Bicycle helmet

Prevention of serious bicycle injuries cannot be accomplished through helmet use alone, and may require separation of cyclists from motor vehicles, and delaying cycling until children are developmentally ready [1)].

Motorcycle helmets provide protection to adult motorcyclists involved in traffic accidents and their use is associated with a decrease in mortality rates and the risk of head injuries. However, no such protective effect of helmet use was observed for bicyclists involved in collisions [2)]

Bicycle helmets may offer less protection to females compared with males. The cause of this sex or gender-based difference is uncertain, but there may be intrinsic incompatibility between available helmets and female anatomy and/or sex disparity in helmet testing standards [3)].

Patients who wore helmets were significantly less likely to suffer from epidural hematomas and open head injuries. While TBI severity was not significantly different between helmeted and non-helmeted bicyclists, the overall occurrence of TBI and moderate to severe TBI among all admissions was lower than that seen in comparable studies from countries without helmet laws [4)].

Helmeted patients involved in bicycle crashes are less likely to sustain a serious head injury, a skull fracture, or facial fractures compared to riders without helmets. The most common injury in patients with a bicycle crash is a concussion. Helmets did not prevent concussion after bicycle rider's crash in our patient population [5)].

Helmet use demonstrated a statistically significant advantage in the prevention of traumatic brain injuries. No significant difference was found regarding the incidence of severity of cervical spine injuries. These results do not demonstrate any statistically significant benefit in the prevention of cervical spine injuries with helmet use. In contrast, helmet use was found to convey a significant protective advantage in the prevention of traumatic brain injuries compared to no helmets [6)].

E-bikers had a significantly greater risk of moderate to severe TBI compared with bicyclists. Helmet use was associated with decreased odds of severe TBI in bicyclists and a tendency toward a more favorable outcome for E-bikers [7)].

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