

Is Glaucomatous Disease Different in Africa?

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Disclosures

I **do not** have any affiliation (financial or otherwise) with a commercial organization that may have a direct or indirect connection to the content of my presentation





CMJAH = Charlotte Maxeke
Johannesburg
Academic Hospital



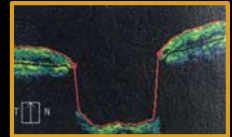
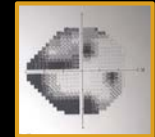
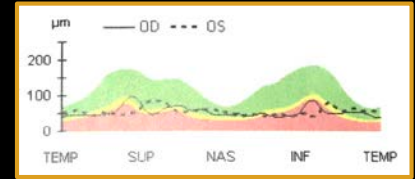
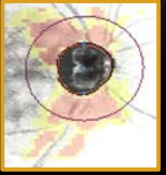
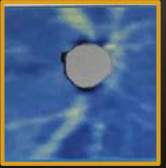
CMJAH Glaucoma Clinic

- 65% POAG
- 20% XFG
- Other:
 - ARG, NVG, ACG
 - PCG
 - Other 2^o glaucomas



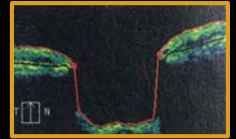
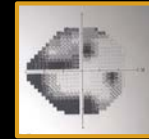
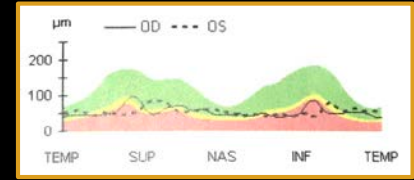
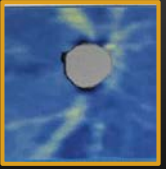
POAG in Johannesburg

- Age: 60 ± 13 (10% under 35)



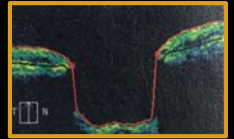
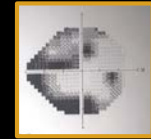
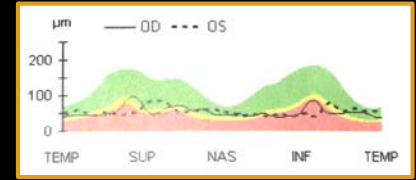
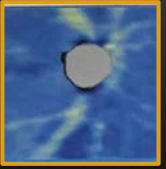
POAG in Johannesburg

- Age: 60 ± 13 (10% under 35)
 - 25% diabetic (T2DM)
 - 50% HT



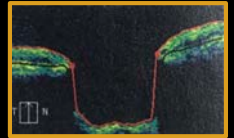
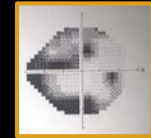
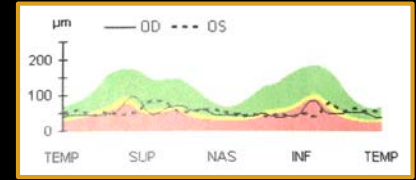
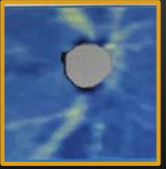
POAG in Johannesburg

- Age: 60 ± 13 (10% under 35)
 - 25% diabetic (T2DM)
 - 50% HT
- CCT = $505 \pm 38\mu\text{m}$
- VDH = $2 \pm 0.2\text{mm}$



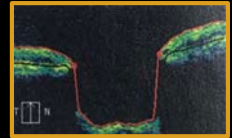
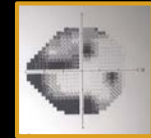
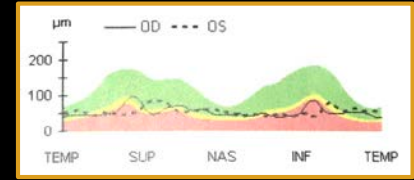
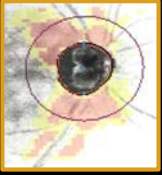
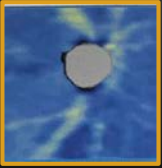
POAG in Johannesburg

- Age: 60 ± 13 (10% under 35)
- Advanced: 70%



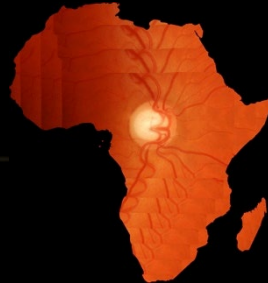
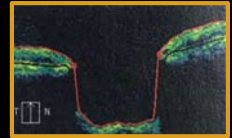
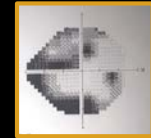
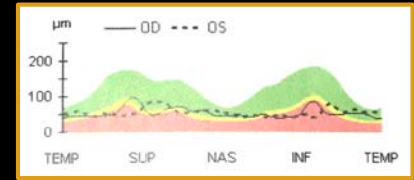
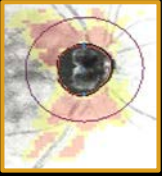
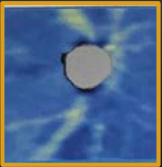
POAG in Johannesburg

- Age: 60 ± 13 (10% under 35)
- Advanced: 70%
 - Severe visual impairment: 53%
 - 27% bilateral



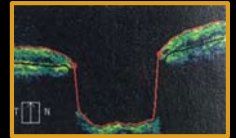
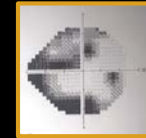
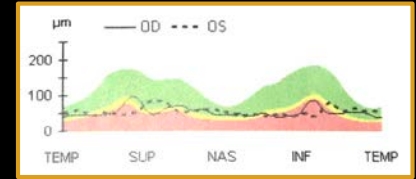
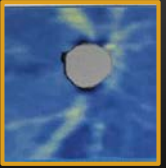
POAG in Johannesburg

- Age: 60 ± 13 (10% under 35)
- Advanced: 70%
 - Severe visual impairment: 53%
 - 27% bilateral
- IOP at dx: $35\text{mmHg} \pm 9$
- VCDR: 0.9 ± 0.1
- VF MD: -10 ± 4



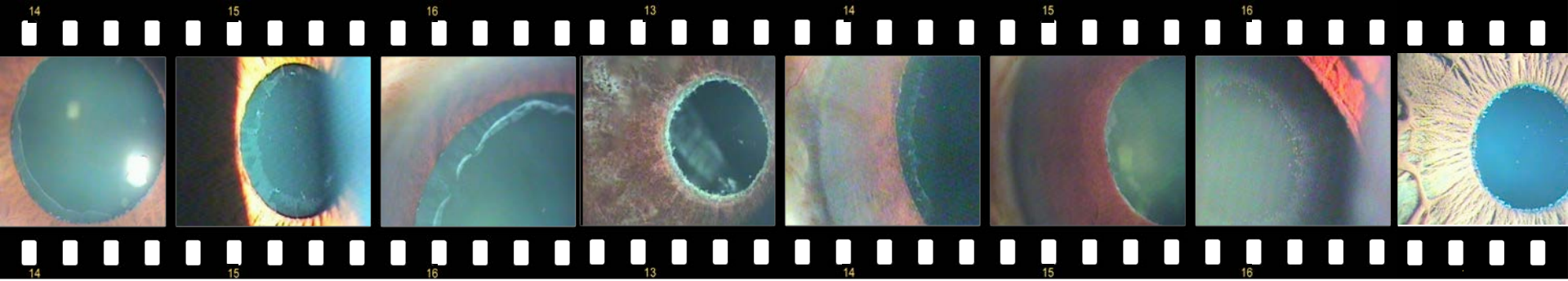
POAG in Johannesburg

- Age: 60 ± 13 (10% under 35)
- Advanced: 70%
- Surgery: 54%

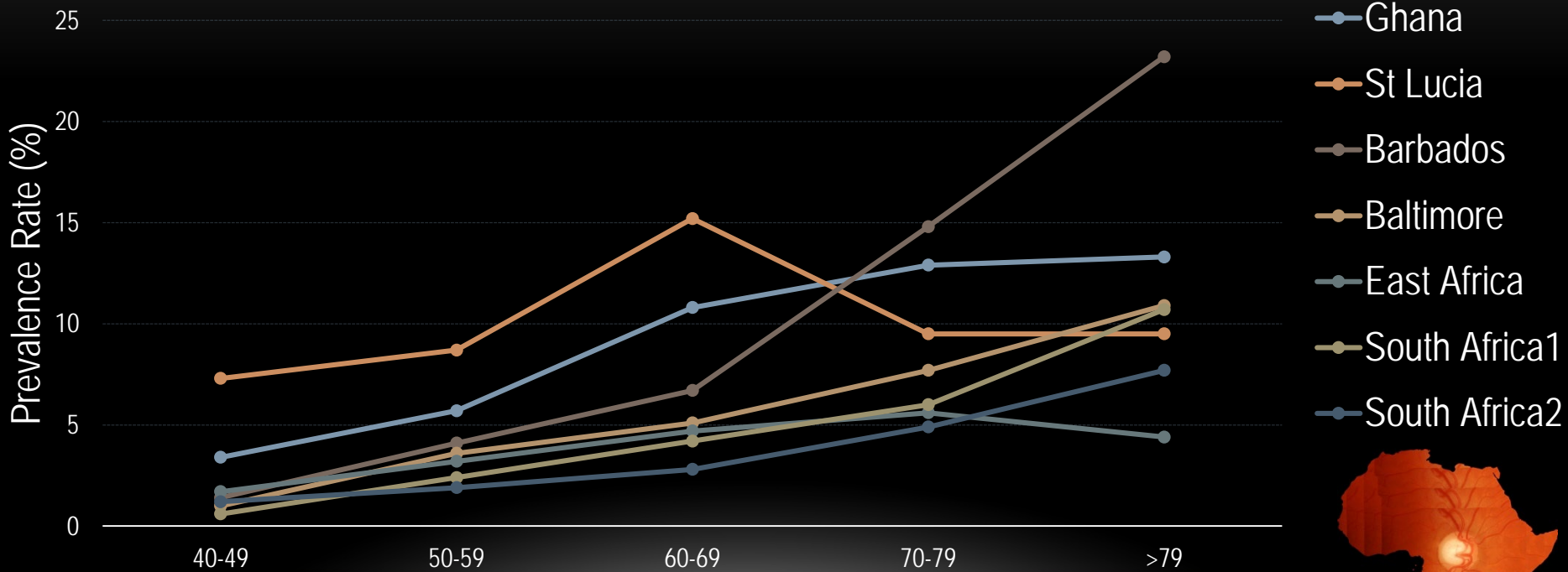




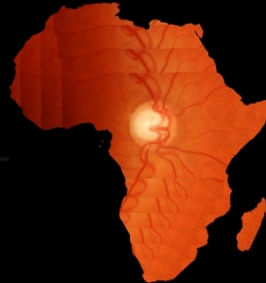
XFS/XFG in Africans



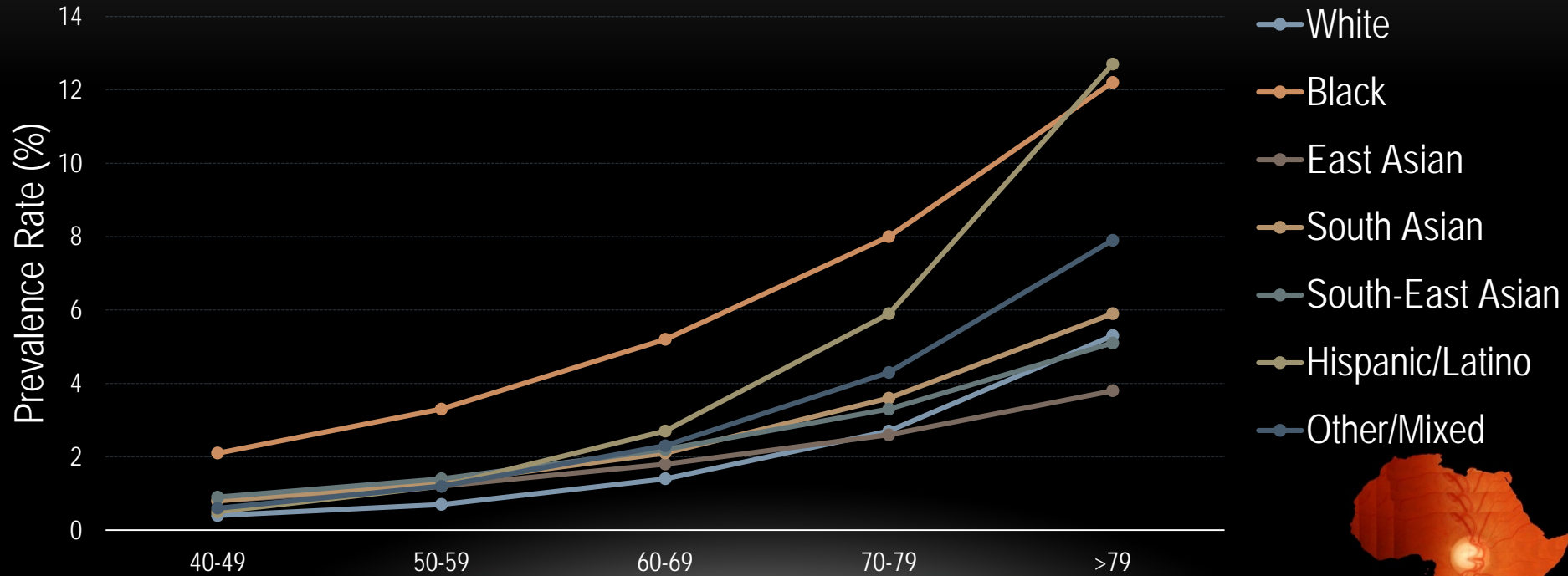
Prevalence of POAG in Africans



Budenz DL *et al.* JAMA Ophthalmol 2013



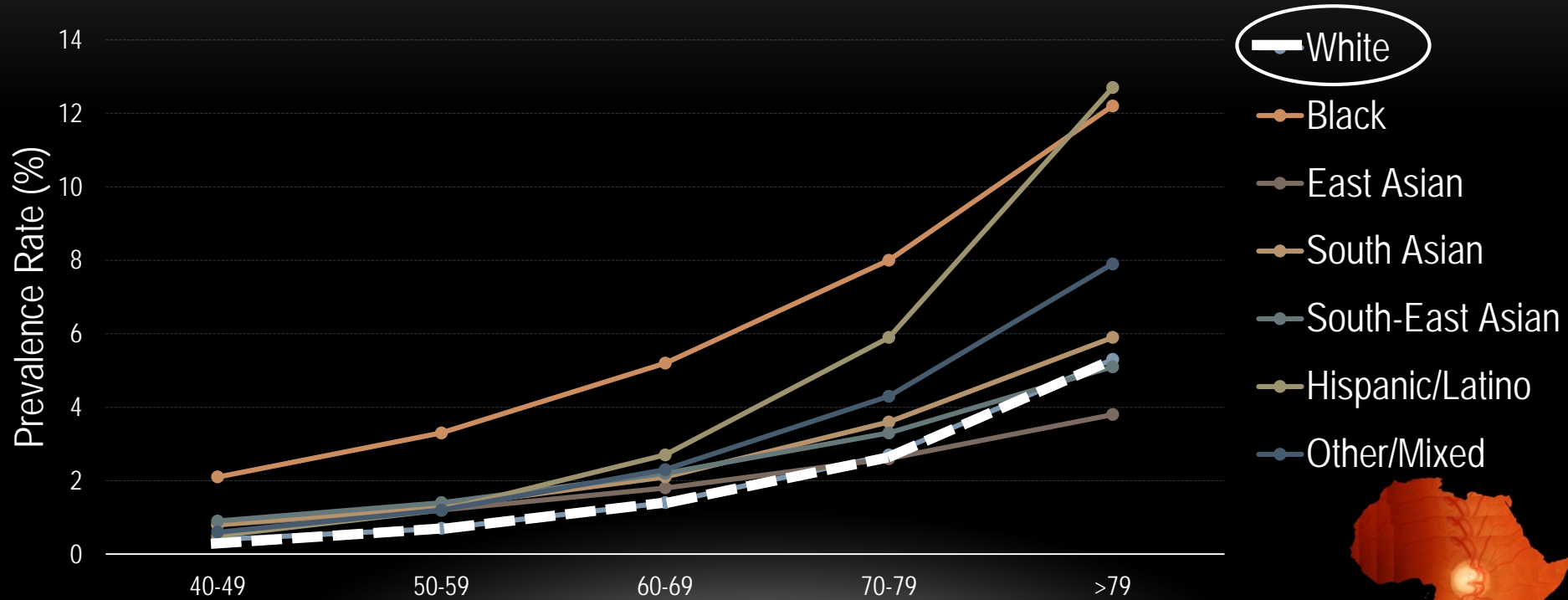
Prevalence of POAG



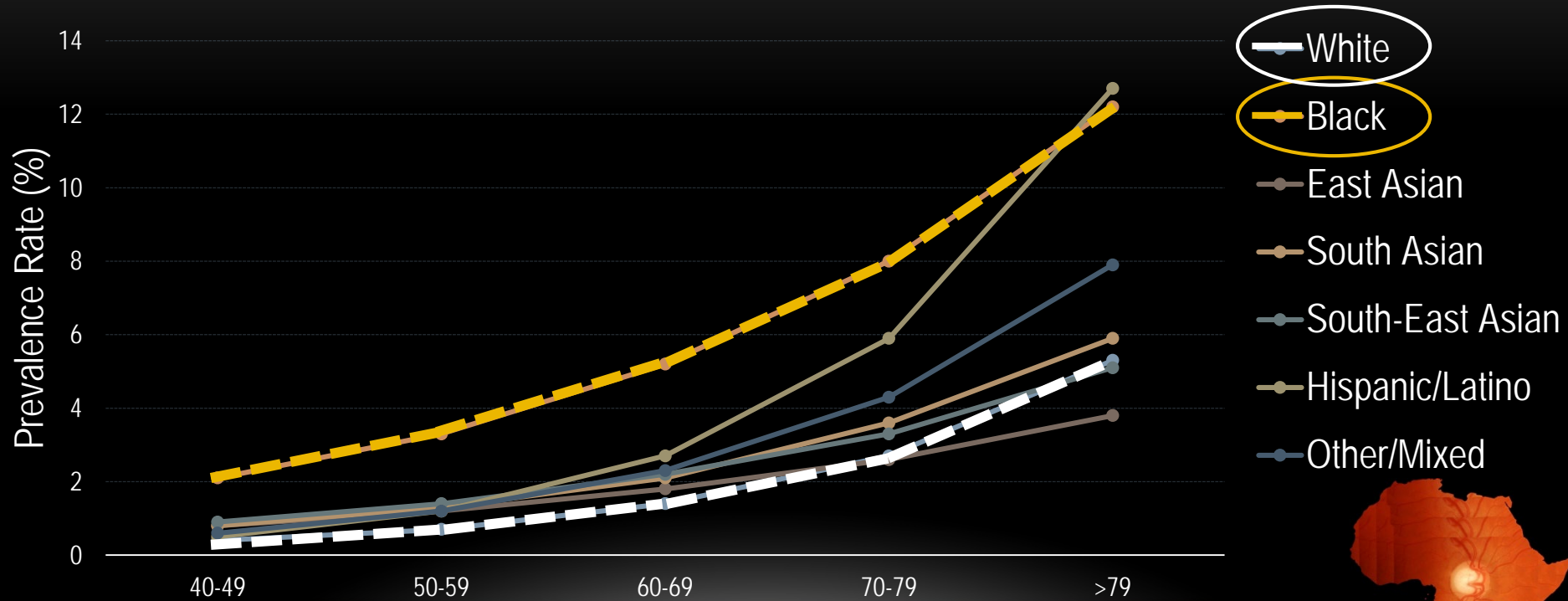
Kapetenakis VV *et al.* BJO 2015



Prevalence of POAG



Prevalence of POAG



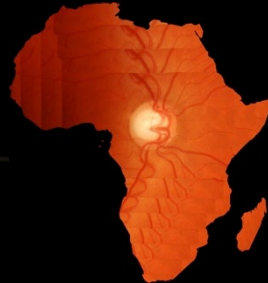
Kapetenakis VV *et al.* BJO 2015



African Descent & Glaucoma

- Greater incidence and prevalence
- Greater severity
- Worse prognosis

cf European
Descent



ADAGES – African Descent and Glaucoma Evaluation Study

- Prospective, multicenter, longitudinal cohort study
 - Enrollment: 2003 – 2006
 - Follow-up: 2016
- Purpose
 - Data: Clinical and Genomic
 - Understand differences

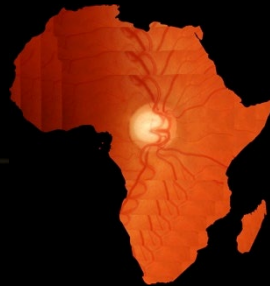


African Descent vs European Descent



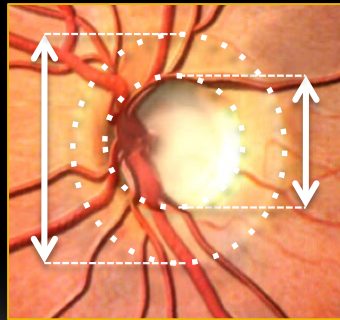
African Descent vs European Descent

- Structure



African Descent vs European Descent

- Structure
 - Larger ONH (\uparrow disc area)
 - Larger CDR (& deeper cup)

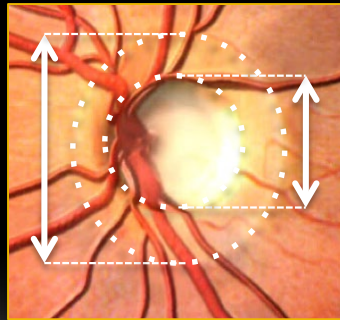


African Descent vs European Descent

- Structure

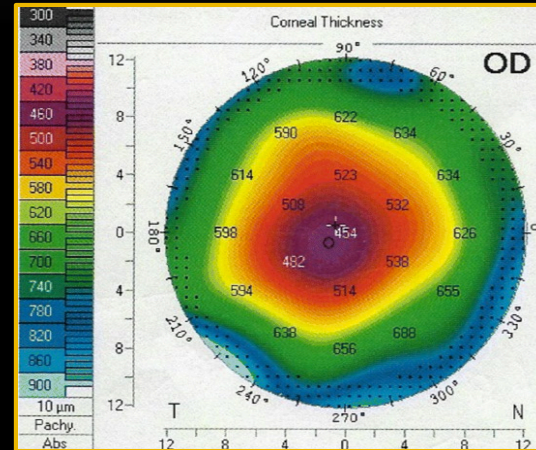
- Larger ONH
- Larger CDR

} Equivalent neuroretinal rim area



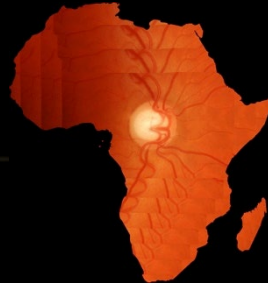
African Descent vs European Descent

- Structure
 - Larger ONH
 - Larger CDR
 - Thinner CCT



African Descent vs European Descent

- Structure
 - Larger ONH
 - Larger CDR
 - Thinner CCT
- } Correlate with percentage African ancestry

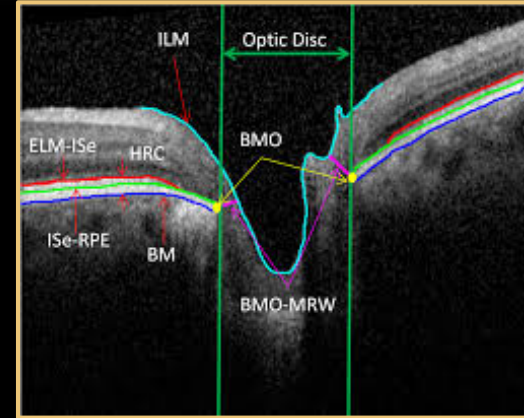


African Descent & Glaucoma Suspects



African Descent & Glaucoma Suspects

- Structure
 - BMO-MRW rate of change faster in AD



African Descent & Glaucoma Suspects

- Function
 - Visual field damage
 - Race x IOP



African Descent & Glaucoma



African Descent & Glaucoma

- More DM and HT
- Younger



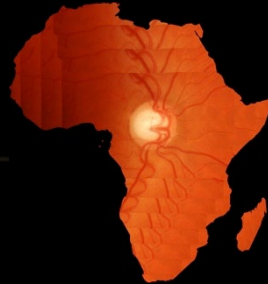
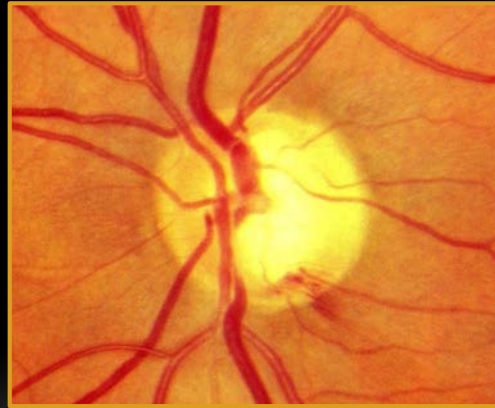
African Descent & Glaucoma

- More DM and HT
- Younger
 - Age adjusted
 - Higher IOP
 - Worse VA
 - Worse VF MD



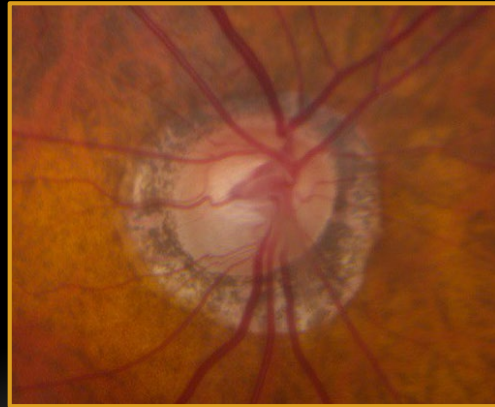
African Descent & Glaucoma

- Optic disc features
 - Less disc haemorrhages



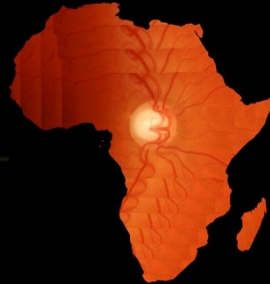
African Descent & Glaucoma

- Optic disc features
 - Less disc haemorrhages
 - More β PPA



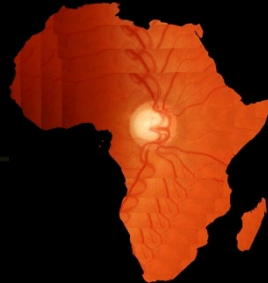
African Descent & Glaucoma

- Increased VF variability



African Descent & Glaucoma

- Increased VF variability
 - Delayed detection of progression



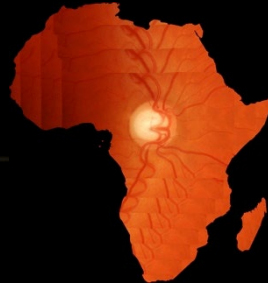
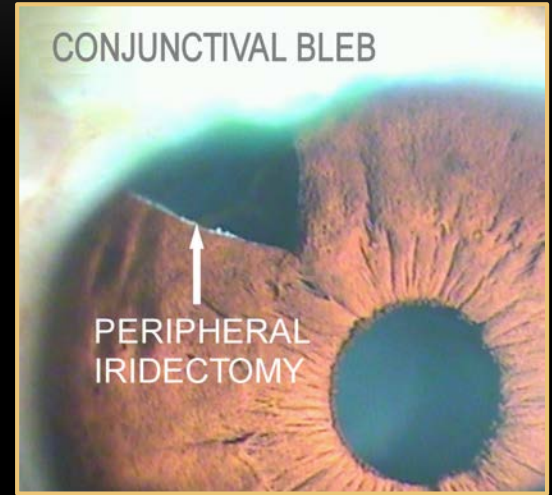
African Descent & Glaucoma

- Increased VF variability
 - Delayed detection of progression
 - Increased visual impairment



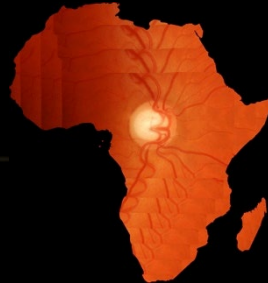
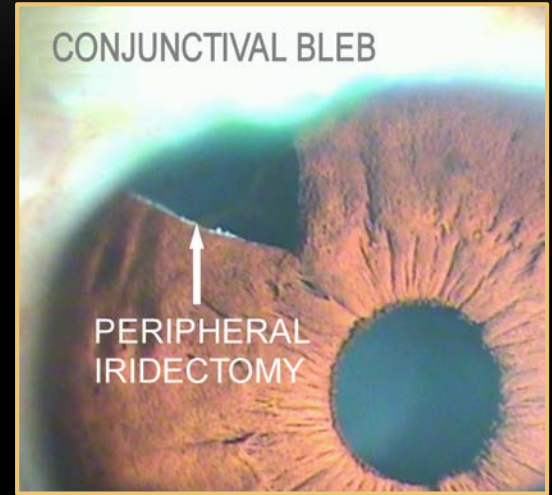
African Descent & Surgery

- Trabeculectomy with MMC



African Descent & Surgery

- Trabeculectomy with MMC
 - Higher failure rates
 - More repeated surgeries
 - More bleb leaks



African Descent vs European Descent



African Descent vs European Descent

- Normative databases
- Glaucoma dx:
 - Disc size
 - CCT
- More aggressive therapy
- More intensive follow-up
- Surgery
 - Antifibrotic agents



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