

# Multi-centre prospective randomised trial of early decompressive craniectomy in patients with severe traumatic brain injury

<b>Submission date</b> 16/06/2005	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered
<b>Registration date</b> 21/07/2005	<b>Overall study status</b> Completed	<input type="checkbox"/> Protocol <input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 04/10/2016	<b>Condition category</b> Injury, Occupational Diseases, Poisoning	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Traumatic brain injury is a potentially devastating injury that mainly affects young males. About 10% of patients admitted with severe traumatic brain injury have a diffuse injury (over a widespread area) and persistent brain swelling that is difficult to control with medical treatment. Over the past decade, treatment of these patients has been shifting from barbiturate coma (a temporary coma) to decompressive craniectomy. This is a well-established surgical procedure in which a large piece of skull bone is removed, stored for 1-2 months and then replaced. The aim of this study is to assess the effectiveness of this procedure in patients with severe traumatic brain injury.

### Who can participate?

Patients aged 15-60 with severe diffuse traumatic brain injury

### What does the study involve?

Participants are randomly allocated to be treated with either the best medical care or decompressive craniectomy and best medical care. They are followed up to assess the outcome 6 months later.

### What are the possible benefits and risks of participating?

Not provided at time of registration

### Where is the study run from?

A number of hospitals in Australia, New Zealand, Saudi Arabia, Canada and the USA participated in the study with the lead site being the Alfred Hospital in Melbourne, Australia

### When is the study starting and how long is it expected to run for?

August 2003 to June 2011

### Who is funding the study?

National Health & Medical Research Council, the Victorian Trauma Foundation, Victorian

Neurotrauma Initiative, Transport Accident Commission, Intensive Care Foundation, and the Western Australian Institute of Medical Research

Who is the main contact?

Prof. Jamie Cooper

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## Contact information

### Type(s)

Scientific

### Contact name

Prof Jamie Cooper

### Contact details

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## Additional identifiers

## Study information

### Scientific Title

Multi-centre prospective randomised trial of early decompressive craniectomy in patients with severe traumatic brain injury

### Acronym

DECRA

### Study objectives

Study hypothesis:

That early decompressive craniectomy will improve long term neurological outcome in patients with severe traumatic brain injury and intracranial hypertension which is refractory to conventional management.

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

The Alfred Human Research Ethics Committee, 27/06/2002, ref: 68/02

### Study design

Randomised controlled trial

## Primary study design

Interventional

## Study type(s)

Treatment

## Health condition(s) or problem(s) studied

Severe traumatic brain injury

## Interventions

Early decompressive craniectomy versus best current medical management

## Intervention Type

Procedure/Surgery

## Primary outcome(s)

Glasgow Outcome Score (GOSE) measured 6 months after the injury. Proportion (%) of Favourable Outcomes (GOSE 5-8) is the primary outcome measure.

## Key secondary outcome(s)

1. Mean and maximum hourly ICP
2. Favourable outcomes (GOSE 5-8) at 12 months post injury
3. Mean GOSE at 6 and 12 months using ordinal logistic regression
4. Mortality - hospital, 6 months, 12 months
5. Days in intensive care unit (ICU) and hospital

## Completion date

30/06/2011

# Eligibility

## Key inclusion criteria

1. Age 15-60 years
2. First 72 hours from time of injury
3. Severe diffuse Traumatic Brain Injury defined as:
  - 3.1. Glasgow Coma Score (GCS) <9 and computed tomography (CT) scan with any evidence of brain swelling. CT brain scan DII + some evidence of swelling or DIII or DIVOR
  - 3.2. GCS >8 before intubation and DIII or DIV. CT brain scan basal cistern compression  $\pm$  midline shift
4. Intracranial pressure (ICP) monitor in situ
5. 'Refractory ICP' despite best conventional management. Refractory ICP in this study will be defined as the spontaneous persistent increase in ICP despite optimal conventional ICU therapies (including intermittent external ventricular drain [EVD] venting) of >20 mm Hg for more than 15 mins (continuously or cumulative over one hour).

## Participant type(s)

Patient

## Healthy volunteers allowed

No

## Age group

Adult

## Sex

All

## Key exclusion criteria

1. Intracranial mass lesion (>3 cm diameter) and/or previous craniectomy
2. Extradural hematoma / subdural hematoma (EDH/SDH) requiring evacuation
3. EDH/SDH >0.5 cm thickness
4. Spinal cord injury
5. Penetrating brain injury
6. Arrest at scene
7. Unreactive pupils >4 mm and GCS = 3
8. Neurosurgery contraindicated
9. No chance of survival after consideration of CT and clinical findings, following Neurosurgical consultant assessment

## Date of first enrolment

01/08/2003

## Date of final enrolment

30/06/2011

## Locations

### Countries of recruitment

Australia

### Study participating centre

The Alfred Hospital

Melbourne

Australia

3004

## Sponsor information

### Organisation

National Trauma Research Institute, The Alfred Hospital (Australia)

### ROR

<https://ror.org/01wddqe20>

# Funder(s)

## Funder type

Research council

## Funder Name

Australian and New Zealand Intensive Care (ANZIC) Foundation (Australia/New Zealand)

## Funder Name

Victorian Trauma Foundation (Australia)

## Funder Name

Western Australian Institute for Medical Research (WAIMR), Neurotrauma Research Programme (Australia)

## Funder Name

National Health and Medical Research Council (ref: 314502)

## Alternative Name(s)

National Health and Medical Research Council, Australian Government, NHMRC National Health and Medical Research Council, NHMRC

## Funding Body Type

Government organisation

## Funding Body Subtype

National government

## Location

Australia

# Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Study outputs

<b>Output type</b>	<b>Details</b>	<b>Date created</b>	<b>Date added</b>	<b>Peer reviewed?</b>	<b>Patient-facing?</b>
<a href="#">Results article</a>	results	01/09/2008		Yes	No
<a href="#">Results article</a>	results	21/04/2011		Yes	No