Modern & Future Eye Examination Techniques
Q&A responses by Michael Moore BSc Optom MSc PGDip(IP)

1 In a routine eye exam would you do both OCT and indirect Fundus?
Yes, typically I would. In private practice the patient needs to pay for the scan so maybe not if they are unwilling. In my teaching clinics the entire exam is free so they always have OCT performed.

2 Are there benefits of dilating with OCT?
Yes, if the scan quality is affected by small pupil size or media opacities, dilation can improve the image although most modern OCTs work well with small pupils.

3 Can an OCT really see more than you can see when looking at a dilated eye with volk?
Yes, there are many conditions such as ERM, PVD, early macular holes which are much easier to visualise on OCT.

4 Can OCT replace fundoscopy?
No, it is complimentary. It usually only covers the posterior pole so no assessment of the peripheral retina. It also is not infallible and should be used along with good fundoscopy skills.

5 Could OCT help monitor keratoconus patients with cross-linking surgery, as well as fitting these patients with contact lenses?
You can perform anterior OCT which can be helpful although I find anterior segment imaging with instruments like the pentacam are better. Better analysis in the future may make OCT more useful for anterior segment imaging.

6 Do you agree that patients with family history or indeed have eye disease themselves should have to pay for OCT?
This is a difficult question to answer. The ever-increasing amount of expensive diagnostic equipment means a much higher cost to the practice owner simply to keep pace with current developments. In my opinion, this should be reflected by changes in government contracts or paid for by the patient.

7 Do you charge for performing the OCT in this sort of investigative capacity?
In private practice yes, we charge. In teaching clinics in the university there is no charge to the patient.

8 Do you feel that DO's should have a better understanding and ability to be able to read and explain OCT scans to patients especially to patients with pathology such as AMD, glaucoma etc?
I think it can be helpful as many patients can feel overwhelmed with information during the exam and only think of questions when getting a dispense so being able to answer these questions or determine if further discussion with the optom is needed can be really useful.

9 Do you think OCT scans should be charged or part of a normal sight test?
See question 6

10 How reliable are OCT images?
OCT images are typically very reliable and repeatable assuming no artifacts such as patient blinks are present.

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11 I heard a while ago that OCT can be used to assess CL fitting. Is this true, and if so, how is it performed? I've personally never used the OCT as I'm a CLO, but I'd be excited too
The primary way I use OCT for contact lens fitting is to fit scleral lenses. You can directly measure the vault of the lens over the cornea which really improves fitting success.

12 Is it possible to use OCT to scan the cornea?
Yes, you can although you typically need to use an attachment of some kind to change the scan to the anterior segment.

13 OCT was once only seen in hospitals or very specialised practices, thankfully it is now more widely available. what do you think the future will hold for the optics landscape in terms of diagnosis equipment?
I think the most significant changes in the coming years will be the introduction of AI powered diagnosis and screening tools.

14 Should all eye exams include OCT?
It is not always necessary, particularly for routine exams with no indication of pathology although you would be surprised how frequently you detect asymptomatic abnormalities that would otherwise be missed.

15 Should DO's do more OCT screening?
I think OCT should be encouraged for all patients.

16 Should OCT be inclusive in standard eye tests, instead of charging a fee? Do you think eye tests will be standardised so that they include OCT?
I think OCT is already starting to become the standard of care although given the significant cost this may mean a routine exam cost needs to be increased.

17 So, the denser the tissue will show whiter on the scan?
Yes, the denser the tissue the greater the reflectivity and therefore the brighter.

18 Sometimes on the OCT scan it can be difficult with certain eye conditions, what would these conditions be?
The most common cause of poor scan quality due to pathology would be media opacities such as cataract. In some patients with advanced macular disease, they can have trouble fixating so this can also make scans difficult to capture.

19 Does the OO cross reference an OCT scan with other examinations, or do they look at the results of the OCT as B scans and then 3D scans etc?
I find the B scans most useful for macular disease, but I will try look at the entire analysis.

20 Would you recommend a doing OCT on all patients having visual issues with new glasses?
Not always, particularly if there is an obvious refraction / dispensing issue but in cases where we can't really understand why the patient is having problems it might help to explain things.

21 Is there some sort of a converter for disc size, depending on which volk lens was used?
Yes, an example is given at this website. https://www.eyedocs.co.uk/ophthalmology-articles/general/558-magnification-factors-of-volk-lenses

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22 What power would you use for a condensing lens when using volk?
I usually have several lenses to hand and use whichever is most appropriate. I use a digital widefield as my general all-purpose lens. I use the 66D lens when I want to do a disc assessment for glaucoma as there is no conversion needed to account for magnification and the increased magnification of the disc is helpful. I also have a 20D lens for using headset BIO.

23 Are you or your department ever used in relation to concussion issues e.g., Rugby collisions and MND?
This is not an area I have any experience in. I am not aware of any of my colleagues doing work in this area.

24 Is it still recommended to take macular supplements if there is a family history of AMD?
The AREDS 2 study demonstrated that supplements were only useful in patients with moderate or worse AMD, so I only recommend supplementation in those patients. For patients concerned about AMD due to a family history I typically give diet advice and emphasise the need to quit smoking if they are a smoker.

25 We do a lot of myopia management. Where would you look to buy a myopia master or similar?
I have not used a myopia master myself although I am fortunate in the University to have a pentacam AXL which is also made by Oculus and offers some of the same features. I use it for all my myopia control patients. I am not sure who the distributor for Oculus is in the UK, but I am sure their website will have details.

26 If the light is near infrared, is it damaging to the structures at all?
Not that I am aware.

27 What is your opinion on online refraction, and do you think the GOC will need to update their act to accommodate the emergence of this technology?
Working in Ireland, I am not too familiar with the GOC Act and byelaws. Online refraction may become a more common issue. How repeatable and accurate it is will likely determine how great the uptake will be.

28 Why is indirect more commonly used?
Indirect gives a much better view of the fundus, offers stereopsis, fits nicely with a slit lamp routine for anterior segment assessment and is more comfortable ergonomically.

29 In your experience how much is gonioscopy used in high street practice compared to HES?
Unfortunately, relatively little. It tends to be only optoms with experience working in a glaucoma clinic that use it.

30 Is gonioscopy used in practice or Hospitals
It can be used in either but is not very common in high street optometry practice.

31 Do you think in a decade or so sight tests will be AI with optom just reading results!
No, although I do think many exams such as OCT will have AI incorporated and mean that more time is spent talking to the patient and explaining results rather than actually performing exams.

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32 Is AI being used in hospitals at the moment to assist treatments?
There are some instances of this but not a huge amount. We are just approaching a transitional phase where we likely will see actual use of AI in day-to-day practice as opposed to just for research purposes.

33 Is there any evidence to say that indirect fundoscopy is not as accurate as the of direct fundoscopy?
No, if anything I would say the opposite is true.

34 Will technology take over optoms in the future?
See question 32

35 How would you see the role of the DO developing with the increasing improvements in high street clinical equipment?
I think this will mainly depend on the scope of practice of DO's going forward. If optoms are spending more time on diagnostics maybe DO's will have a greater involvement in refractive error management.