Headgear, mouth guards have little or no impact on reducing concussions in rugby players

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Existing headgear and mouth guards have limited or no benefit in reducing concussions in rugby players, according to Dr. Michael Cusimano, a neurosurgeon at St. Michael's Hospital.

However, educational injury prevention programs that promote proper playing techniques and enforcement of the rules do result in a significant reduction in concussions and head, neck and spinal injuries, Cusimano concluded after a review of existing studies on the topic.

Cusimano still recommends rugby players wear mouth guards and protective headgear because of the strong evidence they reduce mouth and face injuries and scalp lacerations and abrasions. He said equipment companies should be encouraged to develop more sophisticated headgear that could reduce injury risk. Current rugby headgear is soft-shelled, has thin padding and is primarily designed to protect the ears and the back of the head.

His findings were published in the November issue of the journal *Neurosurgery*, currently available on-line.

Professional rugby players suffer 91 injuries per 1,000 player hours, with each injury requiring an average of 18 days to recover and return to play. Concussion is the third most common match injury, accounting for 62 per cent of match head injuries. Cusimano said the number of

concussions may be under-reported because of the International Rugby Board rule that athletes can't return to play for three weeks after suffering a concussion unless they are cleared by a neurologist.

Spinal injuries account for 9 per cent of time lost to match injuries by professional English players, occurring at a rate of up to 10.9 per 1,000 player hours.

"A large number of players, coaches and referees believe that equipment such as mouth guards and headgears may prevent brain injuries in rugby," Cusimano said. "Our study was the first to summarize what did and what did not work. Equipment such as headgear and mouth guards are ineffective at preventing neurological injuries, but other strategies, such as education and rule changes, have been shown to be effective. These sorts of strategies should be made available to all rugby players so that these athletes can spend more time playing on the field than recovering off of the field."

The New Zealand Rugby Union and the country's Accident Compensation Corp. developed a 10-point RugbySmart injury prevention program in 2001 that has resulted in a 13 per cent decrease in neck, back and spine injuries and a reduction in the mean number of days between an injury and a player seeking treatment (4.27 days, down from six). This also resulted in a savings of $609,690 (U.S.) from decreased compensation claims to the ACC.

Provided by St. Michael's Hospital