

Sports-related traumatic brain injury

Sport-Related Concussion

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see [Bicycle](#)

see [Contact sport](#).

see [Golf](#)

There is currently no consensus on the safety of [sports](#) participation for patients with [Chiari I malformation](#) (CM-I).

A prospective survey was administered to 503 CM-I patients at 2 sites over a 46-month period. Data were gathered on imaging characteristics, treatment, sports participation, and any sport-related injuries. Additionally, 81 patients completed at least 1 subsequent survey following their initial entry into the registry and were included in a prospective group, with a mean prospective follow-up period of 11 months.

Of the 503 CM-I patients, 328 participated in sports for a cumulative duration of 4641 seasons; 205 of these patients participated in contact sports. There were no serious or catastrophic neurological injuries. One patient had temporary extremity paresthesias that resolved within hours, and this was not definitely considered to be related to the CM-I. In the prospective cohort, there were no permanent neurological injuries.

No permanent or catastrophic neurological injuries were observed in CM-I patients participating in athletic activities. The authors believe that the risk of such injuries is low and that, in most cases, sports participation by children with CM-I is safe ¹⁾.

There is evidence that regular physical activity can lower pain perception and improve the outcome after surgery. For this purpose, we hypothesized that patients performing regular sports prior to lumbar disc surgery might have less pain perception and disability thereafter. Fifty-two participants with a single lumbar disc herniation confirmed on MRI treated by a lumbar sequestrectomy were included in the trial. They were categorized into two groups based on their self-reported level of physical activity prior to surgery: group NS, no regular physical activity and group S, with regular physical activity. Further evaluation included a detailed medical history, a physical examination, and various questionnaires: Visual Analog Scale (VAS), Beck-Depression-Inventory (BDI), Oswestry Disability Index (ODI), Core Outcome Measure Index (COMI), and the EuroQoL-5Dimension (EQ- 5D). Surgery had an excellent overall improvement of pain and disability ($p < 0.005$). The ODI, COMI, and EQ-5D differed 6 months after intervention ($p < 0.05$) favoring the sports group. Leg and back pain on VAS was also significantly less in group B than in group A, 12 months after surgery ($p < 0.05$). Preoperative regular physical activity is an important influencing factor for the overall satisfaction and disability after lumbar disc surgery. The importance of sports may have been underestimated for

surgical outcomes ²⁾.

Epidemiology

A study aimed to investigate the epidemiology of Sports-related traumatic brain injury in Hong Kong and to examine predictors for recreational cycling-induced intracranial haemorrhage.

This retrospective multicentre study included patients diagnosed with sports-related TBI in public hospitals in Hong Kong from 2015 to 2019. Computed tomography scans were reviewed by an independent assessor. The primary endpoint was traumatic intracranial haemorrhage. The secondary endpoint was an unfavourable Glasgow Outcome Scale (GOS) score at discharge from hospital.

In total, 720 patients were hospitalised with sports-related TBI. The most common sport was cycling (59.2%). The crude incidence of cycling-related TBI was 1.1 per 100 000 population. Cyclists were more likely to exhibit intracranial haemorrhage and an unfavourable GOS score, compared with patients who had TBI because of other sports. Although 47% of cyclists had intracranial haemorrhage, only 15% wore a helmet. In multivariate analysis, significant predictors for intracranial haemorrhage were age ≥ 60 years, antiplatelet medication, moderate or severe TBI, and skull fracture. Among 426 cyclists, 375 (88%) had mild TBI, and helmet wearing was protective against intracranial haemorrhage, regardless of age, antiplatelet medication intake, and mechanism of injury. Of 426 cyclists, 31 (7.3%) had unfavourable outcomes on discharge from hospital.

The incidence of sports-related TBI is low in Hong Kong. Although cycling-related head injuries carried greater risks of intracranial haemorrhage and unfavourable outcomes compared with other sports, most cyclists experienced good recovery. Helmet wearing among recreational cyclists with mild TBI was protective against intracranial haemorrhage and skull fracture. ³⁾.

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³⁾

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