTIC DISC MORPHOLOGY IN HEALTHY SUBJECTS IN MUMBAI, INDIA

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## INTRODUCTION

For decades, precise observation and documentation of the optic nerve head has been essential for the diagnosis and management of glaucoma. In previous generations, physicians depended on ophthalmoscopic observations, colored drawings, and clinical notes to determine whether the nerve had been damaged by glaucoma.



Fundus photography provided a great leap forward in optic nerve head documentation and this was soon followed by stereophotography, which allowed nerve head contours to be visualized. But this does not provide precise information to detect subtle nerve head changes. The development of laser imaging techniques, The Heidelberg Retinal Tomograph II (HRT II), uses confocal scanning laser ophthalmoscopy (CSLO) to produce pseudo-three-dimensional images of the nerve head. It also produces a set of precise numerical measurements that can be used to document nerve head status and

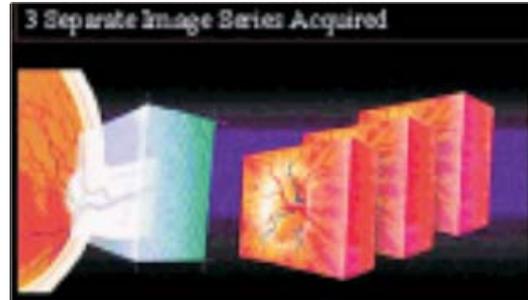
changes. The aim of our study is to critically examine the optic disc morphology in normal subjects using HRT-II, so that the estimation of stereometric parameters of a normal disc can be used to indicate an abnormal one.

## METHODS

The study included 47 randomly selected normal subjects attending an Out Patient Clinic in Urban Mumbai, India. Ages of subjects ranged from 20 to 69

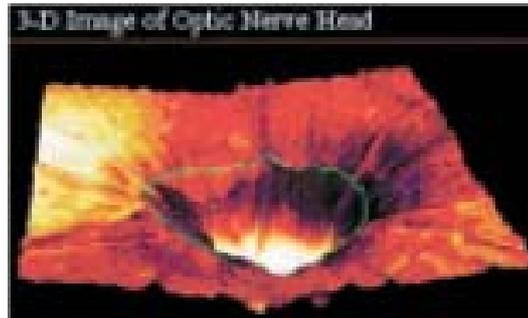
years and mean age was 44 years. The subjects were imaged on the HRT

II and the optic disc slides were morphometrically analyzed. Topographic and stereometric parameters were studied with respect to age, gender and disc size. The parameters analyzed were the disc area, cup/disc ratio, maximum cup depth, mean RFNL thickness and RFNL cross sectional area.



## RESULT

The average disc size in the population was 2.33 (+/-0.72) sq mm. The mean cup/disc area ratio was 0.31 (+/-0.20). Neither age nor sex was found to have any relation with the CD ratio. The maximum cup depth was 0.59 (+/-0.24) mm, mean RFNL thickness was 0.20 (+/-0.11) and the RFNL cross sectional area was 1.07 (+/-0.58).



## CONCLUSION

Decline in the Mean Retinal Nerve Fiber Layer thickness with increasing age ( $P < 0.001$ ) was found to be strongly statistically significant.

The cup diameters were widely dispersed, unevenly distributed and heavily dependant on disc size. The average rim breadths on the other hand were much less dispersed, normally distributed and independent of the disc diameter



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