Meet the 'eye repair' experts

President S R Nathan with award winners (from left) Donald Tan, Roger Beuerman and Aung Tin. ST PHOTO: DESMOND WEE

A TRIO of scientists here have earned national recognition for their work on treatments for eye ailments.

The team from the Singapore Eye Research Institute ventured into growing stem cells to repair diseased or damaged corneas and developed novel ways to treat corneal problems.

Professors Donald Tan, Roger Beuerman and Aung Tin won the President's Science Award for successfully growing adult eye stem cells.

Corneal problems affect 12 million people worldwide. Here, the Singapore National Eye Centre performs 350 corneal transplants each year, and the number is expected to go up, said Professor Tan, who chairs the institute and is the medical director at the eye centre.

The cornea is the clear layer fronting the eye. If it is diseased or injured, blindness can result.

Prof Tan, the team leader, explained that stem cells – drawn from other parts of the body and which can develop into different cell types – are grown in a lab into corneal cells and transplanted to replace damaged corneas.

The team invented a now widely used device that helps surgeons with keyhole corneal transplantation by delivering eye tissue to the eye without damaging it.

In 2006, the team forestalled a major outbreak of corneal infections by identifying a certain contact lens cleaning solution as the source of contamination.

It has also reduced the number of transplant rejections by replacing only some layers of the cornea and identified the gene behind a form of eye dystrophy which causes blindness in children.

APRIL CHONG