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Melbourne researchers have designed a tiny implantable electrical device to sit unnoticed at the back of the eye. Generic picture

VIC News

Melbourne-designed implant puts miracle eye cure in sight

Brigid O'Connell, News Limited
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MELBOURNE researchers have designed a tiny implantable electrical device to sit unnoticed at the back of the eye and extend the years of useful vision in those most at risk of common causes of blindness.

Based on a similar concept to the bionic eye but a quarter of the size, the device provides sporadic low-level electrical stimulation to trigger the release of naturally occurring chemicals that prevent retinal cells dying and protect sight.

After successful animal trials, the Minimally Invasive Retinal-degeneration Arrestor device from the Bionics Institute and Centre for Eye Research Australia has been recognised as one of the most important medical research projects in the country.

Bionics Institute chief Robert Klupacs said it had the potential to help many people.

Given the wider range of diseases it could treat at an earlier stage, it may be more useful than the bionic eye.

“Once someone has lost their sight there is only so much you can give back with the bionic eye. If they don’t have to lose their sight, they can have a really good life,” Mr Klupacs said.

“This will be one of the most amazing things to come out of Australia if it comes off.”

Bionic Vision chief Robert Klupacs says the device has the potential to help many people.

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The project is led by CERA retinal surgeon Penny Allen, visual scientist Associate Professor Chi Luu, Bionics Institute engineer and chief investigator Associate Professor Chris Williams, and BI research fellow David Nayagam.

Dr Nayagam said preclinical studies showed the device was safe and effective in a Retinitis pigmentosa model, an inherited and incurable blindness, but it may also be useful in the future for glaucoma, diabetic retinopathy and macular degeneration.

Dr Nayagam said they were now preparing to continue preclinical trials, with the aim of starting human clinical trials in 12-18 months.

“If we can get five or 10 years of extra sight, that might be enough for the patient to see their kids grow up or to finish their working career,” Dr Nayagam said.

“That’s the grand hope, but the work is just beginning.

“We need to prove it is safe and efficacious before we can start the clinical trials.

“It’s smaller, simpler, less invasive and delivers less current than the bionic eye. We’re very hopeful we shouldn’t run into any obstacles.”

The project, which has received almost $1 million from the National Health and Medical Research Council was last night won the top development project at its Research Excellent Awards.

Other top-ranked NHMRC grant applicants recognised last night include Murdoch Childrens Research Institute paediatric infectious disease physician Dr Joshua Osowicki, who is creating a human infection model of strep throat with a vaccine the aim.

Professor Scott O’Neill from Monash University was awarded for his work as part of an international field trial testing a new way to block the transmission of viruses such as Dengue Fever and Zika.

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