CONCUSSIONS AND KARATE PARTICIPATION

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More than 6 million men, women, and children in the United States participate in karate. This martial art is known to improve social skills, discipline, and respect. It is also known to improve mental alertness, self-confidence, and enhance physical fitness.

While karate is relatively safe, injuries can happen because there is physical contact between opponents. The most frequent injuries in kumite are to the extremities, the abdomen, and the head—in that order. The good news is that severe injuries are rare. In this segment I would like to discuss how to recognize and decrease the risk of concussions, a subset of traumatic brain injury or TBI.

TBI can occur in kumite if the participant (karateka) falls and strikes their head or by any direct blow to the head or an indirect blow elsewhere in the body that transmits an impulse to the head. A TBI is any injury to the brain that disrupts normal brain function on a temporary or permanent basis.

The emphasis on “head shots” increases the risk of serious injuries. In past years the addition of headgear (often optional) has decreased the incidence of serious injuries to the face and skull. There is no data to support that headgear reduces the incidence of concussions. A study of kumite injuries over the years has shown that cerebral concussions occur more frequently than one would expect. While not every blow to the head will result in a TBI, traumatic brain injuries have become a serious public health issue, contributing to one-third (30.5%) of all injury-related deaths.¹ An estimated 1.7 million TBIs occur annually in the United States; between 2001 and 2005, nearly 208,000 emergency department visits for concussions and other TBIs related to sports and recreational activities were reported per year.² ³

Roundhouse kicks, spinning back kicks, direct punches to the head, and the head hitting the mat following a blow are the usual mechanisms of injuries causing TBI.

Recognizing, Treating, and avoiding Concussions

The signs and symptoms of a TBI range from subtle to obvious and usually happen right after the injury but may take hours to days to show up. Karateka who have had a TBI may report feeling normal before their brain has fully recovered. With most concussions, the karateka is not knocked out or unconscious.
The following symptoms are potential signs of a TBI:

- Headache
- Dizziness
- Loss of balance
- Poor recall of memory
- Nausea or vomiting
- Blurred vision
- Drowsiness
- Fatigue
- Feeling “slow” or “foggy”
- Inappropriate emotions
- Personality change
- Light and/or noise sensitivity
- Poor coordination
- Sleep disturbance
- Ringing in ears

Controlled attacks will allow the karateka to perform moves that should reduce the risk of a concussion. Aggressiveness must be channeled and controlled. Wild abandonment or overzealous attacking due to anger or frustration can lead to a potential head injury. TBI may still occur, but can be reduced with proper fundamentals. All karateka need to know how to properly land from a throw or fall to reduce the risk of head injury. This is where the sensei/instructor needs to emphasize proper methods to land and protect the head from injury.

Post- Concussion Care

All concussions are serious, and all karateka with suspected concussions should not return to kumite until they see a clinician. These signs or symptoms should prompt one to stop kumite and talk with the instructor, the referee, and the medical personnel covering the event. Anytime one sees a fellow karateka who has been hit and then complains of a headache, appears dizzy or has a loss of balance, should be referred immediately for evaluation.

Prematurely returning to kumite after a concussion can lead to another concussion or even death. Any karateka with a history of concussion is more susceptible to another injury than one with no history of concussion.

Throughout the country, state karate associations and youth leagues are implementing strict TBI guidelines that clearly state how long a karateka must sit out and/or what requirements they must pass before returning to kumite. The current motto "when in doubt, sit it out" is valuable advice. Keep the karateka out until an appropriate health care professional says he/she is symptom-free and is cleared to return. The consequences of head injuries may not come to light until after several of them, and sometimes many years later.

No sport, karate included, can be considered completely safe. Nonetheless, risks can be reduced with appropriate equipment, adherence to strict rules, and proper training techniques. Of late, safety has become imperative in the minds of the karateka, the sensei, referees/judges, and the governing body. We need to be diligent in recognizing and preventing TBI in all karateka. Doing so can prevent
further brain injury or even death. Arm yourself with information; the following CDC Web sites are excellent resources:


- Banner Concussion Center at [https://www.bannerhealth.com/_Banner+Concussion+Center/_Banner+Concussion+Center+Home+Page.htm](https://www.bannerhealth.com/_Banner+Concussion+Center/_Banner+Concussion+Center+Home+Page.htm)

It is also essential that appropriate medical coverage is available at karate tournaments, particularly clinicians with experience in sports medicine. Appropriate medical supplies as well as pre-planned communication, in the form of an emergency action plan, should be developed to assist when prehospital care is required.

References

