



### OCT can be a helpful additional tool to differentiate glaucoma from other optic neuropathies

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

Differentiating between glaucomatous and non-glaucomatous optic neuropathies can be quite challenging. In addition to a thorough clinical history and a detailed examination, optical coherence tomography (OCT) can be very helpful<sup>1</sup>.

Consider the possibility of non-glaucomatous etiology if you are faced with either of the following findings: An unusual pattern: selective reduction of temporal or nasal quadrants with preserved superior and inferior quadrants<sup>2</sup> or respect for the vertical meridian in the macular ganglion cell complex (GCC) thickness. Discrepancy between OCT parameters and clinical examination: thinning of macular GCC and/or circumpapillary retinal nerve fiber layer that does not correlate with the optic nerve appearance, including cup to disc ratio and the distribution of neuroretinal rim tissue<sup>3,4</sup>.

#### ***References***

- 1) Waisberg, Ethan, and Jonathan A. Micieli. "Neuro-ophthalmological optic nerve cupping: an overview." *Eye and Brain* (2021): 255-268.
- 2) Danesh-Meyer, Helen V., et al. "Differentiation of compressive from glaucomatous optic neuropathy with spectral-domain optical coherence tomography." *Ophthalmology* 121.8 (2014):1516-1523.
- 3) Nguyen, James, et al. "Macular ganglion cell and inner plexiform layer thickness is more strongly associated with visual function in multiple sclerosis than Bruch membrane opening minimum rim width or peripapillary retinal nerve fiber layer thicknesses." *Journal of neuroophthalmology: the official journal of the North American Neuro-Ophthalmology Society* 39.4 (2019): 444.
- 4) Boussion, François, et al. "Retinal Nerve Fiber Layer Thickness/Minimum Rim Width Ratio Differentiates Glaucoma from Other Optic Neuropathies." *Journal of Glaucoma* (2023): 10-1097.

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