

Response ID ANON-Y49A-QC7W-9

Submitted to **Medical Research Future Fund's Traumatic Brain Injury Mission - National Consultation on the Roadmap and Implementation Plan**
Submitted on **2021-03-18 13:30:04**

Consultation Questions

1 What is your name?

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5 Are the priority areas for investment identified in the implementation plan the most effective way for delivering on the Mission's goal and aims? (max 300 words)

Are the priority areas for investment identified in the implementation plan the most effective way for delivering on the Mission's goal and aims? :

HRA is strongly supportive of the priority area identified and the implementation plan., particularly 1.2 Improving care pathways and outcomes for moderate to severe TBI through predictive modelling using novel approaches to data and informatics. The funding allocated to the projects commencing in 2019–20 to improve predictive modelling for TBI using novel data and informatics seem highly appropriate for funding. HRA naturally supports the funding principle of evidence-based TBI research of the highest quality. With this in mind, we strongly discourage any funding using animal models. Traumatic brain injury (TBI) is inflicted on animals, typically rodents, by universities and pharmaceutical companies in Australia, including the University of Melbourne, Monash University, the University of Western Australia and the University of Technology. The TBI is often caused by dropping weights onto the brains in an attempt to replicate the human condition.

However, animal models of TBI incompletely represent the human situation in a number of ways, particularly with regard to size considerations and extensive anatomical and histological differences.

In his publication 'In Vitro models as a platform to investigate traumatic brain injury' (1) Dr Ashwin Kumaria, Department of Neurosurgery at Queen's Medical Centre, Nottingham, UK states that 'Experimental in vivo models offer the potential to study TBI in the laboratory, however, treatments that were neuroprotective in animals have, thus far, largely failed to translate in human clinical studies. In vitro (non-animal) models of neurotrauma can be used to study specific pathophysiological cascades and to test potential neuroprotective strategies. These in vitro models include transection, compression, barotrauma, acceleration, hydrodynamic, chemical injury and cell-stretch methodologies. Various cell culture systems can also be utilized, including brain-on-a-chip, immortalized cell lines, primary cultures, acute preparations and organotypic cultures'.

In order to increase the translation value of research, human-relevant methods of TBI research must be prioritised.

(1) Kumaria A. In vitro models as a platform to investigate traumatic brain injury. *Altern Lab Anim.* 2017 Sep;45(4):201-211. doi: 10.1177/026119291704500405. PMID: 28994300.

6 Are there existing research activities which could be utilised to contribute to the Traumatic Brain Injury Mission Roadmap and/or Implementation Plan aims and priority areas for investment? How can these be leveraged? (max 200 words)

Are there existing research activities which could be utilised to contribute to the Cardiovascular Health Mission Roadmap and/or Implementation Plan aims and priority areas for investment? How can these be leveraged?:

No comment

7 Are the 'Evaluation approach and measures' appropriate for assessing and monitoring progress towards the mission's goal and aims? (200 words)

Are the 'Evaluation approach and measures' appropriate for assessing and monitoring progress towards the mission's goal and aims? :

No comment

8 Do you consent to components of your submission being made publicly available?

Yes