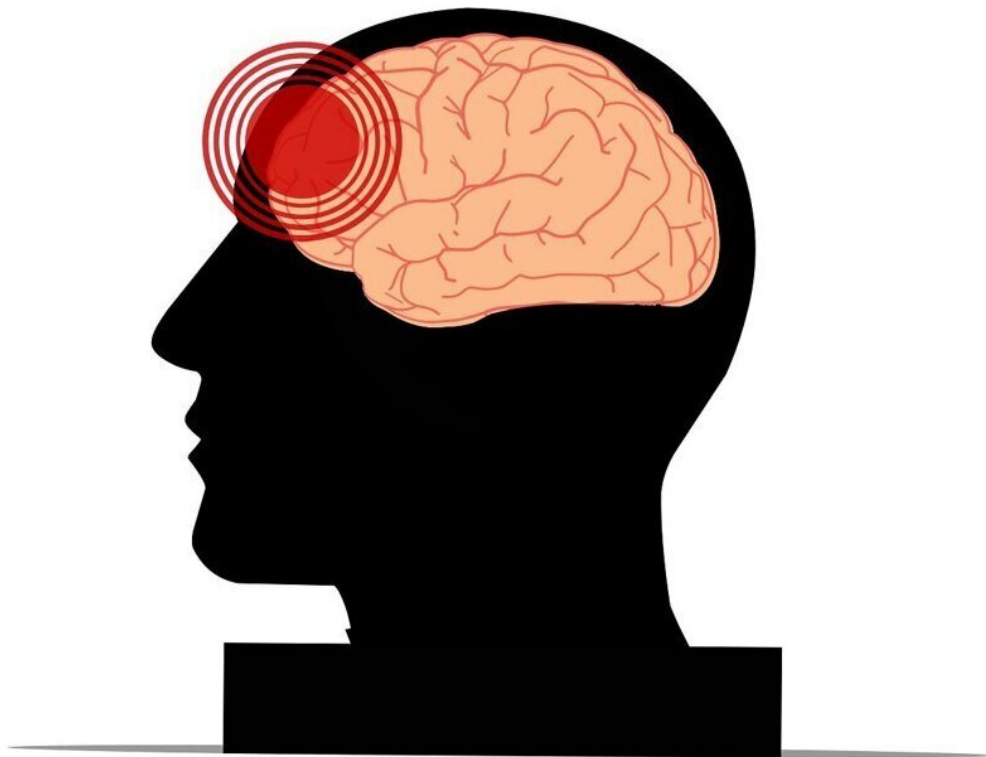


Researchers reveal new pathway to improve traumatic brain injury outcomes

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A team of Australia's leading health researchers has developed a new "dictionary" to better predict outcomes for people who have experienced a moderate-severe traumatic brain injury (TBI). The work is [published](#) in the *Journal of Neurotrauma*.

The Australian Traumatic Brain Injury Initiative (AUS-TBI) is a consortium of academics, researchers and health care professionals from institutions across the country.

Working together to understand the factors that could be used to predict [outcomes](#) following TBI in a study supported by the Australian Medical Research Future Fund Mission for TBI, the team examined factors related to [social support](#), health, [clinical care](#), biological markers, acute interventions, and longer-term outcomes.

Published across eight articles in a [special edition](#) of the *Journal of Neurotrauma*, this work culminated in a Single Data Dictionary: a master list of information that—if collected—would give the best chance at understanding how a person will recover from their [brain injury](#).

Consortium lead and Curtin University Deputy Vice-Chancellor Research Professor Melinda Fitzgerald said predicting each individual's outcome following a TBI was critical—but also very difficult.

"The rate and degree of recovery after moderate-severe TBI varies greatly, due in part to the complex and diverse nature of these injuries," Professor Fitzgerald said.

"Despite decades of empirical research, prediction of outcomes after TBI for individual patients remains imprecise: We have only partial understanding of what it is about the person, their [injury](#), their

environment, or their care that moderates and/or determines the multiple outcomes that contribute to their quality of life.

"At present, there is no indicator or group of indicators that can sufficiently predict treatment outcome or responsiveness to allow for personalized acute care and rehabilitation for patients with TBI."

To create the Single Data Dictionary, the AUS-TBI team examined thousands of published [research articles](#) reporting factors that may impact a person's recovery, such as their medical history, [social contexts](#), biological markers, level of personal support, effectiveness of treatment and more.

The team also consulted extensively with people who have lived experience of TBIs, including an Aboriginal and Torres Strait Islander Advisory Group, to develop the Single Data Dictionary of predictive markers alongside guidelines on how to collect them in a coordinated, culturally sensitive national approach.

Co-author Dr. Sarah Hellewell, from Curtin's Faculty of Health Sciences, Curtin Health Innovation Research Institute and the Perron Institute, said providing personalized care to ensure the best outcomes for patients was critical, as TBIs are often catastrophic and have lifelong impact on patients, their families, workplaces, the criminal justice system and society as a whole.

"Severe TBI has a mortality rate of 30–40%, less than 50% of patients achieve long-term independence and new injuries add \$2 billion in lifetime direct costs to the Australian health care system each year," Dr. Hellewell said.

"Between 2006 and 2015, there was no change in survival or functional outcomes following TBI, proving the need for better, targeted

management strategies to reduce mortality and improve quality of life for these individuals and reduce negative impacts on families and society."

More information: Melinda Fitzgerald et al, The Australian Traumatic Brain Injury Initiative: Single Data Dictionary to Predict Outcome for People With Moderate-Severe Traumatic Brain Injury, *Journal of Neurotrauma* (2023). [DOI: 10.1089/neu.2023.0467](https://doi.org/10.1089/neu.2023.0467)

Provided by Curtin University

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