



Thank you for your 21 years of support.

2021 marks twenty-one years since the Foundation was established with a mission to support research that makes Alzheimer's disease treatable and preventable.

Originally called the McCusker Alzheimer's Research Foundation, the Foundation simply would not exist without the generosity and visionary support of the McCusker Family and our thanks go to them for their support over many years.

The Foundation was renamed to the Australian Alzheimer's Research Foundation in 2016 to reflect its collaboration across Australia and internationally under the leadership of Professor Ralph Martins AO.

September is World Alzheimer's Month which provides an opportunity to raise awareness and challenge the stigma that surrounds dementia and Alzheimer's. It is also a time for us to give thanks to the many people who have supported the Foundation which enables Alzheimer's research to progress.

Our memories shape who we are. With an estimated 250 Australians diagnosed with dementia each day, it affects us all. Alzheimer's disease is the main cause of dementia and we must continue to research ways to prevent, diagnose, treat and cure this disease.

This research is supported by donations from the Australian community who share our vision of a world in which Alzheimer's disease no longer exists.

Thank you to everyone who has supported the Foundation over the past 21 years and for sharing our mission to make Alzheimer's disease treatable and preventable.

Thank you

Thank you Jenny!

The Australian Alzheimer's Research Foundation would like to acknowledge and congratulate one of our longest serving Board members, Jenny Day on her 13 years of service which has now formally come to an end.

During Jenny's time on the Board, Jenny has been a strong advocate for community involvement in research and instrumental in the Foundation's growth. We are indebted to Jenny's service and wish her the best for her future endeavours.

Jenny Day - Former Board Member



Celebrating
21 Years

Proudly supporting Alzheimer's research to bring us one step closer to an Alzheimer's free world.

The Netherlands and WA join forces in new international study

A new study is commencing here in Perth, led by Prof Ralph Martins and A/Prof Hamid Sohrabi with the potential to have a significant impact on reducing the incidence of young onset hemorrhagic stroke.

What is the connection between Stroke and Alzheimer's disease?

A common cause of stroke is the rupture of blood vessels in the brain. A unique group of individuals has been identified that have these small brain bleeds due to the accumulation of beta-amyloid in their brain blood vessels, which is commonly associated with Alzheimer's disease.

The individuals with risk of hemorrhagic stroke have a build-up of such plaques in their brain blood vessels, and sadly go on to develop what is known as intracerebral haemorrhage stroke. In addition, this condition results in dementia and cognitive impairment.

The study will track a group of people who have the genetic mutation that causes the beta-amyloid to build up in their brain blood vessels causing the stroke. If we can develop a better understanding of the disease, treatments can be developed which have the potential to reduce the number of people suffering from strokes each year.

This genetic mutation is called **Dutch-type Cerebral Amyloid Angiopathy or D-CAA**.

The Australian Alzheimer's Research Foundation will host the Perth arm of the collaboration between the Netherlands and Perth.

Professor Martin's said he was delighted to be working with such an esteemed group of researchers here and in the Netherlands researching Dutch-type Cerebral Amyloid Angiopathy in study participants.

"People with this genetic mutation develop symptoms at an early stage. Studying this young onset group with this condition is likely to be of great importance to the much larger older adults who may develop this condition," Professor Martins said.

Following this two-year study, it is hoped a clinical trial with possible treatments for these individuals will commence.

In 2020, the international team formed an alliance (D-CAA Consortium) to design the study referred to as TRACK D-CAA.

D-CAA is the young onset version of a similar condition that is more prevalent in the elderly population and is considered a silent cause of stroke.

TRACK D-CAA in Western Australia commenced recruiting in July 2021 and is expected to have 50 participants by June 2022.

Professor Ralph Martins AO and A/Professor Hamid Sohrabi



Current project opens new avenues for ground-breaking research

The DIAN study (Dominantly Inherited Alzheimer's Network) is an international collaboration which aims to develop the biological changes that occur in the brain as early as possible in the development of Alzheimer's disease. This study has helped uncover a group of people with a genetic mutation which causes a type of stroke.

This in turn has led to the development of a new international research project looking at the Dutch-type hereditary abnormality (see main story) – which has several participants with the rare genetic mutation living here in WA.

The DIAN study collects biological information from adults who have parents with a known inheritable, genetic mutation for Alzheimer's disease causing a young onset, familial type of the disease.

Professor Ralph Martins leads the Perth DIAN site, one of 16 DIAN sites around the world, and with the support of the Australian Alzheimer's Research Foundation, has contributed to a long list of achievements that have been recognised worldwide.

These achievements include the first blood-based bio markers panel to identify those at higher risk of developing the disease and the commencement of clinical trials of drugs to see if they can prevent the onset of Alzheimer's disease symptoms in family members who are at risk.

Historic development in Alzheimer's disease research

A new drug to treat Alzheimer's disease, called aducanumab, has been given accelerated approval by the United States Food and Drug Administration (FDA) after many years of combined research across the world, including here in Western Australia.

The drug was developed by US biotechnology company Biogen.

The Australian Alzheimer's Research Foundation (AARF) has been part of the Biogen clinical trials since 2015.

Leading Alzheimer's disease researcher, Professor Colin Masters AO, who is Professor of Dementia Research at the University of Melbourne and AARF Board Member, said the FDA approval of aducanumab was a major game changer.

"This historic development in Alzheimer's disease treatment research is potentially on a par with the development of statins to treat high cholesterol," Professor Masters said.

Professor Masters led the team that

in 1985 discovered the amyloid beta protein that builds up in brains causing the plaques which are a key factor in causing Alzheimer's disease.

Aducanumab targets and lowers the toxic protein in the brain, amyloid beta.

"It will not result in a cure or reversal of Alzheimer's disease but rather it will reduce amyloid load in the brain if given in the early stages of the disease," he said.

Professor Masters agreed the FDA decision was a controversial one given the clinical trials of the drug showed mixed results but that it was made on the basis that there was reasonable likelihood that there would be a clinical benefit from the drug.

The FDA says further trials are needed to conclusively determine whether aducanumab is clinically effective in treating people with early-stage Alzheimer's.

The Australian Therapeutic Goods Administration (TGA) will evaluate the drug before approval is granted in Australia and this is expected in 2022.

Professor Colin Masters AO



Is a blood test for Alzheimer's disease just around the corner?

Developing a blood test for Alzheimer's disease has long been the holy grail in research into the disease.

With damage to the brain due to Alzheimer's disease occurring up to 20 years before symptoms show, it is important to identify people at risk of developing the disease as early as possible and before they have symptoms.

Discovering changes to the brain very early would provide a much greater chance of slowing or halting the progression of the disease before significant damage to the brain has occurred.

Researchers from Macquarie University in NSW and Edith Cowan University in WA, who have been working on discovering biomarkers that identify people in the very early stages of Alzheimer's disease, are getting very close to finding a solution.

The protein that has been developed by researchers as a possible suitable biomarker is called GFAP (glial fibrillary acidic protein) and is present in the brain cells that provide nourishment

to the cells which transmit information between neurons. The protein is higher in those at risk of developing Alzheimer's disease.

The existing ways to identify people at risk of developing Alzheimer's disease are brain scans or a lumbar puncture which are expensive and invasive.

A blood test is urgently needed as a cost-effective way of diagnosing people at risk of developing Alzheimer's disease or in the early stages of the disease.

The researchers have also found that examining GFAP with a panel of other potential blood-based markers may increase the accuracy of the test further. This research is awaiting publication.

AARF has proudly supported this research by providing research management and facilities for the collection of some of the blood samples used in Western Australia.

With no current effective treatment for Alzheimer's disease, recent research has focussed on prevention and the identification of people at risk of Alzheimer's disease.



WA Memory Study data used for research into psychological effect of COVID-19 pandemic

The Australian Alzheimer's Research Foundation's flagship WA Memory Study (WAMS) has assessed more than 2,000 people since it began in 1996 and has helped those people to identify any problems early that they may have with memory and cognition.

WAMS also provides an invaluable platform for researchers, their students and volunteers to collect data, to observe and learn clinical and neuropsychological assessments and to investigate new hypotheses on cognitive ageing and future risk of dementia. The study is at the forefront of supporting the next generation of scientists who are focusing on finding solutions for Alzheimer's disease.

Meet some of our young researchers working towards greater knowledge of Alzheimer's disease, its impacts and potential treatments.



Olivia Calleri

I am studying the effects of COVID-19 lockdowns on WAMS participants.

Recent research has suggested that lockdowns have a detrimental impact on cognition in older people which could be attributed to an increase in sedentary behaviours and a decrease in protective lifestyle factors such as spending time with family and other physical activities.

As a complement to my research, I have also been volunteering at the Australian Alzheimer's Research Foundation and I have found the experience to be very helpful in understanding what goes on behind the scenes during cognitive and clinical assessments.

My research project will address basic questions regarding the use of daily personalised music listening to improve the quality of life for people living with dementia.

It will be the first study to examine how music listening influences the quality of life for people living with dementia using short- and long-term follow-up.

I am passionate about music, dementia and healthy ageing across the lifespan, and I hope my research outcomes will help people living with dementia, including improved quality of life, decreased behavioural disturbances and increased cognitive functioning.



Paula St Lawrence

I have been studying the effects of the COVID-19 pandemic and cognitive decline among people involved in WAMS.

I am excited about being involved in such a topical and less understood consequence of the pandemic and its broader social and mental health ramifications. It is becoming increasingly important to consider how these past two years have affected specific, local populations.

Working on WAMS is providing me with data that will hopefully allow us to better understand the fallout from the pandemic with greater clarity.



Josh Bennie

I am working on WAMS to research about the diversity of the course of memory loss in different patients.

The results my research could potentially help us to understand the potential risk factors leading to memory loss and the different types of dementia such as Alzheimer's disease. It could also identify protective factors that may help prevent the initiation of loss of cognitive function and related pathologies.

I hope this will play an important part in helping many of the at-risk population to live a healthy normal independent life and reduce the burden of dementia on patients, their families and the community.



Negar Hajian

Clinical trials at the Foundation

Clinical trials are medical studies that involve people like you. They help find new ways to prevent, detect, or treat diseases that are safe and effective.

As studies for new treatments move through a series of steps called phases, researchers learn more information about the treatment, its risks, and its effectiveness. The Australian Alzheimer's Research Foundation conducts various clinical trials including potential new treatments.

Participants in clinical trials can play a more active role in their own health care, gain access to new research treatments before they are widely available, and help others by contributing to medical research.

When you participate in a clinical trial, your participation is entirely voluntary, and our research team will explain all aspects of the study and answer any questions you have. If you are interested in finding out more, please email aarfctd@alzheimers.com.au or call (08) 9389 6433.

Some of our current clinical trials include:

AHEAD 3-45 Study

The AHEAD Study is funded by the U.S. National Institutes of Health (NIH), in partnership with the pharmaceutical company Eisai. The study is testing whether a particular treatment can lower people's risk of memory loss due to Alzheimer's disease.

The AHEAD Study is testing the drug lecanemab, in people at risk for memory problems. Participants will receive a tailored dose of the treatment, instead of a one-size-fits-all approach.

The study will enrol participants as young as 55 years old who are at risk of developing symptoms of Alzheimer's disease as they get older and test an investigational treatment that has been shown to lower brain amyloid in people with symptoms of Alzheimer's.

GREEN MEMORY Study

Scientists believe there are certain bacteria thought to cause inflammation in the brain and nerves, possibly contributing to the development of Alzheimer's disease.

This study will evaluate a carbohydrate which comes from marine brown algae and is designed to restore the natural balance of bacteria in the gut.

Studies have shown that this substance can improve cognitive function by reshaping the balance of microbes in a person's gut.

AUTONOMY Study

This study will assess whether a new treatment can slow cognitive decline in participants with abnormal brain tau.

Tau is a type of protein found mainly in brain cells and is elevated in Alzheimer's disease.

The investigational treatment binds to the abnormal tau in the brain in people with early Alzheimer's disease.



"I appreciate the opportunity to work at the Foundation. It is an amazing experience to work in the Alzheimer's disease research industry, and I enjoy the challenge."

Staff Spotlight - Shima

Shima has been at the Australian Alzheimer's Research Foundation since mid-2020 and is a Clinical Trials Assistant/Coordinator at our Clinical Trials Division.

Originally from Japan, Shima took part in the exchange program at the University of Western Australia in 2016 while completing her Bachelor of Agricultural Science at Nagoya University in Japan. Shima came back to Perth in 2018 to continue her postgraduate study and now holds a Masters of Philosophy in Neuroendocrinology from the University of Western Australia.

During her studies, she gained experience working for a local neurodegenerative clinic here in Perth, which led to her interest in dementia and Alzheimer's disease research.

After graduating in 2020, Shima responded to a casual job advertisement here at the Foundation, leading to a full-time position.

She currently runs two studies as a principal coordinator and is also involved in recruitment.

Shima's postgraduate journey has given her many valuable experiences, and she remains passionate about older adult mental health and changes in cognition associated with ageing and dementia.

Your monthly gift can make more research possible

By making a regular, monthly donation, you can make a significant difference to the lives of many.

Monthly gifts provide a critical base of accessible, immediate funding which allows our researchers to pursue new research opportunities at the earliest opportunity. This generous commitment can help us to respond quickly to emerging new research and results, ensuring that together we are working on the next breakthrough that could save and improve lives of all those people living with Alzheimer's disease.

To join our regular giving program simply donate online at www.alzheimers.com/donate, select the 'Monthly Gift' option, or call our friendly team on **(08) 6457 0253** – we would love to hear from you!

Male volunteers needed!

The Australian Alzheimer's Research Foundation is currently seeking men to take part in a clinical trial investigating whether testosterone has a benefit on memory tests, brain scans, and other measures of Alzheimer's disease risk.

- Are you a male, aged 60 to 80?
- Do you have memory concerns?
- No significant medical or neurological conditions?
- Not receiving testosterone therapy?
- Is your testosterone possibly on the low side of normal?

For more information, please contact Marie Todd on **(08) 6304 3966** or email trial@alzheimers.com.au

Swimming for Memories



A huge thank you to the Stadium Masters Swimming Club which held its annual fundraiser in July. The event raised more than \$5,000. Thank you to everyone who took part!

An especially big shout out to Barry Green for his tireless effort in organising these annual events.

We are so grateful for the ongoing support.

If you're interested in hosting a fundraising for the Foundation, please give us a call on **(08) 6457 0253** or send an email to info@alzheimers.com.au.



Maggie Beer and Professor Ralph Martins AO



"Dancing with Memories empowers young people and their families to better understand dementia. It is a must read."
- Professor Ralph Martins

Dancing with Memories book launched

Congratulations are in order for our Director of Research, Professor Ralph Martins, for his involvement in the recently launched Dancing with Memories – a children's picture book about dementia.

Professor Martins and well-known cook and author Maggie Beer collaborated with the book's author Sally Yule and illustrator Cheryl Orsini.

Dancing with Memories is a beautiful story that gives children an understanding about dementia and how people can live well with the condition.

Ralph's three decades of experience in Alzheimer's research and his continuing commitment to prevention and seeking a cure, is both cross-generational and empowering.

For more information about Dancing with Memories please visit www.dancingwithmemories.com.au



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Calling **(08) 6457 0253**

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