References for Glaucoma / Refractive and Cataract Surgery CAP Assessment

Topic: MIGS (questions 1-5)

Reference: Fingeret, Murray, Dickerson, Jaime E. The Role of Minimally Invasive Glaucoma Surgery Devices in the Management of Glaucoma. Optometry and Vision Science: February 2018, Volume 95 (2), p 155-162. doi: 10.1097/OPX.0000000000001173
https://journals.lww.com/optvissci/Fulltext/2018/02000/The_Role_of_Minimally_Invasive_Glaucoma_Surgery.12.aspx

Topic: OCT interpretation (questions 6-12)

Hood DC. Improving our understanding and detection of glaucomatous damage: An approach based upon optical coherence tomography (OCT). Prog Retin Eye Res. 2017 Mar; 57:46-75. doi: 10.1016/j.preteyeres.2016.12.002. Epub 2016 Dec 22. PMID: 28012881; PMCID: PMC5350042.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5350042/

NOTE: Several figures in this manuscript are incomplete. Screenshots of the correct figures are included at the bottom of this reference list.

Questions 13-25 are fundamental knowledge questions covering these topics.

Glaucoma

- Assessment, differential diagnosis, and management of glaucoma, glaucoma suspects, and ocular hypertension
- Use of glaucoma medications, including contraindications/complications
- Indications for and/or interpretation of gonioscopy
- Indications for and/or interpretation of RNFL/optic nerve OCT
- Indications for and/or interpretation of visual fields

Refractive and Cataract Surgery

- Managing patients with cataracts
- Pre-and/or post-operative care for cataract surgery

- Recommend/co-manage specialty IOL implants (toric, multifocal, extended-range-of-focus, accommodative)
- Pre-and/or post-operative care for patients undergoing refractive surgery

If you wish to review for the fundamental knowledge questions, we recommend any of the following:

- A recent edition of either The Wills Eye Manual or The Massachusetts Eye and Ear Infirmary Illustrated Manual of Ophthalmology.
- AAO Preferred Practice Patterns Guidelines on glaucoma, cataract surgery and refractive surgery

Corrected figures for reference: Hood DC. Improving our understanding and detection of glaucomatous damage: An approach based upon optical coherence tomography (OCT)

The open source (free) version of this article is an author's manuscript that had been accepted for publication but had not undergone final editing. Five of the figures in this manuscript are missing white arrows. The final version of these figures, with the white arrows, are shown on the following pages. We apologize for the inconvenience.

Figure 5

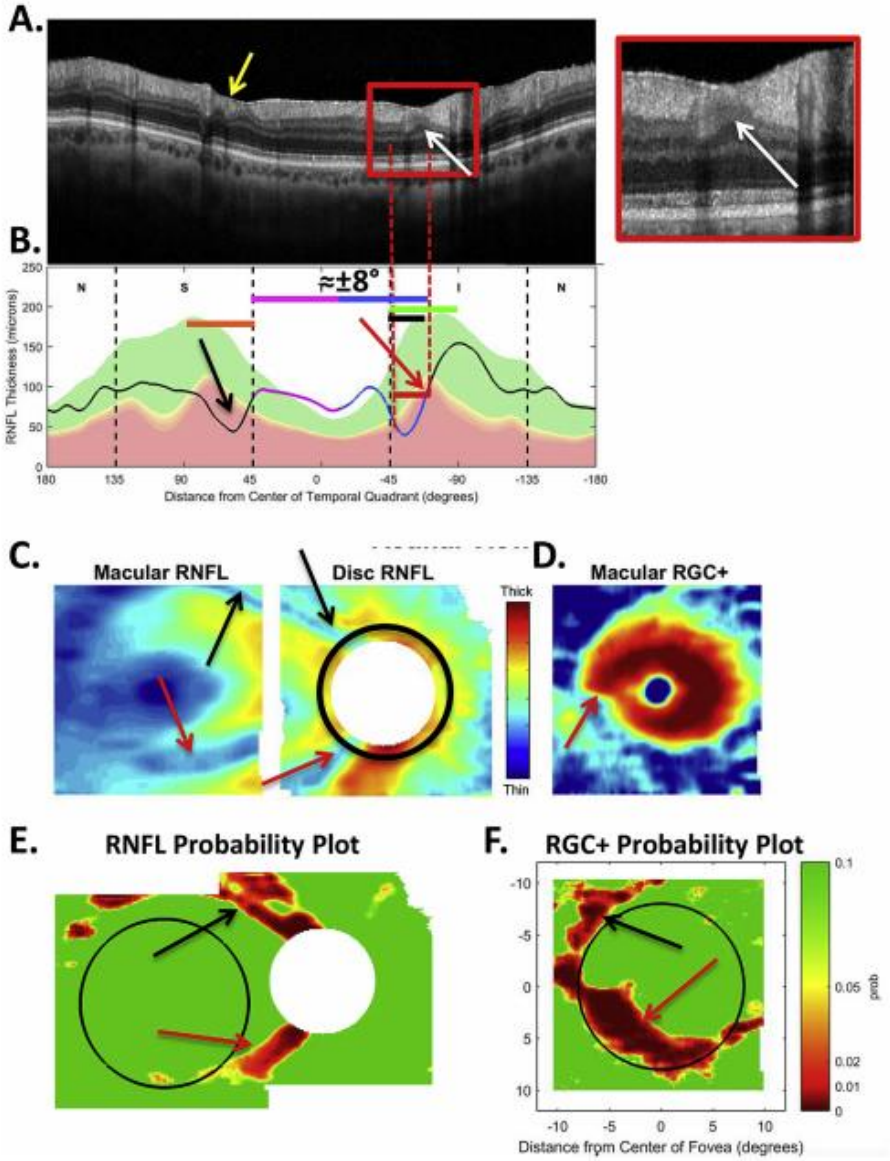

Fig. 5. The sdOCT results for an eye with a relatively local, but relatively deep cpRNFL defect. (A) An image from a circumpapillary scan along with the region within the red rectangle showed enlarged to the right. The white arrows point to the defect. (B) The cpRNFL thickness plot (black, magenta, and light blue curve) obtained from the disc cube scan in panel (C, right panel) shown in NSTIN orientation as in Fig. 2C. (C) The RNFL thickness map from the sdOCT cube scan of the macula (left) and disc (right). (D) The RGC + thickness map from the sdOCT cube scan of the macula. (E) The RNFL probability maps based upon the thickness maps in panel (C). (F) The RGC + probability map based upon the thickness map in panel (D). The black circles in panels (E) and (F) show the borders (±8°) of the macula. The arrows in all panels show the abnormal regions associated with the superior (black) and inferior (red) defects.

Figure 9

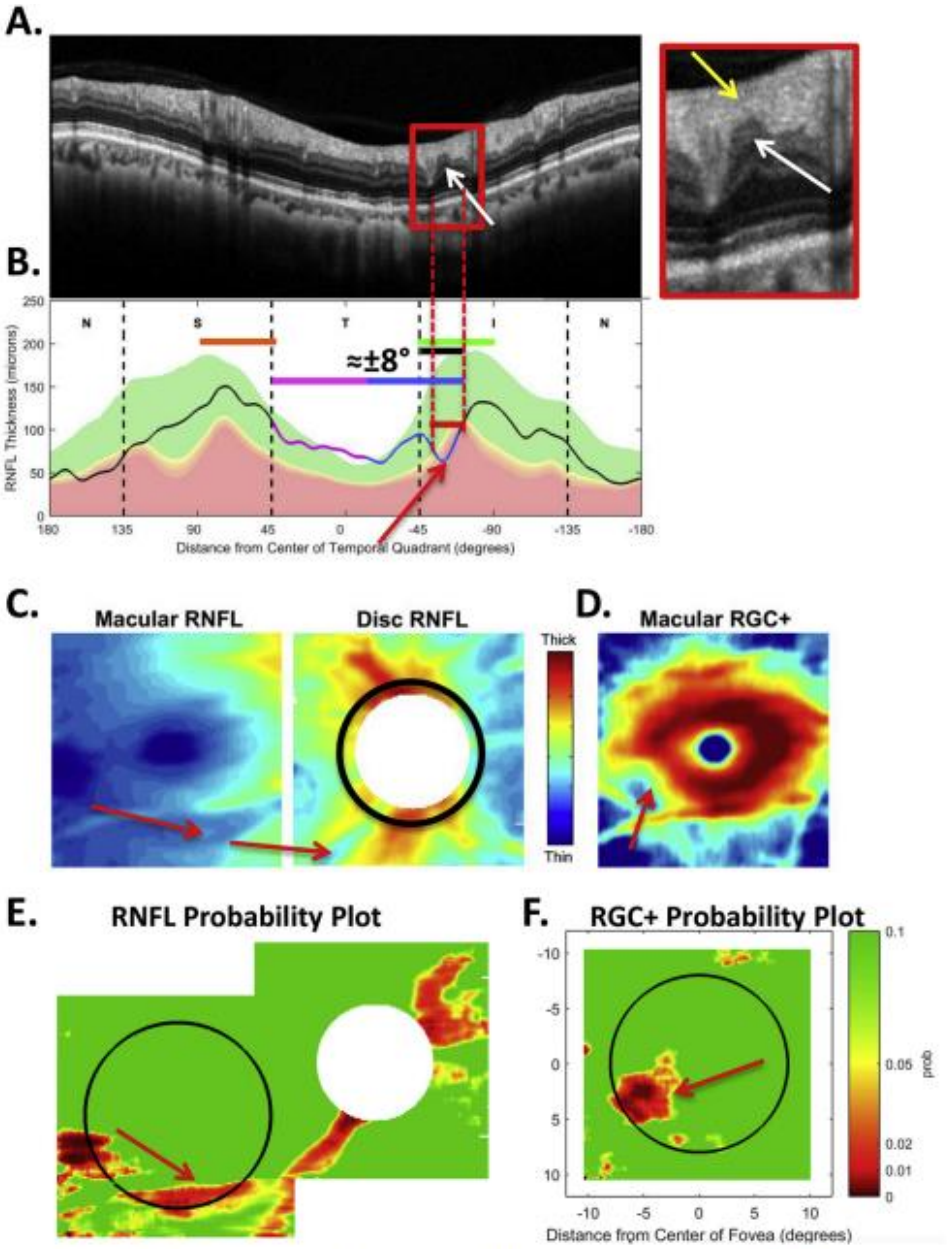

Fig. 9. The sdOCT results for an eye with a relatively local and relatively shallow cpRNFL defect. (A)–(F) Same as corresponding panels in Fig. 5. The red arrows in all panels show the abnormal regions.

Figure 10

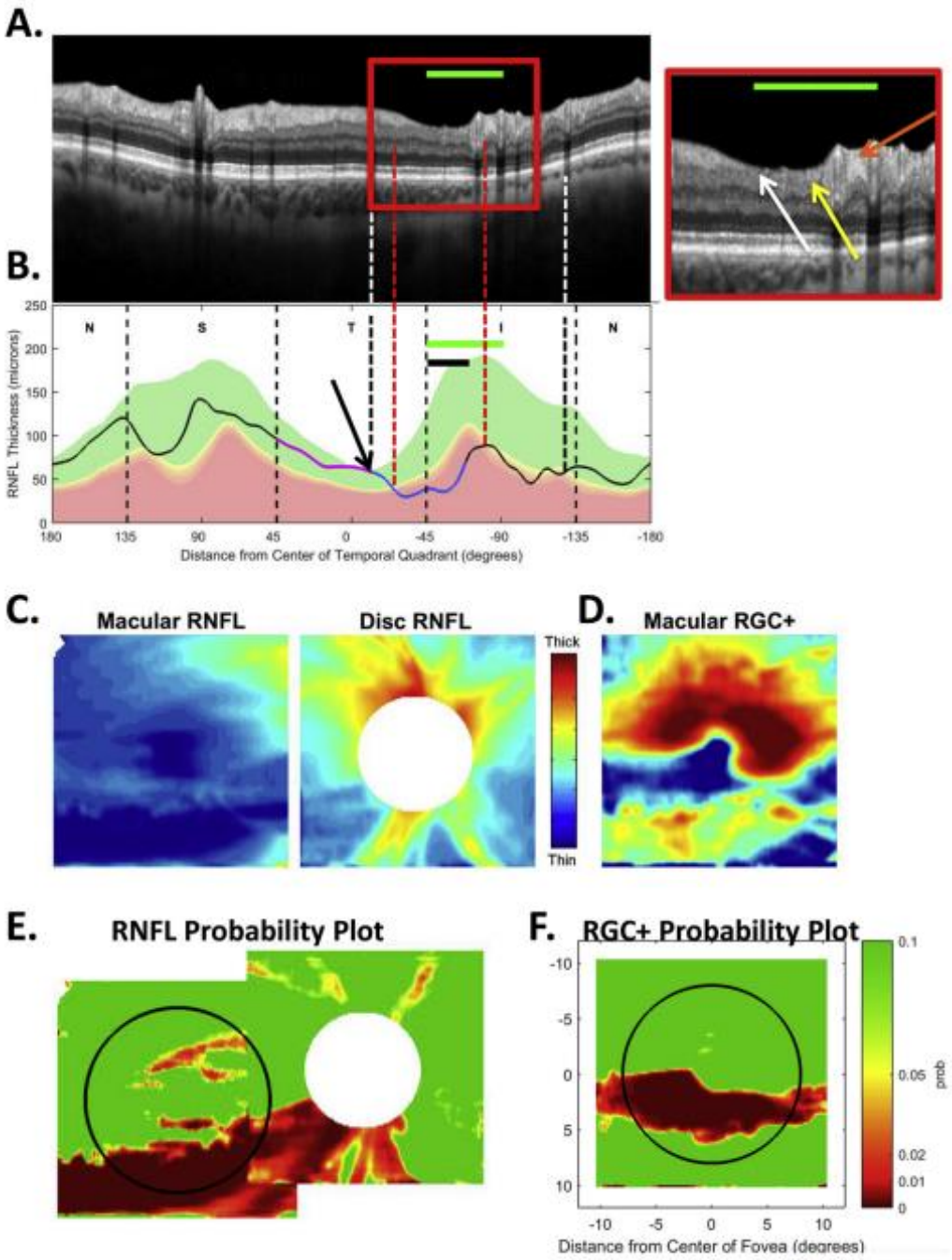

Fig. 10. The sdOCT results for an eye with a relatively wide and relatively deep cpRNFL defect. (A)–(F) Same as corresponding panels in Fig. 5. In panel (A), the arrows point to locations of the defect with little or no RNFL remaining (white) and with some RNFL remaining (yellow). The green horizontal line indicates the extent of the IVZ in panels (A–C). In panel (B), the black arrow indicates the approximate point on the disc corresponding to the midline of the macula.

Figure 11

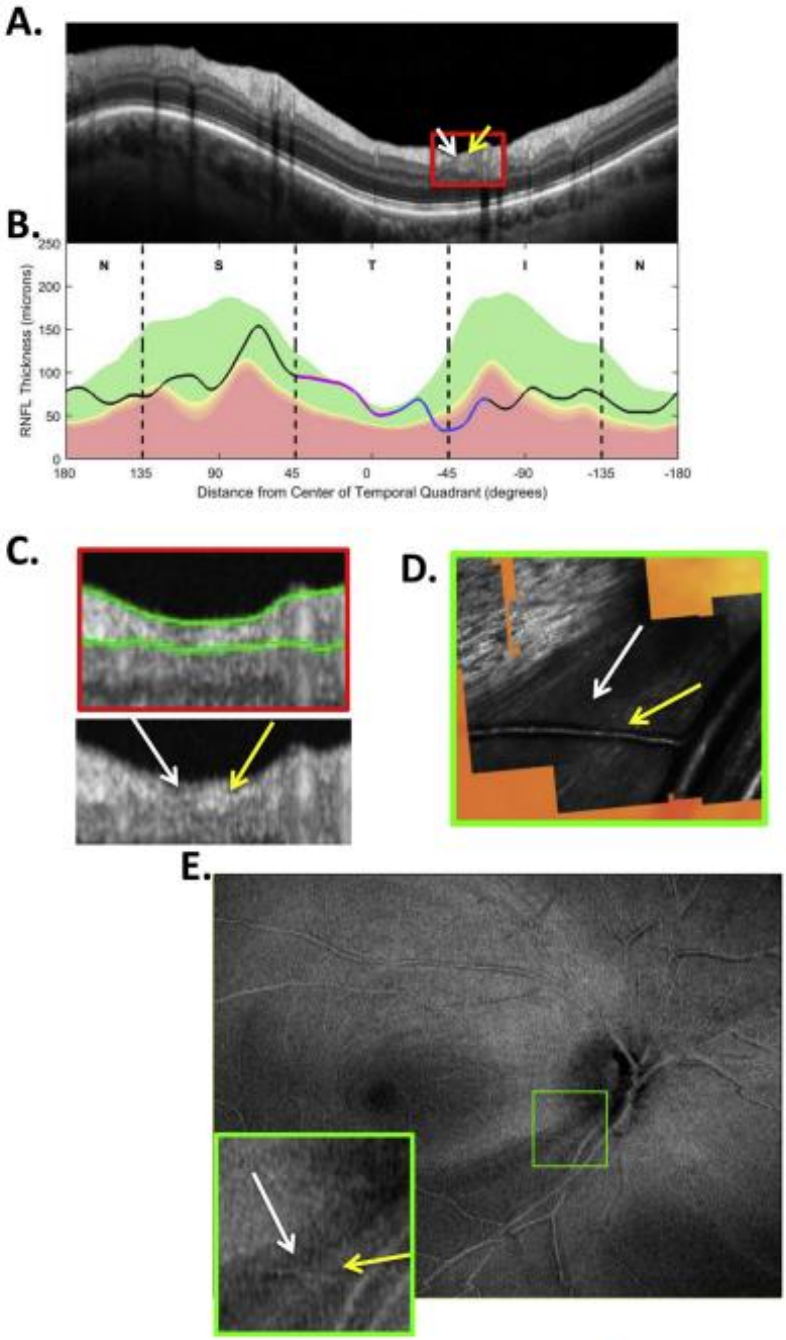

Fig. 11. The sdOCT and AO-SLO results for an eye with a relatively wide and relatively heterogeneous cpRNFL defect. (A) An image from a circumpapillary scan. (B) The cpRNFL thickness plot (black, magenta, and light blue curve). (C) Enlarged view of the portion of the cpRNFL scan within the red rectangle in panel (A) shown with (upper) and without (lower) the segmentation of the cpRNFL shown. (D) An AO-SLO image. (E) An en-face image of a wide-field scan of this eye with the region within the green rectangle enlarged in the lower right corner. This region corresponds to the region within the AO-SLO image in panel D. The arrows in panels (C–E) correspond to the same locations with largely missing RNFL bundles (white) and with some preservation of RNF bundles (yellow). Panels (D) and (E) are modified from Fig. 4A and B in Hood et al., (2015b).

Figure 19

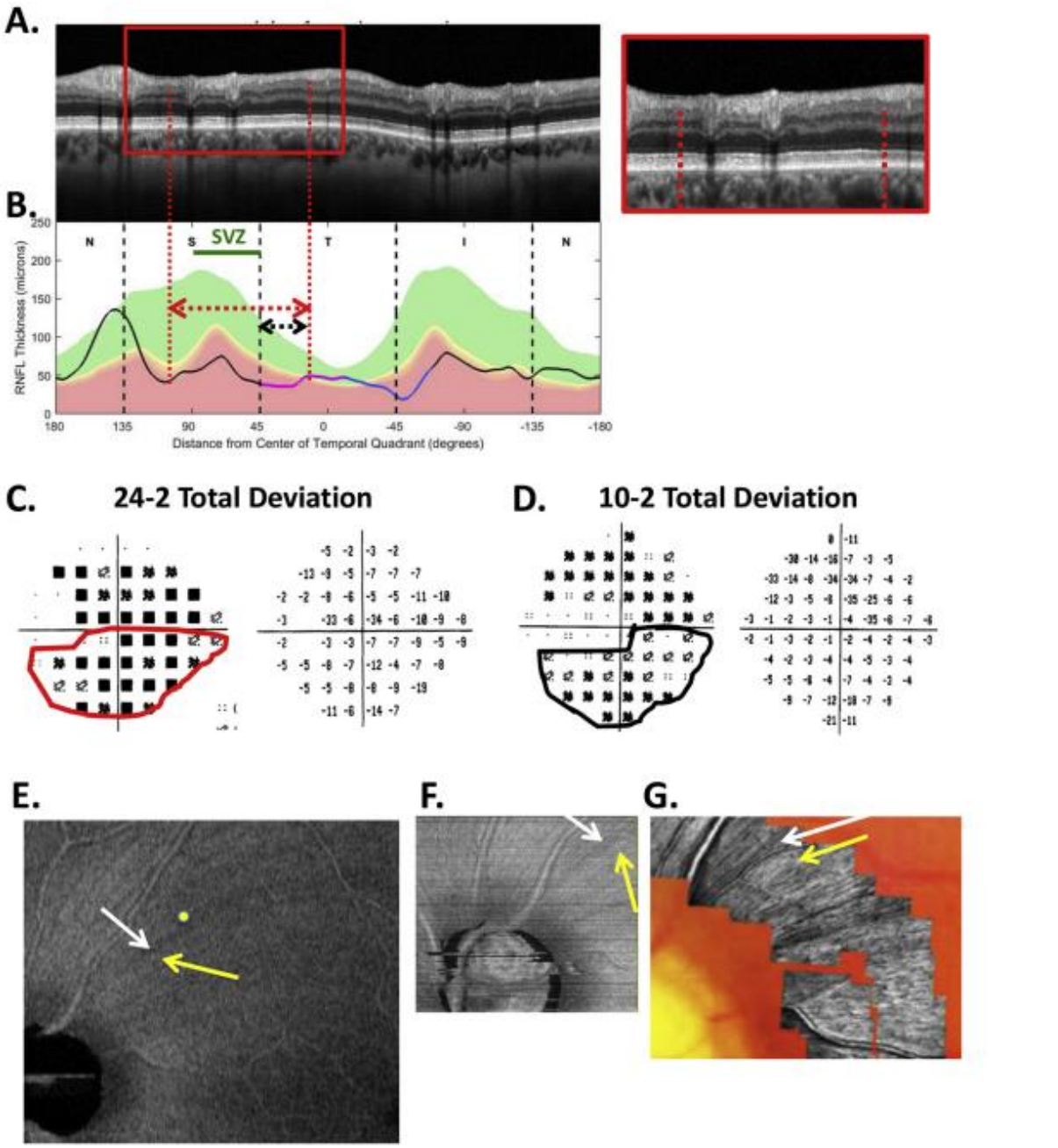

Fig. 19. The sdOCT results for an eye with widespread cpRNFL damage. (A) An image from a circumpapillary scan. (B) The cpRNFL thickness plot (black, magenta, and light blue curve). The SVZ is shown as the green line. (C) The 24-2 VF total deviation (TD) probability map (left) and TD values (right) with the inferior abnormal region enclosed within the red border. (D)) The 10-2 VF total deviation (TD) probability map (left) and TD values (right) with the inferior abnormal region enclosed within the black border. The corresponding regions of the cpRNFL are indicated by the red and black lines with arrows in panels A and B. (E) An en-face slab image of the 9 × 12 mm scan. (F) An en-face slab image of a 3 × 3mm scan of disc. (G) AO-SLO image. The yellow and white arrows are approximately the same locations in panels (E), (F), and (G). Modified from Fig. 6A and B in Hood et al., (2015b).