

Issue 35 | **Summer 2020**

NeuRA magazine

- Researchers open the door to new schizophrenia treatments
- Self-management solutions to lower back pain
- NeuRA is combating disease by exploring the brain
- Colour Your Hair for
 Mental Health 2020

Australian icon Rhonda Burchmore champions NeuRA's brain research

Message from our **Professor Peter** Schofield AO



made some momentous progress on our research here at NeuRA despite the challenges posed by COVID-19. We have successfully adjusted

It's hard to believe that

the end of this strange and tumultuous year has already arrived. In 2020, we have

to working in pandemic conditions, with staff initially working remotely and now returning onsite so we can continue our studies and clinical trials with research participants in COVID-safe ways. Thanks to these new procedures, participants are once again visiting NeuRA to help us tackle some of the most important health issues faced by Australia.

I would like to thank you sincerely for your continued support throughout this challenging time. Your donations and interest in our discoveries have been invaluable and are imperative to our ability to keep delivering the neuroscience research that leads to discoveries, treatments and cures.

In this issue of NeuRA Magazine we examine NeuRA's activities to prevent neurodegeneration. Renowned entertainer and Australian icon, Rhonda Burchmore, tells her story of how neurodegenerative diseases impacted her family, and how NeuRA's work gives her hope.

We also shone a torch on Mental Health in October with our recent discoveries in schizophrenia and in anxiety and resilience, and through NeuRA's community fundraising event, Colour Your Hair for Mental Health. Participants in this year's event raised a phenomenal \$118,815, which will further support NeuRA's research into the mental health conditions that affect so many. I joined the challenge to raise awareness and funds for this important cause, dyeing my hair purple!

It is through your generosity and commitment that we are able to make such progress and help so many in our community. I hope you have a wonderful and safe summer and that we might have a more normal 2021.

Prof Peter R Schofield AO FAHMS PhD DSc CEO



one of her workplace resilience webinars

Boosting mental resilience during Mental Health month

NeuRA's anxiety and resilience expert, Dr Justine Gatt, gave presentations in pubic webinars for Mental Health Month in October to share her latest findings on how we can all build our resilience against mental illness.

Hundreds of Australians tuned in to these sessions to learn how they can improve their ability to adapt to life stressors, which could help them to prevent mental illness from occurring.

Dr Gatt spoke about her latest findings on mental health, and outlined that it is common for many people to fluctuate between being mentally well and mentally ill at different times throughout their life.

Her research has found that even though some people are naturally more psychologically resilient than others, all of us can build up our own resilience.

One of the most important tips she shared during the webinar was on the idea of protecting our ownworth. This means being more secure in who we are as people, what we stand for, what our personal values are, and being authentic to ourselves across different situations. This knowledge enables us to keep our personal boundaries strong, and lessons the likelihood that external problems will get us down.

Dr Gatt's webinars were warmly received, with attendees expressing gratitude for her advice and tips on how we can protect our mental health.

To see one of Dr Gatt's presentations, please visit: https://youtu.be/ge6Wlcah40s

Researchers open the door to new schizophrenia treatments

NeuRA has made a new discovery that could challenge the fundamental assumptions people have about schizophrenia.

Schizophrenia is one of the most severe and disabling mental illnesses, affecting around one percent of Australians.

Current treatments for the disorder only address psychotic symptoms some of the time, and do not restore people to their full potential, which leaves many unemployed and alone.

"This research opens up a new avenue for treatment, supporting the notion that blocking neuroinflammation may improve some of the disordered thinking and behaviour, people with schizophrenia experience."

But a newly published study by NeuRA's Professor Cyndi Shannon Weickert may help to change this. Her team has uncovered biological changes that occur where the core of the pathology resides, in the home of the dopamine neurons.

Why is this so important?

The study found evidence of increased blood cells in the dopamine-producing region of the brain.

These newly discovered blood cells found in people with schizophrenia in the dopamine-



producing region appear to be of the type that could damage brain tissue.

One intriguing new possibility is that these blood cells contribute to the overactivity of dopamine neurons, which is the neurobiological basis of the hallucinations and delusions that people with schizophrenia experience.

The finding suggests that rogue blood cells could be to blame for the most disturbing schizophrenia symptoms.

"We have shown for the first time that blood cells, called macrophages, are increased in the midbrain of people with schizophrenia, suggesting that they could be interfering with normal brain function," said Professor Shannon Weickert.

"This research opens up a new avenue for treatment, supporting the notion that blocking neuroinflammation may improve some of the disordered thinking and behaviour, people with schizophrenia experience."

Next, researchers will examine more precisely if and how these immune cells are damaging dopamine neurons, with the aim of finding treatments that can prevent blood cells from damaging brain tissue or from even entering the brain in the first place. **Feature Story**







Rhonda's family did not have any warning about any of the diseases that would take her father, mother and sister.

Australian icon Rhonda Burchmore champions NeuRA's brain research

Rhonda Burchmore is an Australian entertainer who has been dazzling audiences for more than 35 years.

At the beginning of 2020, Rhonda generously selected NeuRA as her charity of choice while she was a contestant in the hit television show "I'm a Celebrity... Get Me Out of Here!"

During her time in the African jungle, Rhonda spoke about why she supported NeuRA. Rhonda's hope was that she could provide awareness and funding to a rare neurodegenerative disease called Multiple Systems Atrophy or MSA.

- In 2015, MSA took the life of Rhonda's sister, Michelle.
- "It's such a cruel, cruel disease," Rhonda said.
- "There was a slow breakdown, Michelle couldn't use her hand and then she had difficulty with walking. Eventually she couldn't talk and even swallowing became tough."

What Rhonda didn't tell viewers of the show, is that neurodegenerative diseases - dementia and Parkinson's also took the life of her mother and father. In fact, over the course of 10 challenging years, Rhonda watched as her father, sister and mother all battled incurable illnesses that would either rob them of their mobility – or their mind.

- "We were such a healthy family. We had no warning about any of the three diseases that would take my dad, my mum and my sister," Rhonda said.
- Rhonda was by their side until she lost each of them.
- "Trying to put on a happy face for the public while my family was suffering was incredibly hard for me," she said.



"We were such a healthy family. We had no warning about any of the three diseases that would take my dad, my mum and my sister," Rhonda said.

"There'd be times when I would be about to go on stage and I'd get a phone call from one of the doctors who told me something troubling. But I had to keep the show going because I couldn't go and tell a couple of thousand people that 'I can't go on' because of family tragedy."

NeuRA's researchers are working to prevent neurodegenerative diseases like these from ravaging families like Rhonda's. One of the biggest challenges with these types of illnesses is that they often appear completely unannounced.

This is why it is so important that we work towards better understanding and identifying



Your donation to NeuRA supports ground-breaking research into incurable neurodegenerative diseases such as dementia, Parkinson's Disease and MSA.

these diseases. Greater knowledge will help us to prevent, treat and cure these illnesses.

NeuRA's work in this field is being led by our state-of-the-art facility, the Sydney Brain Bank.

Led by Dr Claire Shepherd, researchers at the Sydney Brain Bank are investigating what causes neurodegenerative diseases like MSA, and what we can do to prevent them from developing.

The Sydney Brain Bank currently stores over 650 brains that have been donated by members of the public. The tissue samples from these donations are used by scientists throughout the Australia to investigate dementia, Parkinson's disease, MSA and other illnesses.

"We established the Sydney Brain Bank at NeuRA in 2009 and it is now one of Australia's leading facilities in brain research," said Dr Shepherd.

"The Sydney Brain Bank is a vital resource for global research, and has facilitated over 300 studies since it was created."

Unfortunately, future funding of the Sydney Brain Bank is in doubt. One of the facility's main funding sources has dried up due to the impact of COVID-19.

"We are working tirelessly to secure new funding so that we can continue to research neurodegenerative diseases. Our hope is to create a world where families like Rhonda's don't go through the hardship and pain caused by these incurable illnesses," said Dr Shepherd.



Researchers will discuss common responses to back pain with participants.

Self-management solutions to lower back pain

Back pain is extremely limiting and disabling, and can prevent people from participating in daily life activities.

About 20 percent of people in Australia experience back pain, and approximately one third experience chronic low back pain. The pain is deemed chronic if it extends beyond 12 weeks. For many, it can last years or even a lifetime.

Back pain is a massive health burden on the nation, with Australians spending a staggering \$8 billion to treat the condition each year.

A common response to back pain is to seek medical treatment, such as consults with physios and general practitioners.

But NeuRA researchers and international experts say the most effective method of recovery is self-management, which is the focus of the new study led by Associate Professor James McAuley.

As head of NeuRA's Centre for Pain IMPACT, A/Prof McAuley's goal is to debunk the popular belief that professional help is the best method of treatment to low back pain.

His team is rolling out a project that uses social media to deliver information to the public about how to most effectively recover from this type of pain.

The team will examine contemporary conversations on social media posts to better understand common behaviours around lower back pain. They will also review public attitudes toward the expert recommendations people commonly receive while seeking treatment.

"It's important we understand whether people are more inclined to follow or ignore recommended methods of recovery. This is why it is vital that we investigate people's reactions to the self-management health advice that they receive," A/Prof McAuley said.

The next stage of this research involves developing targeted messaging that provides the best possible advice about how people with low back pain can self-manage their treatment.

This messaging will involve advice from a wide array of health professionals, such as physiotherapists, psychologists, orthopaedic surgeons and rheumatologists.

> The findings from this study could also help clinicians to deliver education-based interventions that are quick, effective and cost-effective. The team hopes the results will be ready later next year.

NeuRA is combating disease by exploring the brain



Brain mapping

NeuRA's research involves examining brain structure and function in people of all ages. Our research team has produced

'atlases' that enable scientists and medical practitioners to see where in the brain structural changes occur as disease progresses.



Brain imaging

Brain activity is assessed using our NeuRA Imaging facility, which features the latest in MRI scanning technology. This centre is being used to examine the brains of NeuRA's research

participants during their lifetime.

Brain donations and research

The Sydney Brain Bank collects and preserves brain tissue after people pass away. Researchers

from NeuRA and internationally use this tissue to analyse and identify biomarkers and risk genes for neurological diseases.

Find out more about the Sydney Brain Bank at https://www.neura.edu.au/ scientific-facility/sydneybrainbank/

DONATION FORM

Yes, I would like to donate to research at NeuRA All gifts over \$2 are tax deductible

Title:
First Name:
Surname:
Address:
Suburb:
State:
Postcode:
Phone:
Email:

How I choose to give my gift:

Please accept this one-off gift to support research at NeuRA

I would like to invest in the future and become	
a Discovery Partner with a regular donation of	

\$ ______ monthly / quarterly (please select)

	\$50		\$100		\$250		or			
	A cheque payable to the NeuRA Foundation is enclosed OR									
	I wish to make my gift by credit card:									
	Visa		Mastercard		American Express			Diners		
ar	d No:									
Expiry Date:										
Cardholder's Name:										
Cardholder's Signature:										

If you do not require a receipt, please tick here

Please send me:

Details about how I can support NeuRA in my Will

- Mail this coupon in the reply paid envelope
- Call us on 1300 888 019 to make a donation over the phone
- Make a secure online donation at neura.edu.au/donate

A message from the NeuRA Foundation: The NeuRA Foundation may co-operate with other like-minded reputable Australian charities to promote our work to our respective donors. If you'd prefer that NeuRA does not share your information with other charities, please phone us on 1300 888 019, email us at foundation@neura.edu.au or write to us using the enclosed envelope.

Thank you for generously supporting our research into diseases

Neuroscience Research Australia Foundation, PO Box 1165, Randwick NSW 2031 ABN 57 008 429 961

Henriss is one of NeuRA's top fundraisers.

Dee

NeuRA has been blown away by the enthusiasm of Australians who 'got their colour on' in October to raise funds for mental health research.

Over 1,150 people signed up to this year's campaign and raised more than \$118,800!

From wigs and streaks to entirely new hairdos, the effort people put in to generate support for NeuRA's *Colour Your Hair for Mental Health* campaign has been nothing short of exceptional.

One of our top community fundraisers is Dee Henriss who works at St Vincent's Hospital and knows first-hand how integral research is to health.

"I decided to take part because I feel that research is so important in order to find ways to treat mental illness. Without research we have nothing," Ms Henriss said.

"I myself am being treated for a number of mental health issues

Colour Your Hair for Mental Health 2020

and I know that without research, this would not have been possible," she said.

With the help of her colleagues, family and friends, Dee managed to raise over \$2,200 in funds as well as patients' spirits and awareness of mental health in general.

"I've had so much fun with my blue 'do. Staff and patients in the hospital stop and comment and ask about it, which opens the door to start the discussion," Ms Henriss said.

With the help of her colleagues, family and friends, Dee managed to raise over \$2,200 in funds as well as patients' spirits and awareness of mental health in general.

Leading Australian aged care service provider, the Royal Freemasons' Benevolent Institution (RFBI) also signed up and encouraged their staff to participate and post their stories.

RFBI was the highest fundraising team with over \$7,490 raised. They were supported by a wide array of people, including Olympian, lan Thorpe, and the Minister for Home Affairs, the Hon Peter Dutton MP. Funds raised through *Colour Your Hair for Mental Health* will help researchers to improve the knowledge and treatment of mental illnesses, such as anxiety, depression, schizophrenia and bipolar.

"My sincere thanks go to everyone who coloured their hair in support of mental health research," said NeuRA CEO, Professor Peter Schofield AO.

"Thanks to your bravery and generosity, NeuRA is better positioned to relieve the distress experienced by those living with these disabling conditions and the people who treat them," he said.

As part of the campaign, Professor Schofield dyed his hair lavender purple. "It's a fantastic way to express the importance of what often remains an unspoken and stigmatised matter," Professor Schofield said.



Thank you for your support

If you wish to update your preferred communications from NeuRA, please call 1300 888 019.

NeuRA (Neuroscience Research Australia) Foundation T 1300 888 019 F +61 2 9399 1082 ABN 57 008 429 961

Margarete Ainsworth Building 139 Barker Street, Randwick NSW 2031 Australia

www.neura.edu.au

