



## **Media Statement**

**21.3.18**

### **Australian scientists invent new treatment for glaucoma which is less invasive and promises faster recovery times for patients**

Researchers at the Lions Eye Institute in Perth are the inventors of a new surgical treatment for glaucoma which is set to become a popular choice for lowering pressure in the eye after being approved for general use in Australia last week.

Glaucoma is often caused by high intraocular pressure – the biggest risk factor in glaucoma and the result of a blockage in the eye’s drainage system. Around 300,000 Australian are affected by the disease, which can lead to severe vision loss if left untreated.

Professor Dao-Yi Yu, who heads the Physiology and Pharmacology research group at the Lions Eye Institute (LEI), is the leading inventor of a microfistula tube that successfully reduces intraocular pressure. The tube is about the size of an eyelash, thinner than a human hair and almost transparent. All staff in LEI’s Physiology and Pharmacology research group made significant contributions to this project.

The surgery involves implanting the microfistula tube using a needle-type implanter in the space between the eye’s anterior chamber and the conjunctiva, the tissue covering the white part of the eye. This allows excess fluid to drain from the eye and thereby lower intraocular pressure.

Professor Yu said the surgery was minimally invasive and did not damage the conjunctiva or require scleral incisions.

“The microfistula technology is the result of more than 20 years of research,” he said.

“Developing it was a huge challenge because the tube needed to be bio-compatible. It also needed to be semi-rigid when implanting, then soften and swell after implantation. We made thousands of implants and ran more than 400 tests before finding the right combination.”

Professor Yu and his team also developed a motorised implantation device with robotic controller to ensure the tube was placed in precisely the right position, with consistent timing.

The microfistula tube was patented in the US by the Lions Eye Institute (LEI) under agreement with The University of Western Australia in 2003 and the patents were licensed to Aquesys, a US-based start-up in 2006.

Professor Yu helped Aquesys raise funding of US\$94 million to underwrite further product development and international clinical trials.

Aquesys was later purchased by Allergan for US\$400 million and Allergan now market the technology under the commercial name XEN Gel Stent.

More than 10,000 patients have been treated with the Xen Gel Stent in Europe and the device has been approved for use in the United States. Australia’s Therapeutic Goods Administration approved the Xen Gel Stent for general use in Australia on March 14.

“I am very happy that glaucoma patients now have another option that is less invasive than traditional trabeculectomy surgery to manage their condition,” Professor Yu said. “Patients who opt for this type of treatment should recover faster and achieve very successful management of their glaucoma. Our team would like to continuously improve this technology and develop even better ones for our patients.”

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***Image: Professor Dao-Yi Yu has invented a new surgical treatment for glaucoma***