

Abstract

A Review of Traumatic Brain Injury Evaluation in Sports [†]

Igor G. M. Quirido *, Eduarda R. Martins, Mariana Y. Rodrigues, Cauã F. Martins and Selma A. S. Kückelhaus

Faculty of Medicine, University of Brasília (UnB), Brasília 70910-900, Brazil; 241041859@aluno.unb.br (E.R.M.); 242007000@aluno.unb.br (M.Y.R.); 242042313@aluno.unb.br (C.F.M.); selmask@gmail.com (S.A.S.K.)

* Correspondence: 242006961@aluno.unb.br

[†] Presented at the 6th International Congress on Health Innovation—INOVATEC 2025, Hybrid, 21–23 November 2025.

Keywords: TBI; evaluation; complementary exams

Introduction: Traumatic brain injury (TBI), characterized by changes in brain function due to external forces, is an important challenge. In the sports context, TBI is responsible for a significant number of disabilities and deaths, which highlights the need for an adequate and efficient assessment of the extent of trauma. This study aims to analyze the tools for assessing TBI in sports in order to evaluate its therapeutic and prognostic value. **Methodology:** This study conducted a normative review of the literature through national and international journals from the PubMed, Scielo, and ScienceDirect databases based on the selection of recent publications (2016 to 2025) on the clinical and social context of sports TBI. **Results:** Clinical evaluation, scales/scores, and imaging exams are essential for the evaluation and prediction of the course of injuries caused by TBI. The Glasgow Coma Scale (GCS), for example, assesses the patient's level of consciousness based on ocular, verbal, and motor responses—incorporating, more recently, the pupillary reflex. The score obtained allows the TBI to be classified as mild, moderate, or severe quickly even during sport practice. In addition to imaging tests such as CT scans and MRIs, GCS helps health professionals make more accurate clinical decisions and identify secondary impairments. **Conclusions:** Tools such as GCS and imaging tests are essential for early diagnosis and therapeutic guidance. Its proper use contributes to reducing complications, optimizing costs, and improving the quality of life of patients.

Author Contributions: Conceptualization, I.G.M.Q. and S.A.S.K.; methodology, S.A.S.K.; formal analysis, I.G.M.Q., E.R.M., M.Y.R. and C.F.M.; data curation, I.G.M.Q., E.R.M., M.Y.R. and C.F.M.; writing—original draft preparation, I.G.M.Q.; writing—review and editing, I.G.M.Q., E.R.M., M.Y.R. and C.F.M.; supervision, S.A.S.K. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: No new data were created or analyzed in this study. Data sharing is not applicable to this article.

Conflicts of Interest: The authors declare no conflict of interest.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.



Academic Editors: Andreanne Vasconcelos, Amílcar Damazo and José Roberto Leite

Published: 27 February 2026

Copyright: © 2026 by the authors.

Licensee MDPI, Basel, Switzerland.

This article is an open access article distributed under the terms and conditions of the [Creative Commons Attribution \(CC BY\)](https://creativecommons.org/licenses/by/4.0/) license.