MS WIRE
MARCH 2025

INSIDE PAGES 2 & 3
OUR ELECTION ASKS
FEDERAL ELECTION
2025

# NEW MS RESEARCH HARNESSING THE BRAIN'S HEALING POWER

A new MS research project designed to help the brain repair itself by activating its own healing processes has been announced as part of MS Australia's latest $5.7 million research investment.

This pioneering work is just one of the 35 new research initiatives funded by MS Australia's latest research grant round, which focuses on advancing better treatments, prevention, and cures for MS.

MS Australia's largest ever funding round in terms of the number of projects has been made possible thanks to the investment and support of MSWA.

The research, led by Dr Jessica Fletcher from the Menzies Institute for Medical Research at the University of Tasmania, focuses on regenerating myelin—the protective coating around nerve fibres that allows efficient communication between the brain and body.

Dr Fletcher's team is examining how to activate the brain's natural repair system by boosting the activity of myelin-producing cells, called oligodendrocytes, to encourage new myelin growth.

"We're working to activate the brain's natural repair mechanisms by encouraging the growth of new myelin, giving it the chance to heal itself," Dr Fletcher said.

The team's research centres on a molecule found in oligodendrocytes called Olig2, which acts as a 'switch' to control myelin production. By targeting Olig2, the team aims to stimulate repair processes and reverse the damage caused by MS.

"Our ultimate goal is to develop targeted therapies that focus specifically on the cells responsible for myelin repair without affecting other parts of the body. This approach could lead to safer and more effective treatments for people with MS."

In addition to its normal contribution to MS Australia research, MSWA contributed a further $2.4 million dollars into this grant round which allowed for the funding of an additional 10 of the 35 funded projects, guaranteeing important MS research would commence, not just in Western Australia, but throughout the country.

These grants enable a diverse array of projects, from novel studies to multi-year investigations of MS through fields such as neurobiology, genetics, epidemiology, immunology, and social and applied research.

CONTINUED ON PAGE 4

# FROM THE CEO

## ROHAN GREENLAND

As we barrel towards the Federal Election, MS Australia has urged all major parties and independents to support three clear priorities to improve the lives of people living with MS and pave the way to cures.

These are:

1. **$300m over ten years for the establishment of a Neurological and Neuromuscular Health Research Mission within the Medical Research Future Fund (MRFF) to coordinate, action and accelerate neurological and neuromuscular research to improve the prevention, detection, treatment and care of these conditions.**
2. **$8m over five years for the establishment of a National MS Biobank to advance research efforts focussed on the early detection and prevention of MS.**
3. **$4m over four years to improve access to life-changing MS Nurse care for people living with MS.**

An investment of $300m into neurological research may sound like a major injection of funds, but at $30m a year across the entire neurological research spectrum, it is – in reality – a modest but important ask.

And a commitment by politicians to fund the mission won’t have an impact on the Budget, because it would be supported by the Medical Research Future Fund, currently underspent by hundreds of millions of dollars each year.

MRFF spending for medical research has been capped at $650m a year, so is decreasing in value year on year as it fails to keep up with inflation.

Meanwhile, the cost of conducting research continues to escalate and sources of secure funding became harder to find.

That’s why support from the MRFF is so important.

And yet, the amount distributed from the MRFF each year fails to match the amount that is actually available.

Each year, the Board of Guardians of the Future Fund inform the government how much money is available to spend on medical research. The latest figure is $1.231 billion for 2025-26. It called the MADA – Maximum Annual Distribution Amount.

The government argues that this is the maximum amount available, and that in some years, there may be less than $650m available, so a conservative approach is taken.

But the reality is that the Future Fund Board of Guardians has already taken a conservative approach. It is obliged by legislation to do so, including requirements to ensure “preservation of capital” and “moderation of volatility”.

So, by underspending on medical research, the government is layering one conservative approach on another. It is a nonsense, and effectively means medical research is being severely short-changed.

That means less research, less hope for new treatments, less hope for improvements in quality of life. Less hope for a future free from disease.

And in the case of MS, that means less productivity, because so many are typically diagnosed in the most productive years of life, between the ages of 20 and 40.

So, our plea to politicians is clear. Please invest in research, in MS nurses and in an MS Biobank. These are investments that will pay great dividends in health, social and economic terms. Absolute no brainers.

Please support the campaign for a neurological mission by lending your voice to the Count Us In campaign.

**Rohan Greenland**
CEO, MS Australia

**LEND YOUR VOICE TO THE CAMPAIGN**

# MS AUSTRALIA'S 2025 FEDERAL ELECTION ASKS

During the upcoming 2025 Federal Election, MS Australia is advocating for funding that will improve the lives of people living with MS through prevention, improved early detection, diagnosis and treatment and access to life-changing MS Nurse care.

## Neurological and Neuromuscular Health Research Mission

One in four Australians live with neurological or neuro-muscular conditions, or neurological disorders.

The associated annual economic cost to the Australian economy exceeds $100 billion.

Our vision; a world where these conditions are preventable, detectable, manageable, and curable, is within reach. But to get there, we urgently need more research investment.

A dedicated Medical Research Future Fund (MRFF) Mission is essential to fund and coordinate the innovations that will make this vision a reality.

At a cost of $300m over ten years, a Neurological and Neuromuscular Health Research Mission within the MRFF would:

- Coordinate, action, and accelerate progress in neurological and neuromuscular research
- Revolutionise the prevention, detection, treatment, and care of neurological and neuromuscular conditions
- Reduce health and disability system costs, improve quality of life for those with lived experience and contribute to a healthier, more resilient population.

## National MS Biobank

Great progress has been made in MS over the past 25 years. In this timeframe we have delivered many specific MS therapies where there were none available previously.

Despite the incredible progress made, MS remains a serious burden on people's quality of life and on the economy. The great unmet need in MS is to prevent, halt and reverse neurological damage and disability.

MS Australia is now calling for the establishment of a National MS Biobank to support MS Australia studies towards early detection and prevention of MS.

At a cost of $8m over five years a National MS Biobank would:

- Improve early detection and diagnosis time
- Halt or delay disease progression
- Allow earlier access to treatments
- Improve understanding and detection of the 'pre-MS' period
- Support the development of an Epstein-Barr virus vaccine
- Improve monitoring of environmental risk factors.

## MS Nurses

MS Nurses are a highly cost-effective model of care. MS Nurse care reduces the need for other, more costly health professionals, such as GPs and neurologists and prevents unnecessary emergency department presentations and potentially, unplanned hospital admissions.

Currently, one-third of Australians living with MS do not have access to life-changing MS Nurse care and have consistently worse health outcomes.

MS Australia in collaboration with the Menzies Institute for Medical Research and MS Nurses Australasia, is calling for the development and implementation of a National MS Nurses Strategy with an accompanying pilot project to co-design, implement and evaluate a best practice model of MS Nurse care.

At a cost of $4m over four years a National MS Nurses Strategy would:

- Increase the number of MS Nurses across Australia and improve the nurse/patient ratio
- Improve education and training for the MS Nurse workforce
- Provide sustained employment and career opportunities for the existing MS Nurses workforce
- Determine a best practice cost-effective model of MS Nurse care
- Increase access to MS Nurses across Australia, including in regional, rural and remote regions
- Improve health outcomes for people living with MS and their family and carers.

**LEARN MORE**

## NEW MS RESEARCH HARNESSING THE BRAIN'S HEALING POWER

CONTINUED FROM PAGE 1

MS Australia's Head of Research, Dr Julia Morahan says these grants address the complexity of MS to discover solutions for those affected by the disease.

"MS affects people in many different ways, which is why our research needs to be equally diverse to create the greatest impact – from uncovering the biology of the disease to exploring how lifestyle factors like diet and exercise can improve outcomes," Dr Morahan said.

In addition to supporting research, MS Australia is fostering the growth of a world-class MS research workforce by funding scholarships, postgraduate studies, and fellowships.

"Australia has a world-leading MS research community and by investing in people as well as projects, we're building the foundation for continued innovation and progress," Dr Morahan said.

MSWA CEO, Melanie Kiely said on the contribution that she is delighted that MSWA can bolster MS research efforts on the national stage.

"Ultimately this investment is about getting us closer to cures, closer to better treatments and ensuring Australians living with MS can maintain their ability to do what matters to them for longer."

"I want to acknowledge the generosity of the Western Australian community that has, for so long, enthusiastically supported the work of MSWA."

Over the past 20 years, MS Australia has invested $60 million into MS research, fostering collaboration and driving advances across the research community.

This commitment has delivered significant outcomes for Australians living with MS, including faster diagnosis, slower disease progression, and improved life expectancy on par with the general population.

CEO Rohan Greenland highlighted the importance of MS Australia's research strategy and its continued investment in delivering these advances.

"MS Australia's scientific agenda is delivering better outcomes for people living with MS today while accelerating progress toward a cure for tomorrow," Mr Greenland said.

"This vital work is made possible by the brilliance of our researchers, the dedication and support of our Member Organisations – MSWA, MS Plus, MS Queensland and MS SA & NT – and the incredible support from donors, fundraisers and the entire MS community."

---

## HIGHLIGHTED PROJECTS

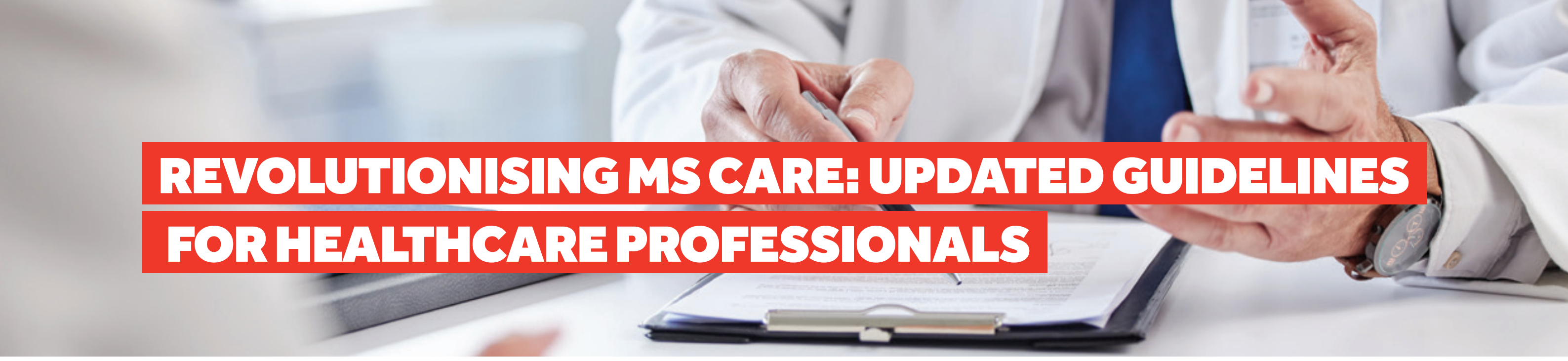
The highlighted projects below demonstrate the diverse and innovative approaches being taken to address key challenges in MS through MS Australia's latest research grant round:

**Mining Cells and Medical Records for Early Signs of MS** – Dr Seyhan Yazar (Garvan Institute of Medical Research & UNSW, NSW): This project investigates the early symptoms of MS (prodromal phase) by analysing large datasets and identifying blood biomarkers, with the goal of enabling faster, more accurate diagnosis, particularly for individuals at high risk.

"Understanding MS during its earliest stages may enable doctors to diagnose and treat patients sooner, potentially preventing long-term damage and improving quality of life," said Dr Yazar.

**How are inflammatory immune cells switched on in MS?** – Dr Iain Comerford (The University of Adelaide, SA): This project explores how immune cells, such as neutrophils and T cells, drive inflammation in MS. The research aims to understand how these cells interact to identify new treatment targets that could protect nerve cells from damage.

"Our goal is to uncover the signals between immune cells that drive inflammation, helping us identify new therapeutic targets to protect nerve cells," said Dr Comerford.



# REVOLUTIONISING MS CARE: UPDATED GUIDELINES FOR HEALTHCARE PROFESSIONALS

The prevalence and incidence of MS have been increasing over time in Australia and New Zealand. The likely reasons for this increase include improved diagnosis, improved registry data, improved life expectancy of people with MS, and potentially increased exposure to risk factors for MS such as adolescent obesity, smoking, reduced sun exposure, and fewer pregnancies.

To diagnose MS, a combination of clinical symptoms, imaging tests, and laboratory results are assessed using guidelines called the 2017 revised McDonald Criteria. These specify a need for evidence of at least two separate attacks in different parts of the brain or spinal cord at different times. This is supported by magnetic resonance imaging (MRI) scans and sometimes by testing the cerebrospinal fluid (CSF) to confirm the diagnosis and rule out other possible causes.

## Why can MS diagnosis and management be so complex?

During diagnosis, it is important that the diagnostic criteria are used carefully to avoid misdiagnosis, as this can lead to unnecessary treatments which can have a negative impact. Common reasons for misdiagnosis include misunderstanding general neurological symptoms and misinterpreting MRI results. Other inflammatory disorders of the brain and spinal cord with different underlying causes can also be mistaken for MS and need different treatment approaches.

Although new treatments have greatly improved outcomes in recent years, the variety of disease-modifying therapies (DMTs) available and their safety concerns have made treatment options more complex.

While there are international guidelines available, up-to-date national guidelines detailing locally available treatments, government subsidies, and local practice are needed for healthcare professionals such as general practitioners (GPs) and general neurologists.

## How were the recommendations made?

The need for clinical practice guidelines on the management of MS in Australia and New Zealand was identified by the MS specialist group of the Australian and New Zealand Association of Neurologists (ANZAN).

Several rounds of feedback and revisions were made, gathering input from MS neurologists, people living with MS, MS nurses, allied healthcare professionals including a physiotherapist and psychologist with experience in MS, MS Australia, MS Plus, an infectious diseases physician, an immunologist, and a GP.

## What are the key recommendations?

Published in The Medical Journal of Australia in two parts, a total of 81 recommendations were made to guide healthcare professionals on various aspects of MS care. These include choosing and advising on DMTs, initial assessments, reducing risks, monitoring the disease, changing or stopping DMTs, and managing DMTs in special situations like pregnancy, breastfeeding, infections and cancer. The recommendations also cover general lifestyle advice, handling sudden symptom flare-ups, and treating symptoms.

## What does this mean for people living with MS?

The recommendations in this resource are based on current evidence and the consensus of a specialist group working in MS in Australia and New Zealand. They offer a practical guide for healthcare professionals on the best ways to provide safe, timely, and effective care for people with MS.

As treatment options evolve, and more long-term safety data becomes available, updated guidelines will be necessary.

It is important to remember that MS affects everyone differently, so personalised clinical assessment and application of these guidelines to each individual is essential.

# COULD DRUGS THAT TARGET EBV TREAT MS?

EBV infection is common, affecting around 90 per cent of adults globally. However, it is almost universal in people with MS.

A landmark study in 2022 provided the strongest evidence yet that infection with EBV is necessary to develop MS. Among 10 million US military personnel monitored over many years, MS only developed in those who had been infected with EBV. Signs of nerve damage appeared several years before MS onset, but only after EBV infection.

In MS, the immune system mistakenly attacks the insulating layer of myelin that surrounds nerve cells in the brain, spinal cord and optic nerve.

There are several theories on the role of EBV in the development of MS. One theory suggests that the body's immune attack against EBV also mistakenly targets the brain and spinal cord.

It is not clear yet whether EBV simply acts as an initial trigger for MS, or whether it continues to drive disease activity following the onset of MS.

However, a growing body of evidence suggests that chronic EBV infection of B cells, a type of immune cell, might be a driver of chronic symptoms in MS, such as fatigue.

## Why trial antivirals for EBV in MS?

In Australia and globally, scientists are investigating various strategies to target EBV in MS. These include antiviral medications, vaccines, and cell therapies.

Antiviral drugs work by preventing viruses from making more copies of themselves (replicating). However, they don't completely eliminate the virus from the body.

If EBV is driving ongoing disease activity in MS, the hope is that using antivirals to stop EBV replicating might help suppress MS activity.

## Why repurpose drugs for MS?

The development of new drugs is an expensive process with long lead times.

An alternative strategy is to "repurpose" existing drugs. That is, to take drugs that are already approved for other uses and test them for effectiveness in a new condition.

This can bring new therapies to the clinic much more quickly, because much of the safety testing has already been done, and there is often a better understanding of the drug's target effects and side effects.

Aspirin is one example of a drug that has been repurposed, where it can be used as a treatment for pain and inflammation, as well as cardiovascular disorders.

Despite EBV being such a common virus, there are currently no approved antiviral treatments for EBV infection in Australia.

However, antivirals used to treat other viruses are known to suppress EBV activity, both in the laboratory and in human clinical trials, offering hope.

## How did the researchers select antivirals for the treatment of EBV in MS?

A new Australian study took a systematic approach to selecting approved drugs with the potential to treat EBV in MS for clinical trials in Australia.

CONTINUED ON PAGE 6

## COULD DRUGS THAT TARGET EBV TREAT MS?

CONTINUED FROM PAGE 5

A list of 11 approved drugs effective against EBV was developed from existing reviews of the medical literature, and detailed laboratory and clinical data on these drugs were compiled.

An expert scientific panel assessed each drug for potential effectiveness in MS and possible side effects. This panel included Australian EBV researchers, MS researchers, MS neurologists, MS clinical triallists, virologists, immunologists and international MS experts.

Information on potential side effects of the drugs, as well as how they are taken (tablets, infusion, frequency etc), was reviewed by people living with MS. This expert panel scored each drug by answering whether they would consider participating in clinical trials for three different purposes in MS: treating disease activity in very early MS, treating fatigue or treating MS progression.

### Which antivirals were shortlisted?

The drugs were scored by both panels, with six of 11 drugs yielding the same highest score. A further review by the scientific panel shortlisted four drugs (famciclovir, tenofovir alafenamide, maribavir and spironolactone) that balanced effectiveness, safety and being well-tolerated for use in MS.

### What's next for people with MS?

Two Phase III clinical trials of antiviral drugs for EBV in MS, known as STOP-MS and FIRMS-EBV, are expected to commence recruitment in Australia in the first half of 2025.

These will help to answer whether antivirals are effective in suppressing EBV infection in people with MS, and whether they are effective in treating progression or fatigue in MS.

Funded by the Australian Federal Government's Medical Research Future Fund (MRFF), and supported by MS Australia, these clinical trials are a significant step forward. Other international trials of antivirals in MS are already underway.

Stay tuned for more details on the Australian trials, which MS Australia will share on our website and social channels in the coming months.

# MEET THE RESEARCHER

## DR SEYHAN YAZAR

GARVAN INSTITUTE OF MEDICAL RESEARCH

### TELL US AN INTERESTING FACT ABOUT YOURSELF?

As part of my postdoctoral training at the University of Edinburgh, I completed the de novo genome assembly for the common wombat. This assembled genome is now accessible to other researchers through the Ensembl website.

### WHAT INSPIRED YOU TO GET INVOLVED IN MS RESEARCH?

As an orthoptist, I have always been intrigued by the connection between eye conditions like optic neuritis and neurological diseases like multiple sclerosis (MS). During my research career, I have focused on applying computational methods to autoimmune diseases, including MS. The immunological aspects of MS, which affect both the brain and the eye, make it a particularly fascinating area of study for me.

### WHAT DO YOU THINK HAS BEEN THE MOST EXCITING DEVELOPMENT IN MS RESEARCH?

I believe one of the most exciting developments in MS research is the growing recognition of the MS prodrome. This pre-diagnostic phase offers a potential window of opportunity for early intervention, potentially delaying or even preventing the onset of MS.

### TELL US ABOUT YOUR CURRENT RESEARCH PROJECT

Multiple sclerosis can cause neurological damage before symptoms appear. Our research aims to develop blood tests and utilise electronic medical records to identify early biomarkers, enabling earlier diagnosis, prediction, and potential prevention. We also seek to define vague early symptoms more precisely, which could help diagnose MS earlier and more accurately than current methods.

### WHY IS YOUR RESEARCH IMPORTANT AND HOW WILL IT INFLUENCE THE UNDERSTANDING AND TREATMENT OF MS?

Our research is crucial because it aims to identify early signs of MS, enabling earlier diagnosis and treatment. By understanding the biology behind these early warnings, we hope to improve disease prediction and potentially develop preventative measures. This could significantly impact the lives of people with MS by delaying or preventing the onset of severe symptoms and improving long-term outcomes.

## HELP FAST TRACK A CURE FOR MS

**To make an online donation scan the QR code**

**DONATE** *(donations over $2 are tax deductible)*

**To support MS Australia's vital work I would like to:**

☐ Make a one-off donation of $

☐ Make a monthly donation of $

☐ Learn more about leaving a gift in my Will

☐ I have already left a gift in my Will to MS Australia

**CONTACT DETAILS**

Title First name Surname

Address

Suburb State Postcode

Phone Mobile

Email

**PAYMENT METHOD**

☐ **Cheque** $

made payable to MS Plus Ltd

☐ **Direct Debit Request** $

*copy of service agreement can be provided on request*

Financial institution

BSB Acc. No.

Account holder's name

**CREDIT CARD** ☐ Mastercard ☐ Visa ☐ Amex

Credit card no.

Expiry date CVV

Name on card

Signature

**Locked Bag 401, Lidcombe NSW 1825, Australia • 1300 733 690 • supporterengagementteam@ms.org.au • ABN 66 004 942 287**