

SNAPSHOT of continuing MSRA-funded research activity (started prior to 2011)



Genetics & Epidemiology

Identifying the triggers for MS

Working across Australia and NZ

- **ANZGene** is a major collaboration mapping the genetic make-up of people with MS to identify why genes influence MS susceptibility.

At Griffith University

- Jason McKenzie is mining for genes in five implicated regions of the human genome that play a role in MS.

At the University of Oxford (UK)

- Dr Julia Morahan is localising the genetic variants that increase disease risk and its mechanism of action.

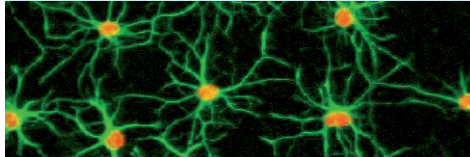
Developing better treatments

In a nation wide study:

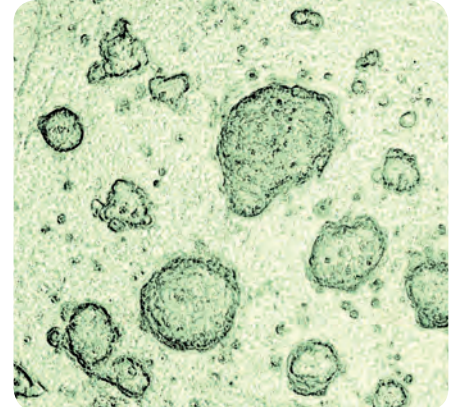
- **MSRA Prevention Trial** is a national collaboration to measure the effects of vitamin D in people susceptible to MS.

At the Westmead Millennium Institute

- A/Prof David Booth is leading a research group in refining MS genetic associations.



A cure for MS via repair or regeneration of cells



Neurobiology

At the University of Sydney

- Dr John Parratt working closely with Prof John Prineas is investigating how lesions form in MS.

Working across Australia

- The **MS Brain Bank** based at the University of Sydney is securing valuable MS tissue for researchers to advance our understanding of the neuropathology of MS.

At the Austin Hospital

- A/Prof Brian Chambers is investigating the prevalence of abnormal venous drainage of the brain and spinal cord by ultrasound examination in patients with MS.

At the University of Melbourne

- Laura Gianni is analysing human brain tissue for MS-specific markers that could be used to diagnose, treat or monitor disease progression.

At the University of Melbourne/Florey Neuroscience Institutes

- Scott Kolbe is a Research Fellow determining if MRI techniques can predict permanent vision loss in MS after optic neuritis.

At the University of Melbourne

- Dr Ben Emery is unravelling the events and a potential 'master gene' that control myelination in the brain and spinal cord.

- Agnes Wong is a Travel Fellow investigating the influence of the BDNF protein on myelination in the brain and spinal cord

At the University of Adelaide, Monash University, Sir Charles Gairdner Hospital and the University of Queensland

- Prof Shaun McColl leads Proteomics research involving a collaboration to identify the key proteins that cause MS.

Immunology & Virology

At the University of Queensland

- Dr Judith Greer is accumulating evidence to support the theory that specific mechanisms lead to the progressive form of MS.
- Prof Michael Pender continues his work to determine the role of EBV in the development of MS, and the potential for treatment.

At the University of Queensland

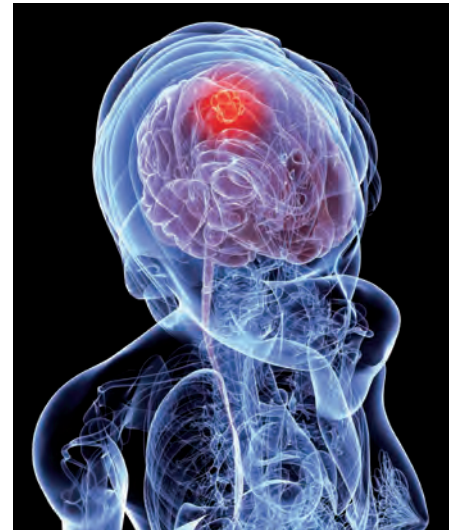
- Dr Judith Greer is exploring ways to inhibit the autoimmune response in parts of the brain that affect coordination and balance.
- In addition, Dr Judith Greer's work will identify why lesions occur where they do in MS.

At the University of Melbourne/ Florey Neuroscience Institutes

- A/Prof Helmut Butzkueven is interrogating specific mechanisms that cause brain and spinal damage in MS.

At the University of Adelaide

- Dr Iain Comerford is trying to understand the role of white blood cell signalling in MS.



Social & Applied Research

At Canberra Hospital

- Dr Rex Simmons manages the **MS Life Study** which is tracking the quality of life and economic impact of the disease on people with MS. It has a particular focus on MS and employment.

At the University of La Trobe

- Dr Sophie Hill is leading a multidisciplinary team to develop high quality information and tools to help PwMS manage their health.

Working across Australia and NZ

- The MSRA Clinical Trials Network is coordinating information about MS clinical trials amongst the MS community.



SNAPSHOT of MSRA-funded projects starting in 2011



Genetics & Epidemiology

Identifying the triggers for MS

- At the University of Melbourne**
- Prof Trevor Kilpatrick is using biomarkers to predict the likelihood of ongoing disease activity in patients with the earliest signs of MS.
- At Westmead Millennium Institute**
- A/Prof David Booth is unravelling the biological mechanisms that known MS susceptibility genes use to influence the onset of MS.

Developing better treatments

- At the University of Queensland**
- Dr Jun Yan will determine whether mutations in a specific gene influence the severity of MS in individuals.
- In an Australian and New Zealand Collaboration**
- Dr Mark Slee (Flinders University) and his colleagues will assess a diagnostic test to identify between Neuromyeliticoptica (NMO), MS and other related diseases.
- At the Murdoch Children's Research Institute**
- A/Prof Anne-Louise Ponsonby, as part of the International Paediatric MS Study Group, is undertaking the first study testing two novel biomarkers in childhood MS.

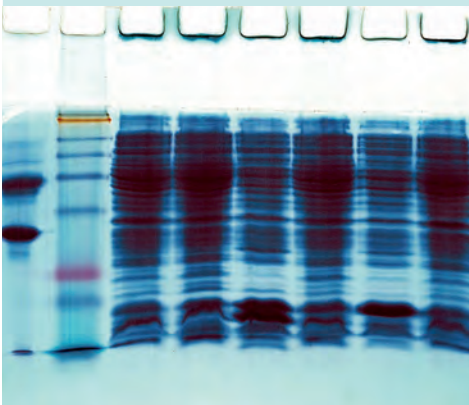
A cure for MS via repair or regeneration of cells



Neurobiology

- At the University of Sydney**
- Prof Simon Hawke is looking to see if chronic inflammation in very small brain blood vessels can lead to disease progression in the absence of new lesions.
- At the University of NSW**
- Biyi Chen under the guidance of Dr John Parratt is exploring the earliest changes that occur to supporting immune cells that might lead to new ways of treating it.
- At La Trobe University**
- Roisin Briscoe under the guidance of Dr Jacqueline Orian is assessing if nerve damage across the brain can cause 'leaks' of immune cells that go on to cause MS.

- At the Florey Neuroscience Institutes**
- Dr Holly Cate will test if blocking specific biological signalling can enhance myelination.



- At the University of Sydney**
- A/Prof Alexandr Klistorner will validate an inexpensive and sensitive method to measure remyelination. This technology will help assess if new medications help the body repair are working even before symptoms appear.
- At Macquarie University**
- Dr Stuart Graham will determine the relationship between a lesion and the effect on nerve function along the optic nerve. The results will form part of a test bed to measure the benefits of new treatments that can repair nerve damage before symptoms arise.

Immunology & Virology

- At La Trobe University**
- Leana Downs under the supervision of Dr Jacqueline Orian is developing an animal model that mimics the lesion activity in the brain to use as a testing site for MRI studies.
- At the University of Western Australia**
- Kirsten Bennett under the supervision of Prof Allan Kermod is studying clinical information to determine if *H. pylori* can protect Australians from developing MS.

- At the University of New South Wales**
- Edwin Lim is interrogating a specific biological pathway known to regulate the body's inflammatory processes that may slow down MS progression.
 - Dr David Brown's research will reveal the role of immune cells in MS leading to better treatments for MS.
- At the University of Melbourne**
- Dr Jerome Staal will investigate the role of a specific cellular deficit in MS leading to new treatments.

- At Monash University**
- Dr Christopher Siatskas is using regenerative approaches to permanently eliminate MS and reverse the neural damage caused during disease.



Social & Applied Research



- At MS Australia - ACT/NSW/VIC**
- Wendy Longley is assessing the potential direct clinical benefits of a neuropsychological assessment and will identify the characteristics of patients and caregivers who benefit most.
- At the Menzies Research Institute**
- Prof Andrew Palmer is assessing the economic impact of MS on Australians.

