



# NATIONAL TRAUMA RESEARCH INSTITUTE

Director: Professor Russell Gruen MBBS, PhD, FRACS

Fully operational since mid-2004, the National Trauma Research Institute (NTRI) has brought together an expert group of researchers and collaborators from various disciplines that includes scientists, clinicians, nurses, allied health staff and other health professionals. NTRI's state-of-the-art facility is located in close proximity to The Alfred Trauma Service, the largest and busiest trauma service in Australia.

NTRI has a wide range of collaborative partnerships with centres and groups such as:

- Trauma services – The Alfred, Royal Melbourne, Royal Children's and Austin hospitals
- Interstate Trauma Services – Liverpool and Westmead hospitals
- Universities – Monash, Melbourne, Deakin, La Trobe and RMIT
- Ambulance Services – Metropolitan Ambulance Service and Rural Ambulance Victoria
- International centres.

NTRI's research and education programs are funded through grants received mainly from the Transport Accident Commission, Victorian Neurotrauma Initiative (VNI) and NHMRC, and supported by philanthropic organisations and AAMI.

NTRI's main focus is on improving trauma patient care and outcomes through research, and by effectively translating research outcomes into clinical practice through education programs. The institute's areas of research extend along a continuum of pre-clinical animal based research, pre-hospital (paramedic), emergency presentation, intensive care management, definitive surgical care and rehabilitation medicine.

## HIGHLIGHTS

### Trauma Melbourne Conference 2008

The inaugural Trauma Melbourne Conference (TM2008), held in November 2008, was a multidisciplinary forum that focused on the two pressing issues in trauma resuscitation: interventions for brain and spinal cord injury, and the management of hypovolaemic shock. Trauma Melbourne 2008 was an initiative of the NTRI and VNI, and was supported by Alfred Health's Emergency and Trauma Centre, AAMI and Ambulance Victoria. Trauma Melbourne 2008 was attended by 261 delegates: 74% Victorian, 21% interstate and 5% overseas.

### Trauma Melbourne Conference 2008 Workshop

NTRI, in collaboration with Professor Russell Gruen, managed a pre-conference workshop on trauma research, which was held at the University of Melbourne and attended by 70 registrants.

### Trauma Research Education Day for Paramedic Students

NTRI hosted a Trauma Research Education Day for paramedic students to promote research and bridge the gap between trauma research and service delivery.

### Corporate Fellowships

The NTRI Corporate Fellowship program continued and expanded in 2008. This program includes sponsorship by company partners of research and clinical fellows to support trauma research activities at NTRI.

### NTRI Honorary Fellowships

2008 has seen the continuation and expansion of honorary research positions; there are now over 45 researchers from other organisations working at NTRI as honorary researchers.

### New Funding

Associate Professor Cristina Morganti-Kossmann was awarded the inaugural Victorian Neurotrauma Initiative Senior Research Fellowship. Her team studies the role of brain inflammation in mediating the production of new neuronal cells, brain cell death and the accumulation of blood cells within brain tissue. Their aim is to identify the molecular targets responsible for the inflammatory cascade that is triggered by injury to the brain.

Dr Alistair Nichol was awarded a Tattersalls Foundation Trauma Research Fellowship to study the role of erythropoietin in head injury. When administered in high doses, erythropoietin (EPO) has been demonstrated in some animal studies and in early human trials to improve outcomes following head injury. However, there is a risk that it may increase the rate of clot formation. It is aimed to conduct a trial to determine if EPO improves neurological outcomes and whether it increases the rate of clot formation.

Dr Edwin Yan was awarded a grant from ANZ Trustees for the project entitled 'Post traumatic hypoxia increases tryptophan metabolite production and exacerbates secondary brain damage'. Tryptophan is an essential amino acid for cellular function and survival, and plays a pivotal role in regulating the immune/inflammatory response. Studies on neurodegenerative diseases, as well as preliminary data on traumatic brain injury (TBI) patients, demonstrate that the brain increases the rate of tryptophan metabolism, including the production of its intermediate and end-products. This project will validate evidence on the increase of tryptophan metabolism in the injured brain possibly contributing to secondary brain damage that evolves after TBI.

## POSTGRADUATE STUDENTS

2 Masters Students  
1 DClinNeuropsych Student  
8 PhD Students

## PUBLICATIONS

43 Journal Articles  
2 Book Chapters