

[Neurology](#). 1998 Mar;50(3):677-83. [Links](#)

Second impact syndrome.

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Diffuse cerebral swelling with delayed catastrophic deterioration, a known complication of brain trauma, has been postulated to occur after repeated concussive brain injury in sports--the "second impact syndrome" (SIS). Certain current concussion management guidelines are contingent upon this assumption. We established criteria for definite, probable, and possible SIS and analyzed all published cases. A total of 17 cases were identified in which the reports described the cases as being consistent with SIS. Of these, only five probable cases of SIS were found based on our diagnostic criteria. We also studied the accuracy of recalled episodes of minor concussion in football players by their teammates because the diagnosis of SIS is usually based on such accounts. We found overreporting of recalled episodes of concussion in teammates when compared with self reports and videotape analysis. Based on case reports, the claim that SIS is a risk factor for diffuse cerebral swelling is not established. Prevention strategies for sports-related cerebral swelling are difficult to implement in the absence of established risk factors.

[Clin J Sport Med](#). 2001 Jul;11(3):144-9.  [Lippincott Williams & Wilkins](#) [Links](#)

Does second impact syndrome exist?

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Second impact syndrome (SIS) is a widely feared complication of traumatic brain injury. Although postulated to occur after repeated concussion, the evidence for such a premise is not compelling. This paper reviews the published evidence for and against the existence of this controversial entity. Rather than SIS being a complication of recurrent concussion, it is far more likely that the clinical condition represents "diffuse cerebral swelling," a well-recognized complication of traumatic brain injury. This condition is more common in children and adolescents, which reflects the known demographics of so-called "second impact syndrome." We propose that clinicians abandon the misleading term second impact syndrome and refer to the syndrome as diffuse cerebral swelling.