



# A HIT TO THE HEAD

One hit to the head – is one to many. Injuries of the head is the number 2 of all polo injuries but for sure the most dangerous. Rugby, ice hockey and American football officials are concerned about safety particular regarding injuries of the head. The Swiss Polo Doc Dr. Andreas Krüger explains the injury and diagnostic tools.

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In recent years the Hurlingham Polo Association (HPA) is focusing on safety of the head with new regulations and a new standard of polo helmets. But what is the crucial point when a player suffers from concussion? What can we learn from other sports?

Concussion is the historical term representing low-velocity injuries that cause brain “shaking” resulting in clinical symptoms, and which are not necessarily related to a pathologic injury. Concussion may be caused by a direct blow to the head, face, neck, or elsewhere on the body with an impulsive force transmitted to the head.

Concussion typically results in the rapid onset of shortlived impairment of neurologic function that resolves spontaneously. However, in some cases, symptoms and signs may evolve over a number of minutes to hours. Concussion may result in neuropathologic changes, but the acute clinical symptoms largely reflect a functional disturbance rather than a structural injury, and as such, no abnormality is seen on standard structural neuroimaging

studies. Concussion results in a graded set of clinical symptoms that may or may not involve loss of consciousness. Resolution of the clinical and cognitive symptoms typically follows a sequential course. However, it is important to note that in some cases symptoms may be prolonged. In sports like Rugby a concussion test (Head injury assessment) is performed at anytime when an action happened which possibly lead to a concussion.

#### Concussion Management

The cornerstone of concussion management is physical and cognitive rest until the acute symptoms resolve and then a graded programme of exertion before medical clearance and RTP (Return to play). The current published evidence evaluating the effect of rest after a sport-related concussion is sparse. An initial period of rest in the acute symptomatic period after injury (24–48 hours) may be of benefit. Low-level exercise for those who are slow to recover may be of benefit, with RTP of one week of symptom free time after injury is recommended. As described above, the majority of



Left: Polo Doc Dr. Andreas Krüger from Switzerland.

injuries will recover spontaneously over several days. In these situations, it is expected that an athlete will proceed progressively through a stepwise RTP strategy.

#### Tools for onfield detection and diagnostics

**ARMIS Blackbox sensor:** When the polo player is training on their own it pairs with a smartphone on the body (I.C.E Mode), during a game the sensor connects to the first responder’s (Coach, Parent, Umpire etc...) app via long range Bluetooth (Match Mode). The system is able to detect motion and impacts. When the sensor is triggered above a critical threshold an alert is initiated. The app will then notify your emergency contact and either suggests to seek medical attention (Match Mode) or send GPS coordinates of the incident if the player is on their own (I.C.E Mode). This allows for follow up actions to be taken and polo player to be encouraged to seek proper medical attention.

**GForceTracker:** Is a tool with which real time monitoring of impacts & performance across a lifetime of activity, coaches can

improve training, technique, and maximize player safety. Individual & team player profiles allow you to track performance activity, exertion, and monitoring player fuel gauges in real time. Raw data collection combined with lab test mode take the tracker even further, by providing valuable information for players and the trainer staff.

**Infrascanner:** Is a portable screening device that uses Near-Infrared (NIR) technology to screen patients for intracranial bleeding, identifying those who would most benefit from immediate referral to a CT scan and neurosurgical intervention. This handheld device was first worldwide used during the snow polo tournament in Kitzbühel. A Player was heavily hit on the head by the horse without unconsciousness. Immediate on field diagnostics could be performed so that the player was safely playing the final games and had continuous checks on the posttraumatic time with full recovery after one week.

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