

## Relating Retinal Structure and Function in Diabetes

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### Abstract

**Background:** Relating retinal structure and function has been discussed in the literature at different stages of retinopathy in diabetics. Little is known however about this relation in type 2 diabetics without retinopathy.

**Purpose:** To review changes in retinal thickness and its correlation with visual function (visual acuity and contrast sensitivity).

**Methods:** A literature review was conducted on the retinal structure and function relation in type 2 diabetes without retinopathy. The search criteria considered the type of diabetes, the retinal thickness and its correlation with visual function. The visual function test used was solicited to high and low contrast visual acuity, and contrast sensitivity gratings, and finally the luminance conditions under which the visual function was tested.

**Results:** The increase in retinal thickness was correlated with worse visual acuity in type 2 diabetics in general. However, it was a general conclusion that may have been affected by macular edema, as the sample was not solicited only for diabetics without retinopathy. Also, the major visual acuity correlated was high contrast at photopic luminance levels. The retinal thickness correlation with contrast sensitivity was mainly tested before and after treatment in diabetics with retinopathy (photocoagulation). The tested spatial frequencies were 1.5 cycles per degree (cpd) and higher (12cpd). The level of illumination was mainly photopic.

**Conclusion:** The retinal structure and function correlation in type 2 diabetics without retinopathy needs to be further studied in longitudinal studies to define a pattern that can be a guide for clinicians in type 2 diabetics screening.



### Biography

Shroug Aldaham has graduated from Complutense University of Madrid (UCM), Spain with a PhD degree in Optics, Optometry and Vision (with distinction). She has a BSc (Hons) in Optometry from King Saud University (KSU), Riyadh, Saudi Arabia, and a Master of Science in Vision Science from the University of Waterloo, Ontario, Canada. She has joined the Optometry department at KSU as a demonstrator (an academic position that prepares for professorship) before joining the Master program in Canada. After her masters she returned to Riyadh and later joined the PhD program at UCM. Both of her Masters and PhD studies were Saudi government-funded research grants. Currently, she is a licensed practicing Senior Optometrist in Saudi Arabia. She has a research experience in pediatric vision screening and visual function testing in diabetics and has published in international Optometric and Ophthalmology research meetings. Her research interests are pediatric and diabetic visual functions.