



Stargazing: the future for CLs

What's the most likely future direction for contact lenses looking ahead? was the simple question

posed by co-chair **Eric Papas**, to open the session. But the first response, from **Pat Caroline**, was unexpected: 'Our practice is predominantly a medical practice and, for us, developments in scleral lenses are probably the most exciting to come along in the past 25 years.'

'These lenses have done some incredible things for our patients. For us, as fitters, it's made our job significantly easier. They're early on in their evolution, and they're going to continue, like soft lenses did, to improve in quality and manufacturing, but I'm really excited about our first step forward with these lenses.'

Noel Brennan was on more familiar territory. 'I guess it's pretty obvious that myopia control is coming and it's coming fast, or slow as the case may be. There are a lot of people interested in this field and a lot of people pushing this right now.'

'There are lenses out there which people can use now, and [myopia control] is probably the thing that's going to change the way we practise in years to come.'

Correction for presbyopia was another direction. 'People are fitting more presbyopic lenses and learning more about it so are able to fit them better. I'd say the lenses we have now are better than the lenses we

Invite some of the world's leading researchers to discuss the future for contact lenses and the result is likely to be a heated debate. Here's what panellists at the BCLA 'stargazing' session had to say



Dr Robin Chalmers: safety concerns

had five years or 10 years ago. And hopefully there'll be some brand new technologies coming our way in the next few years as well.'

'We probably could do with a paradigm shift but talking to my colleagues here, it seems that people are reading the manual and following the fitting guide, and when they do that they achieve better success,' said Brennan.

According to **Dr Philip Morgan**, such a shift was needed. 'By definition, every presbyope needs vision correction. Current lenses do OK but there are lots of people who don't wear them, we all know this.'

'This is one area that potentially could double the market – let's say in the next five to 10 years. Myopia control could also double the market in that sort of timeframe, worldwide at least, or maybe in specific [geographical] areas for that modality.'

'Perhaps the other area is understanding comfort and getting that right with lenses. We're talking about people who are already fitted not ceasing lens wear – keeping them in lenses by understanding comfort issues and developing lenses that solve the problems of comfort.'

Industry attitudes

Co-chair **Lyndon Jones** asked whether one of the biggest barriers to entering contact lenses was the attitude of practitioners themselves, looking at the numbers of people who could be wearing lenses today.

It's difficult to change practitioner attitudes but it's clear that relatively small numbers of people are offered the contact lens modality, said Morgan.

'We've done studies, and others have too, to show that offering contact lenses makes it easier for people to wear them – just giving the opportunity to try them. That's another issue which, if correctly managed, could double the market in the next five years.'

For **Brien Holden**, 'big business' had difficulty in investing in contact lenses compared with the much larger returns they expected from therapeutic drugs. 'We're going through a very interesting stage in the industry where, at the practitioner level, the inventive, imaginative practitioners are the people who will use the best that's available in their practices.'

'But it's difficult for the company scientists and also for people outside who work with companies to get the imagination of the executives in big corporations. It's not just contact lenses, it's a big issue in the pharmaceutical industry, where every innovation is generally done outside the company and bought in.'

'If we're going to seriously kick-start the industry to a different level, we have to produce a result that will move the industry and the imagination of people forward with contact lenses. At the moment it's very difficult to get real investment because most of the money is spent on margins, on making things cheaper and getting the percentage return on the item up, rather than on product performance.'

Public health issue

Turning to myopia control, Holden said that studies with a 'Peripheral Plus' myopia control contact lens showed that there was a reduction in myopic progression of nearly 50 per cent awaiting the next 50 million young myopes growing up over the

THE PANEL

- **Professor Noel Brennan**, clinical research fellow at Johnson & Johnson Vision Care, Jacksonville, Florida
- **Professor Pat Caroline**, associate professor at the Pacific University College of Optometry
- **Dr Robin Chalmers**, independent clinical trial consultant and co-chair of the Contact Lens Assessment in Youth Study (CLAY) into safety of lens wear in young adults
- **Professor Nathan Efron**, director, LANDMark Study at the Queensland University of Technology
- **Professor Brien Holden**, CEO of the Brien Holden Institute and Vision Cooperative Research Centre, Sydney, Australia
- **Professor Lyndon Jones**, director of the Centre for Contact Lens Research at the University of Waterloo
- **Dr Philip Morgan**, director of Eurolens Research at the University of Manchester
- **Professor Eric Papas**, senior visiting fellow, University of New South Wales



Professor Pat Caroline (left) and Dr Phil Morgan

next five years worldwide.

'Imagine what that might mean to the 20 per cent of young adults in Taiwan who have over 6D of myopia and have 10-15 times higher risk of detachment, glaucoma, cataract.

'We have in our hands the capability of modifying the growth of the eye to the public health advantage of some billion myopes. But we're not taking the steps forward in making this happen.

Advances in manufacturing

Nathan Efron agreed there would be developments in myopia control and bifocals but took Holden to task on the industry's failure to invest. 'If you walk around the exhibition here you'll see the phenomenal developments that have taken place, in particular in the field of manufacturing technology.

'The future – in terms of the practical reality of immediate relevance – is that we're moving towards daily disposability. In five years, or certainly 10 years, almost all contact lenses will be daily disposables and that's going to have a massive impact on the way that we practise, the way we think... the way that contact lenses are delivered and supplied to patients, and it's going to require a paradigm shift in itself.

'Yes, bifocals will make a difference. Myopia control will make a difference. But industry's been working exceptionally hard developing the manufacturing technology to have the capacity for mass-produced lenses, so we can have true daily disposability. So many innovations at this very conference are sensational in this regard,' added Efron.

But Holden took a different view: 'The vast majority of the world will be reusing contact lenses for a long time and is outside the daily disposable business,' he replied, adding that only 1 per cent of wearers in China used daily disposables.

He agreed that manufacturing platforms had been created that would enable future developments. 'The problem has been that the

academics, researchers, vision scientists, physiologists have not had the power and the influence, nor the attitude, to focus hundreds of millions of dollars on product performance. It isn't that the industry can't respond. It's responded magnificently in that technology and manufacturing area but there hasn't been the groundswell of capabilities in the product performance areas.'

Fitting emmetropic children

Widening the debate on anti-myopia strategies, Jones asked: 'If we have myopia control lenses available, are practitioners going to be comfortable taking plano children of six or seven years old and putting them into contact lenses?'

'It's the wrong question,' fired back Holden. 'Nobody's suggesting that a seven-year-old kid in China who hasn't got a refractive error should get a pair of contact lenses. But there are a lot of seven-year-olds who are -2D and are heading for -8D. We need to be able to jump in when kids get to -1 or -2D and slow the progress down to 0.25 or 0.50D maximum per year instead of 0.75 or 1D.'

He pointed out that 30 per cent of US myopes become myopic after the age of 17. 'It's all those university students, young adult myopes with disposable incomes. Those are the guys we should be targeting first.'

For Brennan, the key was to predict the onset of myopia. 'If your prescription is on the negative side of +0.75D at eight years old you have an 80 per cent of going myopic. That's the biggest risk factor. We have to start thinking about the fact that, if we want to prevent myopia, we're going to be fitting children who are not myopic with contact lenses to slow it down.'

Practitioner barrier

If we already have such products in the marketplace that would deliver these optics to children, why are practitioners not completely embracing that? asked Caroline. 'The data are overwhelming that it actually works. It's easy to do. It

doesn't take a rocket scientist to deliver these optics to the peripheral retina. Why the reluctance?'

'It's like everything we do,' said Holden. 'How long did it take us as an industry to take advantage of silicone hydrogels? They were on the market for three years before they started selling. Orthokeratology has been around for 100 years. In some of the clinics in China they have 20,000 orthoK patients because it not only eliminates the myopia it slows the progress.

'If you're going to talk to a parent about controlling the child's myopia for \$1,000 a year for the next five years, like the dentist does, you have to have products that are reliable, that the child can continue to wear. Even at a 40 per cent reduction [in myopic progression] you have to have an understanding parent.

'It's a question of how good the products are, how much work we do, how much control we can get and then how it's packaged and delivered to parents and practitioners.'

Morgan took a similar view: 'How this will pan out over the next few years is obviously related to product performance. A 20-30 per cent reduction is rather different from a 60-70 per cent reduction. Maybe products over time could get there. The uptake will be closely related to that figure. It's also conceptually a difficult sell to parents so we have to be geared up to think all the issues through.

'The reason very few people are doing it is that we're not there yet. We don't understand things, the products aren't generally available and there hasn't been that move from the podium into general practice at this time.'

It fell to **Robin Chalmers** to add her comments on safety concerns with myopia control lenses. 'What I hear from regulatory feedback various groups are getting is that there's a lot of concern about safety and the hurdles are being set at an alarmingly high level.

'The gatekeeper, the regulator, has to understand that most of the lenses that are being developed are for daily wear and are materials already used in kids this age. If things go wrong in one region, such as China, we shouldn't throw the baby out with the bath water. We need to think ahead if there is an untoward safety issue in different parts of the world. I think it's safety that would make practitioners hesitant but before the practitioner can get the product the regulator has to be convinced,' she said. ●