

MSRA Next

THE OFFICIAL NEWSLETTER OF MULTIPLE SCLEROSIS RESEARCH AUSTRALIA

South of the Equator

It's one of life's mysteries: To what degree does the world around us have an effect on our health? What is it about our environment, what we eat, what we do and where we live, that makes us susceptible to immune disorders such as multiple sclerosis (MS)?

We know our environment is changing and with it our health. There is little scientific evidence to confirm the exact effect environmental exposures have on the human immune system.

However, thanks to the support of MS Research Australia, a study currently underway in Australia may unravel the complex causes of immune diseases like MS.

The Ausimmune Study, the first study of its kind in the world, aims to examine how environmental factors influence immune diseases and how immune disorders vary by latitude.

Dr Robyn Lucas, who is part of the project team at the Australian National University, believes that early results from the Ausimmune Study are promising.



DR ROBYN LUCAS

"The Ausimmune Study looks at environmental factors including infection, diet, climatic temperature, exposure to sunlight and exposure to man-made chemicals, together with the onset and progression of immune disorders, in particular, MS," Dr Lucas said.

"Whilst we will require three years of data collection to be confident (of our findings), early results do appear to confirm that the distance from the

equator where you live and grow up has an impact on the risk of developing MS.

"We know, for example, that people who live in Tasmania have a much higher rate of MS than those living in Queensland and we think that environmental factors such as less exposure to the sun may have an impact on this."

The three year study involves the collaboration of no less than four other universities and medical centres in Brisbane, Newcastle, Geelong and Tasmania. Conducted over three years and due to conclude in October 2006, the Ausimmune Study is expected to involve approximately 1,800 people.

Recent results from the Tasmanian MS case-control study suggested that having a younger brother or sister in a child's first six years of life protects against the development of MS, possibly by increasing early exposure to infectious illnesses.

Other evidence from the US indicates that taking vitamin D supplements protects against the development of MS. The skin normally produces most of our vitamin D through exposure to sunlight.

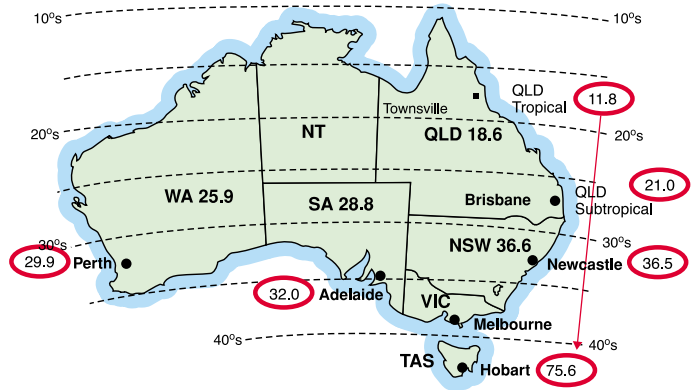
The Ausimmune Study has been funded by the National Multiple Sclerosis Society of the United States and the National Health and Medical Research Council of Australia.

However, Dr Lucas notes that, "organisations such as MS Research Australia and the MS Society of Tasmania provide invaluable support in promoting the study and in sourcing extra funding to optimise participant recruitment and completion of data collection to the highest standards."

MS Research Australia supports a variety of MS research projects which, like the Ausimmune Study, have received world-wide recognition.

The Latitude Gradient

McLeod J et al. Medical Journal of Australia, 1994.



AGE-STANDARDISED PREVALENCE OF MULTIPLE SCLEROSIS PER 100,000 POPULATION IN AUSTRALIA, 1981

Foundation 5 Million

There are over 16,000 people with MS in Australia. Unfortunately, it's a common disease.

But rather than be daunted by this figure, we should make the numbers work in our favour. Any effort we make as individuals – either as people with MS or friends and family members of those with the disease – is multiplied by all those others concerned to find treatments and a cure.

Imagine if 2,000 people, with the assistance of their family and friends, could each raise \$2,500. Collectively, that would amount to \$5 million dollars which could be directed towards Australia's world-class MS research.

That's the idea behind Foundation 5 million which will be launched this month. The aim is to raise, yes, \$5 million over 2 years.

Apart from creating a combined force to be reckoned with, F5m allows us to be involved and to make a positive contribution toward the cure!

In subsequent newsletters we'll bring you stories about how some people have tackled this challenge. Maybe they'll give you some ideas. Hopefully, they'll inspire you.

Recent fund-raising efforts have included a dinner in Parliament House NSW organised by Carol Langsford which raised over \$100,000 and a musical evening under the direction of Jonathon Arthur when he gathered a group of singers to perform at a local church, raising \$1,100.

If you wish to find out more, phone 1300 F5m 4MS (1300 356 467) or visit our website www.F5m.org.au

CAROL LANGSFORD



‘Crazy Ideas’

Take 25 of Australia's leading MS researchers (mostly neurobiologists), put them together for an intense brainstorming session guided by one of Australia's top scientists, Prof Fred Mendlesohn (Director of the Howard Florey Institute), and the result is a lot of bright ideas and inspiration to ensure a productive research future.

In what was the first workshop exercise of its kind, scientists and academics from around the country met for a day in Melbourne in early September.

‘There was a lot of discussion about where we should go, what MS Research Australia should do, and what unique activities are being undertaken in Australia,’ says Professor Claude Bernard from the Immunology and Stem Cell Laboratories at Monash University who was one of the workshop participants.

One of the issues his group focussed on was ‘risk-taking research’ and the need to foster young scientists to undertake this work.

‘We are a very creative and innovative country. We need to try out some crazy, novel ideas on how to unravel the mystery of MS because we have nothing to lose. There is an urgency to understand why MS develops so that we can design better therapeutic approaches to this disease. However, when you are an established researcher you need to attract grants and you can't always be as free in your ideas and in your research which could turn out to be the solution to the problem.

‘Fostering young people is critical. In spite of communications, we are still in some ways isolated from the rest of the world and we lack much of the research funds and infrastructure that are so essential to research progress. This pushes some of our brightest scientists away, in particular to the USA, where they can work in the best laboratories in the world, with many not wanting to come back,’ says Professor Bernard.

He also wants to look at broadening the base of investigation into MS by drawing on new technologies and bringing in other specialists, such as engineers, to see if different perspectives might offer innovative approaches to the problem. He believes that such projects will make MS research more attractive to sponsors and investors.

Professor Bernard is particularly keen to discover ways of repairing damage to the central nervous system, something that will be necessary even if a cure for the disease is found.

‘Damage to the central nervous system doesn't repair itself. We are trying to create a new matrix of substances that will promote new nerve tissue. We still don't know what the first event is that leads to MS; we may be able to reduce the inflammation; but we need to look at reversing the damage.’

The neurobiology workshop included a collegiate dinner and highlighted the need for collaboration and the need for meshing together skills and abilities.

How do you bring together researchers in Queensland and West Australia, for example, and improve collaboration in a co-ordinated fashion? The group came up with the idea of a virtual research centre, enlisting people from the various universities and research institutions to work on one or two projects – in cyberspace. The neurobiology research centre will be the first such centre, establishing the model for virtual research centres in both genetics and clinical immunology further down the track.

This first virtual research centre was assisted by support from the Macquarie Bank Foundation, Biogen Idec and Sanofi-aventis.

▶ PETER BUNN, OUR GUEST AT THE WORKSHOP DINNER, SHARES A MOMENT WITH PROF LYNN BEASLEY (UNIVERSITY OF WA), LEFT AND BRONWYN DILLEY (NEUROSCIENCES VIC), RIGHT.



▶ PROFESSOR CLAUDE BERNARD (RIGHT) WITH PROFESSOR JOHN POLLARD, AO DURING THE NEUROBIOLOGY WORKSHOP.



▶ PROF JIM McLEOD MSRA'S SCIENTIFIC ADVISOR, PRESENTING AT THE ROUNDTABLE.

The MSRA Roundtable

This concept was launched on May 6 by Hon Dr Brendan Nelson – Minister for Education, Science and Training. It represented the first time for a gathering of all major pharmaceutical companies supplying people with MS, together with neurologists, MS researchers and the MS community. The Roundtable presented an update of MS research in Australia and facilitated discussion about the most effective research strategy for the future.

▶ SARAH ROSS-SMITH REPRESENTING PEOPLE WITH MS AT THE ROUNDTABLE.



▶ DR ELIZABETH McDONALD WITH THE HON DR BRENDAN NELSON AT THE ROUNDTABLE.



Travel Bug

Professor Shaun McColl has the travel bug. He's obsessed with journeys, but not the sort that take you to exotic overseas destinations. The travel that Professor McColl is interested in takes place in the human body.

He wants to know how the cells that cause damage in autoimmune diseases travel to the site where they cause the damage.

The work undertaken by Professor McColl at The University of Adelaide is so highly regarded by the international research community that he has been awarded \$US375,000 (\$A517,000) in grant money from the National Multiple Sclerosis Society of USA. It is hoped that his work will result in the development of new therapies to deal with MS.

When cells are mobilised into action as part of the body's immune system, they have to travel from the blood and into tissues, including the central nervous system. Once this journey crossing the blood/brain barrier is achieved, the cells move to specific, targeted locations. In the case of infections, they move to the place where they will do the most good. In the case of MS, they move to the place where they will do the most damage.

In a sense, Professor McColl hopes to set up biological road blocks.

The call to action for our immune system involves cells communicating with each other. The way they do this is by making and releasing proteins that bind to the surface of other cells. This stream of communication is called cell signalling and one of the most important signals in the immune system is the release of proteins called chemokines that control cell migration.

The incoming message is received by the cell's chemokine receptors. Different cells have their own combination of these

receptors, allowing them to accept certain messages. Once the protein binds with the receptor, it causes the cell to change and move, in effect, delivering the marching orders.

While there is research being undertaken into what spurs the cells into action in the first place, it has been very difficult to get a handle on. Looking at this initial phase will ultimately result in mechanisms to prevent diseases such as MS.

In the meantime, there is a real and urgent need for treatments to improve the lives of those already coping with MS. Professor McColl's research is therefore concentrating on the receptors that allow the message to be passed on.

At present, his team has identified four of these chemokine receptors which, when blocked, inhibit active MS. They have also identified receptors that are important in the recruitment process.

"Our basic premise is that blocking these receptors reduces established MS. We are investigating whether they can also help prevent relapse of the condition," says Professor McColl.

He is hopeful that pharmaceuticals can be developed which will bind to the chemokine receptors, making them unresponsive to the incoming message and thus blocking its path. He is also looking at the development of human decoy receptors which will soak up the signals that would otherwise recruit attacking cells.

MS Australia has been a constant supporter of Professor McColl. It's rewarding to see that his efforts are being recognised further afield and that this additional funding will bring him nearer to his goal of improved treatments for MS.



PROFESSOR SHAUN MCCOLL

Corporate Partners and Donations

CORPORATE PARTNERS

We are delighted to have significant partnerships now with two of the major pharmaceutical companies – **Biogen Idec** and **Sanofi-aventis** – who are both principal partners of the MSRA Roundtable.

Also, **Schering** have doubled their long-term support of the MS Longitudinal Study into the Quality of Life and MS, continuing their generous sponsorship of that program.

Meanwhile, MSRA is very proud to announce that **Macquarie Bank Foundation** has been established as a foundation partner supporting the development of the Neurobiology Research Centre.



PETER KLEIN REPRESENTING SCHERING, PRESENTS A GENEROUS CONTRIBUTION TO JEREMY WRIGHT EXECUTIVE DIRECTOR MSRA.

GRAHAM TRIBE, (LEFT) PRESIDENT OF MS AUSTRALIA RECEIVES SUPPORT FROM BILL SIBOLD OF BIOGEN IDEC.



DONATIONS AND SUPPORT

Donations have come from foundations, trusts and individuals, with examples including Perpetual Trustees supporting the MS Life Program and the Neil and Norma Hill Foundation making a specific and generous grant to the Ausimmune Study.

Boardroom lunches for MSRA have been hosted by a number of companies, including Macquarie Bank (in Melbourne and Sydney), Investec and Blake Dawson Waldron (in Sydney) and the Australian Industry Group (in Melbourne). At these lunches over 50 business and community leaders have heard about MS research in Australia and the need to raise further support.

We look forward to taking these lunches into the New Year.

MS Research Australia Staff - making it happen



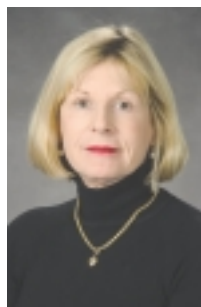
▶ JEREMY WRIGHT



▶ AILEEN MACLEOD



▶ NEIL ROBERTSON



▶ SUE BARHAM

The MSRA team, mostly based in Chatswood, Sydney are represented by:

- **Jeremy Wright**, Executive Director
- **Aileen MacLeod**, Campaign Coordinator
- **Neil Robertson**, F5m Campaign Administrator

They can be contacted directly via 02 9411 7811 or info@msra.org.au

- **Sue Barham**, our P/T Research Administrator is based in Perth and can be contacted via 08 9346 2471 or sumsr@inet.net.au

Our Research Review Board & Research Management Council

We are happy to announce the make-up of our Research Review Board (RRB) – a board that will review our research strategy on an ongoing basis. The RRB will comprise the following group of highly respected scientists:

- **Dr Bill Carroll** – Head of Neurology at the Sir Charles Gairdner Hospital, Perth – Bill will be inaugural Chairman of the RRB
- **Prof John Noseworthy** – Professor of Neurology, Mayo Clinic, College of Medicine, Minnesota
- **Prof Alistair Compston** – Professor of Neurology, Addenbrookes Hospital, Cambridge University
- **Prof Tony Basten** – Chair of Immunology, Sydney University
- **Prof Trevor Kilpatrick** – Howard Florey Institute, Melbourne
- **Prof Marc Feldmann** – Director of Immunology at the Kennedy Institute of Rheumatology, London

To put effect to the strategy, a Research Management Council has been established with the following Australian members:

- **Prof John Pollard**, Sydney University
- **Prof Perry Bartlett**, Institute of Brain Research, Queensland University
- **Prof Martyn French**, Royal Perth Hospital
- **Prof Tom Gordon**, Flinders Medical Centre, Adelaide
- **Prof Brian Key**, University of Queensland
- **Dr Elizabeth McDonald**, Medical Director, MS Victoria
- **Dr Catriona McLean**, The Alfred Hospital, Prahran
- **Dr Gary Pearce**, Medical Director, MS NSW
- **Prof Michael Pender**, Royal Brisbane Hospital
- **Prof Graeme Stewart**, Sydney University, Westmead Campus
- **Dr Ron Sharpe**, PwMS representative



Corporate Support

MS Research Australia appreciates the active support of the following companies:



Biogen Idec – Principal partner with MSRA, principal sponsor of the MSRA Roundtable & sponsor of MS Genetics 2005.



Sanofi-aventis – Principal partner with MSRA and principal sponsor of the MSRA Round Table.



Macquarie Bank Foundation – Founding partner of MSRA, supporting the Neurobiology Research Centre.



Schering – Foundation sponsor of the MS Life Study.



SeroNo – Sponsor of MS Genetics 2005.

MSRA

Multiple Sclerosis Research Australia

The Campaign Coordinator
293 Mowbray Road
Chatswood NSW 2067
Australia

Ph: 612 / 02 9411 7811
Freecall: 1300 356 467
E-mail: info@msra.org.au
Web: www.msra.org.au