

# FRAMES

## A frame for all

**Bill Harvey** catches up with an optician who has set up a charity with the aim of improving access to sight correction across the globe using a unique and fully adaptable spectacle and dispensing service

**J**ohn Snelgrove has been providing optical services from his Enhanced Optical Service practice in St Albans since 1993 (figure 1). He has always been keen on providing vision care for all, and has built up a reputation in offering the best possible care for the most vulnerable and inaccessible members of the community, whether they be elderly and in residential care homes or sheltered accommodation, those with impairments or the homeless.

Since coming across a journal article some years back which stated there are 500 million people across the world unable to work because of uncorrected refractive error and presbyopia, Snelgrove has harboured a desire to try to solve vision problems on a much larger scale than his current practice patient base. To achieve this, he has since set up a charity, EyeNeedSight ([www.eyeneedsight.co.uk](http://www.eyeneedsight.co.uk)) to promote and provide the available solutions for the supply of spectacles to non-governmental organisations (NGOs) and charities who support the Vision 2020 global initiative. More impressive yet, he has designed such a solution, a unique adaptable spectacle called Style-Eyes and a versatile way of dispensing it to those in need.

### STYLE-EYES FOR ALL

Snelgrove set up Style-Eyes Ltd after visualising a modular spectacle design while motor biking across Europe – he is the proud owner and rider of a Harley-Davidson. The design was simple, elegant and, most of all, it was adaptable and could be tailored to individuals across the world.

Working with product designer Adam Gordon Stables ([www.salsusdesign.co.uk](http://www.salsusdesign.co.uk)), he has invented a new modular spectacle frame design to fit all of the anthropomorphic facial dimensions found across different ethnic groups, such as a low flat African or Korean nose as well as the larger Caucasian nose with more prominent bridge. The Style-Eyes spectacle is completely adaptable to every face shape; regardless of size, ethnicity, sex and environment.

As Snelgrove explains: 'Following an eye examination, the prescription is established and the optician chooses the required lenses from their selection of lenses and the Style-Eyes spectacle is assembled. The unique lug system securely fits the lenses to the frame and allows complete universality for the face size, PD, prescription and fit of the nose.'

The Style-Eyes is available to all, and this also offers a unique

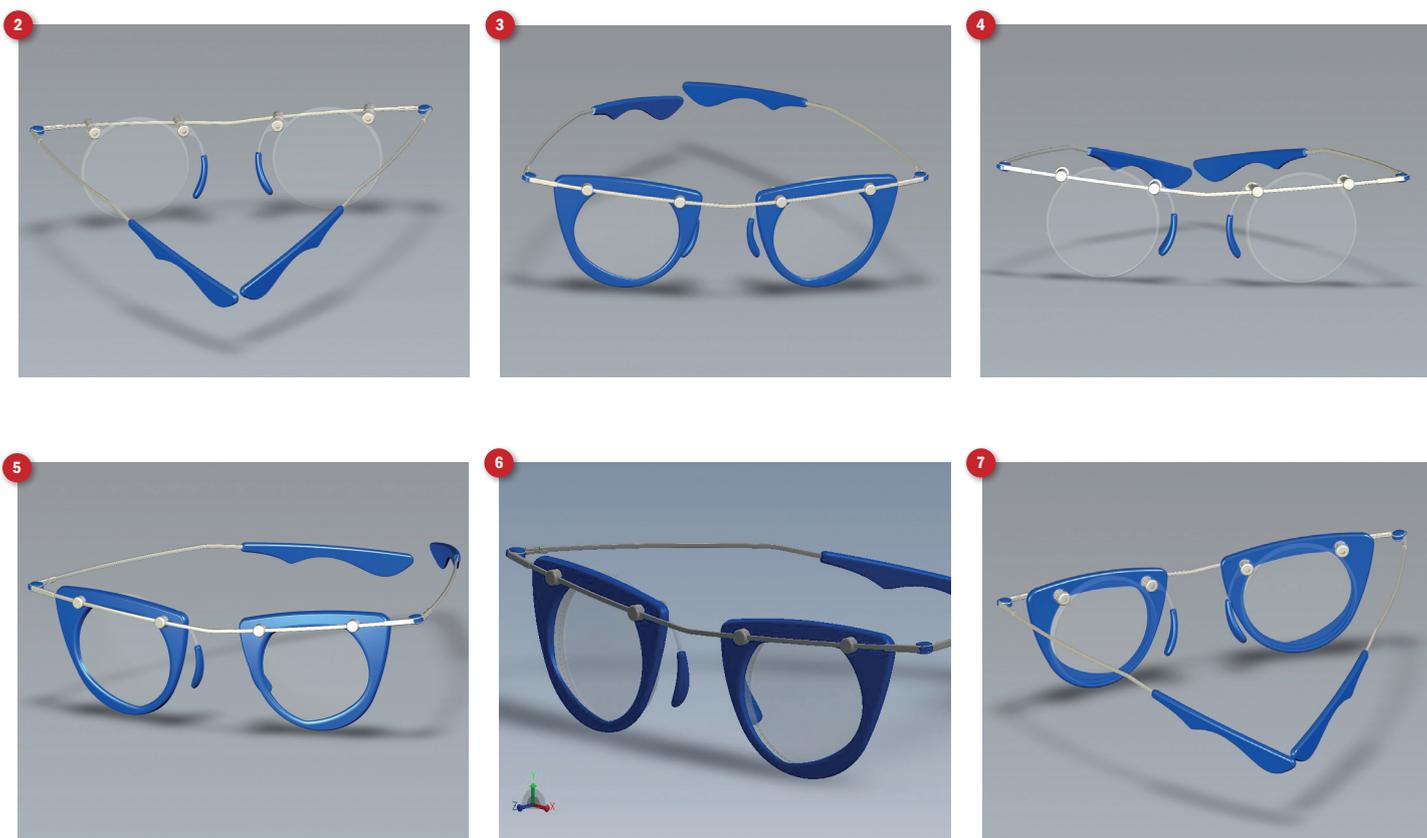


opportunity for the public to contribute towards the charity. 'The frame designed for the high street accommodates a variety of lens shapes and side trims, tailored to their personal requirements. Encouraging fashion-focused consumers to engage in the design process.

'The spectacle version that will be utilised in disadvantaged areas can be assembled using a minimum number of tools and the requirement for a dedicated glazing facility is removed by using pre-cut 40mm lenses. A second set of pre-cut lenses can be fitted to include prisms, plano top varifocals and low vision aids.

'The company's ethical business model supports the supply of donated frames in that, for every pair that is sold on the high street, one pair is donated to the NGO free of charge,' he says. Using this model, Snelgrove has a goal to eventually 'have 100% of the funds donated allocated to the supply of the products.'

Current charitable projects supplying spectacles to populations in need suffer from the provision of often inappropriate frames. He explains: 'A number of charities and NGOs are currently attempting to increase access to prescription glasses for disadvantaged peoples worldwide. Ultimately, the existing process, whereby spectacles are donated by every day wearers in developed countries, limits these organisations and NGOs'. Second hand and undersold frames are all too often unfit for purpose, or at the least a compromised solution to the need.



**ADAPTABLE SOLUTION**

The Style-Eyes design provides a complete spectacle frame and lens correction able to cater for spherical errors up to +/- 20.00DS and cylinders of up to +/- 6.00DC in a frame that can be fitted to all face shapes. Table 1 shows a comparison of the Style-Eyes with two existing adaptable corrective devices.

The system works by using standard pre-cut lenses, which fit into the plastics round rims, and by moving the rims to the correct centration distance between the eyes to avoid induced prismatic effects such as double vision. Figures 2 to 7 show various incarnations of the Style-Eyes spectacles.

A rimless option is to be made available which uses the same round lenses and can also use regular shaped lenses. The 'mask', an additional trim to the frame, adds a style and design feature.

Snelgrove is interested in using a blue mask as a means of increasing peripheral short wavelength light as a means to influence and reduce myopic progression. He is keen to develop this concept further and is seeking interest from academia in applying the design to myopia research programmes.

The modular nature of the system has a number of unique features which allows for up to three lenses to be fitted per eye, creating a low vision aid option for, for example, people with corneal scarring resulting from trachoma, cataracts, macular degeneration or other eye conditions where a traditional refractive correction might only provide limited visual acuity improvement.

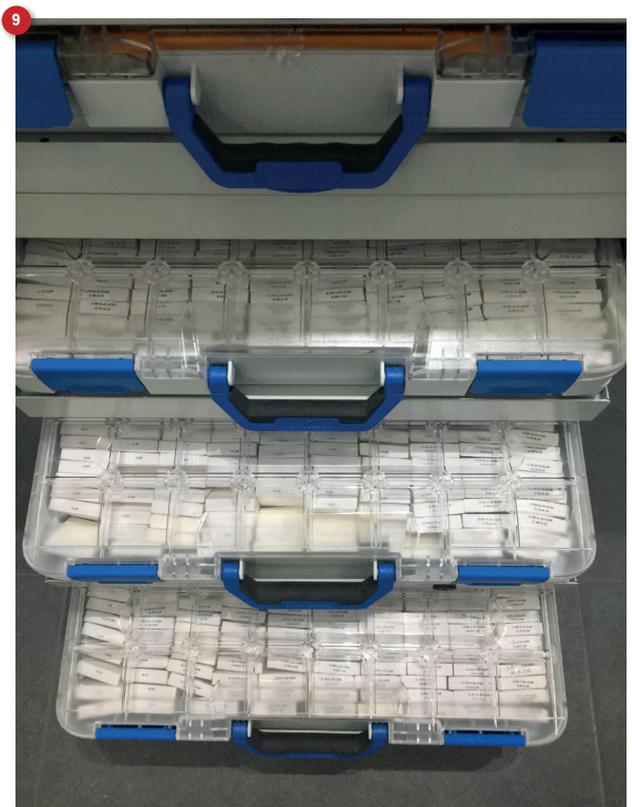
During the development process, the hinge mechanism was highlighted as a possible method for providing insect repellent →

**TABLE 1 Product comparison chart**

| Product                                      | Astigmatism      | Centration | Power Range        | Variable pantoscopic angle | Variable nose fit  | Choice of lens materials | Websites (and JustGiving link) |
|--|------------------|------------|--------------------|----------------------------|--------------------|--------------------------|--------------------------------|
| Adlens Variable Focus Lens Technology*       | No               | Fixed      | -4.50 to +3.50DS   | No                         | Pad arm adjustment | No                       | www.adlens.com                 |
| Adlens Alvarez Lens Technology**             | No               | Fixed      | -6.00 to +3.00DS   | No                         | One size           | No                       | www.adlens.com                 |
| Style Eyes Modular spectacle frame system*** | Plano to -6.00DC | 50 to 80mm | -20.00 to +20.00DS | Yes                        | Fits any size      | Yes - any available      | Style-eyes.co.uk               |

\* Two lenses moving across one another. Adjustable by user. \*\* Liquid filled lenses. Adjustable by user. \*\*\* Correct centration avoids double vision. Adjustable centration can correct double vision. Adjustable rims can hold any regular lens shape. The frame allows for up to three lenses to be added per eye for Low Vision Aid construction using existing lenses. Additional hinges fitted to the front allow for a flip out flip up additional lens like a watch makers eye glass.

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around the face or a drug delivery system directly onto the eyes so the wearer can self-medicate their eye condition. The latest design prototype soon to be revealed has simplified greatly the component range and has an evolved hinge solution that addresses all the feedback attained from early trials.

## OPTICIAN IN A BOX

Snelgrove has designed and developed a solution to allow provision of all the variations that Style-Eyes offers at the point of need. The trademarked 'Optician in a Box' (figure 8) can hold up to 1,000 frame components and 2,000 to 3,000 pre-cut 37mm round lenses (figure 9) with any other dispensing equipment as needed. Where the NGO provide a glazing facility, the disadvantaged customer can choose a lens shape to suit them in the same way as the high street customer.

## THE FUTURE

So how does Snelgrove envisage the roll out of the Style-Eyes system in the coming years? 'I am applying for a Horizon 2020 grant worth €50,000 to allow me to undertake a feasibility and proof of market study which needs the new design to be prototyped (currently under way). If this is successful, it will result in a further application for up to €2.5M to manufacture in the UK.

'I am also going to start an Indiegogo crowd funding project,' he continued, 'to match fund the grants received. My intention then is to launch first into the optical retail sector in the UK and then offer the kits to NGOs and governments abroad.

'The end game is to provide an Optician in a Box which will hold 1,000 pre-cut round lenses with any power range desired plus 500 frames' worth of components. All of which can be supplied to the regulated retail market and abroad as a turnkey kit

where health services are not developed.'

So, to summarise Snelgrove's plan, there are three elements to the provision of Style-Eyes:

- 1 The Optician in a Box will be sold to UK opticians so they can produce these unique spectacles in their practice.
- 2 Optician in a Box will be supplied to NGOs both in the UK and abroad by direct purchase from Style-Eyes Ltd.
- 3 A 'buy one donate one' scheme will give opticians the kudos that comes from charitable work while involving patients in acquiring a unique product in the knowledge that their purchase will also provide sight correction for the needy. The customer will be able to show a split image on a Facebook page of their face alongside that of a grateful recipient achieving sight for possibly the first time and who might not otherwise have been able to see. This will be provided free of charge to the NGOs from Snelgrove's Eye Need Sight charity.

## SUPPORT NEEDED

'I would like to seek interest from academics who are interested in the concept of reducing myopia by projecting blue light peripherally, via the mask, onto the retina to investigate any impact on myopia progression,' he said.

'Also, soon I will be looking for distributors and/or manufacturers to whom I will licence the concept on the back of the patent I own.' ◉

- For further information, and to express any interest in further development of the project, contact Snelgrove via the email [style.eyes@btinternet.com](mailto:style.eyes@btinternet.com) or visit [www.style-eyes.co.uk](http://www.style-eyes.co.uk).