# Nyrada Inc.

**Investor Presentation**
**September 2024**

## Improving Lives, Offering Hope

Authorised by Mr. John Moore, Non-Executive Chair, on behalf of the Board.

ASX:NYR

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# Mr James Bonnar

# Nyrada Chief Executive Officer

# Nyrada's Expertise in Drug Development

- Drug discovery and development company specialising in rational design of novel small molecule therapeutics.
- Nyrada's lead drug candidate NYR-BI03:
  - demonstrated strong preclinical efficacy protecting the brain from secondary injury.
  - currently undergoing Good Laboratory Practice safety and tolerability testing.
  - preclinical TBI efficacy study with Walter Reed Army Institute of Research and UNSW in progress.
- Exploratory works for other indications and opportunities
- Commercially focused business model and expert team.

# Nyrada Investment Proposition

- Pioneering transient receptor potential canonical (TRPC) channel blocking therapies.
- First-in-class neuroprotection therapy with novel mode of action.
- Brain injury program targeting significant market and unmet clinical demand.
- Collaborations with world leading institutions: Walter Reed Army Institute of Research (WRAIR) and UNSW Sydney.  Strategic partnership with Rebion.
- Proven and globally experienced board and team.
- Cash position of AU$4.77M at 30 June 2024.
- AU$0.99M R&D rebate expected around December 2024.

# Large Market Opportunity – Stroke

**Globally:**

**~15 million** people suffer strokes annually[1]

**~5 million** left permanently disabled[1]

One approved drug class for stroke suitable for <15% of patients (tPA - tissue plasminogen activator).

Effective treatment will improve patient outcomes and reduce high costs associated with long-term care.

**Large and growing treatment market:**

Currently **~US$30.3 billion[2]**

Growing **~7.5% CAGR[2]**

Forecast **~US$52.2 billion by 2030[2]**

# Large Market Opportunity – Traumatic Brain Injury (TBI)

**Globally:**

**~5.5 million** people suffer severe TBI annually[3]

**~55 million** living with effects of medically treated TBI[3]

No current FDA approved treatments

Effective treatment will improve patient outcomes and reduce high costs associated with long-term care of brain injury survivors.

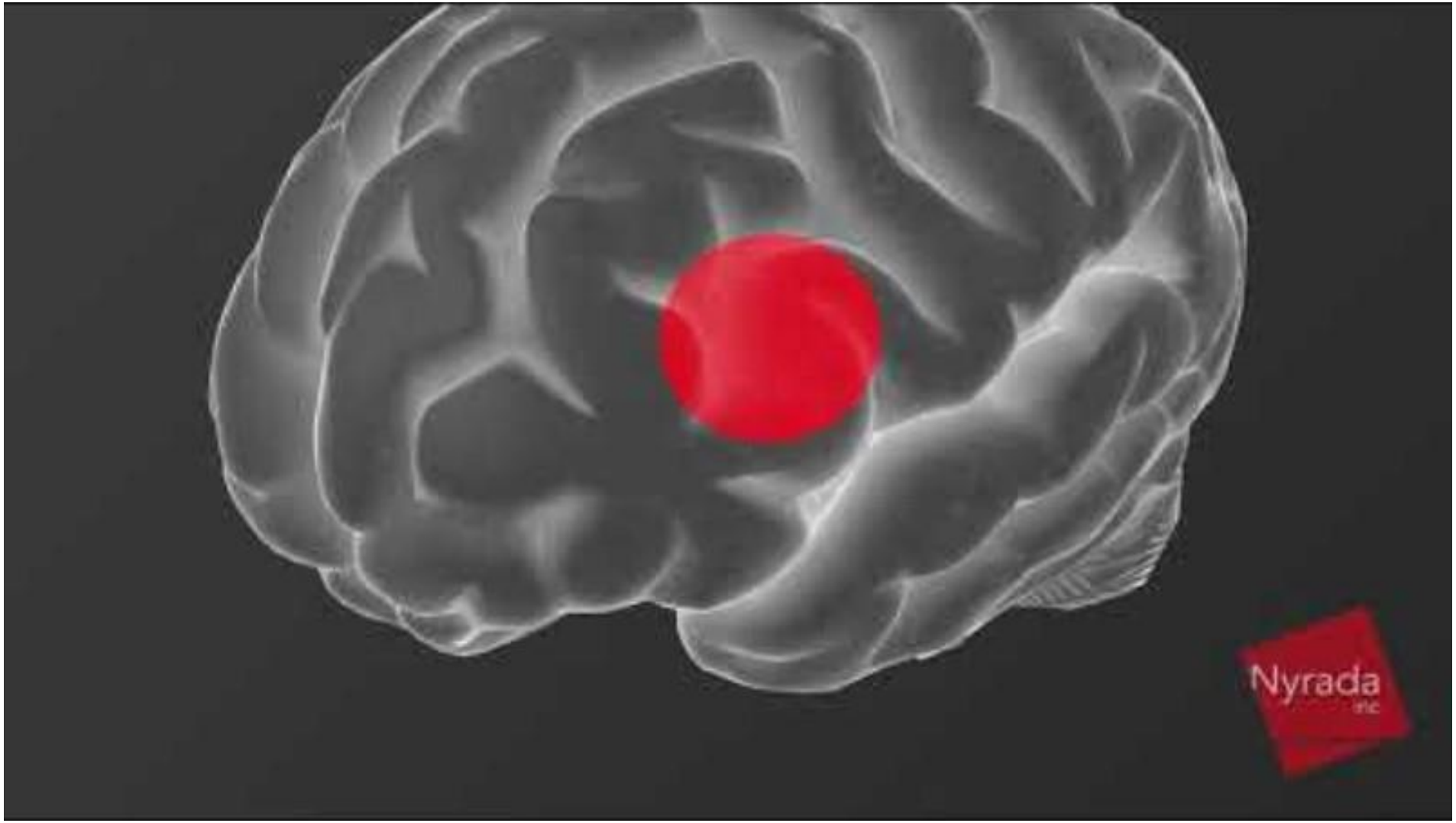
**Large and growing treatment market:**

Currently **~US$3.5 billion[4]**

Growing **~6.2% CAGR[4]**

Forecast **~US$5.5 billion by 2030[4]**

# Nyrada Brain Injury Program



# Nyrada's Lead Brain Injury Candidate – NYR-BI03

## First-in-Class with Novel Mechanism of Action

- NYR-BI03 is a first-in-class therapy.
- Novel mechanism of action.
- Australian developed innovation.

## Significant Unmet Clinical Need and Market Opportunity

- Targeting multiple indications.
- Stroke and TBI are leading causes of death and disability.
- No current FDA approved drugs to treat secondary brain injury.

# Statistically Significant Neuroprotection Achieved

## Recent preclinical study demonstrated strong efficacy and good tolerability

**42%**

**of brain injury in penumbra region rescued on average**

MRI brain imaging showed a statistically significant neuroprotection achieved when animals received treatment (*p* value 0.021)[1]

**41%**

**mean level of biomarkers for NYR-BI03 animals compared to control vehicle**

NfL biomarker levels likely reflect neuroprotection. The mean level for the NYR-BI03 animals was 41% lower than the control vehicle (*p* value 0.068)[2]

**Supporting NYR-BI03's favourable safety profile, the current study had no drug-related adverse effects.**

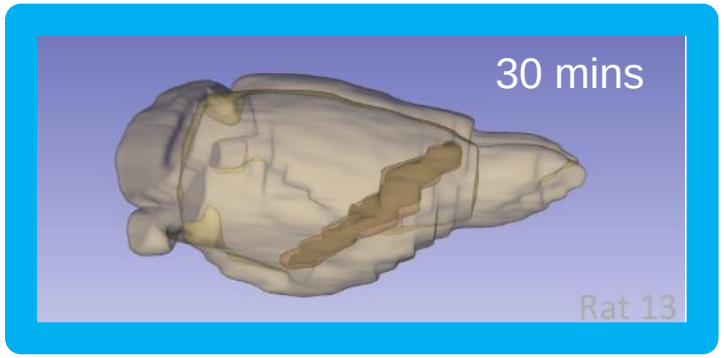
### Study Design

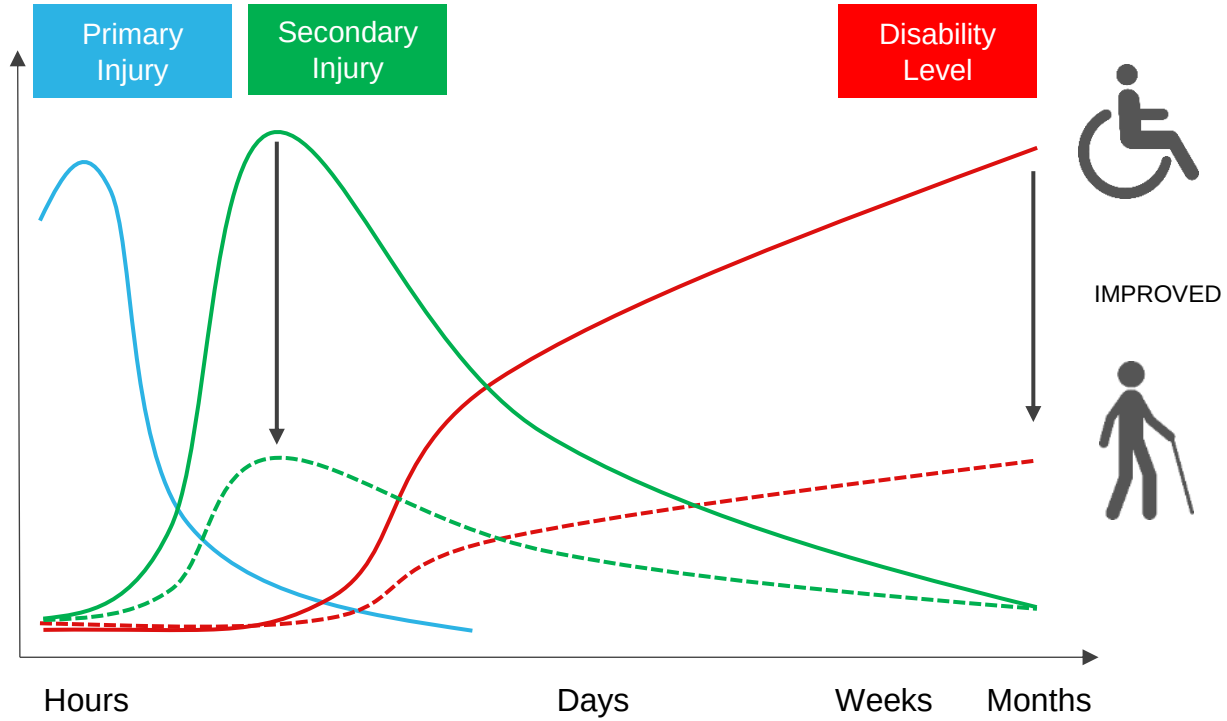
- The study involved inducing a focal ischemic stroke using a photothrombotic model.
- 16 test animals were treated with either NYR-BI03 or vehicle 30 mins following the induced brain injury. Treatment was conducted for 72 hours via continuous intravenous infusion.

1. *p* value 0.021, Mann-Whitney Rank Sum Test.
2. *p* value 0.068, t-test.

# Brain Injury Trajectory, Patient Outcomes, Treatment Aims

**Serial reconstruction from MRI**



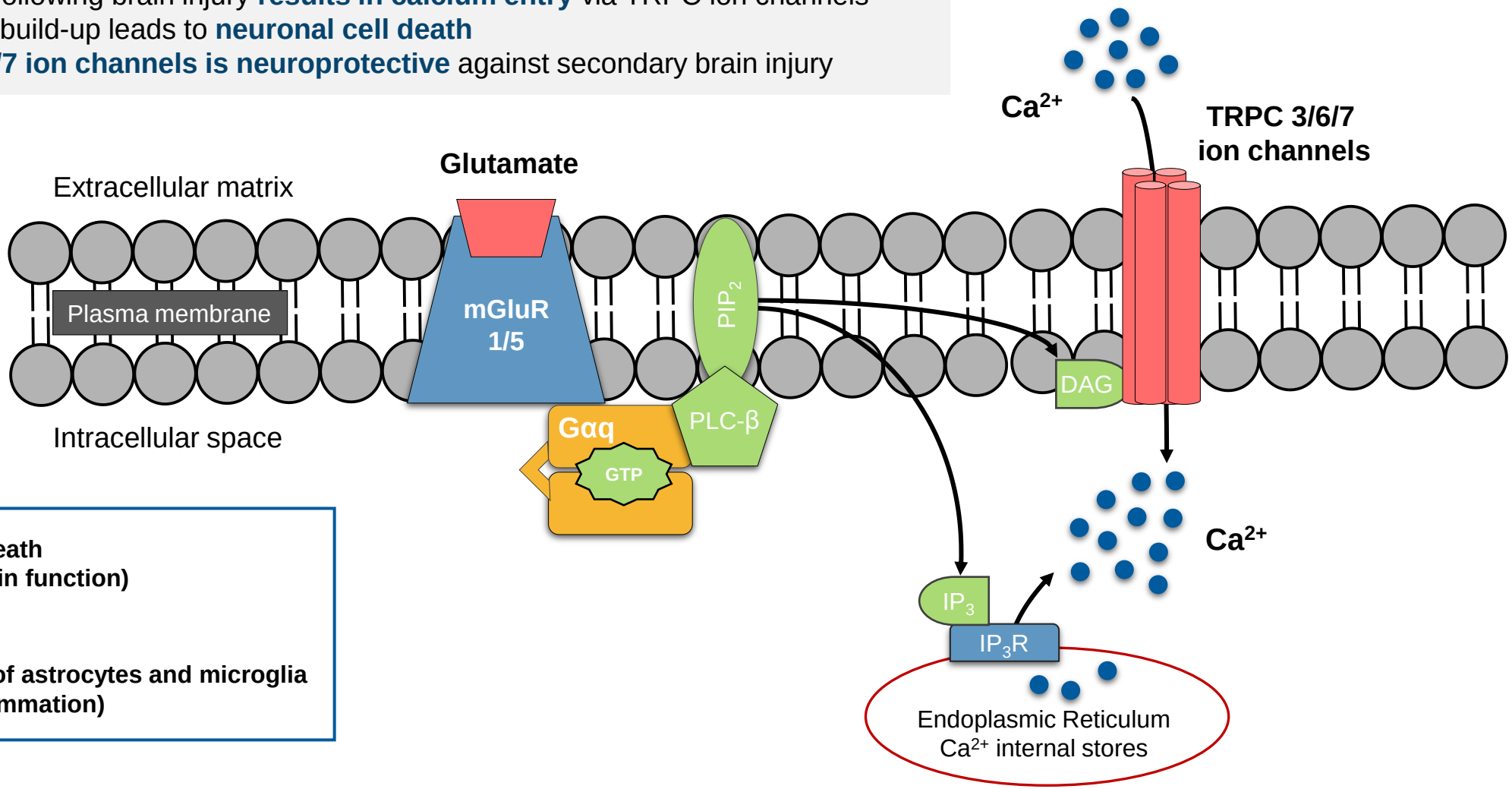




**Nyrada drug NYR-BI03**
An acute 3-day intravenous treatment

**Reduce secondary injury resulting from stroke or TBI**
- **Improve survivability, limit disability**
- **Improve quality of life**

# TRPC 3/6/7 Ion Channels as a Therapeutic Target

- **Glutamate release** following brain injury **results in calcium entry** via TRPC ion channels
- **Excessive calcium** build-up leads to **neuronal cell death**
- **Blocking TRPC 3/6/7 ion channels is neuroprotective** against secondary brain injury



# NYR-BI03 Good Laboratory Practice (GLP) Safety Studies

| GLP Study | Reported |
|---|---|
| AMES | 16 July 2024 |
| hERG | 16 July 2024 |
| Rat CNS | 06 August 2024 |
| Rat Respiratory | 20 August 2024 |
| Dog cardiovascular safety | 09 September 2024 |
| 14-day dog toxicology | |
| 14-day rat toxicology | |
| *In vitro* micronucleus | |
| *In vivo* micronucleus | |

# Brain Injury Program - Indicative Phase I Study Design

**OBJECTIVES** To assess the safety, tolerability, and pharmacokinetics of NYR-BI03

**DESIGN**

- Randomised, double-blind placebo – controlled, dose escalation design
- 5 cohorts; 8 participants each cohort; 6:2 active and placebo treatments
- 3 cohorts will be single ascending doses
- 2 cohorts will be given continuous infusion doses

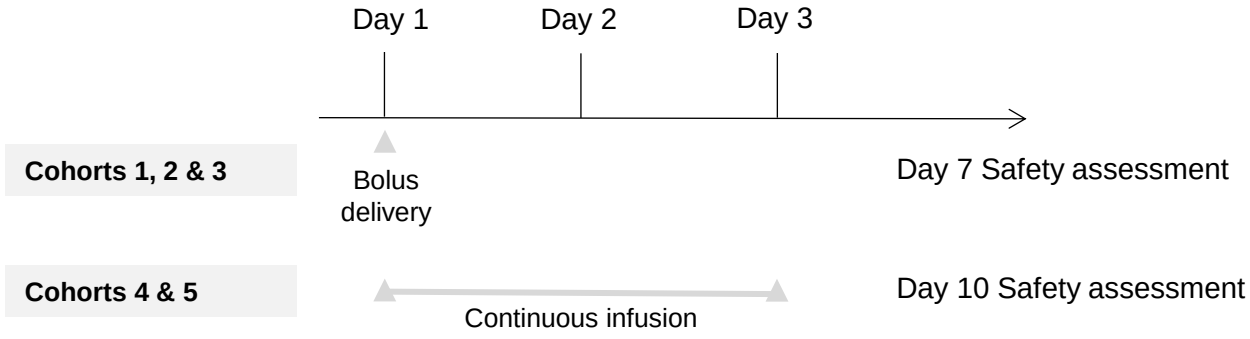
**PARTICIPANTS**

- Male and female healthy volunteers
- 18 – 50 years age


| Cohort number | Dose administered |
|---|---|
| 1 | Low dose single bolus |
| 2 | Medium dose single bolus |
| 3 | High dose |
| 4 | Low dose continuous infusion (72 hrs) |
| 5 | High dose continuous infusion (72 hrs) |

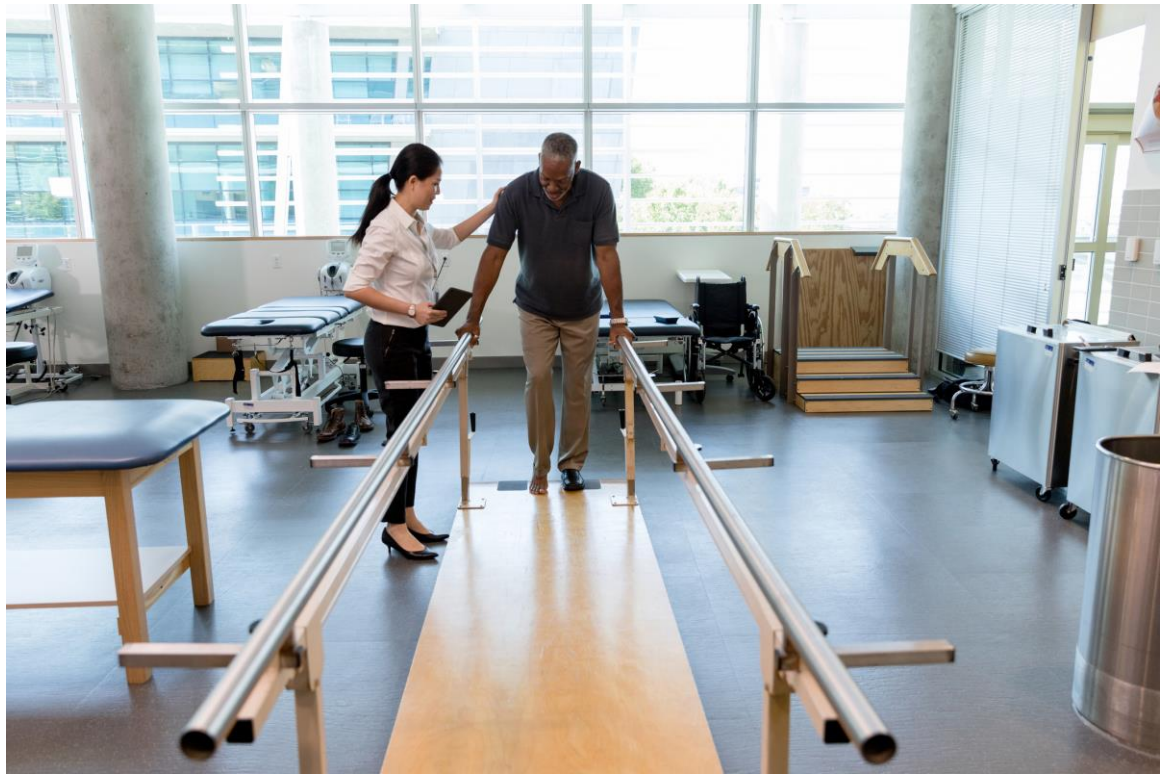
**LOCATION & DURATION**

- Study will be conducted at a clinical trial centre in Australia expected to commence 4QCY2024
- Study duration will vary between 1 – 4 days




*trial design subject to ethics approval

# Near Term Catalysts and Newsflow



- Early October 2024 – 1QFY2025 Cashflow and business update.
- 2HCY2024 – Good Laboratory Practice (GLP) safety and tolerability study updates.
- 4QCY2024 – Human Research Ethics Committee application submission.
- 4QCY2024 – First-in-human Phase I clinical trial.
- 1QCY2025 – Walter Reed (WRAIR) traumatic brain injury/UNSW pre-clinical efficacy study update.

# References


1 – World Health Organization - https://www.emro.who.int/health-topics/stroke-cerebrovascular-accident/index.html#:~:text=Annually%2C%2015%20million%20people%20worldwide,cause%20is%20high%20blood%20pressure

2 – Databridge Market Research - https://www.databridgemarketresearch.com/reports/global-stroke-market .

3 – National Academy of Sciences - https://nap.nationalacademies.org/catalog/25394/traumatic-brain-injury-a-roadmap-for-accelerating-progress

4 – Databridge Market Research - https://www.databridgemarketresearch.com/reports/global-traumatic-brain-injuries-treatment-market

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Brain Injury Solution Animation

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