# Care Pathways in Traumatic Brain Injury: a Scoping Review

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# Background

- Traumatic Brain Injury (TBI) is a major international public health problem <sup>1</sup>
- Affects 300-600 people per 100,000 per year<sup>2</sup>



### **Properties of the literature**

- 32% Reviews  $\bullet$
- 30% Cohort studies
- 7 OECD countries
- Most from the US
- Majority in last
  - decade

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#### Incidence rising in both developed and developing countries<sup>3</sup>



- Affects all age groups <sup>1</sup>
- "Mild" TBI represents 80% of all TBIs <sup>4</sup>
- Full recovery expected within a few weeks for mild TBI<sup>3</sup>
- 30% experience symptoms beyond the typical recovery frame: Post-Concussive Syndrome (PCS)<sup>3</sup>



TBI can be operationalised as a long-term chronic condition

# **Research Question**

What are the care pathways for people with Post-Concussive Syndrome following Traumatic Brain Injury?

Methods

- 14% Guidelines
- 12% Case reports

#### Increasing publication trend

### **Current approach to care**

- No systematic follow-up after uncomplicated mild TBI  $\bullet$
- Stepped approach to care
  - 1. Watchful wait
  - 2. Symptomatic treatment
  - 3. Multi-disciplinary care approach

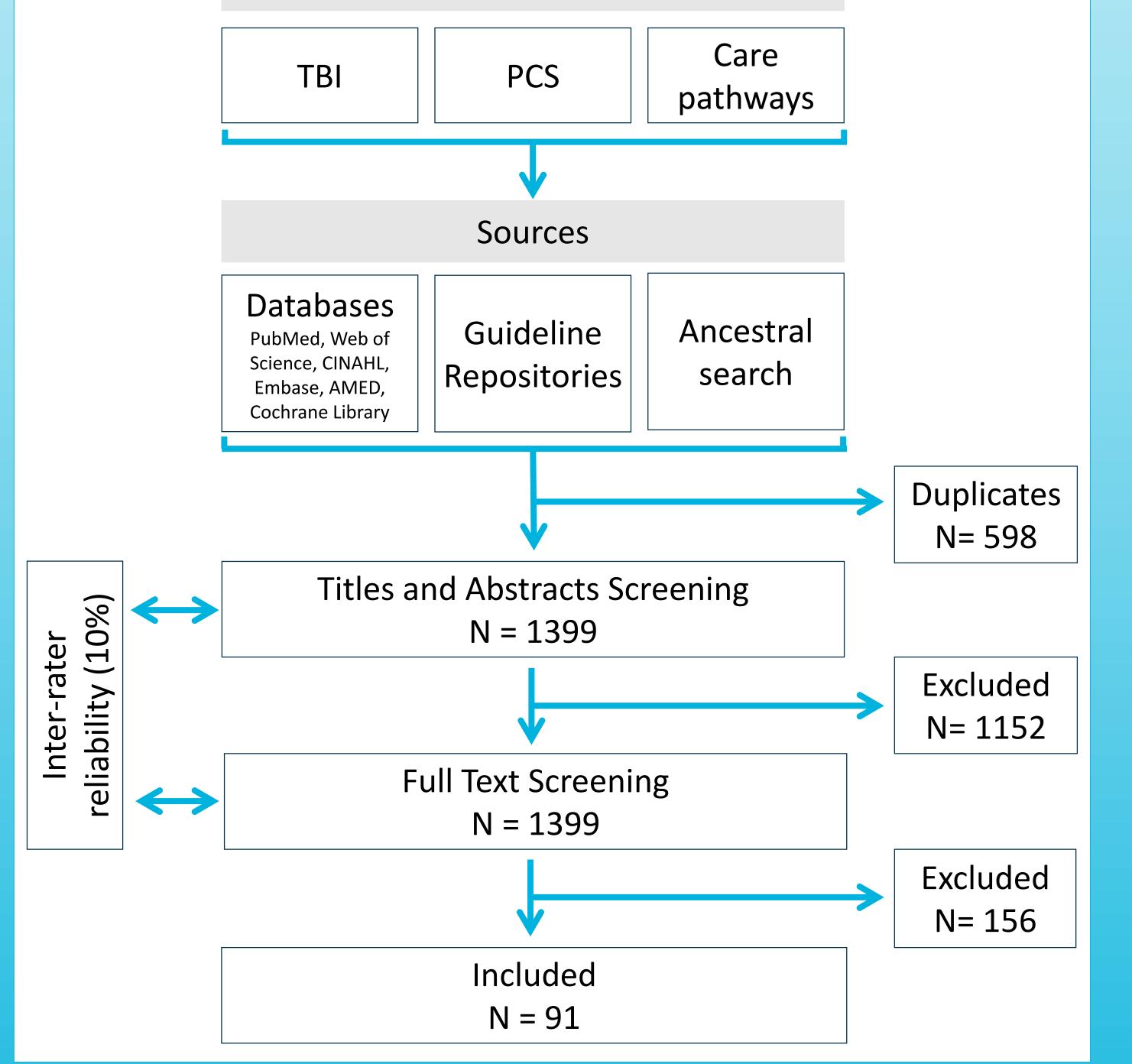
# **Current state of care**

- Patients with PCS have complex and heterogeneous care needs
- The stakeholders involved in patients' care journeys are numerous and  $\bullet$ variable
- Access to care is highly variable
- There are no specific care guidelines for PCS following TBI  $\bullet$



A Scoping Review methodology was used <sup>5</sup>. Included studies were published in English in peer reviewed journals (except for guidelines), and explored care pathways either directly (primary or secondary) research objectives) or indirectly (coincidental reporting of relevant information).

Search Term Categories



There is a lack of a systematised care protocol for the management of patients who experience lasting symptoms following TBI. This is a likely contributor to poor and chaotic access to care and support services pivotal for recovery.

The paucity of evidence to guide PCS care can be explained by 2 factors:

## **Complexity of PCS**

- Emergence of PCS is heterogeneous and unpredictable
- No systematic follow up after mild TBI
- Not all patients with PCS seek care

### **Methodological limitations in the literature**

- Terminology debates reflecting vague conceptual boundaries between  $\bullet$ TBI and PCS
- Focus on specific subsamples of the population (i.e. military and athlete)
- Lack of population-based longitudinal cohort studies  $\bullet$



There are no specific, defined care pathways for people with PCS. Management of patients with PCS is therefore palliative and stratified.

The literature presents significant methodological limitations preventing the production of evidence that may lead to the development of care protocols for the rehabilitation of patients with PCS.

There is a need for the development of new research approaches to investigate medium to long-term care needs and access to services for this patient population.

Ref. 1. Roozenbeek B, R Maas AI, Menon DK. Changing patterns in the epidemiology of traditional events in a provider of the second strain second strain in the second strain second stra 1. Roozenbeek B, R Maas AI, Menon DK. Changing patterns in the epidemiology of traumatic brain injury. Nature Reviews: Neurology. 2013;9. 3. Levin HS, Diaz-Arrastia RR. Diagnosis, prognosis, and clinical management of mild traumatic brain injury. The Lancet Neurology. 2015;14(5):506-517. 4. DeCuypere M, Klimo P. Spectrum of Traumatic Brain Injury from Mild to Severe. Surgical Clinics of North America. 2012;92(4):939-957 5. The Joanna Briggs Institute. The Joanna Briggs Institute Reviewer's Manual 2015: Methodology for JBI Scoping Reviews. 2015

