

Rules limiting aggression should reduce hockey injuries

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Mandatory rules such as restricting body checking can limit aggression and reduce injuries in ice hockey, making the game safer for young people, a new study has found.

Rule changes could be incorporated into existing programs that reward sportsmanship and combined with educational and other strategies to reduce hockey injuries, according to researchers at St. Michael's Hospital.

The need to address the issue is critical, said Dr. Michael Cusimano, a neurosurgeon. Brain injuries such as concussions frequently result from legal or illegal aggressive body checking and account for 15 per cent of all injuries to nine-to-16-year-olds. On some teams, up to one-quarter of players will suffer a concussion in a season. These injuries also reflect a pervasive "win at all costs" culture now seen in many sports.

"Given that brain injuries are so common and that they can have permanent effects, we need to introduce measures that we know have been shown to work to reduce the numbers of children and youth suffering these injuries in sport," said Dr. Cusimano, who has researched and written extensively about traumatic brain injuries such as sports concussions.

The researchers conducted a systematic review of 18 studies that evaluated interventions to reduce aggression-related injuries. The results of their review appear online today in the *Canadian Medical Association*

Journal.

Thirteen of those studies evaluated mandatory rules in minor hockey leagues in Canada and the United States to lessen aggression. Of those, 11 found lower penalty or injury rates. Decreases in penalties ranged from 1.2 to 5.9 per game, while injury rates decreased three-fold to 12-fold.

In three studies of educational interventions, there were inconsistent effects on penalties and no significant effects on injuries. In two studies of cognitive behavioural interventions (changing thinking to change behaviour), reductions in aggressive behaviour were found.

Three of the 13 studies on rule changes examined the Fair Play Program that makes sportsmanship a component of final league standings. Points are awarded to teams at the end of every season or tournament for staying below a pre-established limit of team penalties per game. Nine studies looked at the enforcement of rules prohibiting body checking and one examined the impact of legal punishment on the frequency of aggressive behaviour in the NHL.

"Rule changes essentially alter the culture of a sport and clearly define acceptable behaviour for players, coaches, parents and officials," said Dr. Cusimano.

He said that while educational programs can also do this to a certain extent, their effectiveness depends on the involvement of all stakeholders and a simultaneous change in their attitudes. For this to happen, educational interventions need to be effective, implanted repeatedly, have an obvious reward and have widespread application.

This has occurred in New Zealand, where the Rugby Union and the country's Accident Compensation Corp. developed a 10-point mandatory

injury prevention program in 2001 that has resulted in a 13 per cent decrease in neck, back and spine injuries.

Dr. Cusimano said that introducing Fair Play Program rules with educational interventions and enforced rules hold promise in reducing injuries from aggressive behaviour. He said that Fair Play could have more impact if it incorporated stricter rule enforcement to penalize high-risk behaviour such as a head hit or check from behind. He suggested Fair Play could also remove the maximum number of penalties a team is allowed because critics say it encourages players to believe they are entitled to fill their quota and it potentially limits the number of penalties referees call in a high-stakes game.

More information: www.cmaj.ca/lookup/doi/10.1503/cmaj.112017

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