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**The Centre for Brain Research at the University of Auckland working to launch**

**New Zealand’s first Chronic Traumatic Encephalopathy (CTE) Biobank**

Following the launch of the Australia CTE Biobank at Macquarie University on Tuesday 22 March, the Centre for Brain Research (CBR) at the University of Auckland has announced its intention to establish a similar world-class CTE biobank for clinical research in Aotearoa New Zealand. Once it is established, the New Zealand CTE Biobank will collaborate closely with its Australian CTE research colleagues. Biobanking is the collection and storage of large amounts of clinical data and biological samples to advance the scientific understanding and development of novel treatments for neurological disease.

Professor Maurice Curtis, head of the university’s Department of Anatomy and Medical Imaging, and Co-Director of the CBR Neurological Foundation Human Brain Bank alongside Distinguished Professor Sir Richard Faull, says CTE is a progressive degenerative brain disease believed to result from repetitive head impact injuries sustained over time.

CTE is synonymous with athletes who play contact sport, and has come under the spotlight globally in the past decade in ‘collision’ and ‘combat’ sports such as American football, boxing and ice-hockey. It is also recognised that people who suffer brain trauma through domestic violence, motor vehicle accidents and military service may be just as vulnerable to developing CTE.

The New Zealand CTE Biobank will be co-directed by Professor Lynette Tippett and Professor Maurice Curtis. Professor Tippett, School of Psychology and an associate director of the CBR, is also director of the national Dementia Prevention Research Clinics and has over 30 years’ experience in clinical research work with people who have neurodegenerative diseases such as Alzheimer’s, Huntington’s and Parkinson’s.

Professor Tippett says “The CTE Biobank is fortunate to comprise a very talented and experienced clinical research team including leading concussion and dementia neurologists Drs Rosamund Hill and Kiri Brickell, clinical neuropsychologists and research nurses, who have worked extensively in the area of traumatic brain injury, including repeated head impact injuries in high level sports players. This is complemented by experienced and expert neuroscientists, including those with blood-banking expertise.”

Professor Curtis is one of New Zealand’s leading neuroscientists working in the field of neurogenerative disease research at the CBR, and has been building momentum towards the formation of the New Zealand CTE Biobank alongside other researchers on both sides of the Tasman. Close collaborative links already exist with researchers at Auckland University of Technology Traumatic Brain Injury Network and Matai Research Institute in Gisborne.

“The New Zealand CTE Biobank will complement the work that our Australian colleagues – and other leading groups around the world - are undertaking in this critical area of brain research,” Professor Curtis says. The CBR has close clinical research ties with the Australia CTE Biobank group, which will be led by Macquarie University CTE researcher Dr Rowena Mobbs, one of Australia’s leading neurologists in concussion and dementia.

Professor Curtis says “The CBR team has been building a significant CTE research group for several years, and we now have a dedicated CTE research programme led by neuroscientist Dr Helen Murray, who brings experience as an athlete through her captainship of the New Zealand women’s ice-hockey team.”

During life, CTE manifests with devastating cognitive, mood and psychiatric changes, and the symptoms in its later stages can be mistaken for Alzheimer’s disease. A diagnosis of Traumatic Encephalopathy Syndrome can be made, but currently, there are no clinical tests to confidently diagnose CTE in a patient experiencing these symptoms. CTE can only be diagnosed in post-mortem pathological examination of the brain where distinctive, hallmark changes can be detected at a cellular level.

Alongside mainstay pathological brain autopsy research, CTE research is now focusing on discovering ‘biomarkers’ – or potential indicators of the disease - in living individuals. Biomarkers in human disease can be identified through research undertaken at a cellular level, in high-resolution brain imaging or scanning, in cognitive testing and sensory testing, and in blood and tissue samples. The New Zealand CTE Biobank will ultimately employ all of these methods, including also genetic, familial and lifestyle information in a cohort of retired sports people who have a history of repetitive head impacts and traumatic brain injury, and are showing early signs of difficulty.

Professor Tippett says, “The Centre for Brain Research works from a well-established platform of leading clinical and scientific brain disease expertise, scientific rigour, state-of-the-art technology and pioneering human brain bank and biobank models, so we have the significant resources to make the New Zealand CTE Biobank a reality once we have established the protocol framework.”

“Ultimately, our research drive will take a two-pronged approach: to improve the diagnosis of CTE in New Zealand by a focus on the discovery of biomarkers, and increase understanding of the disease mechanisms underlying CTE so we can develop preventative and interventional CTE strategies.”

Professor Curtis states “The New Zealand CTE Biobank will reflect the ethos of the Centre for Brain Research and our long-standing CBR Neurological Foundation Human Brain Bank (which includes the New Zealand Sports Brain Bank Initiative), and the CBR Hugh Green Biobank: undertaking first-class neurological research in partnership with patients and their families, and the outcomes-focused physicians who are taking care of them in the clinic.”

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**Centre for Brain Research**

The Centre for Brain Research (CBR) at The University of Auckland is a unique partnership that builds on three pillars of strength: world-class neuroscientists across the university, skilled clinicians throughout Aotearoa New Zealand and dedicated community support. Established in 2009 by Distinguished Professor Sir Richard Faull, the overarching mission of the Centre is to translate novel findings from the laboratory through to the clinic for the benefit of patients and their whānau.

***To find out more about the Centre for Brain Research, go to***[*https://www.auckland.ac.nz/en/fmhs/research/cbr.html*](https://www.auckland.ac.nz/en/fmhs/research/cbr.html)