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All you wanted to know about BV – Webinar Q&A responses by Ben Marchant & Fiona Anderson

1. Could we talk about the diff progressive lengths with gross anisometropia?
   FA: I would put the shorter corridor length in the eye that has the most amount of prism.

2. Could you gradually adjust PDs to reduce intolerance to new spex (taking into account head posture)
   FA: You could but it might take some time – you would need to clearly advise Px that this is what is happening & it might take time to adjust – especially if they have worn previous for a long time. Remember also id the problem is only in certain positions of gaze you might never rectify the issue – you might have to go for a compromise – what's best for most of the time.

3. Does fitting a px with mono vision contact lenses have a long-term effect on binocular vision?
   BM: Once stereopsis is developed in childhood the only things that will take it away is a reduction in monocular VA and a loss of motor fusion. You still maintain fusion whilst wearing Mono CL's otherwise you induce diplopia. The only downside is its effect on Stereo acuity which will resolve as soon as VA are rebalanced.

4. If patient has a been found to have a strabismus in the room and makes up spectacles and collect them and comes back not happy with them how can you overcome this situation so the patient is reassured that this will be of benefit for them?
   FA: Communication, Communication, Communication! So often its about managing expectations & we have all had experience of what is best in the consulting room doesn't always work in practice.

5. If patient has poor posture would you drop heights by extra mm or two
   FA: Again you could – you would have to discuss carefully with Px & decide with heir input what will be best for most of the time. The other thing is we might not always be able to fix everything in one pair of specs.

6. In regards to the section regarding cycloplegic reaction and providing the full prescription, what are your thoughts regarding the penalised emmetropisation as a result of removing the accommodation stimulus of a child as a result of cycloplegic prescribing?
   BM: In these cases discussed it is more an issue that over time the Rx reduces due to the patients wear time and accommodative effect they can produce which then produces an Esotropia when previously controlled. As an Orthoptist we were in discussion with Optometrists as to what powers should be prescribed. Simply checking what amount of + reduces the movement on cover test showing control on Cover/Uncover could allow a happy medium between cyclo refraction and subjective.

7. Our senior optometrist sometimes advises putting OCs at the frame box centres when the patient is amblyopic with single vision lenses but surely, the OC measurement in the non-amblyopic eye is more crucial in this case.
   FA: I would pretty much always place OC directly at Pupil centre in the dominant (best VA) eye. This will ensure optimal VA - in the weaker/amblyopic eye I would say less critical – I would always put at OC unless VA very poor & will not make any material difference to the Px or by placing at Frame BCD enhances cosmetic look considerably.

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8. Ben, Are you able to request the prism recording of the different POG from the orthoptist to manage the px's expectations when collecting their specs.
   BM: It would certainly be helpful but what would be better is if they could provide that information as part of their discharge note or Rx as standard. To do so opening a dialog with your local department and building a relationship will work wonders. Any request made like this, if stated why it can only benefit both party's.

9. Great lecture Ben. Does using a pupilometer that covers each eye mean a cover test is not needed?
   BM: Thanks!
   Yes and No. If looking to get Mono PD's it will work most of the time, but induces convergence so anyone with convergence excess will read narrow PDs and anyone with conv insufficiency may deviate to become exo so wide PD's. Optoms should warn you about this but only by doing the full cover test would you be 100% reliant on device.

10. Ben any tips on fitting a Fresnal Prism perfectly?
    FA: N/A I would always measure twice cut once when fitting a Fresnel – make sure Rx lens totally clean & apply using fresh water – not too cold & smooth out with microfibre cloth.
    BM: Twice measure once cut. Remember it sticks to back surface, run your finger over the jagged surface which will be facing out to confirm the base direction. The best pen to use is one with little use in dispensing as it will not mark an AR coated lens but will wash off with water, pen removal solutions can make a Fresnel brittle so not advised.
    Stick it down to back surface and draw around the edge of lens, patient will not like being able to see it (cannot avoid with High Rx/Supra or rimless so one which may sway the dispense.
    Once cut to shape and happy, just a small puddle of water is needed on the back surface of the lens. Push down so all water comes out. Whilst wet you can move the Fresnel about so push to get in optimal position then leave to dry.

11. Is there a reason why a patient may only tolerate a Fresnel prism? I have encountered this in practice; split prism incorporated into the lenses was not tolerated under any circumstances (tried changing measurements, index etc., same frame as had before)?

    The higher the Fresnel power the more it drops the VA in the eye it covers. If high power and/or dirty Fresnel they may be acting more like an occluder.

12. Can you get double vision with labyrinthitis?
    FA: I am not sure – I would imagine it is possible as symptoms such as nausea, light-headedness etc are associated so diplopia could be too.

    BM: As maintenance of BSV is reliant on a good level of motor fusion, any condition can fatigue these reserves. If a person already has a larger phoria and adequate reserves, an illness like this can certainly induce a breakdown of a latent deviation.

13. How does a prism bar work?
    FA: Prisms increase in power through the bar, stacked one on top of another with one flat side. Vertical and Horizontal separate bars.

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14. I have a new px with an rx from her own opticians practice and she has 8 base out right and left but shows no squint without her glasses on. She is due to get surgery to correct her need for prism soon and wanted single vision distance glasses with no prism in the meantime.
    I have never heard of this before, how could she not present with a squint and what is the surgery?
    FA: We would regularly advise a patient to get specs made up without prism pre op as the aim of the surgery was to remove all prism. Usual methods of surgery are to recess or resect a muscle (put it further back so slack or make it shorter and tighter). Another common procedure is to leave the sutures untied on a recession surgery so that you can fine tune the measurements when the patient comes around from anaesthetic.
    BM Think puppet strings and you are there. Pull on one side to change the eye direction one way and let loose to make it go the other. Tie off when you are happy, you can only do this accurately with the specs made up to no Rx.

    As for 16Base out total it would have been a large phoria which they were able to control for periods of time without specs. Alos Esotropia's are harder to see when manifest than Exotropias

15. Which eye do you put the longer channel in a varifocal to help to minimise vertical pr
    FA: I would put the shorter corridor length in the eye that has the most amount of prism so the longer corridor in the eye with the least amount of prism.

16. When testing monocular astigmats with a sphere in one eye and a toric lens in the other, which test would be the best to determine if the base down prism ballast in the toric is causing visual problems?
    FA: I am assuming in CL practice here – not a CLO so perhaps Alex??
    Alex – I cannot answer on which test may be appropriate in these circumstances however, patients with an existing compensated phoria could find this becomes decompensated with additional vertical prism introduced. It is worth establishing the full binocular vision status without contact lens wear, to ascertain if the contact lenses could be the cause of any symptomatic visual discomfort. If so, an alternate stabilisation design for the toric lens, such as peri-ballast or dynamic stabilisation, may relive the issue.

17. If using a short corridor and a long corridor for vertical Diplopia in the progressive lens. Which lens would you put the short corridor in and which lens would you put the longer corridor in? Am I correct that the short corridor goes in the most myopic eye?
    FA: See Q 15

18. What does thyroxine cause?
    BM: Thyroxine is a medication used to treat Thyroid conditions, Red alert in Orthoptics that Graves disease or Thyroid eye disease may be present.

19. You mentioned a condition brought on from Thyroxine. Please can you elaborate on that? I am a CLO, many many people are on Thyroxine, and I was not aware there was a possible Ocular pathology risk.
    The medication itself is not the risk its what it treats in the Thyroid gland. Thyroid eye disease or Graves disease would be what I would look out for. CLO ? increased dry eye due to potential proptosis.

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20. Is it always best to refer a child for patching even if they are much older than the critical period?
    Its best to refer if detected too late as not set in stone. Risk post critical period is that you can induce diplopia by patching the dominant eye. There are tests to look at density of suppression and if suppression is high then its always worth trying. Cases of success post critical period are usually Anisometropic Amblyopes

21. How would you recommend taking a PD for a child who has special needs touch sensitive and resistant to get PDs measured. Constantly closing his eyes while trying to take PD and waving his arms around because he was unhappy.
    FA: You could use marks on the demo lenses, bifocal height stick ons placed vertically & by marking up with your best guestimate & observing from further back. Try to gain the childs trust, demonstrate on Mummy, or Teddy to show it's not sore & try to make it fun

22. What is your protocol when a child has a sudden onset strabismus?
    Depends on the age, usually sudden onset <7 is just the age of onset expected for the type of strabismus. Either way best to do a cyclo Rx and order specs if significant as will speed process up.

23. you could measure inner to outer canthus for the child, with eyes closed if necessary
    FA: Absolutely – bear in mind that this will be a binocular measurement which you will need to halve, you could also mark your findings on demo lenses & double check it looks okay.

24. How many people use contact lenses for young children who are significantly anisometropic? Helping to avoid differential prismatic effect in other than primary gaze and more importantly reducing image size difference in primary gaze and aiding binocular vision development.
    FA: CL's are a classic way of reducing/eliminating associated issues of GA. I have not encountered that many people who have used CL's as a way of treating in children – associated costs, increased chair time & everything else that goes with fitting CL's to children.

    BM I think there is a real gap in research out there on the results of Anisometropic Amblyopia treatment based on lens/ CL choice. If it were an adult and a Rx of that nature came to you say post cat sx, we would say you will not like them because XYZ, Children its CR39 R+L, off you go and develop BSV. The theory says best lens to minimise spec mag so CL perfect, its just pre critical period contact lenses in someone <7yrs. How well will this be taken up.

25. Can binocular vision be hereditary?
    Conditions effecting BSV can be hereditary

26. Is binocular vision more common in males or females?
    So many conditions it probably levels itself out, not sure though.

27. What is BSV?
    FA: Typo – BSV? Binocular Single Vision??

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28. Can a Dispensing Optician ever prescribe prism
    FA: Not to my knowledge – A DO cannot prescribe anything – they can modify a RX for vertex distance change & working distance but can only annotate the Px notes – they cannot issue a copy of this to the Px.

29. Surely, Fiona a short design would be better than mixing lengths.
    FA: A short design works more like a bifocal – very short transition area from Dist to Near (with little Intermediate) however if both corridor lengths are the same the differential prism will still remain.

30. It used to be an accepted principle that multifocals were a solution to Diff Vert Prism Effect... is this still the case or has it been superseded as Fiona mentioned different Varis may not correct?
    FA: With the advent of Freeform & Digital surfacing techniques we should be able to alter corridor lengths to reduce the amount of differential prism. It pretty much depends on the amount to be neutralised as to whether manipulating corridor length will achieve the desired result.

31. If most patients have a small phoria should ALL PD's be measured from inner to outer canthus?
    FA: Again it's a binocular measurement which will be split between the eyes – I would take mono PD's by occluding one eye at a time and order the accurate monos – unless it is impossible to take that measurement from a volatile child!

32. how common is a rotating tropia/phoria
    By rotating I'm presuming Oblique muscle involvement? If so quite common, 4th nerve often to blame and its pathway from midbrain goes backwards meaning it is exposed at the back of head, trauma to this area can cause 4ths eg. car crash, sports injury.

33. How do you and is it necessary to treat a phoria?
    If phoria it means there is some control present, if poor motor fusion treat this with exercises (a whole lecture in its own right)
    Depends on the age of the patient as if older and fusion as good as it will get prisms but less needed than with a tropia.

34. How do you measure pds with a phoria?
    FA: I would measure monos by occluding one eye at a time

35. Would you prescribe prisms for phoria or tropic. Will every Px suffer from tropic needs prism corrected.
    See question 39 but no not everyone will need prism with tropia, some may supress the diplopia. Some the tropia is too large or mixed vertical with horizontal and too much to tolerate. Something like a 4th nerve palsy will have a vertical tropia with torsional element so one image rotated and unable to fuse with prisms. Any of these occlusion is the only way.

36. Recently had a patient his left eye tropic after wearing correction, what is condition called and how to solve.
    Sorry but too many options and not enough to go on.

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37. Says Tropia always apparent but surely Microtropia is not easily apparent without test?
    Very true but for a generalised lecture Microtropia is separate lecture by itself. Can be with or without identity, only seen as a minute wobble like movement if present and if identity needs establishing you observe the reaction of eye to overcoming a 4D base out prism and view the central fixation through ophthalmoscope.

38. What pds do you use if the px has a tropia with rx worn?
    FA: See Q 40

39. Is using a pupilometer ok to measure mono pds as a cover test
    See Q9

40. Is there any harm in taking mono pd's while the opposite eye is covered as a matter of routine?
    FA: I would say not

41. Should we be doing cover tests on everyone before taking PD? Is it best practice to do mono PD's on everyone?
    FA: Lots of practitioners do – whatever you are comfortable with.

42. Should vertical centres be taken in case of patient needing purely horizontal prism? Would you recommend mono pds in all cases of prism correction
    FA: I would say it depends on the Rx & frame choice – I routinely take vertical heights on any Rx over +/- 4.00 or with significant prism – if you do not specify vertical OC the lab will routinely glaze OC's on HCL which might not be suitable for everyone.
    If you see prism do Mono PD's yes.

43. What about inner outer canthas PD?
    FA: See Q 29

44. What is the best way to take PD's on a Px who has a trophia
    FA: See Q 40

45. When taking a PD, in the current environment, any tips on taking a PD while keeping contact down?
    FA: I make sure I can be as swift & efficient as possible – make sure everything is sanitised & if you have a digital device you could use this – I would always double check with ruler. Make sure you have mask, apron, visor & gloves on too.

46. Would it be better to take not just mono pd but also mono heights too?
    FA: See Q 48

47. Mono PD taken with other eye closed.
    FA: Assume this is PD measurement with phoria/tropia? See Q 29

48. What would you do if mono PDs more than 4mm difference. Cover test.
    FA: CT may confirm tropia & hence difference in mono PD's – would always measure each mono with other eye occluded – once specs are made up with prism correction the Px will be best corrected

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49. Wouldn't it be necessary for a normal PD, not just monocular?
    FA: Unsure what is being asked?

50. Is there a specific orthoptics book you would recommend for getting to grips with BV issues? I have not found Pickwell very helpful so looking for an alternative.
    FA: Clinical Orthoptics by F Rowe was the book we started using in first year. It was good to gain basics across most conditions before going in more depth for the years that followed.

51. What is a minimum kit a practice should have?
    FA: As a DO I have fixation targets – finger puppets, teddy & pen torch, multiple rulers & occluders

52. Would you recommend a DO to have a kit to hand to be able to check BV? If so what would be the basic essentials?
    FA: See Q 57

53. I have always just used my dispensing ruler to cover eye and found something appropriate for patient to focus on, always seemed to work fine but is there any detriment to using these humble tools?
    FA: You don't need anything fancy – any ruler which covers the eye & orbit is acceptable kit – as it your hand.

54. Where will I be able to get an occulder from?
    FA: Any of the usual suppliers: Grafton Optical, Birmingham Optical, Louis Stone, Mainline etc

55. Best practice, should both cover tests be used
    As far as for testing yes. For DO when dispensing and reducing your risk of centration's being wrong I would say cover uncover needed, but if you are presented with a problem patient both needed to discover issues.

56. I think people want to know about occluding eyes while taking the pd?
    FA: By occluding each eye whilst taking the PD if the Px has a phoria or tropia each eye will be straight thus making the measurement more accurate & more like it will be when corrected.

57. Will cover test work on really poor VA's
    FA: My experience has shown me to be able to see any movement on Px with poor VA's. It is recommended to do CT with specs off so you can easier see any movement except on Px with poor VA.

    Poor VA use a larger target or light target.

58. By the way do we still get lens from Norville as they have gone into administration.
    FA: Norville are trading after being taken over by the InSpecs group – certain lenses have gone to other suppliers but a phone call will confirm what is available.

59. What is the Norville lens called for very prism called Fiona?
    FA: The Norville lens I mentioned is called the PRESTO lens – it has a bonded segment.

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60. What was the name of the Norville lens again please?
    FA: See Q 65

61. This is a little off-topic, but as a DO, are we able to specialise in orthoptics? What pathways are available to us? Thanks
    FA: To my knowledge as a DO we can't directly specialise in Orthoptics without doing a recognised course & passing their FQE. Ben studied Opthoptics first then DO – there will be areas of overlap & possible exemption in examinations – the two qualifications would need to be 'mapped'. With the move to CPD in the next CET cycle we will be able to do more education in allied subjects & in the future who knows – perhaps ABDO will offer a course in it!

62. With a long standing head turn, is there not value in measuring pupil positions in the turned position, especially with the nv position?
    FA: You potentially could – however I would urge caution as I would be taking PD's for the position that would be held most & may suggest a separate pair of specs for specific tasks – careful communication with the Px is required to see what would work best & what they think would be best/most useful.

    BM Absolutely. If the prism isn't ordered to relieve the diplopia and tested in primary position. There are more reasons a patient may have a head posture, so you would look to make them comfortable. This was specifically aimed at someone who wishes and has the posture to return back to normal head positioning.

63. If you do not think they will change a longstanding head posture would you measure differently?
    FA: Possibly – in the case of a head posture that will not change – e.g. benign brain tumour rather than an assumed habitual posture then yes I probably would as that is how the Px will be looking most of the time.

    Same as 68, and yes some one with spinal issues you wouldn't measure them sat up straight if they can only maintain it for a few seconds.

    If someone has a nerve palsy, usual Orthoptic protocol is Fresnel for 6 months while expected recovery occurs. Then discharge to have residual prism incorporated into specs. Over that 6 months they may have developed head postures as a default when specs are off. Same as a patient lifting their head to see you clearly when fitting for varis, it becomes habit to raise the head to put the eye into the intermediate or near power area even when looking through a dummy lens. Patient with diplopia will do the same.