

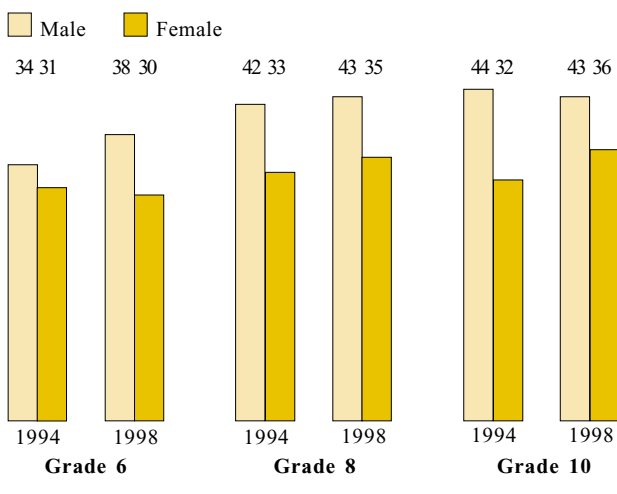
# Injuries

Unintentional injuries are the leading cause of death among children and youth. Those developing strategies to reduce the injury rate need information about how and where young people are injured (Williams, et al., 1997; Mitchell, 1998). There are strategies to reduce the number of injuries among youth (Health Canada, 1997). Teaching young people to take fewer risks in their daily activities, making work and play settings safer, modifying equipment and supervising children more closely can all reduce the risk of injury. Legislation is also effective: laws mandating the use of seatbelts and bicycle helmets have been shown to prevent or reduce the severity of injury incidents involving vehicles and bicycles.

Responses to a series of questions introduced on the 1994 survey showed Canadian Grade 8 and Grade 10 students in the upper quartile of countries reporting large numbers of injuries, although different access to medical care in each survey country may account for the ranking to some degree. In particular, sports injuries are very prevalent among Canadian youth. Over 35 percent of Canadian young people in Grades 6, 8 and 10 reported at least one injury for which they had been treated by a doctor or nurse; over 40 percent had been treated for more than one injury. Not inconsequential events, many of these injuries involved fractures, sprains and cuts, and led to an average of two missed days of school. The social and real costs of these injuries have serious economic implications (Stark et al., 1997; Osberg et al., 1996).

**Figure 9.1**

Students who were injured in the past year and had to be treated by a doctor or nurse (%)



## Incidence of Injuries

An examination of the factors related to the occurrence of injuries using the data from this study revealed very little about the individual characteristics that put young people at greater or lesser risk. Certainly for the older students, those who used alcohol were more likely to be involved in injury events, but there was little other information indicating who was most vulnerable. Other researchers have noted that young people with characteristics related to risk taking, sensation seeking and impulsiveness are more likely to be injured (Robertson, 1992).

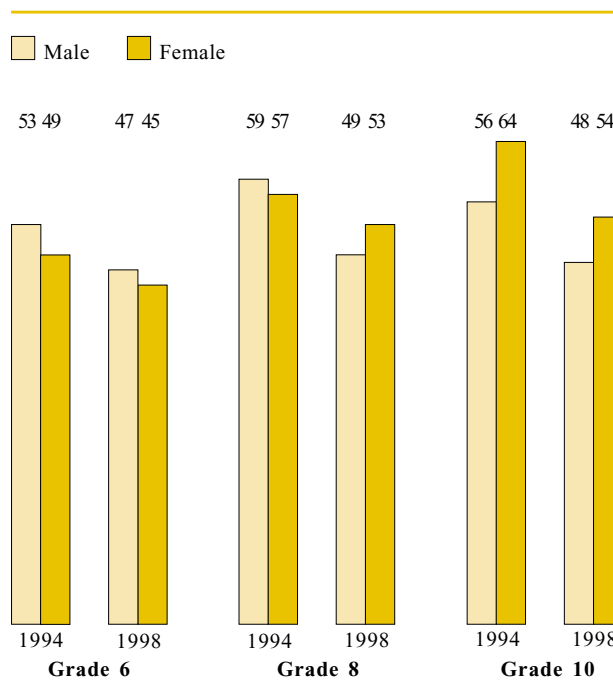
Figure 9.1 presents the notably high percentage of youth who reported at least one injury requiring medical attention in the previous 12 months on the 1994 and 1998 surveys. The figure does not incorporate cases where an individual received more than one injury requiring medical attention, and therefore it does not represent the total number of injuries. Boys were more likely than girls to be injured at all grade levels. Differences were relatively small between the Grades 8 and 10 students, but Grade 6 students were less likely to have been injured. There were only minor differences between the 1994 and 1998 surveys.

One of the real costs of injuries is the amount of school time that injured young people miss while they are recovering. Figure 9.2 indicates that about half of the students who were injured sustained injuries severe enough to keep them from school or other usual activities for at least a day. Gender differences were relatively small for the Grades 6 and 8 samples, but Grade 10 girls were more likely than Grade 10 boys to miss school because of an injury. The older students who took time off from school after an injury were more likely to take more time, and overall boys required more time off on average than girls for injuries.

Figure 9.3 combines the three grades of respondents from the 1998 survey to illustrate the time of year injuries are most likely to occur. The pattern was similar for both boys and girls. December to April is the period of fewest injuries. Injuries are most likely to occur in Spring and Fall. This appears to be related to the fact that organized sporting activities, especially those that involve physical contact, intensify and overlap across seasons (National Institutes of Health, 1992). The figures for summer injuries were also quite high; young people have more free time then to engage in outdoor activities.

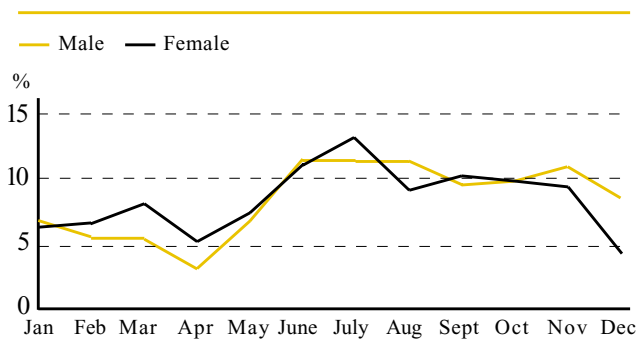
**Figure 9.2**

Students who were injured in the past year, had to be treated by a doctor or nurse and who missed at least one full day of school or other usual activities (%)



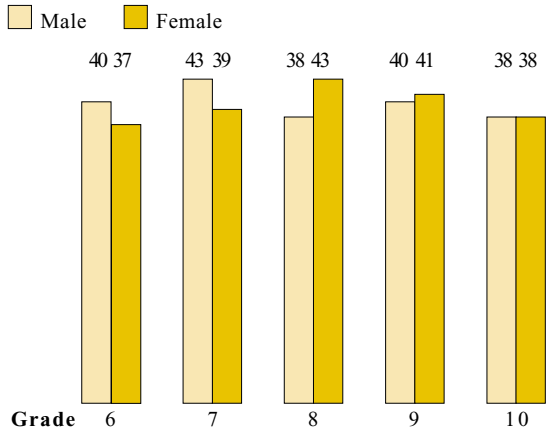
**Figure 9.3**

Time of year when most serious injuries occurred, all 1998 survey students



**Figure 9.4**

Students who were injured in the past year and missed a full day of school or other usual activities, but were not treated by a doctor or nurse, 1998 (%)



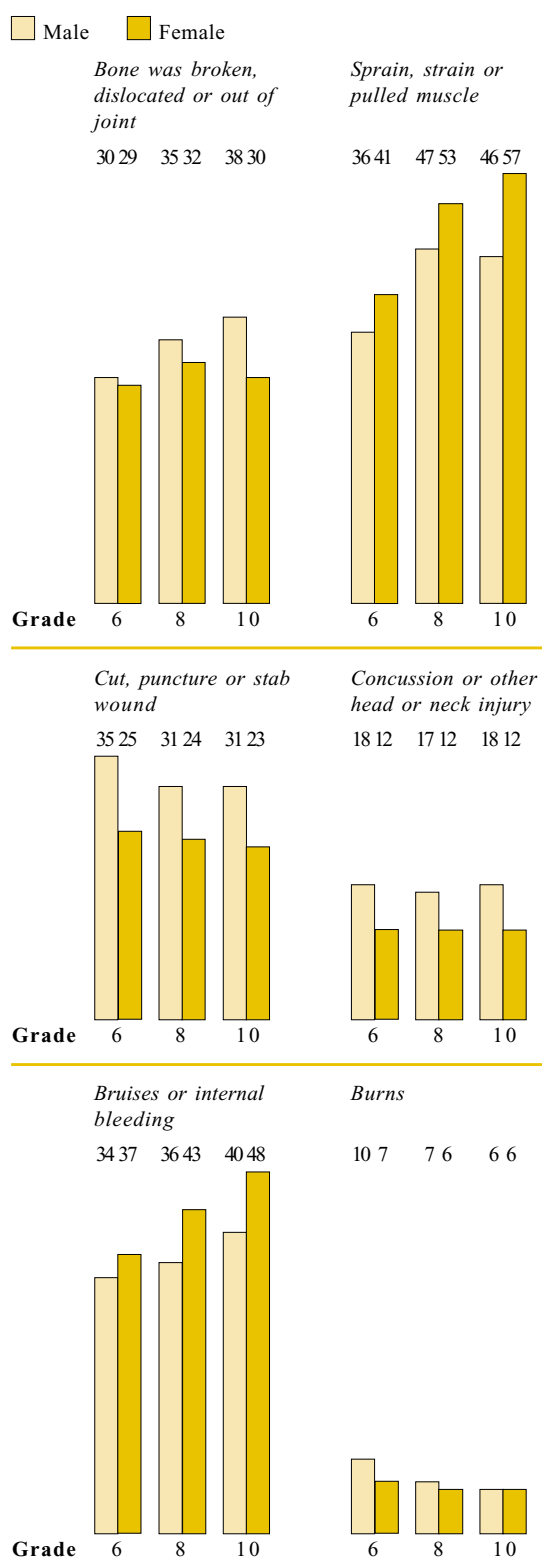
Not all serious injuries required treatment by a health professional. Figure 9.4 indicates the percentage of students who missed a day or more of school because of injuries that were not treated by health professionals. At about 40 percent of all students, these figures were remarkably high and gender differences were relatively small from grade to grade. Added to the medically treated injuries, these figures show that the majority of students receive a significant injury during a typical year.

## Types of Injuries

Figure 9.5 summarizes the types of injuries received by young people that required medical treatment. The most common type of injury was a sprained, strained or pulled muscle. For girls, the incidence of this type of injury increased over the grades, while for the boys it levelled off after Grade 6. Bruises or internal bleeding were also quite common and increased in proportion steadily from grade to grade. Girls were more likely than boys to experience sprains, strains, pulled muscles and bruises or internal bleeding, but boys were more likely to have broken bones, head or neck injuries (including concussions) and cuts, punctures or stab wounds.

Figure 9.5

Type of most serious injury suffered by students who saw a doctor or nurse for the injury, 1998 (%)



## Treatment Required for Injuries

**Figure 9.6**

Treatment received for most serious injury suffered by students who saw a doctor or nurse for an injury, 1998 (%)

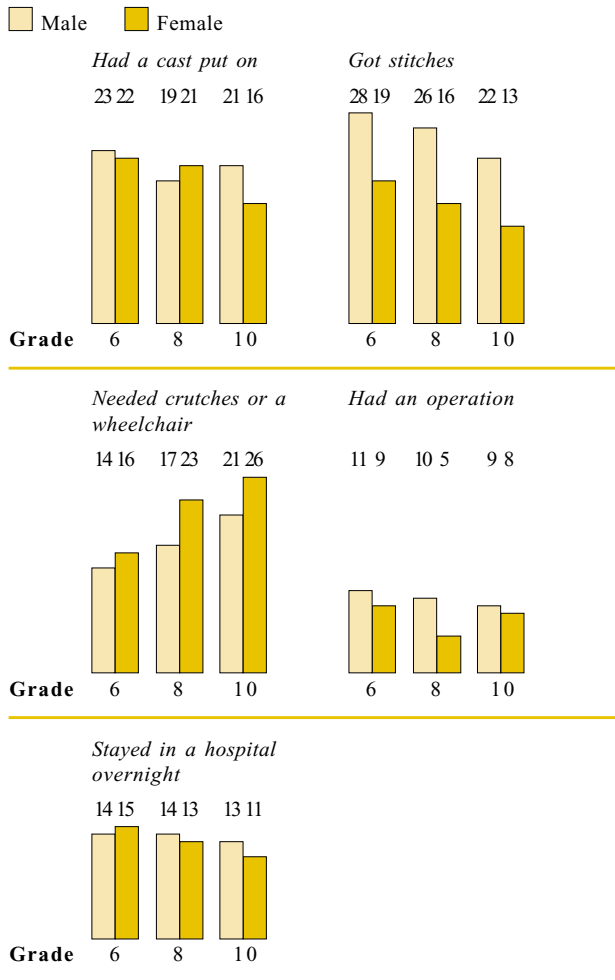


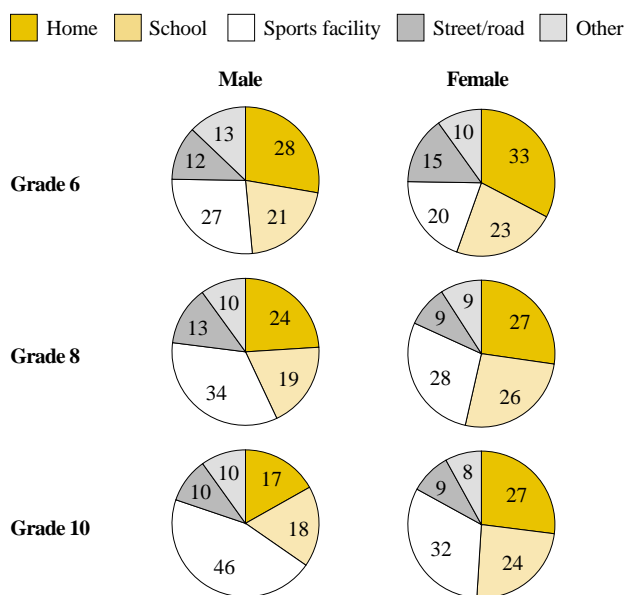
Figure 9.6 summarizes the types of treatment received by injured students. Stitches were common, especially for boys, although the numbers receiving stitches declined from Grade 6 to Grade 10. About 20 percent of the injuries required a cast and about 14 percent required an overnight stay in the hospital. The proportions of students requiring crutches or a wheelchair increased from Grade 6 to Grade 10, but the proportion requiring stitches declined. Girls were more likely to need crutches and boys were more likely to get stitches. About 10 percent overall required an operation.

## Where Injuries Occur

Those who develop injury prevention programs need to know the circumstances and settings in which injuries typically occur. Figure 9.7 indicates where the students were at the time their most significant injury occurred. For both boys and girls there was an increase from grade to grade in the proportion of injuries that occurred at sports facilities and a corresponding reduction in the injuries that occurred at home. Boys were more likely than girls to sustain sports-related injuries, but there were relatively small gender differences in injuries that occurred on the street or road. Over half of injuries that occurred in school involved students playing in games and playground activities. A second significant group of school-related activities involved being struck or cut or falling. Street-related injuries typically involved bicycles and in-line skates and, of course, automobiles, but they also included falls. Each setting presents its own risk-related problems.

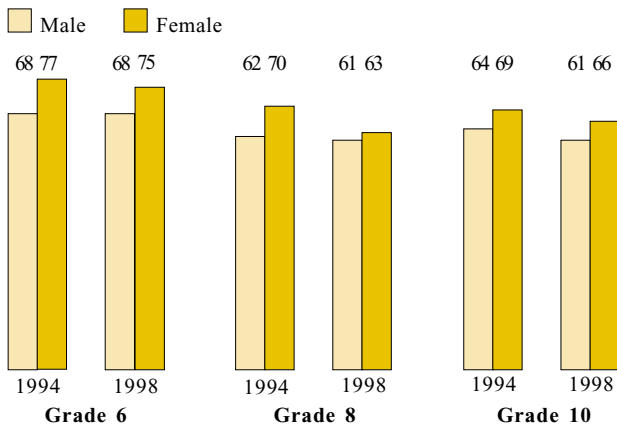
**Figure 9.7**

Where students were when they were injured, by grade and gender (1998)



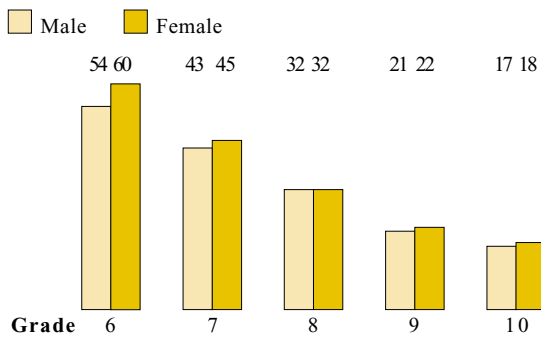
**Figure 9.8**

Students who “always” wore a seatbelt when riding in a car or truck (%)



**Figure 9.9**

Students who “often” or “always” wore a bicycle helmet, by grade and gender (%)



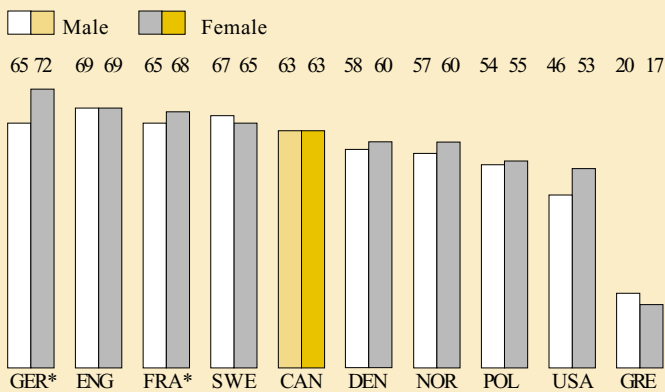
## Preventing Injuries

There are a great variety of injury prevention programs in Canada ranging from providing traffic safety guards, playground supervisors and protective equipment to reduce the risk of injury in sports events to legislation mandating the use of helmets by bicycle riders and seatbelts by automobile drivers and passengers. Figure 9.8 indicates levels of compliance with the seatbelt legislation among the students. Although seatbelts are legally required, a surprisingly large proportion of young people do not wear them all the time, ranging from 25 to 39 percent. Girls were more likely than boys to always wear seatbelts at all grade levels, and Grade 6 students slightly more likely than Grade 8 or Grade 10 students. Certainly, it is the drivers' responsibility to ensure that children wear seatbelts, but it is quite clear that a substantial number of young people are not being required to wear seatbelts while in an automobile.

Figure 9.9 presents the proportions of bicyclists who “often” or “always” wear helmets when bicycling. Helmet regulations vary by province, although the injury prevention advantages have been well established by research (Thompson et al., 1989). The sharp decline in helmet use as students grow older represents a real concern.

**Figure 9.10**

Thirteen year olds who “always” wore a seatbelt (1998), by gender and country (%)



\*France and Germany are represented by regions: see Chapter 1 for details.

All the countries represented in this figure have seatbelt legislation in place. Canada falls into the highest use group where approximately two-thirds of the students always wear a seatbelt. The figures for the United States and Greece are surprisingly low.



## Summary

Unintentional injury may be the most serious health problem facing school-aged children. Approximately 40 percent of Grades 9 and 10 respondents reported an injury requiring medical attention. Boys were more likely to be injured than girls. For the Grade 6 students, injuries were more likely to occur in and around the home, but by the time the students were in Grade 10 they were more likely to be injured at sports facilities. Since most injuries occur around schools and sports facilities, specific prevention programs should be targeted at these settings.

A third of the Grade 8 and Grade 10 students do not always wear a seatbelt when riding in an automobile in spite of legislation requiring them to do so in all provinces, and the vast majority of older bicyclists do not usually wear protective helmets.