

Hunt for a cure: MS Australia commits \$4.5 million to cutting-edge MS research

28 FEBRUARY 2024: Australian research to uncover the genes that could repair the damage inflicted by multiple sclerosis (MS) will soon be underway; one of 17 cutting-edge projects to receive funding today from MS Australia's latest \$4.5m grant round.

Ranging from one-year innovative studies to major five-year senior fellowships, the newly funded projects focus on key MS research priorities, including genomics, treatments for better sleep, research into the impact of diet and lifestyle changes, and studies harnessing new technologies such as artificial intelligence (AI) to aid in identifying MS progression.

Associate Professor Justin Rubio, from The Florey Institute of Neuroscience and Mental Health, spearheads an innovative project that seeks to uncover genes involved in the progression of MS. This work is crucial as the progressive stages of MS are most difficult to manage.

This research has the potential to provide significant clues about how progression works at a genetic level, with the ultimate aim of using this information to slow the worsening of disability in people with MS.

Leveraging innovative laboratory techniques, Associate Professor Rubio and his team will integrate various genomic data sources, from single cells to human populations, to discover genes involved in progressive MS and how they fit into the MS puzzle.

Associate Professor Rubio says the innovative study promises to transform treatment strategies for MS to prevent the disease from advancing.

"This project seeks to identify genes involved in how MS progresses and whether this information can be used to slow damage that occurs in the brain of people living with MS," explained Associate Professor Rubio.

"Once identified, these genes can pave the way for novel drug discovery programs."

MS Australia CEO Rohan Greenland says the significant investment in MS research demonstrates the organisation's ambitious approach to combat the disease.

"These research projects ensure we're not merely seeking answers, we're actively pursuing them," Mr Greenland said.

"Our goal is to explore new and exciting areas within the field of multiple sclerosis to uncover new approaches to managing and ultimately defeating MS as soon as humanly possible."

Dr Julia Morahan, Head of Research at MS Australia, says the grant funding plays a pivotal role in nurturing and growing the MS research workforce in Australia and accelerating vital research outcomes.

"These grants invest in and empower established leaders in the MS research community as well as up-and-coming talent, ensuring Australia remains a global leader in MS research," Dr Morahan said.

"Through this latest grant round, MS Australia is funding collaborations between researchers and clinicians designed to fast-track the translation of research into real benefits for people living with MS."

MS is the most commonly acquired chronic neurological disease affecting young adults who are often diagnosed between the ages of 20 and 40.

Alarmingly, MS prevalence is on the rise in Australia and worldwide at an accelerating rate, with over 33,000 Australians currently diagnosed.

MS Australia President Associate Professor Des Graham thanked the state and territory MS Member Organisations and the MS community for supporting MS research.

"We are incredibly grateful for the generous support of our donors and funding partners for bringing hope to everyone affected by this disease," says Associate Professor Graham.

"With MS on the rise, both here in Australia and across the globe, MS Australia is intensifying its commitment to halt its progress. Today's announcement is a testament to this commitment."

Highlighted Research Projects

Dr Belinda Kaskow, affiliated with Murdoch University, the Perron Institute, and The University of Western Australia, WA, will use her Incubator Grant to study Killer Immunoglobulin-like Receptors (KIRs), which are proteins on immune cells that control immune responses. In MS, where the immune system attacks the brain and spinal cord, understanding KIRs could lead to better treatments.

Dr Chenyu Wang and Professor Michael Barnett from The University of Sydney, NSW, are collaborating to develop advanced AI tools for analysing MRI scans to detect MS progression before symptoms appear.

This early detection will allow for timely interventions to prevent future disability. The goal of this research aligns with the Paired Fellowship's objective of

translating conceptual ideas into practical applications in clinical settings.

Associate Professor Yasmine Probst from the University of Wollongong, NSW, is investigating the impact of weight loss on people living with MS.

Associate Professor Probst and her team will conduct a randomised controlled trial to help people with MS improve their diet, exercise, and overall self-management. By promoting positive behavioural changes, the aim is to empower people with MS to take control of their condition.

Dr Laura Laslett from the Menzies Institute for Medical Research, University of Tasmania, TAS, will study the link between poor sleep and MS. Her project aims to find treatments for sleep issues and understand how changes in sleep patterns affect overall sleep quality in people with MS. Using data from tracking watches and clinical trials such as TAURUS.2, as well as the [Australian MS Longitudinal Study \(AMSLS\)](#), Dr Laslett plans to design future trials to address sleep problems in MS. This research will help improve understanding and management of sleep issues in the MS community.

Associate Professor Justin Rubio, from The Florey Institute of Neuroscience and Mental Health, VIC, has been awarded a Senior Fellowship to lead research using diverse genomic data sources as his team aims to uncover genes linked to progressive MS. This information will be used to identify new treatment targets to slow or prevent MS progression.

The full details of all new research projects funded in 2024 [can be found here](#).

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About MS

MS is the most common acquired chronic neurological disease affecting young adults, often diagnosed between the ages of 20 to 40 and, in Australia, affects three times more women than men. As yet, there is no cure.

There is no known single cause of MS, but many genetic, environmental and behavioural factors contribute to its development. These can include genetics



and ethnicity, gender, viral infection, climate and sun exposure, vitamin D, smoking, stress, diet and physical activity and various other factors.

About MS Australia

MS Australia is Australia's national multiple sclerosis (MS) not-for-profit organisation that empowers researchers to identify ways to treat, prevent and cure MS, seeks sustained and systemic policy change via advocacy, and acts as the national champion for Australia's community of people affected by MS.