



Daily disposable options for healthy contact lens wear

A panel of contact lens specialists from six European countries convened at The Vision Care Institute to discuss the key features a lens needs for successful and healthy long-term wear. **Alison Ewbank** went along to hear what they had to say

Fears for the European economy continue to hit the headlines but one sector of our own industry remains in good health. Industry data for markets across Europe showed that contact lens sales grew in 2010 compared to little or no growth in other optical sectors such as frames and sunglasses.

Latest figures reveal that it was daily disposable lenses that outperformed other segments in 2011, with almost twice the growth of the soft contact lens sector as a whole (5.2 per cent vs 2.9 per cent) while reusable lens sales remained flat. Toric daily disposables performed particularly well, showing growth of 18.1 per cent.

International data for 2011 show that northern European countries have the highest prescribing rates for daily disposable lenses in the world. Of 29 countries surveyed for the journal *Contact Lens Spectrum*, Norway and Denmark take the top two places, with over half of soft lenses prescribed in this modality (56 per cent and 55 per cent), and the UK is not far behind at 43 per cent.

But prescribing of daily disposables varies from country to country even within northern Europe. Sweden has a lower rate of 28 per cent and the Netherlands bucks the trend at just 8 per cent of soft lenses prescribed.

Looking at daily disposables by material, European sales of silicone hydrogel (SiH) lenses grew by more than 50 per cent over the year. Although starting from a low base, this represents a notable achievement for a premium product against the backdrop of a challenging economic situation.

Yet the vast majority of SiH lenses sold are still reusable spherical lenses and only 11.2 per cent are daily disposable spheres. When eye care practitioners think about SiH lenses they generally tend to think about reusables, and that is the case across Europe.



Rachael Smith: ease of handling influences lens choice

So which features of daily disposable lenses make them a popular option? What are the key lens characteristics that practitioners are looking for in this segment? And how can the latest daily disposable lenses best deliver optimal patient health, comfort and satisfaction?

To provide some answers, a group of experienced contact lens practitioners from six countries across northern Europe travelled to The Vision Care Institute at the Pinewood Campus in the UK. The aim was to explore key features and benefits of daily disposable lenses and identify those that are most important for healthy contact lens wear.

The patient's 'well-being'

Comfort has long been recognised as one of the most important attributes of contact lens wear from the patient's perspective and discomfort is known to be the primary reason wearers drop out. Chairman **David Ruston** began by posing an intriguing question: 'Can you have healthy contact lens wear if the lens is not comfortable?'

Peter Karvik, who runs two practices in Sweden and is a faculty member of The Vision Care Institute in Prague, observed that the World Health Organisation describes health as 'the state of complete physical, mental

and social well-being'.

'Discomfort is not good for the patient's mental well-being, in fact all aspects of contact lens fitting are concerned with health, including vision,' he said. 'It's easy just to think about the physical measures when we talk about health but there are psychological factors too.'

Aside from comfort, adequate oxygen supply to the cornea and good lens design were the attributes that first sprung to mind as the characteristics needed to ensure healthy contact lens wear with daily disposables. Lens quality and reproducibility were also at the top of the panel's wish list.

Other panel members pointed to surface properties, especially lubricity or coefficient of friction, as well as material features such as low modulus, as essential to the patient's health and comfort. Attributes of the packaging solution, including pH, tonicity and wetting agents, were also particularly pertinent with daily disposables since lenses are applied directly from the packaging each time they are worn.

Surface matters

Among material characteristics, the consensus was that a wettable surface was crucial. **Rachael Smith**, who works at two Hampshire practices

PANEL MEMBERS

- Chair: **David Ruston**, director of professional affairs for Western Europe, Johnson & Johnson
- **Shelly Bansal**, UK
- **Kees Broos**, Netherlands
- **David Gould**, UK
- **Peter Karvik**, Sweden
- **Bo Lauenborg**, Denmark
- **Berit Frøseth Nielsen**, Norway
- **Rachael Smith**, UK
- **Sophie Tournioij**, Belgium
- **Marco van Beusekom**, Johnson & Johnson Vision Care, Benelux
- **Kristina Stenhammar**, Johnson & Johnson Vision Care Nordics



in the Rawlings group, identified deposit resistance as being different from wettability and also an important feature. 'Even with daily disposables, some SiH wearers may deposit on their lenses over the course of a few hours,' she remarked.

For Karvik, the biofilm that the body creates on a lens in response to its presence was a factor to consider since bacterial biofilm formation on lenses may be among the risk factors for contact lens-associated infection. 'When we talk about deposits we tend to think about proteins and lipids, but we're starting to see it's very much about other aspects of the biofilm too, especially when we think about healthy wear. Bacteria in the biofilm have an effect on the lens surface and we really need to understand what's going on there,' he said.

Bacterial adherence was a surface issue that could not be ignored, even when lenses were disposed of daily. Cases of microbial keratitis could still occur although they were very rare and less severe than with reusable lenses. Sleeping in or reusing daily disposable lenses was a potential issue, said Ruston, who observed that practitioners tended to put patients they considered risk-takers into daily disposables rather than reusables.

Other panellists agreed that patient factors such as compliance and handling – particularly ease of removal – influenced their choice. Smith said that one simple advance that would make patients very happy would be the completely reversible lens. 'They do get very stressed out about whether the lens is inside out or not!'

Marco van Beusekom, who has more than 20 years' experience in contact lens practice said that although daily disposable lens users were the most compliant with lens replacement, patient instruction was still a prime consideration. 'It's very important to tell wearers of disposable lenses they should replace their lenses every day,' he said.

SiH or hydrogel?

'Does the daily disposable lens have to be a SiH to be a healthy lens?' asked David Ruston. 'It depends on who you're fitting the lenses to,' said **Shelly Bansal**, whose practice in northwest London derives 40 per cent of its income from contact lenses.

'Certainly if I'm fitting lenses to a young patient oxygen matters a great deal because I'm planning a lifetime of contact lens wear. I've been in the industry long enough to know that



Peter Karvik: get comfort and vision in place first

hydrogel lenses can cause problems. If patients wear the lenses 14 or 16 hours a day, for five, six or seven days a week, somewhere along the line there's going to be an issue.

'I know it's going to happen, whether it's in three years, five years or 10 years. To continue on that path means I'm going to have problems. So particularly for young people, SiH lenses are very important.'

For older patients, Bansal would be looking at other parameters, not just oxygen. 'I'd be thinking about coefficient of friction, modulus and prescription because the lids are different.' Smith agreed: 'With a part-time wearer with dry eyes I might fit them differently from a full-time wearer,' she added.

'Adequate oxygen is a great way to put it,' Bansal continued. 'We don't need super-high Dk lenses – that's not relevant any more in the marketplace. We need enough to make sure it's safe to use for a lifetime of wear.'

For **Bo Lauenborg**, whose practices in Denmark have as much as 80 per cent of their sales in contact lenses, three factors – comfort, comfort and comfort – were key whether the lens was hydrogel or SiH. The patient wanted to wear the lens from morning to evening without feeling it, he said.

Karvik argued that, from the patient's point of view, comfort and vision were paramount. 'It doesn't matter if the patient gets great oxygen – if they don't get great comfort and vision they're not going to be healthy or satisfied. You need to get those in place first.'

Ease of handling was another priority for patients (see panel overleaf). 'If they can't get the lens off the eye it's going to be a health problem,' said Karvik.

David Gould's experience from his two practices near Manchester

was that 'handleability' was not an essential requirement but was an important consideration. 'Particularly for someone who's new to contact lenses or who has struggled before – if they can't do it they'll easily lose incentive,' he observed.

Sustained vision

Bansal stressed that good, sustained vision was the aim, and was not always a given. 'Vision can vary throughout the day and it's related to material properties. You want to maintain that quality of vision for the patient throughout the day. You can have a lens that's fantastic when you put it in but vision is not sustained – there are lenses on the market that behave like that.'

He also argued that the precursor to healthy contact lens wear was a healthy assessment. 'You've got to understand what the patient's eye condition is first, not just the refraction. Too many times people do not do a good enough examination before fitting lenses.' Using lissamine green as a baseline check of the lids and tears was one example of good practice.

For Gould, the choice of hydrogel or SiH was sometimes a patient management issue. 'If the patient wants to wear lenses 16 hours a day, seven days a week but the best lens for their vision is a hydrogel toric, they may have to compromise on the wearing time,' he argued.

There was one prescribing decision on which all the panel members were agreed: all other things being equal, for the average patient daily disposable lenses were a healthier option than reusable lenses and their lens of first choice. And there were some patients, such as smokers, for whom daily disposables were always preferred.

Long-term health

Ruston summed up the feelings of the panel when he said that it was tempting for practitioners, as health care professionals, to think that no interference with ocular physiology was healthy contact lens wear but it was also about comfort and vision. 'We can't have a healthy contact lens experience without a comfortable experience,' he said.

Karvik took a wider view of ocular health and raised the question of UV protection. 'What got me thinking about UV was that we're going to live so much longer and put people into contact lenses so much earlier. UV protection's becoming a greater tool for us to maintain health in the long term.'



'If I have two different lenses that have pretty much the same characteristics but one has a UV block, I'd definitely go for the one with the UV block.'

Other panellists agreed with this assessment. 'All other things being equal, you'd choose the one with the UV block – why wouldn't you?' said Smith. 'UV protection is really important,' added Gould. 'The ozone layer's getting thinner and any additional protection we can put in there is good.'

Patients rarely thought about protecting their eyes and it could stimulate a different type of conversation in the consulting room.

**David Gould:
UV protection
is really
important**



KEY CL ATTRIBUTES FOR HEALTHY WEAR IN DAILY DISPOSABLES

The practitioner's perspective

- Adequate oxygen delivery for daily wear
- Excellent comfort
- Optimal balance of material properties, (such as coefficient of friction, modulus, wettability, deposit resistance)
- Good lens design
- Reproducibility and lens quality
- UV protection

PATIENT PRIORITIES: ARE THEY THE SAME?

Ocular health may be the primary factor practitioners consider when choosing the best contact lens for their patient, but what are the priorities for patients themselves?

The consensus among our panel was that once patients had made the decision to go ahead with contact lenses, they expected to be prescribed the healthiest possible lens. The feeling was that comfort, vision and other factors such as cost, convenience and handling were more likely to concern patients.

The panel's views are supported by a survey involving over 3,500 consumers across Europe. Among those considering contact lenses (n=829), the following attributes were the main 'triggers' to contact lens use:

- Easy to insert/remove (cited by 45 per cent)
- Superior comfort (31 per cent)
- Superior vision over glasses (30 per cent).

Among current contact lens wearers (n=3,525), the main drivers of contact lens brand choice were:

- Recommended as most suitable for their eyes (35 per cent)
- Easy to insert/remove (19 per cent)
- Value for money (18 per cent).

Patients' principal reasons for wearing their current lenses (n=714 daily disposable lens wearers) are also revealing:

- Recommended as most suitable for their eyes (37 per cent)
- Having a fresh lens every day (27 per cent)
- Easy to insert/remove (24 per cent).

Interestingly, only 9 per cent of daily disposable wearers opt for 'they are the healthiest for my eyes' as the reason for their choice, despite this being the major concern for practitioners

● Note: Usage and Attitudes Survey was commissioned by Johnson & Johnson Vision Care and conducted by Albemarle Marketing Research between January and August 2011. The survey of nine markets in Europe was conducted via an online questionnaire with contact lens wearers aged 16-54 years

But approaches to introducing the topic of UV protection differed; **Sophie Tournioj** never talked about it in her Ostend practice whereas Smith discussed UV blocking as an added benefit.

At **Kees Broos'** practice in Eindhoven, he found that some patients would only accept a premium lens for occasional wear, such as daily disposables for holiday use, which they might not accept for everyday wear on grounds of cost.

Whether the panel would consider changing a daily disposable wearer from a hydrogel lens with UV blocking to a SiH lens without UV protection prompted further discussion. **Berit Frøseth Nielsen**, whose Oslo practice fits around 25 per cent of patients with contact lenses, said that her decision would be patient dependent and influenced by a combination of factors: 'If you have a patient with an oxygen problem or even a handling problem, usually it's much better with a SiH lens.'

Others were wary of switching wearers from any lens with a UV block to one without: 'Patients are becoming more aware of the importance of UV protection and the eye. I'm not sure how they would view you taking that away,' said Smith.

Bansal had a similar view: 'There'd have to be a big advantage for the patient to gain by taking UV protection away. If we're planning a lifetime of contact lens wear we need to be proactive and not reactive. UV protection is almost a duty for our younger patients.'

For several on the panel, lens choice was about setting priorities and recommending the product that best met the individual patient's needs. But Karvik pointed out that those priorities would change as lifespan increased and the next generation

experienced more age-related ocular changes. 'There may be a big shift from UV-blocking being an added benefit to becoming one of the primary benefits of contact lens wear,' he observed.

Minimal impact

There was also some debate about one of the desirable features of contact lenses and whether it was an attribute in its own right, namely that they should 'do no harm'. Some felt that minimal impact on ocular physiology was a given from the patient's perspective. 'From the practitioner perspective we're all very concerned with health but I think the patient just expects it,' said Smith.

'I don't think the patient ever believes that any medical practitioner would do something that was not healthy for them,' observed Bansal. But others disagreed. 'I fit a lot of children and when a 10 or 11-year-old child comes for a contact lens trial and the parent comes in the room, their primary concern is the health of their child,' said Gould, so concerns about safety remained.

The consensus was that, once the patient – adult or child – went ahead with contact lenses they expected the practitioner to prescribe the healthiest possible lens.

The panel's final task was to identify the key lens characteristics from those they had agreed as essential for healthy contact lens wear (see panel). There was little surprise that three attributes in particular – oxygen delivery, comfort and other material properties – made the grade, along with lens design, reproducibility and quality, and UV protection.

It may be no coincidence that the industry is already able to deliver all of these desirable features, in daily disposable lenses that will bring even greater success to the contact lens category. ●