



Canterbury Medical Research Foundation

Research Saves Lives

Research News June 2016

Research Profile - Dr Julia Rucklidge

Julia is a Professor of Clinical Psychology in the Department of Psychology at the University of Canterbury, Christchurch, New Zealand. Originally from Toronto, Canada, she did her undergraduate training in neurobiology at McGill University in Montreal. She then completed a Master's and PhD at the University of Calgary in clinical psychology followed by a two year post-doctoral fellowship at the Hospital for Sick Children in Toronto. In 2000, she joined the Department of Psychology where she teaches child psychology in the Clinical Psychology Programme and more recently, introduced the topic of Mental Health and Nutrition into the wider psychology programme.

Her interests in nutrition and mental illness grew out of her own research showing poor outcomes for children with significant psychiatric illness despite receiving conventional treatments for their conditions.

In the last decade, she has been running clinical trials investigating the role of broad-spectrum micronutrients in the expression of mental illness, specifically ADHD, Bipolar Disorder, anxiety and stress and PTSD associated with the Canterbury earthquakes.

Julia has over 100 publications and was the recipient of the Ballin Award 2015 from the NZ Psychologist Society, an award that recognises notably significant contributions to the development or enhancement of clinical psychology in Aotearoa New Zealand. She was also named in the top 100 Most Influential Women in 2015 by Westpac Trust. Her 2014 TEDx talk <https://www.youtube.com/watch?v=3dqXHHCc5IA> has been viewed over 175,000 times. She is passionate about helping people find alternative treatments to medications for their psychiatric symptoms. Her current research interests can be found at: <http://www.psyc.canterbury.ac.nz/people/rucklidge.shtml>



✦ Research Profile - Dr Julia Rucklidge cont...

Julia tells us about her research, which we will be supporting with our 2016 Wine and Art Auction.

Research over the last hundred years has exposed the complex array of risk factors that exist for the various types of mental illness. There was a study published that showed that fresh vegetables and fruit are less nutrient rich than the produce from 50 years ago. If this reduction in nutrient quality is widespread, even if one chooses to eat foods perceived as nutrient dense, they may not be getting as rich a nutrient diet as we think. Further, add in possible genetic risks that may result in poorer processing or utilization of the nutrients that are consumed, then only a dietary change may not be sufficient for everyone.

One solution to this problem would be to not only change diet but also supplement with vitamins and minerals to provide the body with the full complement of nutrients required for the brain to function effectively and optimally. Research being conducted at the Mental Health and Nutrition Research Laboratory under the Directorship of Prof Rucklidge, is building an evidence base that demonstrates the benefits to people with mental illness of taking additional nutrients. Professor Rucklidge's research is part of an exciting and rapidly growing worldwide scientific effort, with the potential to bring great benefit to people who suffer from mental illnesses.

Dr Rucklidge published the first randomized, double-blind, placebo-controlled trial examining the effects of broad-spectrum micronutrient combinations on attention-deficit/hyperactivity (ADHD) disorder. Her 2014 study, published in the British Journal of Psychiatry, of 80 adults with ADHD provided strong evidence that micronutrients produced greater changes than placebo in both hyperactivity/impulsivity and inattention on rating scales completed independently by patient subjects and by family observers. This work was then followed with an extension, in which she re-examined these adult subjects over the course of one year, and demonstrated that the clinical effectiveness of this treatment remains strong and undiminished over the course of one year of treatment.



Another important area of Dr. Rucklidge's contributions concerns the management of stress reactions following the aftermath of natural disasters. She conducted the first controlled studies to demonstrate that providing broad-spectrum mineral-vitamin combinations is able to reduce the anxiety and stress of individuals who lived through the earthquakes in Christchurch. These studies, subsequently confirmed by other investigators, raise the possibility of an inexpensive and innovative public health intervention applicable to normal populations following natural disasters.

What Professor Rucklidge is now focusing on is a vitally important step: evaluating the potential for broad spectrum micronutrients to help young people. Children are the most vulnerable individuals to the worrisome long term effects of medications. In the pediatric area, there is already a large body of literature that shows that children benefit cognitively from nutrient supplementation; however, less is known about mental health benefits. This is one aspect of mental health that Professor Rucklidge is studying: how to help children with mental health challenges return to normal function and avoid a lifetime of psychiatric medication. Focusing on the very common diagnosis of Attention-Deficit/Hyperactivity Disorder (ADHD), her lab has already published a feasibility pilot study in children, and is now in the midst of a randomized placebo-controlled trial in children.

ADHD is a chronic illness that affects 3-7% of children. It is associated with many other psychiatric conditions and is a risk factor for continued mental and physical health problems into adulthood. Her current study is using gold standard methodology to explore whether micronutrients can improve ADHD symptoms in 100 children 7-12 years alongside investigating possible biomarkers associated with outcome, including epigenetic and microbiome factors. The results have the potential to change our way of conceptualizing this chronic condition. Other avenues being explored in her lab include: the impact of nutrients on insomnia, post menstrual symptoms and assistance with quitting smoking.

CMRF is delighted to be supporting Julia in this important work.

Pilot of Methods to measure unmet secondary healthcare needs

Research Group: Phil Bagshaw, Sue Bagshaw, Chris Frampton, Robin Gauld, Terri Green, Andrew Hornblow, Antony Raymont, Ann Richardson, Carl Shaw, Les Toop.

Following the New Zealand Health Reforms of the 1990s it was clear that rationing of secondary elective healthcare services was one of the adopted strategies, which were justified by the claim that healthcare costs were rising out of control. Subsequent analysis has shown this claim was incorrect.¹ A consequence, however, was an increase in the unmet need for hospital treatment for elective, routine and non-life threatening disorders.²

The Canterbury Charity Hospital Trust (CCHT) was established in 2003 with the objective of offering treatment to as many Cantabrians as possible who find themselves unable to access elective medical and surgical care, without medical insurance, not qualifying for ACC support and unable to pay for private care. The CCHT is staffed almost exclusively by volunteers and funded solely by public charitable giving. It opened a day hospital in Christchurch in 2007. This has subsequently expanded and currently offers a wide range of surgical, dental, counselling and endoscopic services. Although between 1,000 and 1,500 treatments per year are provided it is unable to meet all the growing unmet need.^{2,3} Beyond providing the above health services, the CCHT has become increasingly focused on assessing the quantity, nature and underlying causes of this unmet need in New Zealand.

A number of countries have appreciated the utility of measuring their unmet elective healthcare needs as the basis for deciding on their level of healthcare funding and have undoubtedly done so beneficially. What remains in question, however, is the best method for measurement and whether it might differ between disparate healthcare systems around the Western world. With this in mind, CCHT put together an expert academic group and secured funding from the CMRF, the Association of Salaried Medical Specialists and other health trusts to pilot and compare four methodologies.

The group compared the computerized recording of cases of unmet need as they presented to their GPs, with three methods of random population sampling by questionnaire: online, by telephone, and face-to-face. The GP section was done with the assistance of Pegasus Health and Auckland PHOs. The survey questionnaire was developed by the group to suit New Zealand circumstances but contained some internationally standardized questions. The three methods of population sampling were done in Christchurch and Auckland by the company Research First. The study was completed in March and the findings are currently being prepared for publication.

From the results of the study, and the experiences gained from the piloting process, the group is now aware of the significant level of unmet need and some of its underlying causes. They are therefore in a strong position to define the best methodology for a national survey to measure it, with adequate precision and in a cost-effective way. It is now the group's intention to seek to secure national funding for a nation-wide survey.

The group believes such an important survey should be carried out regularly and conducted by an independent group of experts using transparent processes. The data generated would then better inform the public about the performance of the public healthcare system, in terms of what work is being done and not being done, and assist advocacy for increased healthcare funding where it might be necessary. It would aid government and health planners to determine the consequences of their policies and processes. It could also facilitate better international comparisons with other healthcare systems, thus enabling our health system to learn from their successes and failures.

CCHT and the research group are very grateful to the CMRF and the other involved funders for their generous support.

References:

1. Keene L, Nicholls G, Bagshaw P, Rosenberg B, Frampton C, Powell I. Funding New Zealand's public healthcare system: Time for an honest appraisal and public debate. Accepted for publication NZ Med J. (In press).
2. Bagshaw PF, Allardyce RA, Bagshaw SN, Stokes BW, Shaw CS, Proffit LJ, Nicholls MG, Begg EJ, Frampton CM. Patients "falling through the cracks". The Canterbury Charity Hospital: initial progress report. NZ Med J. 2010;123:58-66.
3. Bagshaw PF, Maimbo-M'siska M, Nicholls MG, Shaw CG, Allardyce RA, Bagshaw SN, McNabb AL, Johnson SS, Frampton CM, Stokes BW. The Canterbury Charity Hospital: an update (2010-2012) and effects of the earthquakes. NZ Med J. 2013;126:31-42.
4. Gauld R, Raymont A, Bagshaw PF, Nicholls MG, Frampton CM. The importance of measuring unmet healthcare needs. NZ Med J. 2014;127:63-7.

NZBRI Update

As usual, the staff and researchers at the NZ Brain Research Institute have been hard at work with their research projects and the fundraising team and Friends of the BRI committee have been ensuring the work continues with a steady stream of fundraising events raising much-needed dollars.

The Parkinson's group is the largest research team at NZBRI, with approximately 25 staff and students working on the disorder. The group is led by consultant movement disorders neurologist, Professor Tim Anderson, and neuropsychology specialist, Professor John Dalrymple-Alford. Their particular focus in recent years has been on the progression of cognitive impairment and dementia.

Much of their activity revolves around a large longitudinal study of approximately 200 local people with Parkinson's and 50 controls, which has been running since 2007. Each person is given extensive neuropsychological assessment, clinical evaluations, eye movement testing, and, where possible, MRI or PET brain imaging.

This study provides a platform for many other more targeted investigations, such as of caregiver burden, functional imaging, emotional effects on motor control, and epidemiology.

MRI Imaging is a very important part of what makes the NZBRI's research focus so unique. MRI stands for Magnetic Resonance Imaging. MRI is an exquisite imaging technique that uses powerful magnets and radiofrequency waves to create detailed images of the body. One of the many benefits of MRI is that it uses no ionizing (damaging) radiation, making it safe and non-invasive. Also, by slightly adjusting the initial parameters of the scan, we can create a multitude of different image types that can tell us about different aspects of brain health.

The Canterbury Medical Research Foundation (CMRF) has worked with Christchurch Radiology Group to enable researchers to have access to a powerful General Electric (GE) 3 tesla MRI scanner. This scanner was the first of its kind in New Zealand, and is located in the same building as the New Zealand Brain Research Institute. The increased magnetic field of this 3T scanner over the current generation of 1.5T scanners gives stronger signals, enabling scans to be performed faster, at higher resolution, and with better contrast.

Our goal is to promote perform ground-breaking neuroimaging research. Researchers from the New Zealand Brain Research Institute work closely with neurologists, radiologists, psychologists, psychiatrists, paediatricians, physicists and basic scientists in this extremely cross-disciplinary environment.

On the Fundraising front, both NZBRI fundraising staff and the FBI have great events either already held this year, or in planning stages. The immensely popular Opera Meets Art event in March as a sell-out and will be repeated next year at the Christchurch Art Gallery. The Great Brain teaser quiz night is set for June 30th and the ever-popular FBI Golf Tournament is fast becoming a 'must-attend' for businesses around the city.



New Grants Application Portal Launched

In March of this year, we launched a new online grant application system for our researchers to use. The “Portal” as it is now known, is a vast improvement on our previous systems and allows us to gather important longitudinal data about research trends and more operational aspects of the grant application system, over time.

The Portal is in use by the Auckland Medical Research Foundation (AMRF) and the Maurice and Phyllis Pykel Charitable Trust, both of which make significant grants to the research sector. The Portal model was gifted to us by the AMRF so our thanks go to Kim McWilliams and her team for so generously sharing their resource with us.

Not only is the application system improved and in most cases, sped up, for researchers; the assessment ‘end’ of the process is now far easier for our Scientific Assessment Committee and the referees who are nominated to review all applications.

This is a great example of what can be achieved in the non-governmental (NGO) sector when charities work together toward a common goal.

We hope this marks a new era of cooperation, information sharing and resourcing between our two Foundations, the two largest regional funders of medical research in the country.

Great speakers for your club or association

The Foundation, along with the NZ Brain Research Institute, has a team of entertaining and interesting speakers available to speak at your Service Club, Association or smaller groups such as ladies luncheons or small business groups. The team includes Chief Executive Kate Russell, Research Director Dr Michael MacAskill, Parkinson’s Lead Researcher Professor Tim Anderson and a list of our currently and previously-funded researchers from both Otago and Canterbury Universities.



If you would like to book us to come as your next speaker, please call Kate on 3531 243 or email kate@cmrf.org.nz

CMRF Applauds increase in Research spending

The Foundation welcomes the announcement from the NZ Government that health research funding will be boosted by \$97 million over the next four years.

Science and Innovation Minister Steven Joyce and Health Minister Jonathan Coleman made the pre-Budget announcement in mid-May.

“The annual amount available for health research through the Health Research Council [HRC] will increase by 56 per cent over four years, from \$77 million in 2015/16 to \$120 million in 2019/20,” Mr Joyce said.

“The HRC supports research that leads to improved health outcomes and more effective delivery of healthcare for New Zealanders, and research that brings economic gains for New Zealand.”

Health Research spending has effectively been progressively eroded for some years and we are delighted with this new practical focus on medical research outcomes in New Zealand.



Supporting Summer Students

Each year, the Foundation supports both Canterbury and Otago Universities by funding Summer Studentships, for students to get a taste of real-world research teams over their Christmas break. These invaluable opportunities are often a time for younger students to cement their special interest to go forward with at University and we are proud to support this worthwhile programme.

If you are interested in helping us to fund these scholarships (we provide several at each university) the commitment for Canterbury is \$2500 per student and Otago \$5000 per student. Contact Kate if you'd like to know more on 3531243.

Completed Projects 2016

Congratulations to these CMRF-funded projects that have completed and submitted their final reports in the first quarter of 2016.

Dr Katie Douglas – Effect of Glucocorticoid administration on brain function in post traumatic stress disorder

Dr Daniel Myall – Optimally predicting risk of cognitive decline in Parkinson's disease

Dr Suetonia Palmer – An Evidence framework for protecting kidney function

Dr Jacqui Keenan – Unravelling the host innate response to enteral nutrition

Dr Tracy Melzer – MRI to predict dementia in Parkinson's disease

You can read the final reports for these projects in full by visiting <http://www.cmrf.org.nz/Projects>

We need your help!

With \$1,400 in prizes and limited to 1000 tickets, the CMRF raffle tickets are a breeze to sell. Prizes include a stunning Jo Malone candle, Pierre Cardin luggage and a Tony & Guy hair care gift basket. Proceeds will aid Professor Julia Rucklidge of Canterbury University with her research into the significant role played by nutrition in mental health issues. The raffle will be drawn at the Canterbury Medical Research Foundation Wine & Art Auction on Saturday 29th October. Tickets are \$5 each or a book of five for \$20. If you are able to sell raffle books on our behalf or would like to purchase some yourself, please contact kimberly@cmrf.org.nz

YES, I WISH TO SUPPORT THE CANTERBURY MEDICAL RESEARCH FOUNDATION

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