

# Neurological Foundation

## Rich Easton



# The Neurological Foundation

- > Established in 1971
- > Funding brain, nerve and spine research for 50 years
- > Over 700 neurological conditions, affecting **1 in 5 Kiwi's**
- > Receive no government funding, all from generosity of Kiwi's



Funded more than \$51 million over 51 years

Ranges from basic science to clinical research into conditions such as:

- > Stroke
- > Parkinson's disease
- > Alzheimer's disease
- > Dementia
- > Huntington's disease
- > Motor neuron disease
- > Spinal cord injury
- > Traumatic Brain Injury
- > Brain Cancer
- > Autism
- > Multiple Sclerosis
- > Mental illness
- > Migraine
- > Epilepsy



- > The Foundation has funded the **Neurological Foundation Human Brain Bank** since 1993
- > The Foundation has funded Professor Alan Barber as the **Chair of Clinical Neurology** since 2008
- > In 2010 the Foundation raised >\$3 million to ensure retention of neurosurgical services in Dunedin
- > The Foundation has put up more than \$1.3 million to ensure researchers work wasn't impacted by COVID-19

# Keeping your brain healthy



# Maintaining a Healthy Brain

- > A balanced diet, with all things in moderation is good for the body & brain
- > Regular exercise promotes cardiovascular health & a sharp brain
- > Puzzles such as cross-words and brain teasers is also a good way to keep the brain active



# Maintaining a Healthy Brain

- > Maintaining a social network with friends and family has been found to be beneficial to keeping your brain healthy
- > The mental agility of learning new topics, skills and crafts is a good way to keep the brain active
- > The World Health Organisation has just published a paper on optimising brain health across the life course
- > <https://www.who.int/publications/i/item/9789240054561>



# Neurological Foundation Human Brain Bank





# The History of the Neurological Foundation Human Brain Bank

- > Established in 1993 by Distinguished Professor Sir Richard Faull
- > Initial funds from the Neurological Foundation to purchase a minus 80-degree freezer
- > The only human brain bank in New Zealand, housing over 800 brains
- > First bank to get tissue from families & the brains collected very soon after death



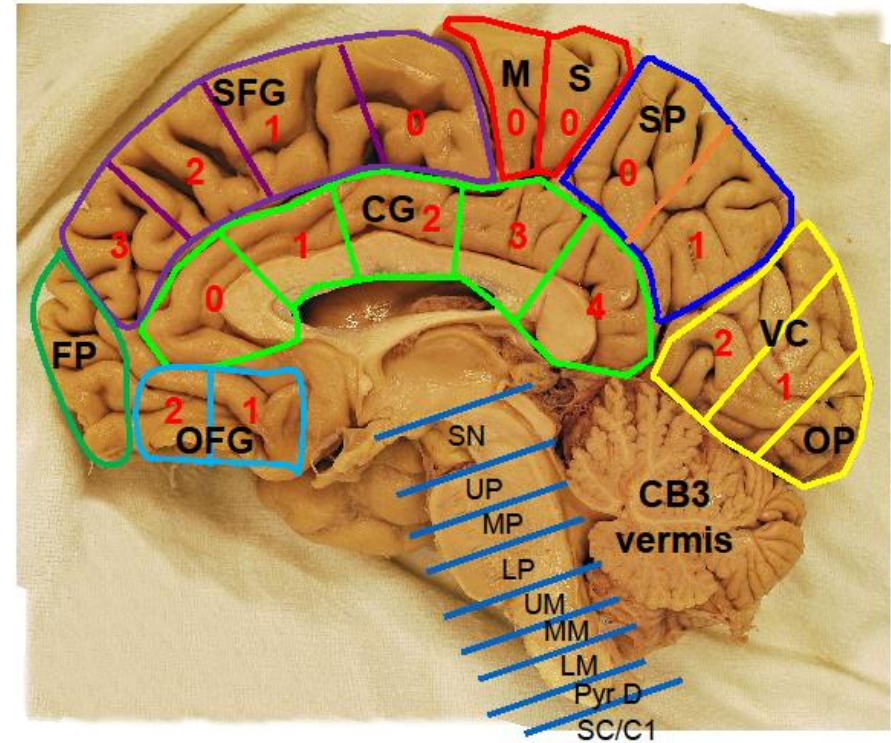
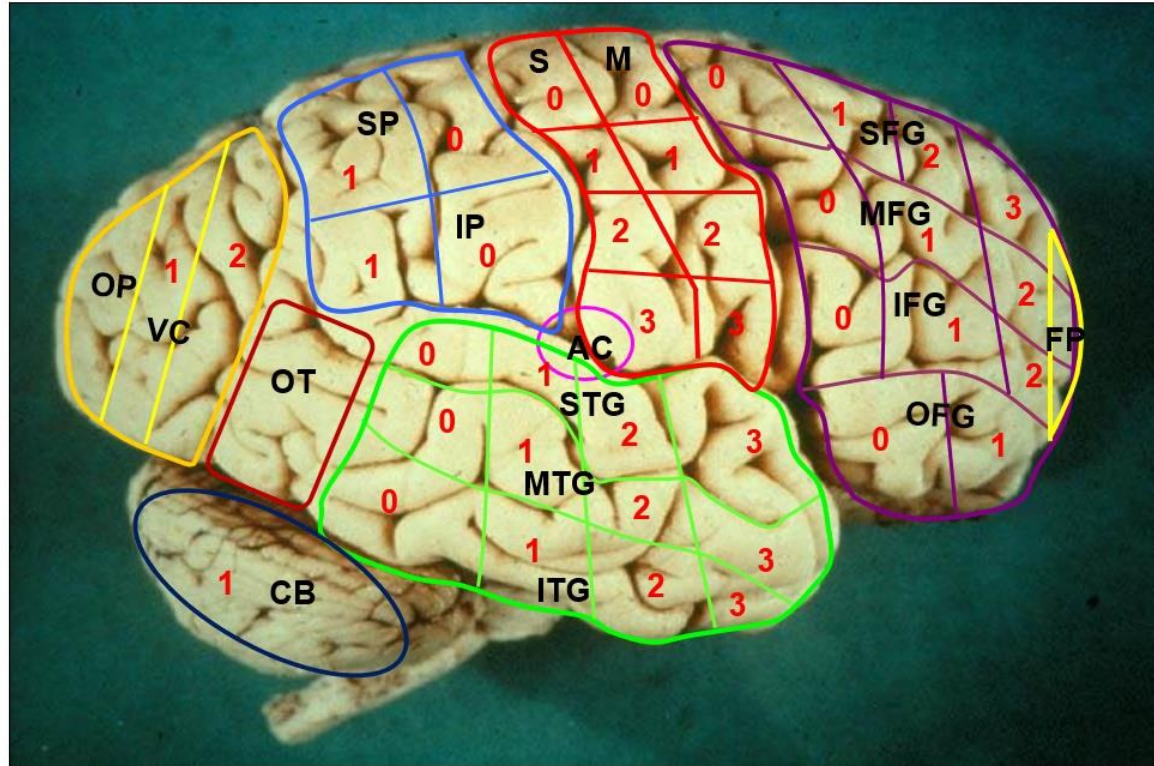
# Neurological Foundation Human Brain Bank



- > Professor Maurice Curtis is the Deputy Director
- > Five years of funding allows the bank to employ a team to manage the brain tissue
- > We have committed over \$428,000 per year
- > The tissue collected is actively used on a daily basis for many different types of research



# How the donated brain is dissected



# Neurological Foundation Chair of Clinical Neurology



# The Chair of Clinical Neurology

- > Established in 2008, funded by the Neurological Foundation, currently 5 year, \$436,000 pa commitment
- > Professor Alan Barber leads a team working in Auckland Hospital with patients
- > Focus on stroke including clot retrieval surgery, a breakthrough stroke treatment which is saving lives

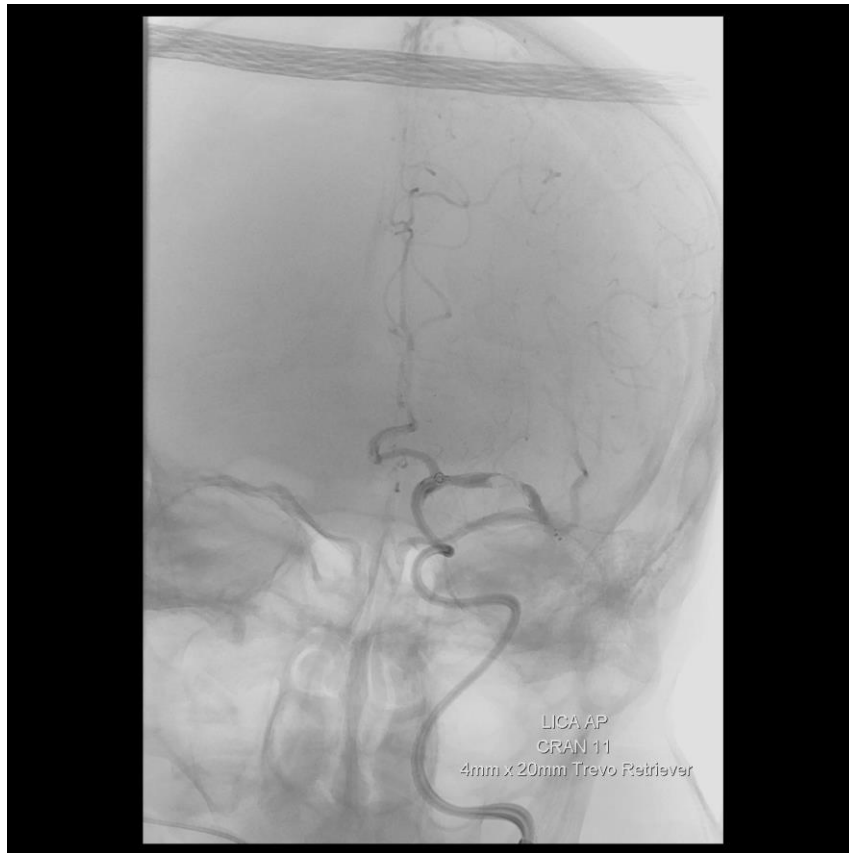


# Chair of Clinical Neurology Funding

- > Alan's team are perfecting clot retrieval at Auckland Hospital, 24 x 7
- > Able to cover from Kaitaia to Taranaki with helicopter assistance, & have worked with Canterbury & Wellington to replicate practice
- > Capability now covers the majority of NZ flowing to these three centres
- > Alan's team are also working on post stroke rehabilitation recovery, focus on targeted recovery of arm and leg movement with patients



# World Class Clot Retrieval Process



Before clot retrieval process



After clot retrieval process



# Save a life by remembering FAST





# Recently Funded Research



# Professor Cathy Stinear

- > Leads a team focused on prediction & promoting recovery after stroke
- > Work closely with Auckland City Hospital patients in days following a stroke
- > Developed algorithm for hand / arm function & walking after stroke for re-hab
- > Implemented into clinical practice within 2 years of research in NZ / overseas



# Professor John Reynolds

- > Principal investigator at the Brain Health Research Centre in Dunedin
- > Originally a neurologist with a passion for Parkinson's research, now fulltime researcher
- > Current funded work is exploring drug delivery approaches for Parkinson's disease
- > Goal is to improve stability of treatments for people, by targeting drug delivery to specific areas of the brain via ultrasound



# Professor Maurice Curtis

- > Leads Research Groups in the Centre for Brain Research (& co Director of Brain Bank), Auckland
- > Currently funded work is a project looking at pre-symptomatic biomarkers for dementia
- > Studying people with genetic mutations that will cause dementia in the future, part of the NZ Genetic Frontotemporal Dementia study
- > Working with people many years before onset of dementia to look for early changes in biomarkers
- > Rationale is biomarkers will identify dementia in its earliest stages in the general population, helping to better understand if early interventions are possible



# Professor Nick Draper

- > Funded in June 2021 to look at “collision in junior rugby – incidents and impacts of headgear”
- > Three quarters of active rugby in NZ is played by juniors, with potential increase of risks from concussion
- > Concussion during brain growth years poses significant long term health issues later in life
- > Research focus on assessing potential of World Rugby approved headgear to reduce collision forces for better athlete protection
- > Collaboration with Canterbury Medical Research Foundation, both girl and boy rugby research



# Dr Tracy Melzer

- > He is a Research Manager at the NZ Brain Research Institute in Christchurch
- > His research focuses on development & application of Magnetic Resonance Imaging (MRI) techniques
- > This is used to advance our understanding of cognitive decline in Parkinson's disease



# Dr. Akshata Anchan



- > Akshata Anchan just finished her PhD in Brain Metastasis of cancer cells
- > Her research focused on how cancers that form in other areas of the body migrate to the brain
- > Identified molecules that allow cancer cells to interact with & damage the Blood Brain Barrier & how cancer survives in the brain once it gets inside
- > Now has a First Fellowship to continue the research

# How we grant funds





# Funding Process

All applications are reviewed before funding is granted:

- > The Neurological Foundation
- > The Scientific Advisory Committee (SAC) & Personal Awards Committee (PAC)
- > International Peers
- > Our Board (Council)

Committee is made up from a pool of 30 different members:

- > Neurologists
- > Brain Surgeon
- > Psychologists
- > Neuroscientists

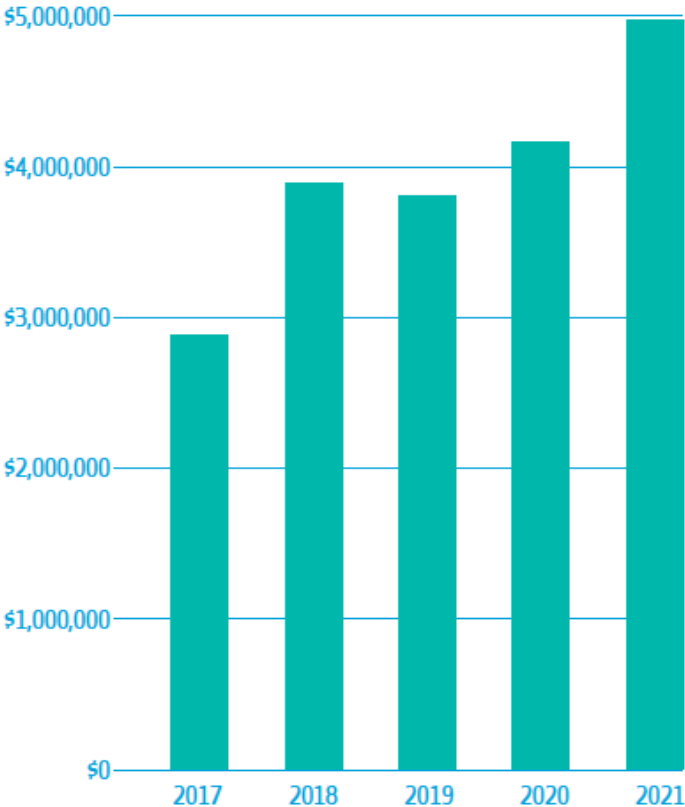
They meet in June & November to review all the applications



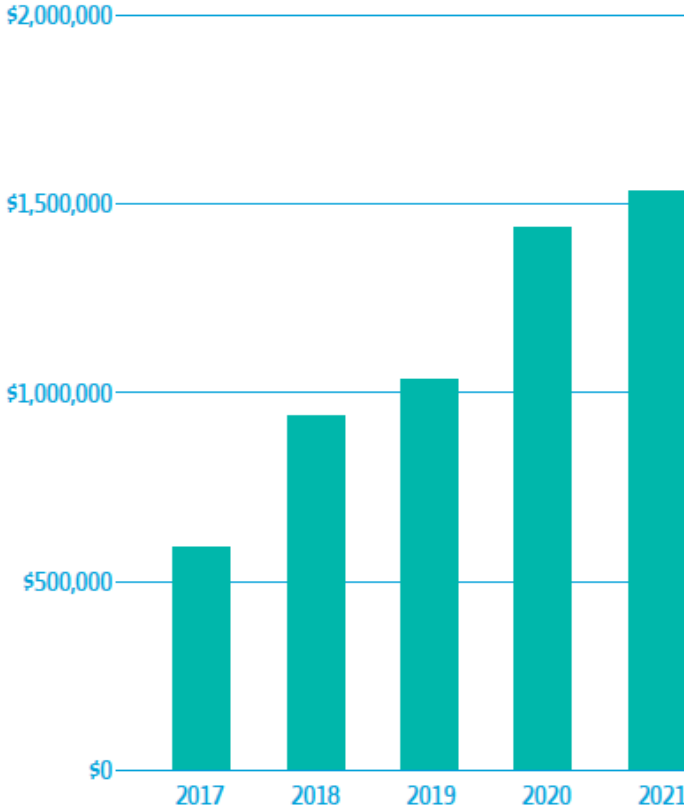
# Funding

In the last 5 years we have funded around \$25,000,000 for research

TOTAL GRANT FUNDING AWARDED



TOTAL FELLOWSHIP FUNDING AWARDED



# COVID-19



## Impacts on research

Over 2 years impacted over 90 of our funded projects

This is more than \$11M of inflight research

Almost \$1.5M COVID-19 relief fund enabled so far

Goal – don't let the vital research get disrupted

# Want to get involved



If you wish to hear more about the Neurological Foundation and the research being funded you can:

- > Become a member to receive our quarterly magazine, Headlines
- > Visit our website [www.neurological.org.nz](http://www.neurological.org.nz)
- > Look out for our public events invitations & our digital event series
- > Follow us on Facebook and our email newsletter

