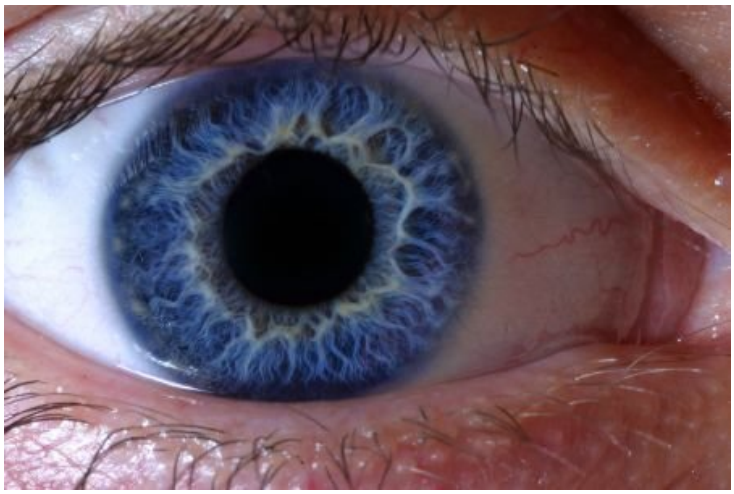
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Singapore univ prepares for trial of glaucoma drug

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Singapore: For glaucoma patients, taking daily medication will soon become a thing of the past. With Nanyang Technological University's (NTU) newest solution, a simple, quick and painless injection four times a year would be enough.

The solution contains an anti-glaucoma drug wrapped in nano-sized capsules, and is delivered by an injection into the outer layer in the front of the eye (conjunctiva) by the doctor. The nanocarrier will then slowly release the drug over several weeks. LipoLat, as it is known, is now ready for clinical trials.

Extensive pre-clinical studies have shown that this single injection is as effective at treating glaucoma as taking daily eye drops for up to three months. The newly launched Ocular Therapeutic Engineering Centre will work on this research. Housed at NTU's School of Materials Science and Engineering, the center builds upon the School's successful research collaboration with the Singapore Eye Research Institute.

The center's director Professor Subbu Venkatraman, who is also the school chair, said the center will build on the strong research collaboration between clinical scientists and NTU technologists, to develop new drug delivery systems for the eye. "I hope to showcase this as a good example of how close interactions between medical practitioners and technology providers can lead to rapid translation of ideas to the clinic, such as LipoLat," said Prof Venkatraman. "We are confident that the products co-developed at the centre will lead on to further discoveries and innovations in ocular therapy."

Working closely with Prof Venkatraman as the co-director of the center is Dr Tina Wong, an adjunct associate professor at the School of Materials Science and Engineering and a senior consultant at the Singapore National Eye Centre. She is also head of the Ocular Therapeutics and Drug Delivery Research Group at the Singapore Eye Research Institute.

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"Finding the right person with the scientific and technological know-how to help solve a clinical problem or improve the way in which we can treat our patients better is the vital first step to achieving a fruitful, long lasting, research collaboration," Dr Wong said. "Prof Venkatraman and I work well together as a team to bring cutting edge technological solutions to the clinic." Dr

Wong who is a recipient of the Clinician Scientist Award from the Ministry of Health, has developed, together with Prof Venkatraman, a novel glaucoma surgical implant and a sustained drug delivery gel for combating post-operative scarring following glaucoma surgeries. Both these innovations have shown to improve surgical outcomes in glaucoma from early studies.

The Ocular Therapeutic Engineering Center will have about ten full time scientists. Among its initial projects, which are individually funded by various funding sources and agencies, include an implantable device which can constantly monitor the pressure changes within the eye in real time.

The center is also looking into developing a novel nano-carrier system that will be able to deliver drugs for a sustained period of time, to the back of the eye, the retina, when injected in the front of the eye. Currently, only regular painful and invasive injections directly into the back of eye can deliver drugs to treat retinal diseases such as age-related macular degeneration and diabetic retinopathy.