

# BEYOND DISPOSABLES

## PART 1: THE PLACE FOR SPECIALIST LENSES

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by Ron Loveridge FBDO (Hons) CL,  
FAAO, FIACLE

**The growing fitting preference for disposable contact lenses whether spheres, torics, multifocals, colours or continuous wear has greatly reduced the numbers of rigid lenses, conventional soft and special purpose contact lenses from a contact lens optician's fitting options. This article will highlight the limitations of only fitting disposable lenses as well as presenting evidence proving the declining trend in conventional lens fitting. Underline also that there is a risk of lowering the standards of the contact lens professional and reducing the overall number of contact lens wearers in the United Kingdom if fitting choices are not fully exploited.**

**Keywords: contact lens market, disposable contact lenses, rigid gas permeable lenses, specialist lenses.**

Dispensing opticians may be referred to as highly experienced professionals when they demonstrate their ability and skill to fit any spectacle option. Similarly contact lens opticians who have successfully built their reputation amongst their peers have achieved recognition largely through fitting all types of contact lenses regardless of their complexity.

The advent of high volume disposable monthly or daily contact lenses over the last few years is unquestionably a great technological breakthrough. This may lead contact lens professionals to the conclusion that all patients can be fitted

with one form or another of disposable contact lens. The reality is that not everyone can or will be able to wear disposable contact lenses. The reason is simply due to the fact that certain prescriptions, lens parameters and designs cannot be cost effectively manufactured using the disposable methods of cast moulding or spin casting. The only way these lenses can be processed is by using computer lathe technology which offers more flexibility when more complex prescriptions are required, but does so at a higher cost which excludes fitting these lenses as disposables.

The contact lens optician's role is to fit and dispense the most appropriate

contact lens to fulfil the prescription issued. In a percentage of patients this has to be a conventional soft or gas permeable contact lens. The necessity is that contact lens opticians must not only be familiar with all conventional and specialist lenses available, but they should know how to fit them when the need arises. In the author's opinion it is vital to actively go beyond disposable contact lenses and fit specialist lenses and retain the high level of respect and associated rewards of our profession. The professional bodies have endeavoured to maintain examination standards so that practitioners at least qualify with knowledge about the complete range of lenses and lens care products available. This includes the basics of fitting specialist contact lenses.

Even the optometrist and OMP can be influential during an eye examination by discussing with the patient the suitability of contact lenses for sight correction.

It is also important that the patient remains loyal and is prescribed the most appropriate contact lens option for their visual and every day requirements and not turned away or referred to other more skilful practitioners.

### The trend in the UK contact lens market

The United Kingdom (UK) market over the last few years has shown a decline in the number of contact lenses fitted. Between 1990 and 1996 there was a steady increase in the number of contact lens wearers in the UK. Wearer numbers went from 1.3 million (3% of adults) in 1990 to 2.87 million (6%) in 1996. After that the steady decline occurred until 2000 where it reached 2.58 million (5.3%). In 2001 there was a rally to 2.78 million (5.7%)<sup>1</sup>. The major reason for this decline is reflected in the lens types fitted. Although there has been a steady increase in planned replacement soft lenses including monthly disposables since 1992 to 46% and daily disposable lenses from 2% in 1996 to 24% in 2001 there has been a big reduction in conventional soft lenses and rigid gas permeable lenses (RGP's). Since 1990 these lenses reduced in 2001 from 58% to 10% and 43% to 18% respectively. In recent times the predicted demise of fitting rigid contact lenses has been a topic of debate<sup>2</sup>. The questions that need to be answered are 'Why aren't practitioners as enthusiastic when recommending contact lenses?' The rhetoric is that spectacles are more profitable and less time consuming than contact lenses and 'Is there a skills gap or lack of confidence in fitting some lens types?'

The first question has already been addressed by the Association of Contact Lens Manufacturers (ACLM) with their London Business School model which shows by using a straightforward

interactive financial spreadsheet that only increased profitability can occur by dispensing patients with both spectacles and contact lenses<sup>3</sup>. The proactive initiative of the ACLM with lectures, articles and seminars throughout the last two years, quite possibly has helped reverse the decline in contact lens fits in this period. The second question which is more of professional concern is regarding the skills gap and is the focus of this article which will endeavour to remind contact lens clinicians of the great opportunities available when fully utilising the broad spectrum of contact lenses available in the UK.

The aim is to encourage the maintenance of contact lens skills and to help identify where fitting prowess can be broadened, so that every potential contact lens wearer can be fitted with any type of contact lens.

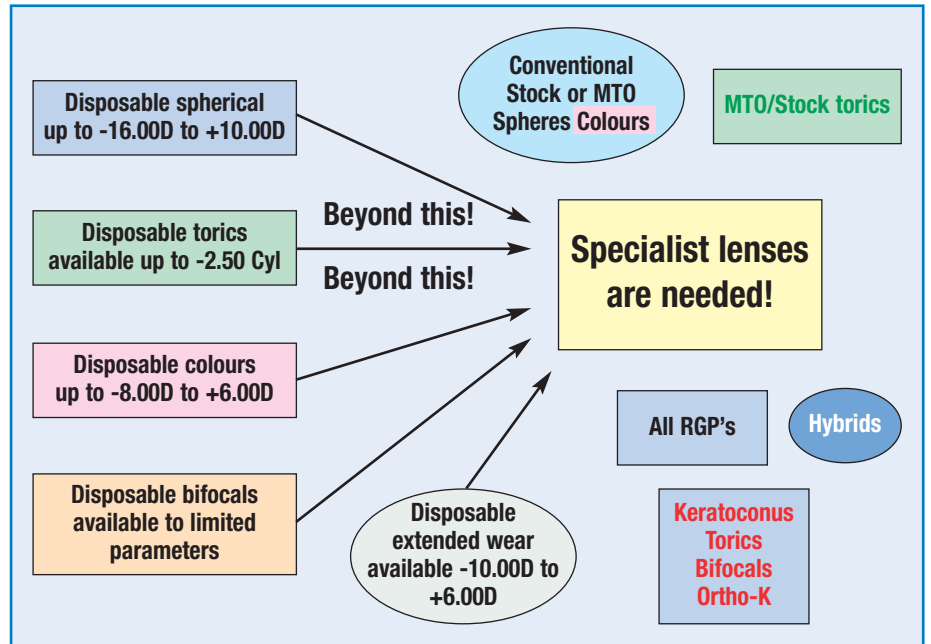
### What is beyond disposables?

The statement 'It is not rare when it is in the chair'<sup>4</sup> is very apt when describing contact lens practice as the limitations of just dispensing disposable lenses becomes very clear to see when more complex patient prescription or ocular requirements need to be addressed.

Disposable spherical contact lenses are only available between -16.00D and +10.00D, disposable torics range is confined to back vertex powers (BVP's) -8.00D to +6.00D with only up to -2.50D cylinder correction. **Table 1** shows that there are also limited parameters in disposable colours, disposable bifocals and disposable continuous wear lenses. The area beyond disposables according to a recent survey suggests conventional soft lenses still represent 13% of wearers whilst RGP's represent 19% of contact lens wearers<sup>5</sup>.

The popular term used for these lenses outside disposable lenses is 'conventional lenses' although CIBA Vision have labelled them as 'specialist lenses'<sup>6</sup> which reflecting skill levels are, in the authors view, a more appropriate terminology.

Specialist lenses refer to RGP's, conventional soft and made to order (MTO) spheres, torics, multifocals,



▲ **Table 1:** What is beyond disposables?

coloured and tinted lenses, not forgetting hybrid lenses which are a combination of soft and hard materials.

All of these lenses are still manufactured by at least one or several contact lens laboratories and are invariably available on a planned replacement basis either three, six or 12 months for soft lenses or six to 12 months for RGP's.

The following specialist lenses will be discussed separately.

- RGP's
- Soft torics
- Coloured/tinted soft
- Extended wear
- Bifocals/multifocals
- Lenses for special purposes

### Opportunities for rigid gas permeable lenses

Generally there are a number of advantages and disadvantages of wearing RGP lenses as compared to soft lenses - **Table 2** lists them.

Patients who might be considered suitable for RGP's may be recruited from those who report they have family or friends successfully wearing RGP lenses.

These potential wearers are invariably more positive and realistic about the features and benefits of RGP's and more willing to try the lenses.

Existing successful hard or RGP wearers may be refitted with higher oxygen permeable, improved wettability materials or modern thinner aspheric designs so as to minimise oedema, or lens surface deposits or drying.

Studies have shown that RGP's have been prescribed to control progressive myopia in children. One study carried out over two years reported an increase of 0.28D in the contact lens wearers compared to 0.80D in the control group<sup>7</sup>. This study showed by using standard fit RGP lenses that corneal flattening was greater with the contact lens wearing group than the controls. The follow-up study by the same team after three years of RGP wear showed myopia had increased by 0.48D for the RGP lens wearing group as compared with 1.53D for the spectacle wearers<sup>8</sup>. Another investigation, looking at whether there is an established benefit of rigid lenses controlling progressive myopia, called the Contact Lenses and Myopia Progression "CLAMP" study started in 1998 is due to report its findings in 2003<sup>9</sup>.

Recent reports have suggested that myopia control in esophoric children may reduce myopia progression when RGP bifocal contact lenses are fitted<sup>10</sup>.

One RGP fitting philosophy called orthokeratology which originated in the USA and more scientifically perfected in Australia in the last decade enables myopic adults to wear their lenses (known as retainer lenses) only overnight. During the day contact lenses and spectacles are not required. Sometimes these retainer lenses are only worn every second or third night to maintain the altered corneal shape. The

▼ **Table 2:** Advantages and disadvantages of wearing rigid gas permeable lenses as compared to soft lenses

Advantages	Disadvantages
Better visual acuity	More initial awareness
Higher oxygen transmissibility	3 and 9 o'clock staining
Less ocular compromise	Lid ptosis more likely
Corrects more ocular conditions	Not disposable but may be ordered on planned replacement
Used for irregular corneas and keratoconus	Surface wetting generally worse
Less likely to be supplied on the internet	Harder to fit - require more skill

idea behind fitting rigid lenses with a measured amount of apical touch for overnight wear is to re-shape the cornea temporarily. The flattening of the cornea achieved renders the eyes emmetropic until the effect wears off. Practitioners who practice using this technique of fitting suggest this is a reversible alternative to laser surgery<sup>11</sup>.

There are several benefits as well as challenges of orthokeratology and these are shown in **Table 3**.

Astigmats may also benefit from standard RGP wear as up to -2.50D of with-the-rule astigmatism and up to -1.25D of against-the-rule astigmatism can be simply fitted with multicurve or aspheric periphery designs. Beyond this level of astigmatism aspheric or elliptical back surface RGP's may be considered<sup>12</sup> or back surface torics or bi-torics. The key feature that eliminates the need to correct astigmatism is the rigidity of the RGP material whether silicone acrylate or fluorosilicon acrylate trapping a tear layer under the lens which neutralises the corneal astigmatism present.

For presbyopic patients, soft disposable progressives or bifocals are not always ideal for the following reasons:

- They do not correct low level of astigmatism which may cause compromised vision
- Alternating vision options are more viable in gas permeable lenses<sup>13</sup>
- Customised control of spherical aberration is available in some RGP aspheric designs only<sup>14</sup>.

RGP bifocal or multifocal lenses should be considered for those patients who are successful RGP wearers who have early to mid presbyopia and could be refitted with one of the many bifocal, multifocal or monovision options.

**Table 4** outlines choices of RGP multifocal or bifocal for a variety of patient visual needs including alternative options<sup>15,16</sup>. The table has been derived to highlight the best recommended options for the visual needs of potential presbyopic patients. It should be noted that all bifocals and multifocals are a visual compromise and therefore patient

expectations and selection must be carefully managed and the potential and limitations of these lens types must be fully explained. Lifestyle needs must be fully explored so as to identify specific close, intermediate or distance seeing tasks. It is possible that recommending over-readers for very critical close work or special distance glasses for concentrated distance seeing such as long distance driving will be a consideration.

Certain presbyopic patients are more challenging and are usually those who have specific visual needs, very small/large (<1mm or >5mm) pupils, high adds, dry eyes or patients with lower lids which are well below the limbus or have loose and flaccid upper lids.

There are several simultaneous vision lens options such as aspheric front and back surface designs or translating lenses which are fitted so as to alternate between the distance and reading portion of the lens whilst correctly aligned over the pupil.

**Table 5** highlights some opportunities and challenges of RGP multifocal or bifocals which are either aspheric multifocals or alternating bifocals<sup>17</sup>.

Fitting gas permeable lenses for presbyopia is professionally very satisfying. Success rate has been reported to be 70% and considered a first choice when correcting presbyopes<sup>18</sup>. The over 45's bifocal contact lens wearers are usually more loyal, have disposable income and can provide the practitioner with more profit than single vision or disposable lenses. This current niche fitting activity is guaranteed to grow as the UK population grows older particularly in the next ten years according to the recent government census.

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▼ **Table 3: Benefits and challenges of orthokeratology**

Benefits	Challenges
Lenses worn during sleep	Needs special topographical equipment
Control myopia up to -3.50D (-2.50 optimum)	Practitioner needs skills training
Patients see normally without correction during the day	Could cause corneal distortion if procedure incorrectly applied
Corneal affects reversible	Manufacturing expertise for reverse geometry lenses is limited
Safer than laser surgery	Lenses must be fitted much flatter than conventional RGP's
Support group available (British Orthokeratology Society) required	Lenses must be worn overnight during sleep - high oxygen transmission

Visual need	Translating (alternating)		Simultaneous vision (aspheric)			Other
	Segment	Concentric centre distance	Front surface centre distance	Front surface centre near	Back surface centre distance	Alternative options
Good distance essential (flying and driving)	✓ Low seg	✓ Large distance area	✓ Large distance area		✓ Large distance area	Golf - enhanced mono dominant eye - distance non dominant - bifocal
Good reading <i>long periods</i> (accountant)	✓ Large seg	✓ Small distance area		✓ Large read area		Bias non dominant eye for reading
Good intermediate (computing/musician)			✓	✓	✓	Distance or intermediate in dominant eye - inter or reading in non-dominant eye
Good intermediate <i>above</i> (chemist/librarian)		✓ Intermediate dominant eye	✓	✓		
Good near vision <i>above</i> (retail/stock)				✓ Large read area-centre		
Social use (theatre/restaurant)		✓	✓	✓	✓	Bridge player - one eye with intermediate add and other reading add
General at all distances (housewife/retired)		✓	✓	✓	✓	+Distance specs for night driving/over-readers close work

▲ Table 4: Choice of RGP multifocal/bifocal type (✓ emboldened = 1st choice, ✓ normal = 2nd choice)

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▲ Table 5: Opportunities and challenges of RGP bifocal and multifocal lens types

Aspheric multifocals (simultaneous vision)		Alternating bifocals (translating vision)	
OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES
Easy to fit	Less suited to small pupils	No loss of contrast sensitivity	Poorer comfort due to prism ballast/truncation
High Dk available with certain RGP materials	Good centration is vital	No jump - better optics	More complex fitting (seg size, seg height)
Corrects low and moderate astigmatism	Some back surface aspherics fitted steeper (warpage and spec blur)	Corrects low and moderate	Gaze dependent - look down to read
Offers some intermediate vision	Some aspheric designs need some translation	Excellent VA - distance and near achievable	Intermediate restricted to modified monovision or trifocal
Not gaze dependent and no image jump	In focus and out of focus image seen simultaneously	High Dk materials used more oxygen to cornea	Needs sufficient lid tension
Increasing power on down gaze with some designs	Visual compromise? 'Top up' spectacles for higher adds may be needed	Easier to modify (segment, prism, truncation and fit)	Flare may be noticed at transition
High success rate claimed	Reduced contract sensitivity	Back surface toric designs available	More expensive