AUSTRALIA

RESEARCH
AUSTRALIA

MS WIRE

SEPTEMBER 2021

ADVOCACY FOR SOCIAL JUSTICE, WELLBEING AND MS RESEARCH

"MS Australia's key focus is providing the best outcomes for people living with multiple sclerosis (MS) and overseeing our research program to better treat, prevent and ultimately find a cure for MS", says Associate Professor Desmond Graham, President – MS Australia (pictured left with MS Australia CEO Rohan Greenland).

"Advocacy is the work we undertake to influence government and other key decision-makers to enact systemic policy change (fix or change systems), particularly related to health, disability and aged care."

WHAT WE DO

MS Australia seeks opportunities to contribute to policy development and to secure funding for vital MS research. We advocate on behalf of our four state/territory MS member organisations, to represent the over 25,600 people in Australia with MS, their carers and the broader MS community.

We advocate for improvements to all aspects of life with MS and work with the national and international research community, to identify better treatments, preventions and ultimately a cure for MS.

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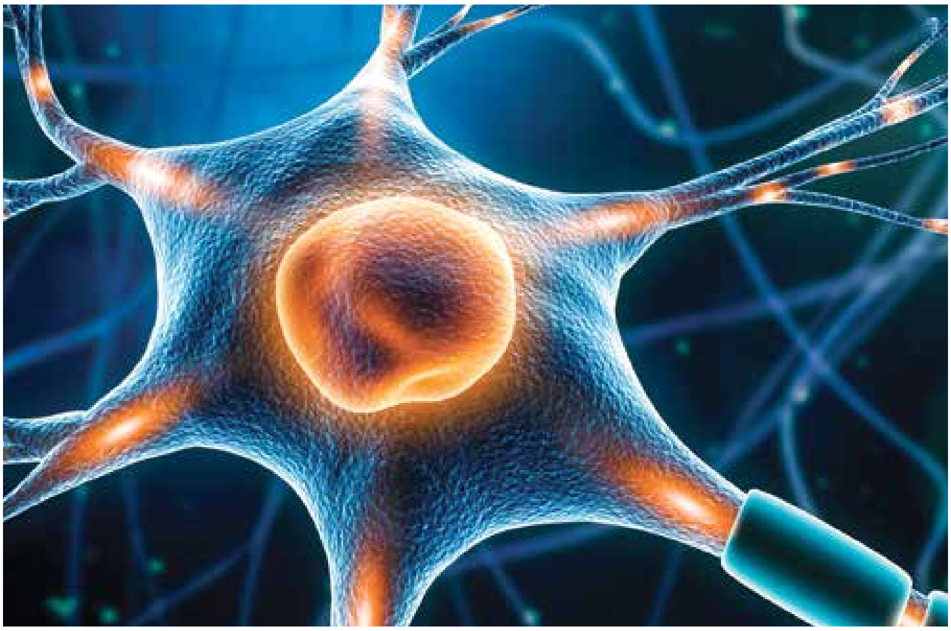

REPURPOSING OLD DRUGS: THE HUNT FOR PROGRESSIVE MS TREATMENTS

BENEFITS OF DRUG REPURPOSING FOR THE TREATMENT OF PROGRESSIVE MS TARGETING REMYELINATION

In MS, the immune system damages the insulating coating on nerve cells, known as myelin. The human body has a limited and often insufficient ability to repair myelin, in a process known as remyelination. While there are many MS treatments available that target the immune system, there are no treatments available that target remyelination. Repairing myelin is thought to be important as it may reverse some symptoms of MS and could provide protection against further damage to the nerves. This is believed to be important in treating progressive MS, however, identifying new drugs to treat progressive MS is difficult because it is still poorly understood and there aren't any models that represent the entirety of the disease.

More recently, drug repurposing has garnered attention for the treatment of currently untreatable clinical processes, such as myelin damage in MS. This involves finding new uses for approved drugs or drugs that are already being investigated for other diseases. It is becoming quite popular because these drugs have already been clinically tested for safety, making the whole clinical trial process substantially quicker compared to completely new treatment options. Therefore, drug repurposing is an attractive avenue for discovering new progressive MS therapies.

Cont. on pg 3

MS Australia
Community Program for
Women's Health Week 2021

Watch the event recordings here:

events.msaustralia.org.au/whw2021/

A WORD FROM OUR CEO

As I write, we are amid the Delta variant of the COVID-19 pandemic.

For many, it's a time of significant disruption and concern. This is especially true for people with MS. Early in the pandemic, there were fears people with MS were at a greater risk than the general population either because of their MS or the medication they were on. Luckily the data showed this is not the case for most people with MS.

At MS Australia we have in-house scientific experts with experience in immunology, virology, and clinical care of MS. Our team have been working tirelessly to answer questions and provide accurate information. We are constantly updating this information as the pandemic evolves. You can read the information on COVID-19 and MS on our website here: msaustralia.org.au/about-ms/covid-19-and-ms.

While COVID-19 has been highly challenging, it has been a time of great collaboration nationally and internationally. MS Australia and our world-class Australian scientists have contributed to the Multiple Sclerosis International Federation (MSIF) in crafting their guidance documents, not only to cover the vaccines available here in Australia, but more generally on COVID-19 vaccinations. We have worked with international teams to share data and their experiences of treating MS during the pandemic, as well as funding vital research into the impacts of COVID-19 on the MS population.

In collaboration with the Australian and New Zealand Association of Neurologists (ANZAN) and other international MS organisations, we have also compiled the latest information on the vaccines, MS and MS medications.

The Australian vaccine program has been operating for several months, with people with MS eligible for vaccination early in phase 1b. Hopefully, you have all had a chance to be vaccinated, and I would urge you to do so, as vaccines are our best defence against COVID-19 and evidence shows they are safe and effective for people with MS.

We are already having discussions about what the subsequent phases of this pandemic might be and the potential impacts for our community. Rest assured that we will continue to keep our website up to date with the latest evidence-based information from Australia and around the world, as we continue to make our way through the pandemic. Most importantly, your MS specialist healthcare team (neurologist, MS nurse, GP) is still your primary source of contact for any concerns or specific questions about COVID-19, vaccinations and timing of MS treatments and other medicines.

Best wishes

Rohan Greenland

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ADVOCACY FOR SOCIAL JUSTICE, WELLBEING AND MS RESEARCH

MS Australia National Advocacy Coordinator Andrew Potter, National Advocate Dr Mary Webb and National Policy Manager Andrew Giles with the Hon Scott Morrison MP, Prime Minister of Australia (Parliament House, Canberra)

Our advocacy tools include our dedicated volunteer National Advocates and Ambassadors, our Parliamentary Friends of MS Group; making submissions to and meeting with government; holding events; collecting profiles and case studies; undertaking data insights and surveys, aligning with national or global campaigns such as National Carers Week and World MS Day, forming alliances and developing collateral.

CORE ADVOCACY WORK, SOCIAL JUSTICE AND WELLBEING

MS Australia's core advocacy work is proudly tied to social justice and wellbeing for people with MS. We strive for equitable access to support programs, to combat discrimination against people living with disability because of their MS and to ensure people ageing with MS get equitable support. Other aims include:

- Stopping young people with MS (under 65) from entering and living in nursing homes
- More affordable and accessible medications and treatments
- Access to assistive technology to help people better manage home, work and daily life
- Accessible housing
- Better access to MS Nurses
- More recognition and support for family members, friends and carers
- Ensuring NDIS issues are fully addressed

ADVOCATING FOR MS RESEARCH

We advocate for an increased focus on research and better treatments for people living with MS.

Our research coordination, education and advocacy work includes funding grants and calls for specific programs, research into progressive MS, collaborations and submissions to government.

We initiate and explore opportunities for major collaborative research platforms and investigator-led research projects. We strive to ensure that research findings and evidence are translated into better outcomes for people with MS.

"Our overall aim is to **supercharge the MS research agenda** and seek funding for our research activities, to better treat, prevent and find a cure for MS", says Associate Professor Graham. "In the area of MS research, MS Australia has made significant gains over the last 10 years, especially the past five years, across both searching for a cure, and in improving the treatments and care available to people living with MS."

As CEO of MS Australia Rohan Greenland says, ''MS Australia's mission and focus are our dual pillars of research and advocacy. We are working harder than ever to improve the lives of everyone living with MS, while supporting our incredible research community who are working tirelessly to find a pathway to a cure.''

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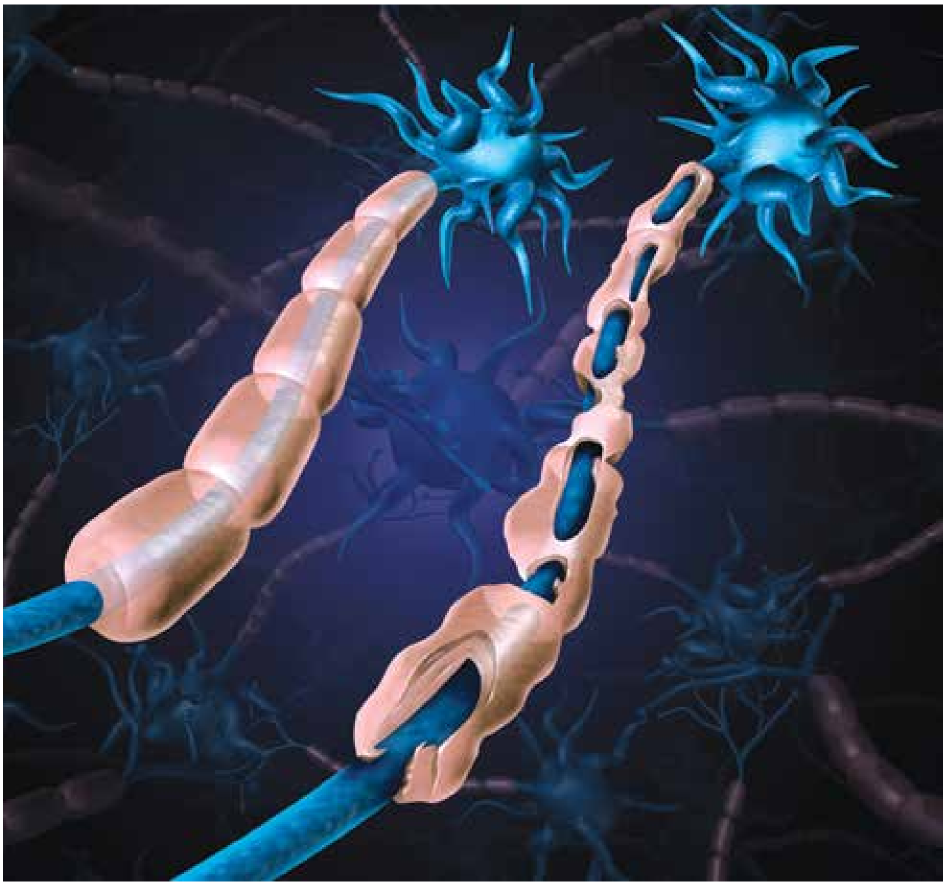
REPURPOSING OLD DRUGS: THE HUNT FOR PROGRESSIVE MS TREATMENTS



WHAT DID THE RESEARCHERS DO?

As part of the BRAVEinMS platform of the International Progressive MS Research Alliance, researchers from Germany, Canada and Australia aimed to identify approved drugs or drugs that are currently being investigated for other conditions that could boost remyelination and potentially treat progressive MS. Published in *EBioMedicine,* they performed a drug screen using the changing location of a protein called p57kip2 in myelin-producing cells as a marker of whether the drug can increase myelination. When this protein is in the nucleus (where genetic material such as chromosomes are located), it blocks myelin-producing cells forming myelin. When this protein is out of the nucleus, myelin-producing cells can then form myelin. This occurs very early in the myelin production process and is a unique way of performing a drug screen – most initial screens for progressive MS look at the level of myelin protein, which focuses on a much later process of myelin production.

Those drugs that moved this protein out of the nucleus were then shortlisted. Following this, the researchers narrowed down the list of drugs further by looking at the level of myelin protein and the ability of cells to myelinate and remyelinate after treatment with these drugs.

HOW MANY DRUGS WERE SCREENED AND HOW MANY WERE FOUND TO PLAY A ROLE IN MYELIN PRODUCTION?

The researchers initially screened 1,280 drugs – most of these drugs were predicted to penetrate the blood brain barrier (BBB), a border that prevents many substances from reaching the brain, such as toxins. By penetrating the BBB, these drugs could potentially act directly on the brain and spinal cord to prevent further damage to the myelin. Of the 1,280 drugs screened, 21 drugs were capable of moving this protein out of the nucleus, suggesting that they may promote myelin production.

Next, the researchers tried to confirm the findings by looking at the amount of a protein called myelin basic protein (MBP) in the cells after treatment with each drug. This protein is part of the myelin sheath and is believed to be important in myelination.

> “THE RESEARCHERS FOUND THAT ALL THREE DRUGS HAD THE ABILITY TO PROMOTE MYELINATION IN A MODEL OF BRAIN DEVELOPMENT.”

They found four drugs that increased the level of this protein, suggesting that these drugs may promote myelin production. In fact, the researchers confirmed that three of these drugs did significantly promote myelin-producing cells to mature without much toxic effect – these drugs were danazole, parbendazole and methiazole, which have been linked to anti-viral, anti-microbial and anti-cancer activities.

DID ANY OF THE DRUGS DIRECTLY AFFECT MYELINATION OR REMYELINATION CAPACITY?

The researchers found that all three drugs had the ability to promote myelination in a model of brain development. For the remyelination study, the researchers decided to focus on parbendazole and danazole, which haven’t been characterised as well. They found that both drugs had the ability to promote remyelination in a laboratory model of MS.

WHAT DOES THIS ALL MEAN?

This exciting study shows that focusing on early cellular processes involved in myelin production, such as the movement of the protein p57kip2 in the cells, is a powerful way to identify drugs that promote the production of myelin. The study reveals that parbendazole and danazole may be potential therapeutic candidates for treatment of progressive MS, although further research will be required to confirm this.

As a managing member of the International Progressive MS Alliance, MS Australia is invested in international research into myelin repair for progressive MS. It is hoped that this research will pave the way for effective therapies promoting myelin repair in progressive MS.

For more information please visit: msra.org.au/news/repurposing-old-drugs-remyelination.

PAIN – AN INVISIBLE SYMPTOM OF MS

Multiple sclerosis (MS) is a neurodegenerative disease directed by the immune system which affects areas of the brain, spinal cord and optic nerves. Nerves lose their protective coating (called myelin), leading to a loss of nerve function which may be temporary or more lasting.

MS symptoms vary greatly both between individuals and within individuals, with some symptoms appearing intermittently, and others becoming more chronic. One of the less recognised common symptoms of MS is pain, which can take many forms and greatly affect the quality of life for people with MS. International studies estimate that about two thirds of people living with MS experience pain as one of their MS-related symptoms. Research into pain and management of its symptoms has been rated as one of the highest priorities for Australians living with MS, as uncovered in previous research studies conducted by MS Research Australia.

CAUSES OF PAIN

Pain in MS can often be related back to two main causes: neuropathic ("nerve") pain and nociceptive pain (from damage to tissue). Neuropathic pain in MS originates directly from the damage to the myelin, with disrupted messages to the brain. Most commonly, this results in feelings of numbness, pins and needles, and a burning sensation which can occur anywhere in the body. Examples include Lhermitte's sign (an electric shock feeling when bending the head, which is caused by MS lesions in the spinal cord), optic neuritis (sharp eye pain caused by lesions on the optic nerve) and "the MS hug" (a tightness around the chest caused by lesions in the spinal cord), as well as more generalised feelings of numbness or burning in the limbs. Nociceptive pain relates to the damage caused to tissues such as muscles, tendons and ligaments. For example, nociceptive pain can result in back pain or hip pain related to altered walking patterns in people with MS, or spasticity (spasms) from tight muscles reacting to damaged nerves.

There may also be other types of pain in people living with MS, such as headaches and side effects from medications and injections. Some pain or discomfort occurs only when overheating takes place from exercise or similar activities (called Uhthoff's phenomena). Some types of pain are unique to MS and may indicate new lesions, and other types of pain may not be related to MS but may still impact people living with the disease.

MANAGING THE PAIN

Pain can be an invisible symptom of MS and many people living with MS do not realise that their pain may be related to MS, meaning that pain remains an under-reported and under-treated symptom. Pain has the potential to cause many flow-on effects, which are detrimental to health and wellbeing in MS, including poor sleep, fatigue, depression, and anxiety. It is therefore crucial to understand the type of pain people with MS are experiencing. This firstly involves a thorough assessment to assess the cause of pain, followed by the development of a pain management plan by an MS specialist healthcare team, pain specialist or general practitioner. The ultimate aim of pain management is to improve overall quality of life.

RESEARCHING PAIN AND MS

Unfortunately, the area of pain and pain management in MS is poorly understood, even with recent MS breakthroughs. The International Progressive MS Alliance has identified that pain is an area of unmet need in progressive MS care that requires intense attention and research. A "call to action" from the International Progressive MS Alliance in 2021 has encouraged researchers to target this debilitating symptom to facilitate treatment and improve wellbeing for people with MS. Following a pain in MS workshop hosted by MS Research Australia in 2019, Australian researchers were encouraged to target the understanding and treatment of MS-related pain as a priority, to better understand this debilitating symptom. Currently, we await results from an MS Research Australia supported study looking at mindfulness as a pain strategy as well as two studies exploring the use of medicinal cannabis in MS.

TREATING THE PAIN

There are many options available to treat pain, depending on the cause, and some treatments may be used in conjunction with each other to improve the overall benefits. Options include medications, physiotherapy sessions that can include stretching, exercise and movement, and occupational therapy assessments of posture and seating.

People with MS may also wish to explore complementary therapies such as acupuncture and psychological interventions to manage the pain, such as meditation and cognitive behavioural therapy. Identifying the correct source of the pain is essential to help guide the most beneficial therapies.

A PAIN FREE FUTURE FOR MS

It's vital that we collect as many resources as possible to prioritise the understanding and management of pain for people with MS. Working with Painaustralia is an important component of this approach, supporting the National Strategic Action Plan for Pain Management within the MS community. By continuing this work, MS Australia can supercharge the research agenda, ensuring that through targeted research efforts, this debilitating symptom will be recognised, treated, and better managed.

MS HEALTHCARE DURING THE COVID-19 PANDEMIC: THE VALUE OF TELEHEALTH

People living with MS need complex care, often engage with a variety of healthcare professionals to manage their health and wellbeing.

The COVID-19 pandemic brought specific challenges for people living with MS in accessing their usual care and treatments. These concepts were explored in this qualitative research study.

THE ANU STUDY TEAM AND THEIR UNIQUE MS CONNECTIONS

Dr Anne Parkinson and Dr Jane Desborough, together with their team from the Australian National University (ANU) and in partnership with the Our Health In Our Hands (OHIOH) project explored the experiences of people living with MS in accessing healthcare, including via telehealth, during the COVID-19 pandemic in Australia. Members of the OHIOH team have previously received funding from MS Research Australia for research into the development of an online toolkit for collaborative MS research. What is different about this study team is that half of the team comprises of people living with MS, which provides a unique insight into the research question, with all team members involved in the research development. A diverse group of people living with MS were interviewed during the study about various types of healthcare consultations (for example, with general practitioners, physiotherapists, specialists and psychologists). During the pandemic, usual healthcare was often not sought, with many people living with MS feeling vulnerable to becoming infected with the COVID-19 virus.

WHAT DID THE STUDY FINDINGS REVEAL?

Published in *Health Expectations,* the findings revealed that telehealth has been a valuable tool in managing both MS and general health, providing improved access, convenience, and a contact-free consultation. During the pandemic, the contact-free option added a degree of protection, for people living with MS who felt vulnerable to potential exposure to the COVID-19 virus. Additionally, fatigue and transport issues were greatly relieved by avoiding long trips, often complicated by tiredness from exertion, unpredictable waiting times and parking concerns. Researchers noted that people living with MS found that video telehealth, was more personal than phone telehealth as they were able to feel more personal connection over video, with the added benefit of a modified physical examination with their healthcare practitioner, which is important in assessing symptoms of MS.

When people living with MS thought about the option of a face-to-face consultation during the pandemic, researchers developed three key themes of consideration, revealing the issues most important to them throughout this time. Firstly, assessing their personal risk from immune suppression due to MS medications. This also included other risk factors such as the risk of falls when attending the visit and worsening fatigue. Secondly, the concept of postponing their usual care, including putting off mental health appointments, infusions, and MRIs to avoid contact with others to protect themselves. Thirdly, accessing new ways of care including telehealth as a safe and contactless option, which also proved to be more convenient and better for fatigue levels. This created a new way for people living with MS to look after themselves safely, while receiving the care and guidance they needed.

WHAT CAN WE LEARN FROM THIS STUDY TO BETTER HELP PEOPLE LIVING WITH MS?

These themes give healthcare practitioners important insights into the factors to consider for people living with MS when planning their care and appointments, while considering what is most important to them. Whilst telehealth could not replace face-to-face care, especially when performing intricate physical examinations, there is still a place for telehealth in MS clinical care, offering a safe and contact-free option when appropriate. Researchers also noted that telehealth was perhaps better suited to already established relationships with healthcare practitioners, where people with MS have already developed trust and confidence with their healthcare practitioners. The study also found that there are some knowledge and capacity gaps for healthcare practitioners when conducting telehealth and that they may benefit from education, to help them communicate effectively using this platform with their patients and clients. This study shows that careful planning and appropriate use of telehealth has a place in future care for people living with MS, beyond the COVID-19 pandemic.

MEET KISS GOODBYE TO MS AMBASSADOR, MELISSA

Melissa was 27 years old, in the prime of her life, when she was diagnosed with MS in 2015. As a young female between 20-40 years old, her demographics were in line with the usual profile of MS. However, Melissa's journey to diagnosis was different.

In contrast to many others, she was diagnosed rather quickly and thankfully didn't go through the weeks, months and sometimes even years of uncertainty prior to receiving her diagnosis.

Melissa's first symptoms appeared only a couple of weeks before she was diagnosed. She noticed a change when walking and had difficulties putting one foot in front of the other after sitting down for long periods of time. Melissa didn't think much of the symptoms at the time and instead attributed them to wearing high heels too often.

One morning, she woke up with her foot tremoring and it didn't stop, no matter how she moved it. She hoped it would dissipate as the day went on, but upon taking her dogs for a walk, her walking difficulties came back.

Melissa went to see her doctor in hope of receiving a referral to see a physiotherapist. However, when her doctor performed a pin prick test down her leg to check if she could feel the sharpness of the pin, she couldn't feel any sensation when it reached her ankle. Following this discovery, Melissa's doctor referred her to the Emergency Department for further investigation and testing.

"I was admitted on Thursday. Friday morning, I had an MRI and by Friday afternoon I was diagnosed with MS," Melissa describes.

She recalls being in complete denial about her diagnosis.

"I knew it was bad, but I didn't want to know how bad. [I thought] 'this is what I've got and no one's going to tell you what's going to happen or how you're going to end up.'"

Already an anxious person, this feeling heightened Melissa's anxiety. However, once Melissa came to terms with her new diagnosis and she got back into her usual routine, her perspective shifted. She realised the things she once used to stress about weren't worth her worries anymore.

"Over that year, my mental health really began to improve – I was looking at things differently."

The shift in Melissa's outlook made her realise that she didn't want to sit back and wait to see how her life would unravel.

"I really wanted to take some of the power back," she says.

Melissa looked thoroughly into the benefits of healthy eating and exercise for MS, resulting in her joining a gym and taking up running – two things she had never done before.

It was also at this time, in 2016, that Melissa got involved with Kiss Goodbye to MS to raise funds for MS research. She has been unstoppable ever since!

Melissa has participated in the City2Surf and Bay to Bay run, sold chocolates, hosted her own fundraising events and took on The May 50K every year – collectively raising an astonishing $20,116.88 to help power world-class MS research and improve the future of people living with MS like herself. She has even participated in clinicals trials, volunteered her time and jumped in front of the camera for MS Research Australia and The May 50K 2021.

"I really want research to progress quicker than my disease."

Sadly, over the past couple of years, Melissa's symptoms have worsened. She can no longer run and is unable to walk long distances. Despite this, Melissa's dedication and commitment to accelerating MS research and stopping the disease has continued.

Melissa continues to be passionate about research and says that an important part of her MS journey was finding out how she could give back to the MS community.

"Without hope, there's just fear. That's why fundraising for life-changing MS research is so important to me – it gives me hope for the future."

We can't wait to continue to watch Melissa shine in her role as a Kiss Goodbye to MS Ambassador. Her support is instrumental in highlighting the importance of keeping up the momentum in life-changing MS research today and in the future.

For more information on how you can raise funds for life-changing MS research, please head to: www.kissgoodbyetoms.org or contact the Kiss Goodbye to MS team on 1300 785 717.

JENNY NEVER LETS HER MS STOP HER. NOW SHE'S HELPING STOP MS.

Jenny has been living with MS for over 30 years and is a firm believer in doing whatever she can to help herself and others with the disease. She is an active member of an MS Peer Support Group as well as participating in The May 50K, a virtual fitness and fundraising challenge throughout the month of May.

Recently, Jenny did something that could change the future for people with MS forever – she decided to leave a gift in her Will.

In 1985, Jenny was 14 weeks pregnant when she first noticed her MS symptoms.

"I couldn't use my right arm. I didn't know what the problem was and went to a neurologist for tests. They couldn't confirm what it was at that stage because I was pregnant, but I was pretty sure I had MS," Jenny remembered.

When her son Paul was born, Jenny still hadn't regained the use of her arm but she refused to let that hold her back. She learned how to do everything one-handed and loved every minute of being a new mum.

After six months Jenny's arm was a little bit better, but then she started having problems with her legs. A lumbar puncture confirmed what Jenny had suspected all along, she had MS.

At the time, there were no treatments or medications available for MS in Australia and over the next few years, Jenny's symptoms became worse. She began tripping and falling, and to keep her balance she started walking with a hiking stick.

In her typical fashion, Jenny approached this change in her life with courage and a sprinkle of humour by following her sister's suggestion and naming her new stick 'Ada' – because it 'aids her'.

With Ada by her side, Jenny felt ready for a new challenge and asked a nurse if it'd be safe to take an overseas trip. The nurse agreed on one condition: Jenny had to start a newly developed MS medication and give herself injections every second day.

Whilst overseas, Jenny found that she could walk longer and further than she had in years, and she even regained the use of her right arm.

Jenny's newfound mobility showed her just how powerful MS medications can be. From that point on, she became determined to support research into MS – to help find new treatments, and ultimately a cure.

> "I COULDN'T USE MY RIGHT ARM. I DIDN'T KNOW WHAT THE PROBLEM WAS AND WENT TO A NEUROLOGIST FOR TESTS. THEY COULDN'T CONFIRM WHAT IT WAS AT THAT STAGE BECAUSE I WAS PREGNANT, BUT I WAS PRETTY SURE I HAD MS."

Thanks to breakthroughs in medical research, there are now 16 different treatment options for MS in Australia – including the injection that changed Jenny's life.

Since then, Jenny has raised money for MS research by taking part in The May 50K (with the support of Ada). She became president of her local Rotary Club, who support her fundraising cause by making an annual donation to MS Research Australia/MS Australia.

She's also become active in the MS community by volunteering as an MS Peer Support person and taking trips as required to Canberra to advocate for the over 25,600 Australians living with MS.

Jenny's passion to find a cure for MS is driven by a desire to make sure 'nobody is as stricken by the disease as I was'. She's been encouraged by the huge progress in the last decade that's accelerating life-changing research into MS. People with MS can now live longer, fuller lives, and a cure could be available in Jenny's lifetime.

Now Jenny is making sure that progress continues long after she's gone by including a gift to MS Research Australia/ MS Australia in her Will.

Jenny said the process was 'simple'. Once she'd made the decision all it took was a quick call to her solicitor. Today, Jenny is still helping her MS community in every way she can, and her gift means she'll continue changing the lives of people with MS for generations to come.

If you'd like to find out more about including MS Research Australia/ MS Australia in your Will, our friendly Future Planning Coordinator Tara Koomen would be happy to answer any questions you may have.

You can also download our Gift in Wills brochure at msra.org.au/ways-to-donate/gifts-in-wills/. Please know that a gift of any size can make a huge difference. Even leaving 1% of your assets (after you've taken care of your family) could help change the future for people living with MS.

You can get in touch with Tara by calling her on 02 9646 0622 or you can send her an email at giftsinwills@ms.org.au.

MEET THE RESEARCHER

ASSOCIATE PROFESSOR LAURENCE MACIA

UNIVERSITY OF SYDNEY, NSW

LET'S GET STARTED! TELL US AN INTERESTING FACT ABOUT YOURSELF...

I am a French scientist passionate about the impact of nutrition on the immune response. I think that we do many things wrong, an obvious example is the consumption of processed and unhealthy diets. Our immune system has evolved for thousands of years to extract its energy from simple and balanced food. For instance, the fact that we eat food additives, which are often nanoparticles, is very confusing for our immune system which will trigger its activation and thus inflammation. It is simple to take a step back and just think on our evolution and what humans should be doing, which involves moderate but regular physical activity, a healthy diet and reduced stress. As a scientist I want to convince the community that we are meant to live simpler lives to maintain our health.

WHAT INSPIRED YOU TO GET INVOLVED IN MS RESEARCH?

MS is an autoimmune disease which means that the immune system for unknown reasons will mistakenly attack cells in our body. The immune system is strongly affected by its environment and I want to investigate how changes in diet could be a strategy to re-educate the immune system and thus improve the lives people with MS. My passion for nutrition and immunity led me into MS research.

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

There was a very exciting study published in *Cell* last year showing that a gut bacterial product could improve disease severity in MS patients. This molecule is called propionic acid and is produced by gut bacteria when we consume dietary fibre. If this treatment is efficient, it would be a totally novel safe approach to treat the disease or to potentiate the efficacy of current treatment options.

TELL US ABOUT YOUR CURRENT RESEARCH PROJECT...

My research projects investigate the mechanisms behind the effects of diet and gut microbiota on immune function as well as the impact of inflammatory diseases on the gut microbiota. We have interesting articles under review on how the gut microbiota might affect the development of anti-inflammatory cells and how specific diets might impact B lymphocytes development and function.

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

It will determine whether particular diets might help control the immune system to reduce MS severity. This work might lead to novel personalised dietary recommendation for MS patients.

WHAT DO YOU ENJOY MOST ABOUT WORKING IN THE LAB AND WHAT ARE SOME OF THE CHALLENGES YOU FACE?

Learning everyday something new is to me the best aspect of research. The biggest challenge is to face daily failure and negative results but the day we find something interesting all the negative aspects are erased.

HELP MS RESEARCH AUSTRALIA FIND A CURE FOR MS

Donate (Donations over $2 are tax deductible)

To support MS Research 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 Research Australia

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Payment method:

☐ Cheque (made payable to MS Research Australia)
☐ Direct Debit Request (copy of service agreement can be provided on request)
Financial institution: ______
BSB number: ______
Account number: ______
Account holder's name: ______
☐ Credit Card
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