

# PRODUCT WATCH

In selected issues of *Update*, we bring you the latest in new medicines, devices, apps and other tools for diabetes management to help inform discussion with patients

## EYE MASK TREATMENT FOR RETINOPATHY

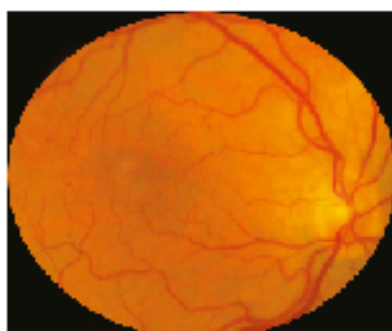
The Noctura 400, an eye mask that targets retinal rod cells during sleep, can provide non-invasive and low-cost treatment for diabetic retinopathy at both early and later stages of the disease, reducing the need for the more invasive and expensive interventions, such as laser and intraocular injections. Noctura 400 is a Class IIa medical device with CE accreditation that has been developed by PolyPhotonix, a British research and technology company.

During dark adaptation, when the rod photoreceptors become more active, the oxygen demand of the retina increases by 40 per cent. In the diabetic eye, the retina can become hypoxic and the body's natural response is to promote new vascular growth to compensate. But these new vessels are

weak and leak fluid. The resulting retinopathy and oedema can cause serious visual loss.

By directing low-intensity light of a specific wavelength into the rods via the mask, Noctura 400 restores the rods to their daytime state, avoiding the hypoxic responses and preventing the progression of retinopathy. The mask, which records patient usage data, is replaced every 12 weeks. Downloaded compliance data can then be discussed with the user and other healthcare professionals in the care pathway. The feedback arising from this monitoring proves very useful in supporting and motivating patients in their eye care.

Clinical trials have shown that wearing the mask reduces progression of retinopathy, including diabetic macular oedema (DMO), and improves



visual acuity. Results of a Phase III trial of Noctura 400 in DMO are due in 2016–2017. Currently, PolyPhotonix is aiming to get the technology adopted in the NHS in parallel with current treatments. To this end, they are in discussion with the Academic Health Science Networks.

However, the mask should also be considered for use at an early stage of the diabetic eye treatment pathway. There is a major study, PILOT, under way in primary care through optometrists, where patients can pay for access to the eye mask and integrate it into their eye care pathway.

PolyPhotonix has worked closely with several leading UK academic institutions during the development and clinical trialling of the device. One researcher involved is Professor Ian Grierson, Emeritus Professor of Ophthalmology at the University of Liverpool. He said: "Expensive hospital treatments like laser and intravitreal anti-VEGFs have their place, but there is a pressing need for an inexpensive, home-based therapy for widespread use and hopefully Noctura 400 will fit that bill."

**i** To find out more: go to [www.noctura.com](http://www.noctura.com) (product website), [www.polyphotonix.com](http://www.polyphotonix.com) (company website), email [enquiries@polyphotonix.com](mailto:enquiries@polyphotonix.com) or call 01740 625 181

