



## Research Report

Innovation and collaboration  
in the fight against stroke

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2024

[strokefoundation.org.au](https://strokefoundation.org.au)

# Message from the Chief Executive Officer and Chair of the Research Advisory Committee

## Research powers our vision of a world free from disability and suffering caused by stroke.

Investing in research that delivers innovation and improvements in stroke prevention, treatment and recovery is core to Stroke Foundation's mission.

Seed funding to help kickstart innovative projects with early and mid-career researchers, is only possible through the generous support of our donors. These vital programs are targeting the diverse impacts of stroke in children and adults.

Partnerships bring together the most brilliant minds, tackling the toughest research problems.

Paramount to our Research Program are those who matter most – the survivors of stroke, their families and carers. Our Lived Experience network is giving voice and agency to survivors of stroke, bringing them together with researchers and health professionals and leading to better health outcomes for survivors.

There are significant medical advances in Australia and we sincerely thank the many donors investing in our Research Program.

Stroke can happen at any age, and one in four people globally will experience a stroke in their lifetime. The risk of stroke is on the rise, and its impact remains far-reaching and life changing for many.

Furthermore, in Australia the incidence of stroke in the Indigenous population is almost three-fold that of the non-Indigenous population. There is so much more that needs to be understood.

There are an estimated 475,000 survivors of stroke living in our community, the majority with a disability that impacts their everyday life.

Yet, stroke can be prevented and treated.

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We are committed to research excellence, translating evidence into practice and improving the state of stroke in Australia.

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*Dr Lisa Murphy*

*Chief Executive Officer  
Stroke Foundation*



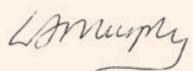
Stroke Foundation is incredibly grateful to have three named endowment funds, depicted throughout this report, established by generous families impacted by stroke.

These dedicated funds provide sustainable revenue to support ground-breaking projects in areas of prevention, new treatments and young adult stroke, improving the lives of people touched by stroke for generations to come.

Stroke Foundation has also established a 'Research and Innovation Future Fund', to invest in future research, health technologies, and services to improve frontline care and rehabilitation services for all Australians.

We are passionate and dedicated, investing in people and projects which will help us reduce preventable stroke and transform the outcomes for the many thousands of Australians impacted by stroke each year.

**We are empowered by your support and invite you to stand with us in the fight against stroke.**



**Dr Lisa Murphy**  
Chief Executive Officer  
Stroke Foundation



**Professor Coralie English**  
Chair of the Research  
Advisory Committee



“

Research into prevention and stroke care is paramount to supporting survivors of stroke and making a lasting difference in their lives.

”

**Professor Coralie English**  
Chair, Research Advisory Committee

# Why we fund stroke research

**Stroke is still a leading cause of disability in Australia. On average, a stroke occurs every 19 minutes.**

Stroke changes lives instantly – its impact is deeply felt by individuals, their families and significant others, the community, the health system and economy.

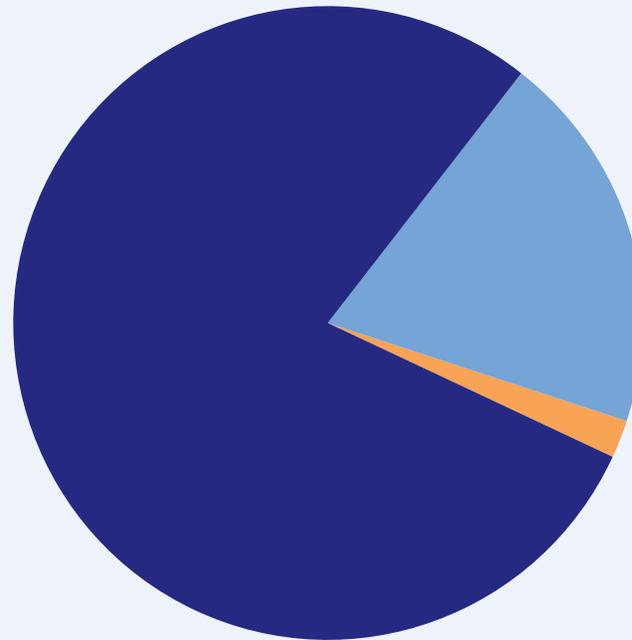
Stroke has long been recognised as being among Australia's most costly disease groups. In 2020, the estimated cost of stroke in Australia was \$6.2 billion in direct financial costs and a further \$26 billion in lost wellbeing.

Despite the shocking statistics and devastating impact of stroke on the Australian community, stroke-related research continues to be under-represented in funding support.

Stroke attacks the brain, the human control centre. Research is the only way to unlock the mysteries of the brain and take important steps towards achieving breakthroughs in stroke prevention, treatment and recovery that will benefit generations to come. However, this work takes time and a great deal of funding.

There is an opportunity to make a difference.

**Less than 2%** of the National Health and Medical Research Council (NHMRC) funding in 2023 went towards stroke research:



**78.7%**  
All other research

**19.4%**  
Cancer research

**1.9%**  
Stroke research

# Stroke in Australia

A **stroke** occurs every



**19 minutes** in Australia<sup>1</sup>

Around **80%** of **strokes**



**can be prevented**<sup>2</sup>

Only **31%** of people can recall two or more



**signs** of stroke<sup>3</sup>

**Stroke** is on the **rise** in



people aged 35 to 54 years<sup>1</sup>

The **economic cost** of **stroke** exceeds **\$6.2 billion** annually



and **\$26 billion** in **lost wellbeing**<sup>4</sup>

**Stroke** is a leading



cause of **disability**<sup>4</sup>

# About Stroke Foundation's Research Program

**As the voice of stroke in Australia, we support researchers who work towards the next innovation in stroke prevention, treatment and recovery.**

- › Advocate for more stroke research funding.
- › Empower researchers and clinicians to explore their research questions, test their concepts and implement their novel ideas.
- › Partner with like-minded organisations, including major prevention alliances and world-leading stroke collaborations.
- › Work alongside Australian hospitals to improve treatments and provide best quality care.

## History

Research has been an integral part of Stroke Foundation since it began in 1983. The organisation was originally known as the Stroke Research Foundation. It later became the Australian Stroke and Neurosciences Institute, with its dedicated research arm, the National Stroke Research Institute.

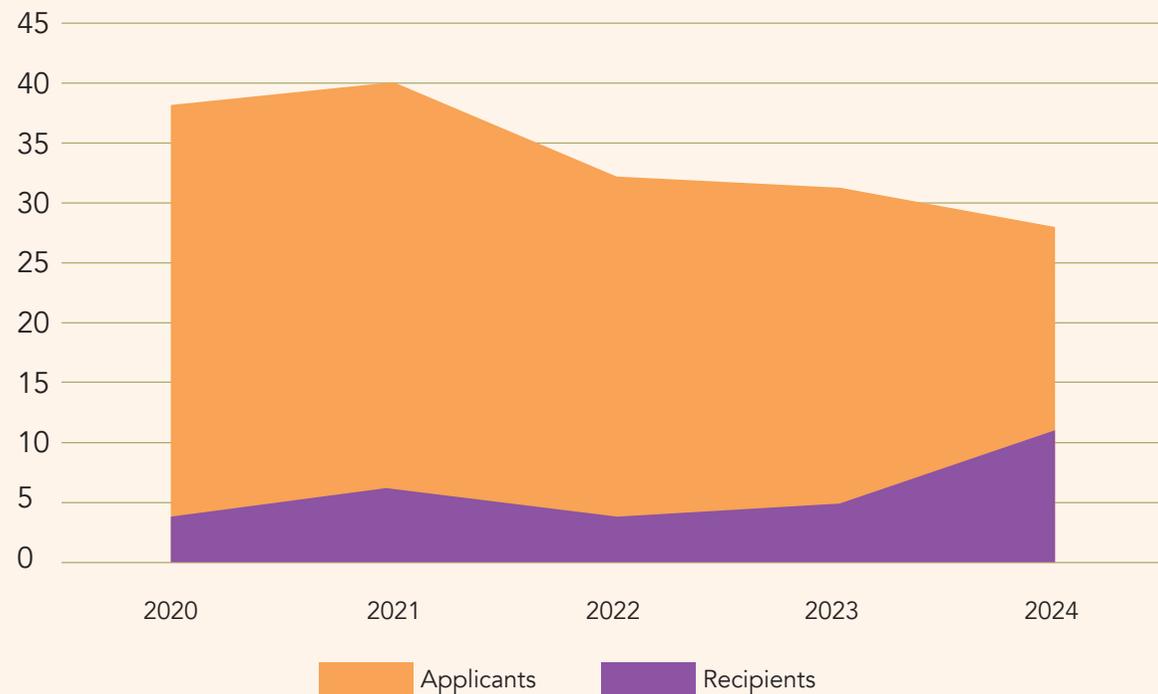
In 1996, stroke was identified as a priority area of need and the organisation became known as Stroke Foundation.

Since 2008, Stroke Foundation has awarded over \$6.6 million in grants to more than 220 accomplished researchers thanks to the generosity of our supporters.

Our Research Program funds annual grants to generate new knowledge and build stroke research capacity.

We provide an essential platform for early and mid-career researchers to tackle evidence and implementation gaps in stroke care and excel in their stroke specialty.

**Applicants vs Grant recipients**



Types of grants provided:

- › **Seed Grants:** Grants to support pilot or feasibility studies. These projects are essential to informing larger-scale, nationally competitive grant submissions to the Australian Government and other grant opportunities.
- › **Endowment Grants:** Offered from perpetual funds to address dedicated areas and provide sustainable investment in stroke research.
- › **Targeted Grants:** Administered on behalf of governments and recognised funding bodies to address stroke research priorities.
- › **Partnerships:** Collaboration with a range of researchers to advance large-scale projects and cutting-edge initiatives in stroke. Partnerships are multi-disciplinary because of the diverse consequences of stroke and the potential to impact the direction and delivery of health care in Australia.

Our priorities for research funding are informed by evidence and lived experience and determined by the Research Advisory Committee of Stroke Foundation's Board.

Our grants assessment process is robust and independent and focuses on impact and evidence.

## Profile

### Associate Professor Dana Wong

La Trobe University

2024 Tim Glendinning Memorial  
Fund for Young Adult Stroke Grant

Co-designing a psycho-education package  
to enhance psychosocial wellbeing for  
young adults living with stroke

Associate Professor Wong, Clinical Neuropsychologist, is a key voice in applying innovative neuropsychological rehabilitation techniques to improve the lives of young survivors of stroke.

'Invisible' challenges, like anxiety, depression, cognitive impairment, and fatigue are common in young adult survivors of stroke yet remain the highest areas of unmet need.

One-third of Australian stroke services report no access to psychologists.

Associate Professor Wong's project will co-design clinician-delivered information, tailored for young adults with stroke, to support self-management, improve wellbeing, and prevent the need for more intensive therapies.



“

We are incredibly grateful to the Glendinning family and the supporters whose generous philanthropy has made this grant possible. We sincerely hope that it will lead to improvements in the wellbeing of young adults living with stroke in Australia and worldwide.

”

*Associate Professor Dana Wong*

# Research powering prevention

**Our supporters and researchers are pioneering prevention work, yet so much remains to be done.**

Unless there is significant investment in prevention, by 2050, it is predicted that Australians could be experiencing a first stroke every 10 minutes, and that 820,000 survivors of stroke could be living in the community – a significant burden on individuals, families and our health system.

## Nancy & Vic Allen Stroke Prevention Memorial Fund



This endowment fund was made possible through the generosity of the late Vic Allen, who was passionate about preventing stroke after witnessing the devastating impact multiple strokes had on his beloved wife Nancy.

Vic envisioned a future where the tragedy of stroke would be greatly reduced. The fund encourages stroke prevention research combining best practice medical care and evidence-based integrative care.

## Profile

### Dr Natalie Fini

University of Melbourne

2022 Research Seed Grant

#### Fit 4 Me After Stroke – A Phase I/IIA Clinical Trial

Physical activity is vital for good health, yet the consequences of stroke make being physically active challenging. Generic physical activity programs fail long-term after stroke.

Dr Fini's research is testing personalised, engaging, and targeted physical activity programs co-designed with survivors of stroke, carers and clinicians.

In the year after receiving this Seed Grant, Dr Fini was awarded almost \$600,000 with an NHMRC Investigator Grant (Emerging Leadership Fellowship) to build upon this work. Ultimately, this research aims to help survivors of stroke engage in sustainable physical activity to improve their health long-term.



More than  
**80%**  
of strokes can  
be prevented

# Profile

## Professor Caleb Ferguson

University of Wollongong

2023 Nancy & Vic Allen Stroke Prevention Memorial Fund Grant

**INFORM-AF II: A Phase 1 pilot randomised controlled trial of a digital stroke prevention education program for people living with Atrial Fibrillation.**

Atrial Fibrillation (AF) is a form of irregular heart rate and a key risk factor for stroke. People who experience AF-related strokes have a higher level of disability, and AF occurs after around 25–30% of strokes.

Currently, life-saving treatment includes stroke prevention medications which thin the blood, called 'anticoagulation', but for multiple reasons, people don't always take their medications as directed by their doctor and often stop altogether.

Professor Ferguson's study will pilot a new learning app, which builds on the team's successful research into the educational and self-management needs for people living with AF.



“

We believe this program will assist in patients being more knowledgeable about their condition and their medicines, and in turn, more adherent to stroke prevention therapies. The Allen Family's contribution is making a significant difference in our mission to fight the rising tide of stroke in Australia and beyond.

”

*Professor Caleb Ferguson*

# Research fuelling treatment

Early intervention after stroke is critical. Here are just a few of Stroke Foundation's many treatment initiatives.

## Australian Paediatric Acute Code Stroke (PACS) Study

Through the Australian Government's Medical Research Future Fund (MRFF), Stroke Foundation and Murdoch Children's Research Institute are partnering to transform the care of children with stroke through this world-first study.

This ground-breaking project, led by Associate Professor Mark Mackay, brings together a team of researchers, clinicians and people with lived experience who are dedicated to reducing time to diagnosis and increasing the number of children receiving emergency stroke treatment.

We are proud to partner in this work to improve survival outcomes and reduce potential lifelong disability for children.

## Living Clinical Guidelines and Australian Living Evidence Collaboration

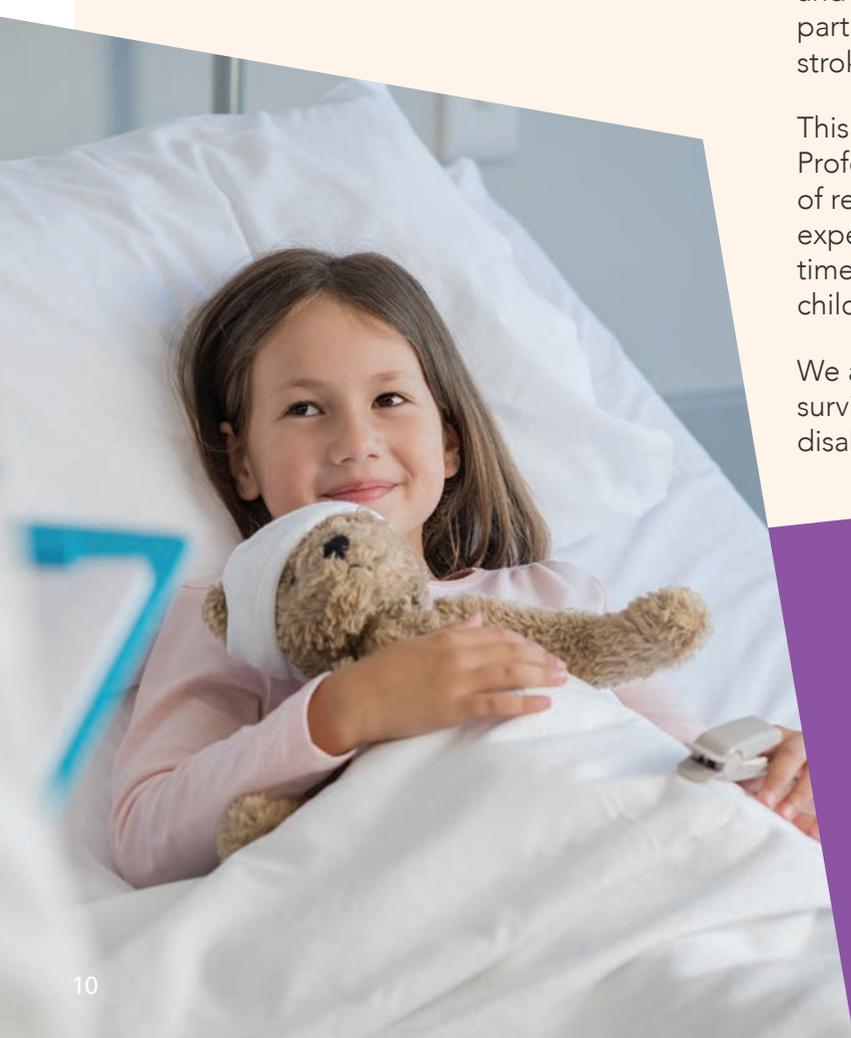
The initial three-year pilot (July 2018 – June 2021) of the Living Clinical Guidelines for Stroke Management was funded by the Australian Government's MRFF. The project established and evaluated a world-first, online, dynamically updating summary of stroke evidence to guide clinical practice and policy development.

The Living Guidelines provide clinicians in Australia and New Zealand with extensive evidence-based recommendations for stroke management including early assessment and diagnosis, pre-hospital care, medical and surgery management, secondary prevention, rehabilitation, complications and long-term care.

The Living Guidelines project was a partnership between Stroke Foundation and Cochrane Australia. Experience from stroke has been used to develop living guidelines for COVID-19, diabetes, kidney health and arthritis. With the leadership of Cochrane Australia, these groups formed the Australian Living Evidence Collaboration (ALEC) and published the world's first 'Living Guidelines Handbook' in October 2022.



Each year up to 600 Australian children suffer a stroke; one in 20 die and more than half of young survivors will experience long-term impairments.



## Australian Stroke Alliance The Golden Hour

Stroke Foundation is delighted to be a principal partner with the Australian Stroke Alliance in the Stroke Golden Hour research project, awarded \$40 million in 2021 under the Australian Government's MRFF Frontiers Initiative.

The project aims to radically transform pre-hospital stroke care by developing portable, lightweight brain scanners which may be carried by road, helicopter and fixed-wing ambulances. If successful, the scanners will provide rapid diagnosis and treatment for stroke patients across metropolitan, regional and rural Australia, saving lives and reducing disability.

The Alliance brings together over 40 leaders from key academic, health, consumer and commercial agencies. These include the University of Melbourne, The Royal Melbourne Hospital, Ambulance Victoria, Royal Flying Doctor Service, Council of Ambulance Authorities and RMIT University.

Stroke Foundation applauds Darak for their fundamental role in the Alliance and for providing a voice to First Nations peoples in health care, research and education.



**More than 27,000  
Australians will  
experience a stroke  
for the first time each  
year. Rural and regional  
Australians are 17  
percent more likely  
to have a stroke and  
are at greater risk of a  
poorer outcome due to  
limited access to stroke  
specialists, treatments  
and care.**



“

**Our country's broad geography  
will no longer be a barrier to  
time-critical stroke treatment.**

”

*Dr Lisa Murphy  
CEO, Stroke Foundation*

# Research driving recovery

**Collaborations involving people with lived experience, researchers and health professionals are making significant inroads for enhanced recovery.**

## 2023 Stroke Conference

Congratulations to Associate Professor Sarah Wallace, University of Queensland, on her award for the best co-design research abstract presentation at the 2023 Stroke Conference. Sarah is an NHMRC Emerging Leadership Fellow and speech pathologist with a fantastic portfolio of research for people with aphasia.

This inaugural award was jointly provided by Stroke Foundation and The Centre of Research Excellence to Accelerate Stroke Trial Innovation and Translation.

## Australian Cardiovascular Alliance Translation Research Award

Congratulations to Professor Sandy Middleton and her team on winning the Australian Cardiovascular Alliance's Translation Research Award in February 2024.

The team showcased the positive impact of nurse-initiated fever, hyperglycaemia, and swallowing (FeSS) protocols in managing post-stroke complications.



*Professor Dominique Cadilhac (Co-investigator), Ms Simeon Dale (Project Manager) and Ms Kelly Coughlan (Research Officer) accepting the award on behalf of the Quality in Acute Stroke Care (QASC) team.*

Their Lancet-published trial revealed a 16% reduction in death and dependency within 90 days and a 20% decrease in mortality up to four years post-stroke.

Professor Middleton has a long history collaborating with Stroke Foundation and there has been ongoing collaboration including upscaling these protocols in NSW and the current national project. The team have also coordinated their expansion to 64 hospitals across 17 European countries, resulting in improved adherence and stroke patient care.

This program has also shown significant economic benefits, potentially saving millions of dollars and preventing numerous deaths and years of life lost and has contributed to reducing inequality in stroke care, particularly in countries with limited access to acute therapies or stroke units.

“

For research to make a truly meaningful impact, the voices of people living with stroke must be included. Being 'heard' can be particularly difficult for people with aphasia and communication support needs.

”

*Associate Professor Sarah Wallace*



“

We are extremely grateful for the Gavin Paul Bennier Memorial Research Fund's continued support. This study aims to provide haemorrhagic stroke survivors with an accurate and timely diagnosis. With treatment options at the horizon, the work, supported by the Fund, will gain further significance.

*Professor Vincent Thijs*

”

## Profiles



### Professor Vincent Thijs

The Florey Institute of Neuroscience and Mental Health

2019–2024 Gavin Paul Bennier Memorial Fund Grant

**Screening for Early onset Amyloid Related Cerebral Haemorrhage (SEARCH)**

Professor Thijs' work enabled by Gavin's Fund is key to understanding what causes brain bleedings (haemorrhages), including CAA, which is difficult to diagnose, especially in younger survivors of stroke.

The work involves assessing if novel diagnostic techniques can help make diagnoses. This opens up possibilities for earlier treatment, especially now that treatments for CAA are being studied in human clinical trials.



### Professor Natasha A Lannin

Department of Neuroscience, Monash University

Allied Health, Alfred Health

**2019 Return to Life, Return to Work Clinical Trials – WORK Trial**

Professor Lannin's 'WORK Trial', funded by the Australian Government's MRFF Emerging Priorities and Consumer Driven Research initiative, has been instrumental in helping young survivors of stroke achieve their work or vocation-related goals. Stemming from this pilot project, Professor Lannin secured larger funding through the Australian Government's Cardiovascular Health Mission to further develop pathways for improved work and health outcomes after stroke (2023–2025).

### Gavin Paul Bennier Memorial Research Fund



The Gavin Paul Bennier Memorial Research Fund focuses on the rare brain disorder Cerebral Amyloid Angiopathy (CAA).

This disorder causes bleeds on the brain and is more commonly associated with dementia and older people. CAA caused Gavin to have several strokes and tragically led to his death in 2017.

# Research supporting priority communities

Having positive and lasting impact in communities with unmet needs is at the heart of Stroke Foundation priorities.

## Australia's First Young Stroke Service

Almost one in four of all strokes in Australia are in young people. The Young Stroke Service works with young survivors of stroke, as well as their supporters and clinicians, to offer a range of support, strengthening recovery.

Professors Julie Bernhardt and Vincent Thijs at The Florey Institute, secured this almost \$10 million, 5-year project through the Australian Government's MRFF. It builds upon six years of research into the unmet needs and challenges faced by young survivors of stroke and stems from Stroke Foundation's first Tim Glendinning Memorial Fund for Young Adult Stroke Grant awarded to Dr Karen Borschmann and her team in 2019.

Stroke Foundation's Young Stroke Information Coordinator, Sophie Weaver, is a young survivor of stroke who is intent on making a difference for other working age survivors of stroke.

She helps facilitate the 15-member strong Lived Experience Contributors Group for the project, which supports engagement with the young stroke community, and ensures information is tailored for individual needs.

The Young Stroke Service ([youngstrokeservice.org.au](http://youngstrokeservice.org.au)) can be accessed by referral from a health professional and is a joint partnership with The Florey Institute, Stroke Foundation, Austin Health, Flinders Medical Centre, La Trobe University, University of Technology Sydney, Flinders University, Monash University, University of Melbourne, Royal Melbourne Hospital and Ambulance Victoria.

## Tim Glendinning Memorial Fund for Young Adult Stroke



Established in 2018, the Tim Glendinning Memorial Fund supports young adults affected by stroke.

Tim Glendinning sadly lost his life to stroke at the age of just 36. Tim had seven strokes in 17 years – each one impacting his physical and mental health and quality of life.



“

Early feedback from members of the group is that they feel valued as an individual, their input is taken on board and their voices are heard. Stroke Foundation continues to facilitate the Young Stroke Service project's engagement of people with lived experience.

”

*Sophie Weaver, survivor of stroke*

Goals of the Fund:

- › Provide support and advice to young adults with stroke and their families.
- › Improve the environments in which young adults with stroke are provided care.
- › Support research into undiagnosed stroke causes.
- › Fight stigma that young adults may feel after stroke.

# Profiles

## Dr Heidi Janssen

University of Newcastle

2021 Research Seed Grant

Yarning up After Stroke

Dr Janssen leveraged a Stroke Foundation Seed Grant (2021) into Australian Government MRFF funding to expand work in partnership with Aboriginal and Torres Strait Islander communities focused on stroke recovery. The team are testing a co-designed yarning tool, adapted from 'Take Charge', shown to be effective with the Indigenous peoples of New Zealand.

Enhanced community participation and quality of life for Aboriginal and Torres Strait Islander peoples living with stroke are some of the real-life impacts arising from this research.



## Dr Anna Holwell

Alice Springs Hospital

University of Melbourne

2024 Research Seed Grant

Our Story – the On Country journey of remote stroke

Dr Holwell's two-part study explores opportunities to enhance pre-hospital pathways, enabling faster access to hospitals and life-saving treatments, and creating stroke education materials that are culturally and linguistically relevant to the Central Australian communities.

This is particularly relevant given the limited access to acute stroke services and specialised care in remote communities.

Anna is commended for her tireless work in improving the health outcomes of Aboriginal Australians after stroke and for winning the prestigious 2023 Stroke Care Champion Award at the joint Smart Strokes Nursing and Allied Health Conference and 32nd Annual Scientific Meeting of the Stroke Society of Australasia.



“

Effectively addressing stroke care across a vast region is challenging and complex. We need to be innovative and find solutions that work for our unique environment and our population. This can't be done without listening to the community and understanding what stroke means for them.

”

Dr Anna Holwell

“

Yarns with people and different groups in community to date reveal that an important step in supporting people after a stroke is ensuring trusting and respectful relationships.

Dr Heidi Janssen

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# References

1. Deloitte Access Economics. 2020. No postcode untouched, Stroke in Australia 2020.
2. O'Donnell et al, 2016 'Global and regional effects of potentially modifiable risk factors associated with acute stroke in 32 countries [INTERSTROKE]: a case-control study', Lancet: 388: 761-75.
3. Stroke Foundation F.A.S.T. National Awareness Survey Report, YouGov, 2023.
4. Deloitte Access Economics. 2020. The economic impact of stroke in Australia, 2020.



## How to get more involved

-  **Give time** – become a volunteer.
-  **Raise funds** – donate or hold a fundraising event.
-  **Speak up** – join our advocacy team.
-  **Leave a lasting legacy** – include a gift in your Will.
-  **Know your numbers** – check your health regularly.
-  **Stay informed** – keep up-to-date and share our message.

## Contact us

-  **1300 194 196**
-  **[strokefoundation.org.au](https://strokefoundation.org.au)**
-  **[/strokefoundation](https://www.facebook.com/strokefoundation)**
-  **[@strokefdn](https://twitter.com/strokefdn)**
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**Stroke Foundation | 1300 194 196 | [strokefoundation.org.au](https://strokefoundation.org.au)**

National Office: Level 7, 461 Bourke Street, Melbourne VIC 3000

We also have offices in Sydney, Brisbane, Perth and Hobart.

ABN 42 006 173 379