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**Background** Ice hockey has high participation and injury rates in youth in Canada. Body checking (BC) is the predominant mechanism of injury. Research has informed policy change disallowing BC in non-elite Pee Wee leagues (ages 11–12) in some provinces.

**Objective** The objective of this study was to determine if the risk of injury and concussion differ for non-elite Pee Wee ice hockey players in leagues where BC is permitted (Alberta) versus leagues where policy no longer permits BC (Ontario).

**Methods** This is a cohort study completed in Alberta and Ontario during the 2011/2012 season. Players were from Pee Wee teams in the lower 70% of divisions of play. A previously validated injury surveillance system was used to collect preseason, exposure and injury data.

**Results** Forty-four teams from Alberta (n=658) and 32 from Ontario (n=258) participated. There were 144 injuries (Incidence Proportion (IP)=21.88 (95% CI 18.78 to 25.24)) and 83 concussions (IP)=12.61 (95% CI 10.17 to 15.4)) in Alberta and 17 injuries (IP=6.59 (95% CI 3.88 to 10.34)) and 11 concussions (IP=4.26 (95% CI 2.15 to 7.5)) in Ontario. The Alberta versus Ontario Risk Ratio was 3.34 (95% CI 2.06 to 5.41) for all injury and 2.96 (95% CI 1.6 to 5.46) for concussion.

**Significance** There was a 3-fold increased risk of injury and concussion in non-elite Pee Wee ice hockey players in leagues where BC is permitted compared to a cohort where BC is no longer permitted. These findings have important implications for further BC policy change to reduce the public health burden of injury and concussion in youth ice hockey.