ing violent acts perpetrated by hockey teams in Stanley Cup final series, as indicated by recorded penalties,[2] Marchie and Cusimano note that "teams playing with less violence were more likely to win. Compared with more violent teams, they had on average over 7 more shots on goal per game and 53 more shots on goal over a 7-game series." Stating that victory resulted from less violence is a fallacy. Teams can play with extreme violence yet contain their actions to that which is within the rules; no penalty is incurred, even though significant violence is employed. In addition, less skilled teams may resort to a more physical and thus more violent strategy in an attempt to win the game.

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The excellent article by Anthony Marchie and Michael Cusimano[1] highlighted the fact that even minor concussions are serious injuries. The authors recommend caution in deciding when or whether hockey players should return to play after a concussion. This principle should apply to athletes in all sports, not just ice hockey. Traumatic brain injury can occur in a variety of sports,[2] and other sports with high risks for head injury include boxing, football, wrestling, soccer and rugby.[3] For example, one study showed evidence of neuropsychological impairment in amateur soccer players,[4] whose performance on tests of planning and memory was inferior to that of amateur athletes involved in swimming and track. As pointed out by Marchie and Cusimano,[1] physicians need to educate the public about brain injury and help to reduce the risk of our youth experiencing permanent cognitive deficits as a result of sports.

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[The authors respond:]

As R. van Reekum notes, legal bodychecks are often the cause of trauma and concussions; only 8% of injuries are caused by illegal checks.[1] However, stricter enforcement of existing rules would not solve the problem, as Angus Juckes and Ian Ross suggest.

It is difficult to see how anyone can perceive entertainment value in bodychecking, especially if its victims are children and youth. The American Psychiatric Association has concluded that, in addition to desensitizing viewers, violence in entertainment promotes more such violence.[2] Neal Shaw's suggestion that violence and aggression are often manifested in legal bodychecking raises the important question of whether these are values we wish to foster in the next generation of citizens.

Yet remaking the game is unnecessary. For example, most high school and women's hockey games are already played without bodychecking, and the injury rates in these settings are much lower than in the National Hockey League (NHL).[3] What needs remaking is attitude: we need to refocus the game on fun, skill and sportsmanship, rather than violence and aggression.

Although his review of our references is admirable, Ross's comments are limited in applicability, given that many athletes underreport injuries such as concussions. Because concussions are often missed or misdiagnosed,[4] the incidence is probably much higher than that reported.[3,5] Ross also fails to mention that Honey's review[6] indicated that 2 studies reporting no concussions did not have large enough sample sizes to allow definitive conclusions. Nonetheless, a conservative estimate of 1 or 2 concussions per 1000 player hours,[6] for 560 000 registered minor hockey players who average 15 hours on ice per season, would yield at least 8000 to 16 000 concussions alone for the upcoming season in Canada. On the basis of an injury rate of 15 per 100 players (9 to 15 years of age) per season,[7] we would expect bodychecking to account for the majority of the 84 000 injuries in the 2003/04 minor hockey season.

Some people, including various media pundits, coaches, parents and health care professionals, have suggested — erroneously — that the benefits of checking outweigh the risks, even for young children and adolescents. They argue that this technique must be learned to minimize the risk of injury at older ages, but the data do not support this contention. The incidence of concussion and other injuries consistently increases with increase in bodychecking experience, reaching its zenith at the elite levels in collegiate leagues and the NHL,[3,6,8] and is associated with significant risk of fracture,[9-11] concussion[8,12] and spinal injury.[13] One concussion is a risk factor for a second one, and those who have sustained 3 or more concussions are 9 times more likely to have altered mental status than those without prior concussion.[14] A frequently overlooked cost is that of attrition from the sport, which is greatest in those 13 and 14 years of age, when differences in the size and weight of players are also at their greatest.[11]

When these reasons against bodychecking are considered along with the concept of patient autonomy, we are compelled to recommend banning bodychecking until players are at least 17 or 18 years of age. It should be permitted thereafter only if players have given proper informed consent. Parents and young players need to know the risks before starting play in a contact league, and physicians should take into account not just when but if a player

should return to play in a contact league after injury.[15] Indeed, as Stephen Anderson reminds us, these principles should apply not only to ice hockey but to all sports.

Ultimately, a multifaceted approach that incorporates the elimination of bodychecking, enforcement of rules, engineering advances in materials and education holds the greatest promise for making hockey a safer game.

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Prehospital intubation and SARS

Richard Verbeek and associates[1] conclude that "paramedics should not intubate patients with SARS-like symptoms in the prehospital setting," presumably because of the risk of contracting severe acute respiratory syndrome (SARS). I disagree with this sweeping prohibition.

First, the only evidence provided that such intubations pose a risk is a single case report,[2] which did not even involve paramedics. That intubation occurred in the intensive care unit of a teaching hospital and was anything but typical. The procedure was prolonged, and both bilevel positive airway pressure and high-frequency oscillatory ventilation were used, procedures likely to create a viral aerosol and considered unacceptably dangerous by physicians experienced in the treatment of SARS (H. Dwosh and H. Wong, Department of Medicine, York Central Hospital, Richmond Hill, Ont.: personal communication, 2003). In contrast, many straightforward intubations of patients with SARS were performed without incident during the Toronto outbreak.

Second, the authors make no attempt to quantify the risk to paramedics. Instead, their recommendation is based on the conclusion that it is difficult to follow the procedures required by the provincial government's directive.[3] However, this directive is not evidence-based. A more reasonable conclusion would be that the Ontario government directive is impractical and should be reconsidered.

Third, the authors fail to place SARS-like illness into an epidemiological context. Obviously, SARS is a meaningful risk only in communities that are experiencing a SARS outbreak. At the moment, this does not apply anywhere on the planet. Even in a community that is experiencing a SARS outbreak, the probability that a prehospital patient who has "SARS-like symptoms" and who requires prehospital intubation actually has the disease is small. If it can be ascertained that the patient is not a hospital worker or a recently discharged (within 10 days) inpatient, the probability becomes very small indeed.

There is no reason to believe that a straightforward intubation of a low-risk patient poses an unacceptable risk to paramedics using reasonable and practical precautions. This risk analysis applies to the great majority of prehospital intubations during a SARS outbreak and, at present, it applies to all prehospital intubations throughout the world.

The sweeping recommendation of Verbeek and associates[1] will compromise patient care while offering no benefit to paramedics. This is just the latest example of a self-inflicted wound from our misguided response to SARS.[4]

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Unfortunately, I cannot agree with Richard Verbeek and associates[1] that paramedics should not intubate patients with SARS-like symptoms in the prehospital setting. If we applied their logic to certain other clinical scenarios, paramedics would never, for example, insert an intravenous line for fear of contracting HIV infection. A reliable history of HIV risk factors is difficult to obtain in the field, and the uncontrolled circumstances in which paramedics