



Fitting tomorrow's presbyope

Last year CooperVision invited seven of the world's leading contact lens experts to its research and development facility in Pleasanton, California. During a roundtable discussion, chaired by Jonathan Walker, the panel looked at the correction of the presbyope

Jonathan Walker (clinical consultant to global professional services, CooperVision) began the session by asking **Dr Phil Morgan** about any statistics his team have produced that might shed light on the distribution of new fits and refits with increasing age.

Morgan: 'We have collected data on lens fitting now for about 15 years. We've got a database of about 200,000 prospectively collected fits now across 30 countries.'

'When we reflect on presbyopic contact lens fitting over this period, it's actually quite a story of success. In some ways this has crept up on us a little bit, but we are managing presbyopes more appropriately in 2011 than when we started the survey in the late 1990s. For example, in the late 1990s, of all contact lenses prescribed, around 15 per cent were patients in the presbyopic age group. Nowadays it's around 30 per cent. So the number of presbyopes fitted, at least according to our survey, has doubled over this period.'

'The sorts of lenses being fitted to this larger number of presbyopes also appear to be more appropriately managing their presbyopia. Ten years ago, two thirds of presbyopes were being prescribed spherical lenses, only one third receiving a monovision or a multifocal correction. I take from that most people at that stage were using distance-correcting contact lenses and using some sort of reading spectacles over the top. In 2011, that's swapped around. We now see that two thirds of presbyopes when fitted with contact lenses are receiving a multifocal or a monovision correction – actually, more with multifocals than monovision. Only one third now receives a spherical correction. So my take on this is that our colleagues around the world have increasing confidence in the products now being offered for presbyopic correction. At the same time, there may also be an increasing demand from patients. Maybe there is an increasing demand to move away from spectacles and more visible signs of the ageing process and to request contact lenses.'

THE PANEL

Bo Lauenborg - Mindtrack Coaching, Denmark

Dr Phil Morgan - Manchester University

Professor Lyndon Jones - University of Waterloo

Dr Heiko Pult - Munich

Brian Tompkins - private practice, UK

Ingebret Mojord - Oslo

Professor Bruce Evans - Institute of Optometry, UK

This appears to be matched by greater satisfaction from practitioners with the products available. I think there is work still to be done. There are a lot of presbyopes, of course, who are not receiving contact lenses and those who are perhaps still occasionally prescribed distance lenses and a sort of slightly crude reading glasses over the top approach.'

Walker next addressed **Bo Lauenborg** about his experience trialling multifocal contact lenses, and in particular, what impact this had on the business.

Lauenborg: 'We already know from studies that a lot of people are dropping out of their contact lenses when they come to their 40s. We have a clinic where 40 per cent of our patients are 45 and over, so we looked into this market and the clients are going for price, price, price. We really had to do something for those patients to keep them in the business. So we started with "contact lenses for grownups". We don't call it presbyopia, because the name presbyope implies "old eye". Why should we do that? We started fitting "contact lenses for grownups" and we find now we have a success rate of around 80 per cent with our multifocal lenses, and that means that it's very, very good business.'

Lauenborg then described, as an example, how he successfully fitted a secretary from a lawyer's office with multifocal contact lenses.

'The next day three of the other secretaries from the office signed up, and they really wanted to try the contact lenses. So those grownups, when we successfully fit them with the multifocal lenses, act as ambassadors.'

They recommend family, friends and colleagues. We have really seen over the last couple of years that the cash flow in the company really increases when we start fitting grownups (or presbyopes).'

Walker then asked **Professor Bruce Evans** about the possible impact upon binocularity with monovision.

Walker: 'We have heard that the number of patients being fitted in monovision has started to decline. One of the reasons for that is patients have difficulty with binocularity and monovision. Perhaps you can talk us through the compromise to the binocular system of using monovision and perhaps a little bit about how the principles of blur suppression work.'

Evans: 'I think there used to be a debate between two camps. One camp said monovision worked better than presbyopic contact lenses because monovision was the most likely way of giving you excellent distance and near acuity but at the cost of stereopsis. The other camp said multifocal contact lenses were a better option because they would be the best way of giving you normal stereo acuity albeit at a slight sacrifice in most cases to acuity. That debate I think is over now because they are both a very good way of correcting presbyopia. These days many patients, perhaps the majority, are fitted with modified monovision. In other words, they are fitted with multifocal contact lenses but with a monovision-type bias, where one eye is biased towards distance and the other eye is biased towards near. So the two options have come together, and most modern wearers of multifocal contact lenses are having an element of monovision in their success. Even with straightforward monovision, most studies were getting 59 to 67 per cent success rates. So it did work surprisingly well. By merging monovision with multifocal contact lenses in the way that I described one would expect to get even higher success rates.'

'But the key thing we can learn historically from monovision that is



very relevant for this new scenario of modified monovision is which eye should be the distance biased eye and which eye should be the reading biased eye. This is something that practitioners need to know if they are fitting modified monovision with modern multifocal contact lenses.

'The research on ocular dominance is a fascinating field. It goes back a long time. In 1951, Walls described 25 different tests of ocular dominance. We now know that there are a lot more tests of dominance than that. In fact, pretty much every way you can measure visual function can be used to determine dominance. We know that in a given person usually one eye will be dominant for some tasks and the other eye will be dominant for other tasks. So in most normal patients, the eye that is dominant varies with conditions. It varies with where they are looking in the visual field, it varies with attentional tasks, and indeed it varies from one moment to another. So ocular dominance is a plastic, fluid concept with the visual system doing what we would expect an intelligent system to do. It shows great adaptability, and it chooses the best eye for a given task at a given moment in time. This means that if we are going to determine which eye to bias for distance then we need to use a task that most closely reflects the situation that we're trying to investigate. So, in other words, we need to use a task that closely reflects modified monovision.

'In practice, if you have a patient in your chair and you want to know which eye to bias for distance vision, then you get them to wear the distance correction in both eyes. Then you pick a spherical lens that will blur an eye by the amount that you expect the near eye to be blurred. You hold that lens up in front of each eye in turn while the

patient views a threshold line on your distance chart. Ask the patient when they find it clearest, or when is it least blurred? If they find it least blurred or clearest when that near vision lens is over their left eye then that is the eye that would have the near-biased contact lens in your presbyopic correction. So you use a blur suppression test to investigate which eye to bias for distance vision.'

Walker: 'Is there a reading addition beyond which multifocals do better than monovision?'

Evans: 'There is no magic cut-off, but it's always a challenge with higher adds. It's a challenge if the patient wears multifocal contact lenses, because the ability to ignore unwanted blur which will be there all the time becomes harder as the add increases. With intraocular blur suppression, we have a natural way of suppressing blur between the two eyes. But, again, that becomes most challenging with the higher adds, typically over 2 dioptres.'

Walker: 'And the lens that you put in front of the eye, how do you choose that powered lens?'

Evans: 'That's harder now. In the old days of spherical monovision it was very easy, because you just used the add power. With modern modified monovision you need to pick a lens that will create a degree of blur that is similar to that which the near eye would experience when it looks in the distance. So it depends very much on the multifocal design you are using and of course on the add power.'

Turning to **Dr Heiko Pult**, Walker next addressed the impact of the ageing tear film on presbyopic lens success.

Walker: 'Presbyopic patients are going to have an older tear film. What bearing does it have upon choice of materials and choice of lenses?'

Pult: 'Age is strongly related to the lipid layer quantity and quality. What you need are contact lens materials with low surface dehydration rate. Proper cleaning solutions and wetting agents are vital to improve comfort, as well as optimised fitting of the lenses themselves. I think silicone hydrogels are mostly the better option but also normal hydrogel might be good, especially if it's a problem of wettability. Wettability is also strongly related to vision, especially in night driving and reading. So you might mix up problems from the multifocal lenses with tear film problems.'

Walker: 'How do you assess wettability clinically in the practice?'

Pult: 'In clinical practice you can use a slit-lamp microscope, observing different areas of the contact lenses surface in specular reflection. I am interested in how the tear film is built up and its stability in front of the contact lens. Reduced pre-lens tear film stability is often related to the lipid layer. So if the patient does have any state of meibomian gland dysfunction, I think the easiest option is to recommend daily lid hygiene by warming up the lid margins, massage the meibomian glands and scrub the lid margins. Success depends on the motivation of the patient. If he is highly motivated I would continue with contact lenses. Lid hygiene is the most promising option to improve comfort in contact lens wear if there is meibomian gland dysfunction.'

Next, Walker asked **Brian Tompkins** about whether presbyopes attending his busy practice wanted different wear modalities.

Tompkins: 'I don't think that a presbyopic patient necessarily wants a different modality. They want life to be as easy as possible. They have got to the grumpy old man or woman stage in their lives, and any aspect that doesn't run smoothly in life will upset them. And certainly I have huge empathy with presbyopes these days, and I think that has a massive benefit for me to really get on the same sort of wavelength as them, because I am one! A lot of the patients have grown up with me, and they expect me to help them continue in their lenses for



as long as they live. In fact, one of my mission statements is “You will die in my lenses”. I want them to – well, hopefully not too soon, because that’s very bad for business. It’s our job to enable them to never, ever stop wearing lenses, and I think that’s really crucial. I think it’s something we should be promoting a lot more than we do now.’

Walker: ‘Is there a role for both contact lenses and spectacles worn by the same patient?’

Tompkins: ‘Absolutely. You can choose according to what you want to do. You may have an extended wear silicone hydrogel wearer who wants to go swimming on holiday, so we will give them some daily wear lenses. We want that same patient to be wearing specs as an emergency.’

Walker next addressed Bo Lauenborg about the need for a one-day multifocal lens.

Lauenborg: ‘We need a very good one-day multifocal. We are beginning to see an even higher penetration in monthly multifocal disposables, and many of these customers would like to go to one-day multifocal lenses.’

Professor Lyndon Jones has published much research in lens materials and he responded to Walker’s next question.

Walker: ‘Does the older eye require a different material than perhaps the rest of the contact lens wearing public?’

Jones: ‘We need to bear in mind that the older eye is often a different eye to the one we see in younger individuals, in that the tear film quality and quantity is often reduced. Often these patients, particularly if they are wearing complex lens designs (like multifocals) or if they are hyperopic, will be wearing thicker lens materials. The overall picture really relates to providing a balance of properties for that patient. We need to be able to provide a material that has adequate oxygen transmissibility, such that the lens material will be able to provide the cornea with adequate oxygen and we see no hypoxic compromises. We also need to look at the quality of their tear film. I think it’s important as we start to be more successful with our older patients that we do what Heiko Pult was talking about. We need to ensure we examine the meibomian glands. If they exhibit mild blepharitis, we need



Brian Tompkins: ‘It’s our job to enable them to never, ever stop wearing lenses’

to make sure we advise them on the use of warm compresses and lid scrubs, and make sure that we clean those lids up so that we have an optimal chance for them to be successful. Even the best material in the world won’t work if you are dealing with a compromised ocular surface.

‘Older patients often have a reduced ability to handle lenses. Having a stiffer lens material, as you get with silicone hydrogels, may well provide them with some handling advantages. I don’t think it’s as simple as just saying are we going to fit a hydrogel versus a silicone hydrogel? It’s important we get that balance of oxygen transmissibility, wettability, dehydration, and ensure that their eye is as healthy as it can be.’

Tompkins: ‘We run a separate and quite successful and busy dry eye clinic for patients whether they wear contact lenses or not. It’s absolutely crucial that when you are putting any patient into lenses, whether it be a youngster or a “grownup”, you do the workup of dry eye management and give them a real indication as to the fact that they may have issues. So it is really crucial to go through a variety of noninvasive break-up times and check the lids. You can then look at stains such as fluorescein, but obviously you are also using lissamine green. It’s a stain which is under-used and very useful to look at different aspects of which parts of the eye are going dry.’

Walker next tackled the subject of recommending multifocal lenses to patients. **Ingebret Mojord** offered his thoughts.

Mojord: ‘The tricky thing is communication. Most ophthalmic practitioners are really good at refractive measurements, but how to utilise this

information, and how to implement this for each individual, is something you have to learn through experience.

‘We talk through each modality with patients. For me the challenge is to find the best solution for each individual – refractive surgery, contact lenses or spectacles. It is not always a question of contact lenses or not, since many patients do not have a good idea of how this modality works. After we have assembled all the necessary information, we give the patient a pair of contact lenses, telling them that this is part of the regular eye exam, in order to find the best solution. We then examine the fundus mapping together with the patient and discuss the findings. If the patient still does not wish to proceed with contact lenses, we either send them out of the exam room looking for frames, or we try to send them back to work or other daily activities in order to experience the product in daily use. Contact lenses do not always prove to be the best solution.

‘Spectacles will nearly always give the sharpest vision, but not all human beings have the demand of really sharp vision. They will feel that their eyesight is adequate. Concerning spectacle prescription our practice does quite often prescribe an add of 0.75DS as opposed to 1.75DS to a 50-year-old since the lower add can give the freedom to see well in most daily situations in a more comfortable way than with a higher add. We call this an advanced distance prescription.

‘In my opinion, it is better to learn to use one multifocal contact lens design, rather than jumping to another design, when not immediately succeeding with the first option. It is important to consider chair time both for practitioner and patient, and so after the first trial day, we should have a good understanding of what the possibilities are. What would be an acceptable success level for most patients? Clear distance vision, good intermediate vision, and adequate vision to go shopping, scanning through a newspaper and – very important – to read and write a text on a mobile phone. When aiming to find the best fit, I nearly always start with the lowest add to reach the goal rather than the measured add or the expected age related add. I then start adding up for better near vision, but stopping before reducing distance vision. Modified monovision is not unusual.

‘In our practice we have many cases of patients using contact lenses 10-15 years longer than with the average practitioner.’ ●