



## **Artifacts in the SD-OCT images in a patient with glaucoma or suspected glaucoma may lead to an erroneous conclusion**

### ***The Science behind the Tip***

Structural measurements of the optic disc and retinal nerve fibre layer (RNFL) have become an indispensable tool in the diagnosis of glaucoma and as an aid in determining progression of the disease. However, several causes of artifactual measurements have been recognised<sup>1</sup>.

Epiretinal membranes and vitreo-retinal adhesions give an erroneously thick RNFL measurement with SD-OCT. Following a spontaneous posterior vitreous detachment, the values of the RNFL thickness are reduced, mimicking progressive RNFL thinning. Other causes of artifacts include myopia and optic neuropathy other than glaucoma. The cause of some artifacts cannot be determined: in a prospective study 41%-56% of measurements in glaucoma suspect eyes which were classified as abnormal, were not replicated on subsequent scans<sup>2</sup>.

It is important to understand the limitations of imaging technology. Clinicians should first assess scans for artifacts before making therapeutic decisions based on RNFL measurements<sup>3</sup>. Clinical evaluation at the slit lamp supported by SD-OCT, should result in an accurate interpretation of the SD-OCT images and prevent erroneous conclusions, that are based on data that are highlighted in red ("red disease")<sup>4</sup>.

### ***References***

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- 4) Chong GT Lee RK. Glaucoma versus red disease: imaging and glaucoma diagnosis. *Curr Opin Ophthalmol* 2012; 23: 79-88