Dispensing for active ageing

Continuing our series on eye care for older people, **Liam Kite** looks at changing occupational and lifestyle needs and how these influence lens and frame choice

2035 was to be a special year for me. I would turn 70, and be able to reminisce on 10 years of retirement. Alas it seems that I will only just be preparing to retire, providing that bumbling senility has not had a hand in bringing forward my retirement!

Financial burdens are reshaping retirement ages, people are living and working longer, and the visual load of those previously labelled as pensioners is changing. As technology improves and the 'silver surfers' embrace this technology, the type and design of their eye correction must also adapt to provide, for example, specialist intermediate wear with a higher intermediate addition than, say, 10 years ago.

As the population of the UK ages we, as eye care professionals, need to adapt and progress our methods in a manner that will allow the public to continue to trust our advice and the service that we offer. Thirty years ago, a patient at the age of 55-60 was preparing for a retirement of allotment keeping, sewing and knitting, and possibly vegetating in front of the television. Thankfully this has swung considerably.

According to the Office of National Statistics (ONS), the population of England and Wales is just over 56 million, with 12.6 million of these, or 22 per cent, over the age of 60.[1] It is interesting to see from Table 1 that the generation born pre-1946 dislikes, or distrusts, technologies whereas those born between 1946-1964 dislike laziness and are often labelled as workaholics. It is expected that this generation will embrace longer working years.[2]

Also worthy of note is the fact that the baby boomers are considered to dislike turning 50, and this poses a further question on their own perception of themselves; do they see themselves as younger at 50 than their parental generation? Is our future 'elderly' generation more prone to the attitude of being 65 years young, with a positive spin on age rather than being depressed about presbyopia?

Are we prepared for grannies complaining that the Kindle is blurred at night and granddads worried about the PlayStation display starting to be a little dull? Makes a change from knitting and checking the pools coupon!

Many of our 'senior' citizens are continuing sports and hobbies longer than before. Consider a recent case study of Mr D.[3] At the age of 57 he is a fully qualified rugby referee, who had taken the step at the age of 50

Rex Features

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TABLE 1

	Matures	Baby Boomers	Generation X	Net Generation
Birth dates	1900-1946	1946-1964	1965-1982	1982-1991
Description	Greatest generation	Me generation	Latchkey generation	Millennials
Attributes	Command and control Self-sacrifice	Optimistic Workaholic	Independent Sceptical	Hopeful Determined
Likes	Respect for authority Family Community involvement	Responsibility Work ethic Can-do attitude	Freedom Multitasking Work-life balance	Public activism Latest technology Parents
Dislikes	Waste Technology	Laziness Turning 50	Red tape Hype	Anything slow Negativity

to retire from regular playing to take up refereeing. However, this current season has seen Mr D play in more first-team games than he has officiated in, a move made easier with alternative correction (monovision contact lenses).

If the patient still has the drive and ability to continue with sports and leisure activities, the onus is upon the professional to discover methodologies to achieve these desires. The same values and principles are to be applied to occupations and pastimes, with modern technology being embraced by the grey generation much more quickly than one would imagine.

The over-55 age group are not static in employment either. Among my father's generation, a job was 'for life' whereas in my generation the tendency is to change occupation at least two or three times during our working lives. This necessitates extra training and development and so the modern 55 year old is far from winding down towards retirement. It is notable that the Open University has 9 per cent of first-time entrants over 50.[4]

Modern methods of adult learning (as opposed to remedial adult learning) embrace technologies such as virtual learning environments, laptops and computer-led learning, which brings different challenges to our visual load.

Accommodating needs

The need for intermediate spectacles is greater for the 55+ patient than the first-time presbyope. If we assume that at 40 years of age we will have around 5.00D of accommodation available, then using distance correction, a computer screen at 67cm distance will be seen clearly using 1.50D of accommodation alone, well within reasonable limits, even taking into account that actual accommodative response will be lower than the clinically accepted amplitude (Figure 1).[5] However, our 55-year-old will only have around 1.50D available and so will definitely need assistance.

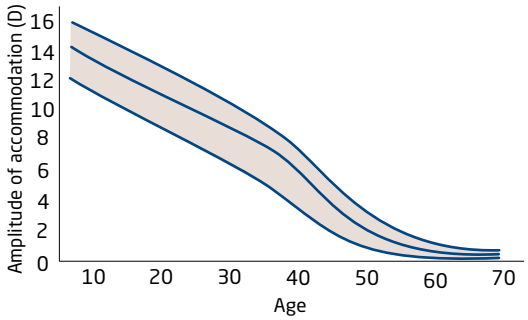

Figure 1 The need for intermediate spectacles is greater for the 55+ patient than for the first-time presbyope

How can this be achieved? And which lens is best? This is the unanswerable question, but I am sure that every manufacturer would suggest that their solution is better than any other. The truth is that whichever lens works for the individual is the best lens for that patient/situation. Probably the key to a successful transition into intermediate prescription dependency is, as it is with all dispensings, that the patient is correctly and accurately measured in order to facilitate the best position of the optimum vision zones. This will also help to alleviate confusion and the possibility of falls due to incorrect fitting or lens design.

Time should be given at the collection appointment, especially for first-time wearers, to reiterate the design features of the lens and how to use it. Patients should be fully aware of the limitations of the lenses, as we ease them into greater dependency on the intermediate prescription needed for computers and other technology such as tablets and smart phones. A demonstration is often worth a million words when describing how to use both occupational progressive powered lenses (OPPLs) and progressive powered lenses (PPLs) effectively.

One option worth considering is the regressive type of multifocal design, where the near vision zone dictates the design of the lens. Patients who need a larger near and intermediate zonal field of view with less head movement (as often is the case with the arthritic association with increasing age) will find that the OPPL fulfils this need, as the transition from having 'enough' accommodative reserve, to needing the intermediate assistance increases.

What benefit will the OPPL give? Apart from being a general option for vocational and occupational tasks, a wider near vision area with a shorter corridor reduces the need for head movements as many elderly or ageing patients are starting to have restricted movement and this shorter corridor gives the patient a more natural posture.

Unfortunately, this also increases the density of the surface astigmatism which is compressed into a smaller zone away from the enhanced larger visual zone. This makes the lens unsuitable for tasks where good peripheral visual acuity is required, eg for driving, but the lack of reliable

distance vision should have been a clear indicator against such a choice of lens for driving.

The shorter corridors associated with these OPPLs present a rapid change in power which makes the near zone accessibility easier to adapt to; however, this again induces a greater amount of surface astigmatism. Some OPPLs work with a set reduction of +0.80D from the full near prescription, regressing up the lens to an intermediate zone and this requires the lenses to be ordered as the near Rx.

The downside of this is that when the patient reaches a near addition of 2.00D then the intermediate range is reduced, and may not be so good for computer work. Again the patient needs to be made aware of the changes that may occur in the future and be primed.

Along with shortened corridors, some OPPLs have corridor lengths of up to 28mm, which is beneficial for those that require a smooth, slow transition, with 80 per cent of the reading addition in the first 15° below the primary visual axis.

What are the disadvantages of OPPLs? If a distance Rx is required, the OPPL has to be dispensed as a specific usage pair. This is not a bad thing as most designs are inter/near corrective, some have a very limited distance field of view, and as the near addition increases the patient needs to understand the associated loss in the intermediate range of clear vision.

Individualised correction

Health and welfare have improved over the years which have a positive effect of increasing longevity but this puts pressure on the eye care professional to adapt existing designs for prolonged use. Better health often means a more active lifestyle and a need for dynamic as opposed to static solutions for patients.

When health problems do occur there may also be implications for spectacle dispensing. It is well publicised that the elderly are more prone to falling, one study reporting that a third of the over 65s fall at least once a year.[6] While many of these falls can be attributed to conditions such as arthritis, postural hypertension, stroke and Parkinson's disease, there may be other contributing factors associated with visual problems. Reduced visual acuities, poor contrast sensitivity and reduced visual fields could be causative factors. This would lead to the conclusion that the elderly should be groomed towards ditching multifocal spectacles for single-vision spectacle lenses, but is this always the best solution?

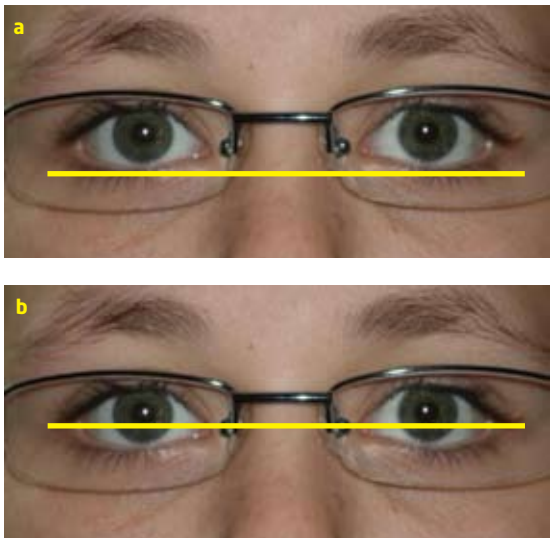

Figure 2 Positioning of bifocal segments may be important for patients who are unsteady on their feet

There are some medical conditions where PPLs and OPPLs should be discontinued or avoided, but each patient must be viewed as an individual. This approach is also relevant from the business point of view, since one way that the optical practitioner can lose out on the 'grey pound' is to fail to individualise each case. Disposable income is on the decline in real terms, as can be seen from ONS statistics,[7] but with the projected increase in retirement age this income should be more accessible as major purchase costs (mortgages etc) fall or are paid off in later life.

So, by looking at each case individually, judgements can be made. For example, a patient with Parkinson's disease will struggle with the shaking effect of the use of a progressive corridor and fixating on continually moving reading material. In theory any patient with balance issues, eg vertigo, would be advised to stay away from PPLs and bifocals.

Take the case of Mrs K (aged 70) with Ménière's disease.[3] Mrs K has worn S28 segment bifocals for over 25 years, but was advised to discontinue with the bifocals and moved to two separate pairs. This caused several problems, not least of which was a fear of falling as she had to relearn the position of viewing areas on the lens.

Already stepping carefully due to the Ménière's disorientation, Mrs K was used to looking over the top of the segment, which had been set a little lower than conventionally acceptable, and was confident to do so. With the segment shown in position A (Figure 2a) then the patient has a good overall distance vision, and is able to see over the top of the segments.

A patient in the early stages of Ménière's could be prepared for the latter more disabling stages by careful and considerate dispensing and educating. A downwards head movement to look at stairs and curbs is sufficient to avoid the segment, provided that the patient is instructed correctly.

The positioning of a segment for someone who sits at a desk all day working on a computer is going to be different to that needed for patients who may still be active but not as steady on their feet (Figure 2b). Obviously they will need to change out of these for walking around (and driving) into a more appropriately fitted segment position or single-vision spectacles. By adapting the position of segments for individual tasks, that is 'multi-dispensing', it is possible to keep the patient in bifocals.

Frame considerations

When the patient is in the transition from middle age to senior citizenship, this is the time to advise and guide, not just for the current dispensing but for future dispensings too. By projecting the spectacle usage and visual needs as the patient progresses through the ageing process, an experienced practitioner can pre-empt any potential problems, and solve them with careful dispensing and education. It is important to remember that the patient may not be able to do everything with the one pair of spectacles and multi-pair dispensing should become the norm.

When dispensing to those who need good intermediate and near, it is also important that the frame be appropriate. It is mildly annoying when frames are supplied 'as narrow as possible because the corridor length is short' but unfortunately this is becoming an increasing trend. It is important, when dispensing, to match the frame shape and size to the lens design, and not pick a frame and then fit a lens to that frame.

Particularly with an OPPL that has been selected for the larger field of view for near and intermediate tasks, a lens aperture that is too shallow will adversely affect and compromise the usable area. The shallower the frame the shorter the corridor and then the more compact the progression is, especially for the higher additions and intermediate additions usually found in the older generations.

Although OPPLs and PPLs are supplied with minimum fitting heights, it is advisable that the frames are bigger than this to allow for maximum area. Patients who need the extra intermediate assistance, whether by vocational bifocal (distance/near, intermediate/near or distance/intermediate) or by OPPL must not be restricted by the frame being too narrow. Minimum heights are just that – the bare minimum that a patient could manage with, not a recommended ideal height.

A similar case can be made for the frame shape. An aviator, or cut-away shape, is also poor for managing the insetting of segments or near/intermediate zones needed to account for convergence. It is possible that, as we are looking at an ageing population, these additions could be higher than conventionally seen, which leads to a shorter working distance and a greater degree of convergence, so the shape and size of the frame takes on yet more importance.

This also applies to spectacles for driving. If we assume that the patient has the required visual acuities and visual fields to drive, the last thing that we should do is reduce that field by a small frame, or a frame that fits too far away, acting as a limiting aperture stop. Thick-sided frames are becoming fashionable, but they can also cause a blind spot for a patient who is not as mobile in neck movements, and whose reactions may not be quite as good. The best way, of course, to get the maximum field of view for the patient is to have either an extremely thin rimless frame or contact lenses.

Mix and match

So what about the contact lens option? Again, if the patient is already an established contact lens wearer then stay with this option. Increased availability of multifocal contact lenses has opened up new opportunities for presbyopes whether they have previously worn lenses or not. Active lifestyles, continuing or taking up hobbies and sports later in life, and concern about appearance mean that contact lenses can be just as appropriate for this age group as in younger people. Combining contact lens correction with other forms of correction for some tasks is particularly relevant to presbyopes.

With regard to driving, when undertaking near vision tasks such as reading the speedometer, single-vision distance spectacle lenses have been shown to require longer fixations and more eye movements than monovision

Presbyopic contact lens correction may affect night vision

or multifocal contact lenses.[8] However, it is also important that any pathology or natural ageing within the eye be taken into consideration. Increasing age results in a reduction in contrast sensitivity associated with light scatter, reduced light transmission and cell loss in the retina and visual cortex. Presbyopes are therefore less likely to tolerate any further reduction in contrast sensitivity that might be caused by contact lenses.

With respect to driving at night, Chisholm[8] concludes that all types of presbyopic contact lens correction can affect night vision and potentially driving performance, although symptomatic monovision wearers can be helped by providing over-spectacles for night driving.

It may be advisable to mix and match and use a good distance-vision spectacle lens for driving, with a good quality multi-layered anti-reflection coating, in situations where contrast and glare may be an issue. In my experience, ageing drivers often feel that their eyesight is fine without correction, but we all know that the rules are very specific that appropriate eyewear is worn.

The other issue with contact lenses and driving is that of dry eye, a further consideration that may affect vision in the ageing eye. Again these issues require a proactive approach. Dry eye can be unmanageable with the wrong contact lens material, so again pre-emptive discussions will help to prepare the patient as to what to expect and look at alternative materials and management options.

As mentioned earlier, the 55+ is planning to, or needs to work later in life, and we need to be mindful of air conditioned offices. Air conditioning can be detrimental to dry eye, so spectacles may need to be worn for work, swapping to contact lenses for social occasions and leisure activities.

Whether wearing spectacles, contact lenses or no distance correction, UV protection is an issue for patients of all ages. Practitioners have an important role to play in advising on eye protection to suit the individual's lifestyle. Finally, with new refractive surgery techniques being marketed specifically for presbyopes, we need to be prepared to answer questions on the pros and cons of surgical options compared to other forms of correction.

To recap, 'active ageing' means that a new approach is needed to prepare the 55+ age group for the implications of working and remaining active longer. Prepare the patient for intermediate correction with OPPLs and PPLs used as an optical solution as opposed to a cosmetic option. Consider the fact that the contact lenses may have more specific uses compared to the younger person. But the main issue is to think long term and start to anticipate the problems that may emerge. This hooks the patient into the practice and both sides of the patient-practitioner equation benefit.

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