



Lions Australia Spinal Cord Fellowship

www.lascf.org.au

Managed by The Lions Club of Traralgon Inc
Reg. No. A0006340A

Towards a Therapy for Chronic Spinal Cord Injury

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BACKGROUND: Just over 18 years ago, the then President of the Spinal Cord Society Australia Inc. (now StepAhead Australia), Dr George Owen, arranged to speak at a local Lions Club meeting looking merely for financial support for his organisation. He spoke of the stunning statistics that put 1 person per day into a wheelchair in Australia suffering from either paraplegia or quadriplegia. Most of these people are young and suffer their injuries from swimming accidents, sporting injuries and car crashes among other things. Their injuries currently confine them to a life of pain and constant dependence on others to allow them to enjoy the basics of life ... in most Third World countries this type of injury often results in death. The cost to the Australian community is well over \$2 billion per year. This cost is spread across a whole range of support services from the immediate and ongoing medical treatment to the day to day assistance required with the task of simply living. Doctor Owen's address affected the Traralgon Lions members sufficiently enough to have them seriously consider spreading support for the Society and their research throughout their region and to the wider Lions community. A small committee set about convincing District 201V3 to adopt support for the Society as a District project. That was achieved and the Spinal Cord Fellowship was born when Australian Lions adopted the Fellowship as an Australian Lions project at the Perth Convention in 2000. The committee then set about making a serious attempt at raising funds and providing information to the more than 1400 Lions and Lioness clubs in Australia. The growing enthusiasm for the project among our Lions family saw it become a major Australian project at the Hobart Convention in 2003.

THE FELLOWSHIPS:

In the 18 years since Australian Lions adopted the Fellowship, more than \$1.6 million has been raised. We have achieved this fantastic result in the face of droughts, floods, bushfires, earthquakes and Tsunamis; all of which rightly compete for the support of Lions. We are grateful thanks to every club that has supported us in those 16 years including LCIF. There is currently 1 scientist who holds a Lions Spinal Cord Fellowship. This scientist requests Fellowship funding from Lions through StepAhead Australia. The funding requests are reviewed by StepAhead and their Scientific Technology & Advisory Committee to ensure Fellowship guidelines are being met. Once approved by StepAhead, a request for funding is submitted to the Fellowship (currently managed for District V3 by the Lions Club of Traralgon). Requests for funding may include equipment, supportive funding for a submission or research related travel. Once approved by the Lions Fellowship committee, Lions funds are transferred to StepAhead for distribution.

Some recent examples:

- \$290,000 used in 2016 by Professor Donnan, a previous Fellowship holder at the Florey Institute to support studies that are providing exciting new insights of the biological mechanisms by which a protein called Decorin promotes recovery of neurological function in the injured spinal cord, information vital for the development of a human spinal cord therapy.

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- \$141,000 to purchase a Zeiss Axio Observer microscope, computer and software for use by Fellowship holders to study the use of Decorin.
- Over \$150,000 was provided in 2013 for the purchase of a dotSlide microscope including a dedicated computer and camera to enable analysis of images. This amount included an LCIF Grant of \$US75,000. The dotSlide microscope will save weeks of microscopy work with large images being produced in 8 minutes where it previously took up to 2 days.
- \$36,000 to purchase a QuantStudio quantitative PCR (polymerase chain reaction) machine that allows rapid and precise measurements of changes in the expression of multiple genes simultaneously. An EzHyb hybridization oven was purchased for \$6,500 to visualize gene expression in spinal cord tissue sections using a technique called *in situ hybridization*.

STEPAHEAD AUSTRALIA and the RESEARCH: StepAhead Australia is the premiere foundation in Australia searching for an effective SCI therapy and the Fellowship is dedicated to helping them achieve this goal. Professor Terence O'Brien, Head of the Department of Neuroscience and Alfred Neurology Department, AMREP, Melbourne has agreed to be a Lions Australia Spinal Cord Fellowship holder. Prof. O'Brien is also the director of the recently opened Neurology Clinical Trial Facility at AMREP, the first clinical trial centre in Australia to focus on neurological disorders.

Traumatic spinal cord injury results in the loss of many neurons, support cells, and the failure of severed nerve fibres to regenerate across sites of injury and re-establish neural circuits. Award winning studies from the Davies research team (recently moved to Monash University) have shown that infusion of a protein called Decorin into the spinal cord is highly effective at preventing the formation of growth inhibitory scar tissue, allowing nerve fibres to cross Decorin treated injuries. In addition, Decorin induces the injured spinal cord to make enzymes that can actively breakdown scar tissue - results that have recently been verified by a UK research team. In seeking means of delivering Decorin to patients, the Davies team have discovered that infusion of human Decorin to cerebro-spinal fluid surrounding the brain and spinal cord in experimental studies can promote robust nerve fibre sprouting, formation of neural connections (called synapses) and recovery of movement – even in chronic SCI. Importantly, working in partnership with biotech partners to develop pharmaceutical-grade Decorin, and thanks to support from Lions Australia, the stage is now set to deliver a breakthrough treatment for SCI and other neurological disorders in Australia and around the world.

HOW DO WE RAISE FUNDS?

The Lions Spinal Cord Fellowship generally appeals to Lions Clubs for funds/donations simply by writing to Clubs asking for their support. The Fellowship does not go direct to the general public due to the constraints put on fundraising by the various states and territories. How your local club raises the funds to support this wonderful project is entirely at the club's discretion. Clubs have held events ranging from community BBQ's to fun runs in an effort to raise funds. In recent times, the collection of aluminium can ring pulls (or whole cans) has become popular. This activity is not only environmentally sound; it can also be financially rewarding. We have recently entered into a recycling arrangement with Simms Metal Management and their associated agents. Now you will be able to recycle practically all your old metal through Sims Metal Management and the proceeds will be deposited directly into the Lions Australia Spinal Cord Fellowship account. More information on this can be found at www.lascf.org.au. There are many ways to raise funds and there is no idea too silly or amount too small – every dollar makes a difference. As you can see the funds raised by Lions thus far have been well spent and have been allocated to a variety of projects and equipment purchases. Thanks to Lions support, results have been achieved and doors have been opened to funding which may not have otherwise happened. Our target of \$175,000 per year is comfortably achievable provided we keep our eye on the ball and make the Fellowships one of our regular, 'can do' donations each year. Imagine what we could achieve if every one of the 1400 Lions Clubs made a regular donation ...!