

Eye to Eye:
The Art of Fundus Photography

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Disclosures

- No relevant financial disclosures

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Objectives

1. To understand the most common types of fundus photography and associated clinical indications
2. To explain how particular fundus photo findings can provide insight into the patient's disease process
3. To develop optimization techniques for fundus photo capture to match particular pathology being captured

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	Optos	Heidelberg Spectralis	Clarus 500	RetCam
Field of area (degrees)	Up to 200	105-150	133-200*	130
Patient positioning	Sitting or "flying baby"	sitting	sitting	supine
Benefits	Non-contact but wide field to view periphery, can also do FAF, FA, ICG, and OCT	Captures peripheral vasculature better than Optos (in some cases)	Can do true color imaging, FAF, infrared	Can transport to NICU for ROP screenings
Drawbacks	\$\$, not true color images	\$\$, not true color images, less wide than optos	\$\$	\$\$, high initial learning curve
Common indications	Many	Many	Many	Retinopathy of prematurity

Source: Mishra et al (2023)

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Why get a fundus photo?

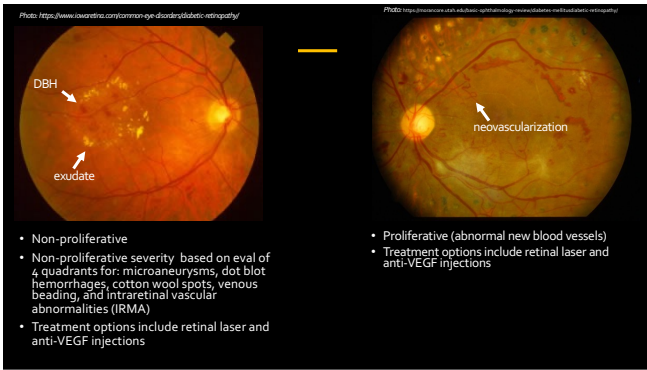
- Diabetic retinopathy
- Age related macular degeneration
- Retinal vascular occlusions
- Choroidal nevi and tumors
- Retinal dystrophies
- Retinopathy of prematurity
- Retinal detachment
- Glaucomatous optic disc damage
- Posterior or intermediate uveitis
- Anterior ischemic optic neuropathy
- Infections (herpesvirus, CMV, toxoplasma, etc.)
- ...and many more!

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Case 1

- A 47-year-old woman presents for an annual dilated exam for type 2 diabetic retinopathy screening
- Diagnosed with T2DM 5 years prior, recent A1c was 11% and she started insulin last month
- In last month noticed blurrier vision overall

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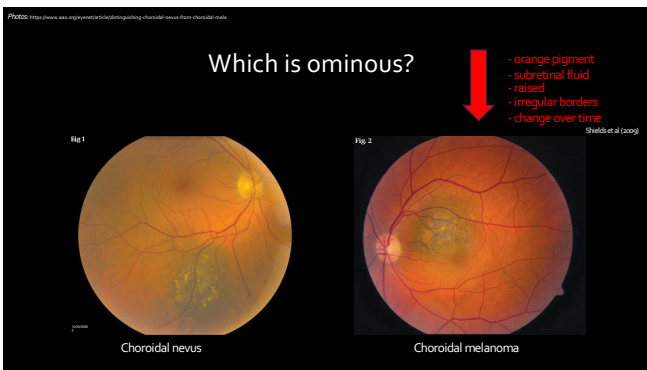


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Case 2

- A 55-year-old woman presents as a new patient for a routine dilated eye exam
- After seeing provider they ask you to take a fundus photo of a pigmented spot on the choroid

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Case 3

- A 76-year-old man comes in for a new-patient visit, referred from optometry for "suspicious nerve appearance" and borderline high eye pressure (IOP)
- He has no visual complaints
- Your refraction is -6.00 / -6.25 sphere

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Which nerve is worrisome?



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Additional References

- Mishra C, Tripathy K. Fundus Camera. [Updated 2023 Aug 25]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024, Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK525117/>
- Shields CL, Furuta M, Berman EL, et al. Choroidal Nevus Transformation Into Melanoma: Analysis of 2514 Consecutive Cases. *Arch Ophthalmol*. 2009;127(8):981–987. doi:10.1001/archophthalmol.2009.151
