

# the NeuRA magazine

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**MINDSHIFT:** *Refining our understanding of mental health*

## NEWS IN BRIEF:

- *Bouncing back from stroke*
- *Brain health: Does gender matter?*
- *The five steps to safer car trips*

**Turning up the pressure on spinal cord injury research**

**ASK a Researcher:**  
*Understanding schizophrenia*

**FIVE MINUTES**  
*with Ainslie Cahill AM*





**At NeuRA, our commitment to** being a world-leading medical research institute extends well beyond the laboratory, prioritising the translation of discoveries into real-world solutions. Our recent research highlights this critical connection to community.

Currently, nearly half of all Australian adults will face mental ill-health at some point in their lives, with young people particularly affected. Addressing this is critical. Led by Associate Professor Justine Gatt, researchers at NeuRA's Centre for Wellbeing, Resilience and Recovery have explored an important yet often overlooked aspect of mental health: wellbeing.

Traditionally, mental health has been viewed through the lens of distress symptoms, ignoring the broader picture of an individual's overall mental health. To bridge this gap, researchers at NeuRA and UNSW have developed the COMPAS-W scale, a comprehensive tool for measuring mental wellbeing. This tool promises to transform how we approach mental health by providing a more holistic understanding.

Our focus is not just on research that benefits the community but also on bringing them along on this journey. We are very pleased to share that Ainslie Cahill AM, a legend in the consumer advocacy world, has teamed up with NeuRA's Professor Kim Delbaere and Dr Meghan Ambrens on StandingTall-Rehab, a digital rehabilitation program which aims to improve physical mobility, quality of life and independence in patients recovering from stroke.

Ainslie's extensive experience, particularly as a driving force of consumer advisory programs at a national level, will undoubtedly enhance our efforts at NeuRA.

I look forward to updating you on our ongoing impact and the strides we continue to make in neurodegeneration, mental health and healthy ageing research. Your support is invaluable, and together, we will achieve remarkable outcomes.

Warm regards,

**Matthew Kiernan AM**  
CEO, Neuroscience Research Australia



**Left to right:** Janine Lam, Luke Egan, Associate Professor Justine Gatt, Dr Haeme Park.

## Welcome to the Winter edition of NeuRA Mag!

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***We are excited to showcase our recent advancements and research updates with you.***

Our main story highlights a significant development by NeuRA's mental health team (pictured above), for measuring wellbeing, which will enable experts to enhance their standard tests for assessing mental health. Given that half of common mental health problems emerge before the age of 18, this research is particularly pertinent.

We also hope you enjoy hearing from a NeuRA supporter and a researcher whose shared interests in spinal cord injury research have brought them together, along with a special Q&A with Ainslie Cahill AM, a dedicated consumer advocate working closely with NeuRA researchers to ensure our work remains focused on community needs.

We trust this issue offers valuable insights into our research, and as always, we look forward to your feedback. ●

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## Bouncing back from stroke

Currently, over 100 Australians experience a stroke every day. Tailored exercise is critical for recovery, enhancing physical mobility, balance, strength and functional abilities. To address this need for accessible and tailored exercise for individuals recovering from stroke, researchers at NeuRA's Falls, Balance, and Injury Research Centre are developing a digital rehabilitation program that combines high-dose exercise with standard stroke care. This program aims to improve the quality of life and independence for patients.



*If you have experienced a stroke or are caring for someone who has and would like to participate, visit [neura.edu.au/project/standingtall-rehab](http://neura.edu.au/project/standingtall-rehab) •*

## Brain health: Does gender matter?



Did you know that gender can affect the risk of cognitive impairment?

Researchers at NeuRA and the UNSW Ageing Futures Institute, led by Scientia Professor Kaarin Anstey, have explored how factors such as education level, occupation and leisure activities influence resilience and the risk of mild cognitive impairment (MCI) in women compared to men as they age.

A key finding from their study revealed that lower occupational skill is more strongly associated with a higher risk of MCI in men than in women. Additionally, for both men and women, enjoying intellectually stimulating activities was found to have benefit: "Engaging in cognitively stimulating leisure activities, such as solving puzzles, playing a musical instrument, or even gardening play a critical role in protecting against MCI for both genders. These findings suggest targeted interventions focusing on cognitive engagement activities could be beneficial," said Dr Yvonne Leung, Postdoctoral Research Fellow at NeuRA. •



Image: iStock.



Image: Andrew Thurrell / iStock.



## The five steps to safe travel

A new study conducted by researchers at the Transurban Road Safety Centre at NeuRA has revealed that while the '5-Step Test' is the most effective method for carers to determine when a child is ready to use an adult seatbelt, only eight per cent of parents and carers are aware of this test.

In Australia, children can legally use an adult seatbelt from the age of seven, but there is no single metric, such as age or height, that reliably predicts readiness. Switching children from a booster to an adult seatbelt too soon can compromise their safety and decrease protection in a car accident. Importantly, when exposed to the 5-Step Test, participants significantly improved their understanding of achieving a proper seatbelt fit. •



## What is the 5-Step Test?

Follow the 5-Step Test to determine whether your child can safely transition to an adult seatbelt:

1. The child can sit with their back against the vehicle seat back
2. The child's knees bend in front of the edge of the seat
3. The sash (shoulder) belt sits across the middle of the shoulder, not on the neck
4. The lap belt is sitting low across the hips and touching the thighs
5. The child can stay seated like this for the whole trip

# MIND OVER MATTER: Closing the gaps in mental health research



Image: iStock

*Approximately half of mental health conditions emerge before the age of 18, with one in five young people experiencing depression and one in three experiencing anxiety. However, research has shown that with the right approach, around one quarter of cases of depression can be prevented.*

Despite the significant increase in mental health research in recent years, an often overlooked aspect remains: mental wellbeing. This oversight can result in a skewed understanding of mental health, focusing solely on symptoms of distress and illness while ignoring the broader picture of an individual's overall mental health.

Addressing this gap, researchers at NeuRA and UNSW Sydney have developed the COMPAS-W scale, a comprehensive measure for adult and adolescent mental wellbeing, promising to transform how we approach mental health.

In a new study published in *Frontiers in Psychiatry*, NeuRA scientists have validated an effective tool for assessing mental wellbeing among adolescents. Unlike many previous measurements of wellbeing, the COMPAS-W scale integrates both hedonia (subjective wellbeing, including happiness and life satisfaction) and eudaimonia (psychological wellbeing, encompassing factors like purpose, mastery and self-worth).

Historically, mental health research has equated the absence of psychological distress or illness symptoms with good

mental health, leaving wellbeing underexplored and misunderstood.

Critically, the study's findings challenge preconceived ideas about mental health. Adolescents with clinical symptoms of mental ill-health, such as anxiety, depression, or with neurodevelopmental conditions such as ADHD, do not necessarily score low on mental wellbeing. Conversely, those without clinical diagnoses did not necessarily exhibit high levels of wellbeing, proving that mental illness and wellbeing are not correlated in the ways we might expect.

Associate Professor Justine Gatt, Director of NeuRA's Centre for Wellbeing, Resilience and Recovery, emphasised the importance of a holistic perspective. "If you consider the full definition of what mental health is, it's not just about the illness symptoms; it's also about

Associate Professor Justine Gatt, Director of NeuRA's Centre for Wellbeing, Resilience and Recovery.



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The COMPAS-W scale, initially developed in 2014 for adults, has now been adapted for adolescents. This scale comprises 23 questions, reduced from 26 after psychometric testing, to assess both hedonia and eudaimonia. The research, supported by a grant from social media platform Instagram, analysed data from 1,078 adolescents in Australia and the US.

One significant finding from the study revealed that adolescents with clinical diagnoses of mental health conditions or neurodevelopmental disorders often reported moderate levels of wellbeing.

For instance, over half of the participants with such diagnoses scored as having moderate wellbeing, with a small percentage even flourishing. This indicates that effective management of symptoms can allow individuals to maintain a satisfactory level of wellbeing despite their conditions.

These insights advocate for a well-rounded approach to mental health. According to Associate Professor Gatt, current treatments for anxiety and depression could be enhanced with wellbeing programs focusing on positive emotions, self-worth and autonomy: “If well managed, people with chronic mental health or neurodevelopmental conditions can report higher levels of wellbeing so that they are more functioning and content”.

Importantly, the study highlights the need to measure wellbeing alongside traditional assessments of psychological distress. This dual approach could identify those who, while not meeting clinical criteria for a psychiatric diagnosis, may still require intervention to improve their wellbeing. It also offers a pathway to personalised treatment options, enhancing support for those with diagnosed mental illnesses who score low in wellbeing.

Looking ahead, the research team is working on adapting the COMPAS-W scale for children aged five to twelve. Their future studies

aim to track changes in wellbeing across the lifespan, providing deeper insights into how mental health and wellbeing evolve over the lifespan.

In the interim, raising awareness among the public, researchers and clinicians about the importance of measuring mental wellbeing is crucial. Associate Professor Gatt envisions a future where mental health strategies incorporate both the alleviation of psychological distress and the promotion of wellbeing: “We'd like to increase awareness and eventually, see how mental health strategies can incorporate a measurement and promotion of wellbeing in those who need it.” •



## Boost positive emotions

Research shows that individuals who are positive are more likely to overcome adversity. Here are some science-based ways to improve your positivity:

- **Stay engaged:** Maintain social connection and mental stimulation through hobbies, games and education.
- **Give the gift of joy:** Acts of kindness boost happiness for both the giver and the receiver, known as the “warm glow” of altruism.
- **Move your body:** Physical activity is a reliable and natural mood-booster.
- **Savour happy moments:** Reflect on positive memories and set meaningful future goals, a powerful practice known as “positive reminiscence”.
- **Don't chase happiness:** Focus on meaningful activities and goals – and happiness as a journey, not solely a destination.

## Turning up the pressure on spinal cord injury research

Just as Ben Kende was on the cusp of becoming a professional rugby union player at the age of 18, an on-field accident altered his path. While playing the first game of a regional Asian championship tournament in Hong Kong, one of his opponents delivered a hit to the back of Ben's neck and dislocated it.

"I could not feel my arms or legs and my lungs started giving out straight away. This was the start of the rest of my life," Ben said.

Between 2010-2011 Ben was on a journey of endless hospitalisations, operations and rehabilitation, navigating both the Asian and Australian health systems.

By 2012 he was able to stabilise his life and return home. Ben now lives with quadriplegia, impaired hand function and requires a manual power-assisted chair for mobility.

"Other than this I am fairly independent. I regularly go to a gym for those with neurological conditions and for functional training to make life easier, and keep healthy and fit."

Today, Ben says his physical challenges stem mainly from bowel and bladder issues as his blood pressure regularly spikes due to autonomic dyslexia as a result of his spinal cord injury (SCI). He also has some other physical limitations which require disability care support day-to-day.

Dr Peter Sturgess, a NeuRA Spinal Cord Injury Research Centre researcher and rehabilitation medicine physician working with patients with SCI, is well aware of the significant challenges SCI presents for blood pressure and heart rate. He is currently conducting important research to deepen knowledge of how to maintain stable blood pressure in people with SCI.

"We don't consciously think about our heart beating or going to the toilet, as these functions are automatic. But with high spinal injury, people lose that automatic control. For example, people may end up with blood pressure that can be very high or very low... this can leave them at risk of heart attack or stroke," Dr Sturgess says.

Seeing patients with blood pressure issues from SCI inspired Dr Sturgess to conduct his research, driven by a desire to find better solutions and improve their quality of life.

"I thought, what if we could do something in a more natural way that does not require drugs to control it? Could we use electrical stimulation to stimulate the spinal cord and control the autonomic nervous system?"

**“We don't consciously think about our heart beating or going to the toilet, as these functions are automatic. But with high spinal injury, people lose that automatic control. For example, people may end up with blood pressure that can be very high or very low... this can leave them at risk of heart attack or stroke.”** – Dr Peter Sturgess, NeuRA researcher



**Above:** Ben Kende, at right, tours the NeuRA Spinal Cord Injury Research Centre with NeuRA researchers (left to right) Dr Peter Sturgess, Professor Jane Butler and Dr Claire Boswell-Ruys.

Supported by a donation from The Ben Kende Foundation, which was set up in 2010 shortly after Ben had the accident, Dr Sturgess' research is now underway.

According to Ben, supporting medical research gives him hope for a brighter future for people affected by SCI.

"We have moved to focusing on research as the Foundation's main purpose. I liked what NeuRA was doing in electrical stimulation [and] epidural stimulation – based on the literature this seems to be the closest to any meaningful treatment, and the most meaningful way of managing the effects of spinal cord injury," Ben explains.

Dr Sturgess says the initial study is having some good results so far, adding that they already have earmarked where to take the next phase of investigation.

"We hope to enable anyone with spinal cord injury to be able to participate. Many people would like to, but they can't due to the travel and accommodation expenses, so we plan to use these funds towards giving them access to the study." •

From left:

Ainslie Cahill AM and  
Professor Kim Delbaere.



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I thought: ‘It’s a natural part of ageing and you get sore knees and a sore back.’”

*Ainslie Cahill AM is a legend in the consumer advocacy world. Over her 12-year tenure as Chief Executive Officer of Arthritis Australia she transformed the organisation into one that had people living with arthritis at its core – embedding consumers into the not-for-profit’s research programs, and bringing them into grant funding panels.*

Ainslie recently teamed up with NeuRA’s Professor Kim Delbaere and Dr Meghan Ambrens on StandingTall-Rehab: a digital rehabilitation program, that aims to improve physical mobility, quality of life and independence in patients recovering from stroke.

We speak to Ainslie about her journey to consumer advocacy, involvement with NeuRA and what inspires her most about medical research.

#### **What led you to become a consumer advocate?**

It started when a job came up with Arthritis Australia – I jumped at the chance to apply because I had two close friends living with rheumatoid arthritis and saw firsthand what a tough life that can be.

When I joined Arthritis Australia, I learned that two of the chronic conditions my sister had had since her early twenties fell under the arthritis umbrella. There are more than 100 forms of arthritis

and I was one of those many Australians who didn’t know a lot about it. I thought: “It’s a natural part of ageing and you get sore knees and a sore back.”

#### **What inspires you about working with medical researchers?**

Their inquiring minds and thirst for discovery, that hopefully creates knowledge which will lead to better treatments and services for patients and carers.

#### **What has been your involvement with NeuRA so far?**

Professor Kim Delbaere asked me if I could help her and Dr Meghan Ambrens with StandingTall-Rehab. Once I got involved it was very clear to me that Prof Delbaere and her team have been practising quality consumer and community involvement for some time.

I was in a group of consumers earlier this year, who reviewed the online resources for the project, and all the work leading up to the development of those resources

had involved consumers. So it wasn’t that they developed the resources and then thought “Oh, we better get in some consumers to have a look” – which I was delighted to learn.

#### **What do you enjoy about working with NeuRA’s Falls, Balance & Injury Research Centre team?**

I can see that they are genuinely committed, not just to their research, but to collaborating with a wide range of stakeholders, as well as consumers, and that they have the consumers’ outcomes at heart.

#### **What do you hope true partnership between people with lived experience and researchers will achieve?**

Research that’s relevant, powerful and translatable. It’s also about influencing policy development and the introduction of treatments and services – there are so many potential outcomes from well-considered health and medical research. •



## Ask a Researcher



*This issue, Dr Hayley North, Postdoctoral Fellow at NeuRA, (pictured) answers a question from one of our schizophrenia research supporters.*

**Q: My son was recently diagnosed with schizophrenia, and we've faced mostly negative reactions when sharing his diagnosis. Do you have advice on how to educate loved ones and reduce stigma?**

**A:** As a scientist, I believe that discussing and disseminating research findings on the brain's role in schizophrenia is a critical part of reducing the stigma associated with mental illness. My research at NeuRA focuses on understanding inflammation and neurogenesis in schizophrenia. Neurogenesis, the growth of new brain cells throughout life, may be influenced by a high inflammatory state, which is observed in about 40 per cent of people with schizophrenia. By delving into how these inflammatory processes impact neurogenesis, I hope to gain a deeper understanding of the biological underpinnings of schizophrenia.

When people recognise that schizophrenia stems from complex brain processes, it helps shift the narrative from blame and misunderstanding to empathy and research-based perspectives. Sharing research about the condition and educating others on what schizophrenia is – and isn't – can further contribute to this shift. This helps to foster compassion and support, paving the way for a more inclusive society for people affected by schizophrenia. By working together, we can create a more informed and empathetic approach to mental health. •

## Include NeuRA in your Will

Including a gift to NeuRA in your Will is a powerful way to accelerate research that will transform people's lives. A gift of just 1% of your estate will allow us to deliver world-first clinical trials, effective treatments, early interventions and crucial research that we simply could not do otherwise.

With your gift, we will help people lead happier and healthier lives for longer and we will shape the future of neurological wellness for generations to come.



*NeuRA's Bequest Officer, Lauren Moore, is available to help you to organise a gift in your Will and keep you up to date with NeuRA's research. Please feel free to phone Lauren directly on 02 9399 1093 or email [bequests@neura.edu.au](mailto:bequests@neura.edu.au)*



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