



NSAA FACT SHEET

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Updated 10.1.2012

Facts About Skiing/Snowboarding Safety

Skiing and snowboarding enjoy an excellent safety record. Skiing and snowboarding are less dangerous than other high-energy participation sports, and less so than some common activities. However, skiing and snowboarding are still challenging and require physical skills that are only learned over time with practice. The sports involve some inherent risk, but in some measure, it is the thrill that entices most skiers and riders to pursue the sports. Even with the attendant risks, the health and fitness benefits of skiing and snowboarding are enjoyed by people of all ages across the slopes each season.

STATISTICS ON SKIING/SNOWBOARDING

Fatalities - According to the National Ski Areas Association (NSAA): During the past 10 years, about 41.5 people have died skiing/snowboarding per year on average. During the 2011/12 season, 54 fatalities occurred out of the 51.0 million skier/snowboarder days reported for the season. Thirty-nine of the fatalities were skiers (33 male, 6 female) and 12 of the fatalities were snowboarders, (10 male, 2 female). The equipment type was not reported for three of the 54 incidents. Regarding helmet use, 36 of those involved were reported as wearing a helmet at the time of the incident. The rate of fatality converts to 1.06 per million skier/snowboarder visits. (See Table 1).

Serious Injuries - Serious injuries (paralysis, serious head, and other serious injuries) occur at the rate of about 44.7 per year, according to the NSAA. During the 2011/12 season, there were 510 serious injuries. Thirty-eight of the serious injuries occurred with skiers (30 male, 8 female) and 10 were snowboarders, (9 male, 1 female). Among the serious injuries, 30 of those involved were reported as wearing a helmet at the time of the incident. The rate of serious injury in 2011/12 was one per million skier/snowboarder visits.

Table 1: Skiing/Snowboarding Fatality Rate Per Participant and Per Million Visits

2011/12 number of fatalities*	54
2011 number of ski/snowboard participants (in millions)**	9.8
Fatalities per million participants	5.5
Days of participation (in millions)*	51.0
Fatalities per days of participation rate (per million)	1.06

NOTE: A skier/snowboarder visit represents one person visiting a ski area for all or any part of a day or night and includes full-day, half-day, night, complimentary, adult, child, season and any other ticket types that gives one the use of an area's facility.

NOTE: The National Sporting Goods Association (NSGA) reports in 2011 there were 6.9 million skier and 5.1 million snowboarders. According to NSGA, 22.2 percent of snowboarders also ski, and conversely, 16.6 percent of skiers also snowboard. Therefore, the total on-slope participants were calculated at 9.8 million. (22.2 percent of 5.1 million snowboarders equals 1,132,200. 5.1 million minus 1,132,200 equals 4.0 million snowboarders. 16.6 percent of 6.9 million skiers equals 1,145,400. 6.9 million minus 1,145,400 equals 5.8 million skiers.) Using NSGA's 9.8 million on-slope participants, the per-participant skier/snowboarder fatality rate in 2011 equates to 5.5 per 1 million on-slope participants. The "participant per million" rate is calculated by dividing the number of fatalities by the number of participants. The "days of participation" rate is calculated by dividing the number of fatalities by the days of participation.

Sources: * National Ski Areas Association ** National Sporting Goods Association (Sports Participation, 2010 edition)

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AN ADDITIONAL PERSPECTIVE

To place skiing and snowboarding safety into context (and keeping in mind that this is not statistically significant) it helps to offer a perspective: The National Safety Council (Injury Facts, 2011 edition) points out that in 2009:

- 35,900 Americans died in motor-vehicle accidents;
- 5,300 pedestrians were killed;
- 8,600 died from unintentional public falls;
- 4,500 died from unintentional public poisoning;
- 2,400 people drowned while swimming in public areas;
- 800 died while bicycle riding;

FREQUENTLY ASKED QUESTIONS

Are the rates of collisions among skiers and snowboarders on the rise?

According to Dr. Jasper Shealy, professor emeritus at the Rochester Institute of Technology in Rochester, N.Y., who has studied ski related injuries for more than 30 years, the number of collisions accidents with other skiers or snowboarders accounts for only 6.4 percent of reported accidents. Dr. Shealy's research also confirmed that alpine skiers are three times more likely to be involved in a collision with other people than snowboarders.

Is the number of ski injuries increasing?

No. According to Dr. Shealy, the overall rate of reported skiing injuries has declined by 50 percent since the early 1970s. The once-feared broken lower leg from skiing is now a thing of the past, declining more than 95 percent since the early 1970s. The overall rate of reported alpine ski injuries as of the year 2000 remains essentially the same as 10 years ago—2.63 reported injuries per 1,000 skier visits. To only look at the overall number, or rate of injuries, does not tell the whole story. In research that was reported on at the International Society for Skiing Safety Congress in May of 2003, it was noted that in the last three to five years, the rate of serious knee injuries was starting to decline; unfortunately the number of mid-shaft tibial fractures was increasing after having declined dramatically from 1970 through the mid 1980s. The reason for the decline in serious knee injuries is believed to be due to the market penetration of the newer, shorter skis. The reason for the increase in mid-shaft tibial fractures appears to be due to a decline in the functional properties of the ski-binding-boot systems.

Have snowboard injuries increased?

The rate of injury for snowboarding as of the 2000/01 season has increased to 6.97 from 3.37 per 1,000 visits from 10 years ago, according to Dr. Shealy.

Who gets fatally injured while skiing and snowboarding?

Most fatalities occur in the same population that engages in high-risk behavior. Victims are predominantly male (85 percent) from their late teens to late 30s (70 percent), according to Dr. Shealy. Less than 10 percent of fatally injured skiers and snowboarders are under 10 or over 50 years of age, but more than 16 percent of all skiers and snowboarders are in these age groups. Most of those fatally injured are above-average skiers and snowboarders who are going at high rates of speed on the margins of intermediate trails. This is the same population that suffers the majority of unintentional deaths from injury. For example, in 1995 this population suffered 74 percent of fatal car accidents and 85 percent of all industrial accidents, Dr. Shealy reports. During the 2011/12 season there were 43 fatal incidents involving males, as opposed to eight fatal incidents involving females. Snowboarders don't appear to be making the slopes less safe for their skiing peers, either, says Dr. Shealy. A study presented at the Ninth International Symposium on Skiing Trauma and Safety in 1993 indicated that 7.7 percent of all ski injuries are the result of skiers running into skiers, while only 2.6 percent of snowboard accidents are caused this way.

Has the introduction of helmets made any difference in terms of head injury and fatalities in skiing and snowboarding?

The most recent helmet usage data clearly indicates that skiers and snowboarders already understand the importance of helmets. According to the 2011/12 NSAA National Demographic Study, 67 percent of skiers and snowboarders wore helmets while enjoying the

slopes at the time of being interviewed, up 10 percent from the 20010/11 season and up 171 percent from the 2002/03 season when only 25 percent of skiers and snowboarders wore helmets. Data also shows that:

- 91 percent of children 9 years old or younger wear ski/snowboard helmets;
- 81 percent of children between 10 and 14 wear ski/snowboard helmets;
- 78 percent of adults over the age of 65 wear ski/snowboard helmets;
- Skiers and snowboarders aged 18 to 24 have traditionally represented the lowest percentage of helmet use among all age groups. In 2011/12, 53 percent of all 18 to 24 year olds interviewed wore helmets, representing a 194 percent increase in usage for this age group since the 2002/03 season, when only 18 percent wore helmets.

According to Dr. Shealy, who has studied ski related injuries for more than 30 years, recent research has shown that the use of helmet reduces the incidence of any head injury by 30 to 50 percent, but that the decrease in head injuries is generally limited to the less serious injuries. There has been no significant reduction in fatalities over the past nine seasons even as the use of helmets overall has increased. This trend emphasizes the importance of not increasing risk-taking behavior simply because you are wearing a helmet. Skiing and riding in control is essential in improving slope safety and reducing fatalities.

What is the best way to avoid a collision with another skier or snowboarder?

The best way to avoid a collision is to follow the steps of Your Responsibility Code including: stay in control, stop in a safe place for you and others and when starting downhill or merging, look uphill and yield. It is also important to obey signs designating slow zones and intersecting areas. It is recommended that all skiers and snowboarders share the slopes and always show respect for others.

What is being done to improve safety?

Skiers at NSAA member resorts (currently 329 alpine resorts in the U.S.) are given several opportunities to learn how to ski safely. All ski areas endorse and are asked to display the "Your Responsibility Code," which admonishes skiers and snowboarders to ski and ride within their ability, to watch for skiers downhill, to look uphill before entering a trail, to move to the side of the trail when stopping, use devices to help prevent runaway equipment, observe all posted signs and warnings, have the ability to load and unload lifts, and to practice courteous ski habits. Those who break the code are routinely stripped of their passes by ski patrollers.

Ski areas have undertaken several programs to increase ski safety. Those programs range from establishing family ski areas to increasing the number of monitors on the slopes. Alpine and snowboarding lessons are offered and encouraged at ski areas. During the 2011/12 season, based on 147 of the nation's 475 operating ski areas that responded to the NSAA

Kottke National End of Season Survey, 19,702 ski lessons were given on average per responding resort. Additional data shows that 33 percent of these lessons were Level I (first time skiing or snowboarding).

What do ski areas do to address the safety issue of skiing and boarding?

Mountain resorts expend tremendous energy and expense educating their guests about skier and snowboarder safety. Below are some of the many slope safety campaigns.

“HEADS UP” CAMPAIGN AND THE RESPONSIBILITY CODE

During the 1999/00 season NSAA created the “Heads Up” campaign to support ski area safety education efforts and provide a unified platform for which to proactively reach skiers and snowboarders with timely slope safety information. The objective of the campaign is to further reduce the frequency of incidents through education. The campaign emphasizes the seven points of the skier and snowboarder Responsibility Code. Those points include:

1. Always stay in control.
2. People ahead of you have the right of way.
3. Stop in a safe place for you and others.
4. Whenever starting downhill or merging, look uphill and yield.
5. Use devices to help prevent runaway equipment.
6. Observe signs and warnings, and keep off closed trails.
7. Know how to use the lifts safely.

Additionally, resorts nationwide continue to recognize and celebrate NSAA’s annual NSAA National Safety Awareness Week, now in its 14th year. While Safety Week activities are based largely on the Heads Up safety initiative and Responsibility Code, resorts continue to expand upon and add their own creativity to the overall messaging. Each season NSAA recognizes member ski areas that have implemented particularly effective safety campaigns focused in a number of areas include helmet safety, chairlift safety, terrain park safety, avalanche safety, the best safety website and best Safety Week campaign. Find more information on NSAA’s safety education efforts and initiatives under the Safety and Education menu at nsaa.org.

Kids on Lifts

In 2012, NSAA developed the Kids on Lifts educational website. NSAA views using and riding chairlifts in a responsible manner as one of the primary safety considerations for all skiers and boarders. A skier's behavior has as much or more to do with the safety of the sport as does any piece of equipment from helmet to chairlift. The website www.KidsonLifts.org contains FAQ's and safety tips on how to load, ride and unload responsibly, general skiing and riding tips, coloring pages for kids, public service announcements and more. The tagline "No Horsing Around" is a motto we hope to ingrain in not only children but every skier and boarder.

SMART STYLE

NSAA and Burton Snowboards created the **Smart Style Terrain Park Safety** initiative in 2004. Smart Style enforces a code of conduct in terrain parks. The elements encourage participants to make a plan, look for others before using the jumps, respect other participants and to participate at their own level of skill. This venture is a cooperative effort to continue to heighten the awareness of the proper use of terrain parks at mountain resorts, while also delivering a unified message that is clear, concise, and effective. The Smart Style program includes four main messages; **Make a Plan, Look Before You Leap, Easy Style It, and Respect Gets Respect**. These messages encourage participants to scope around jumps first, to be aware of their landing areas, to start with the basics and to respect other participants.

GET SMART

NSAA developed the **Get Smart Freestyle Terrain Resource Guide** in 2008. The guide provides freestyle terrain users with useful safety information including the four points of Smart Style, the ATML method, the seven points of Your Responsibility Code and safety points to consider when using freestyle terrain.

Objects are Closer Than They Appear

In 2008, NSAA developed an additional component to its Heads Up safety education campaign billed "**Objects are Closer Than They Appear**" to further highlight the first tenet of Your Responsibility Code: Always stay in control and be able to stop or avoid other people or objects. The campaign emphasizes the role that speed plays in staying in control and overtly addresses the risk posed by collisions with trees or other fixed objects on the slopes.

TerrainParkSafety.org

NSAA launched a new consumer website: www.terrainparksafety.org in October 2004. The site incorporates up-to-date information on freestyle terrain safety, and encourages consumers to educate themselves about the use of terrain parks, halfpipes and other freestyle areas at snowsports resorts. As the sport grows in popularity, the elements of the site are meant to educate the consumer about various aspects of freestyle terrain.

LIDS ON KIDS CAMPAIGN

NSAA promotes the use of helmets on the slopes. We urge skiers and riders to wear a helmet – but to ski or ride as if they are not wearing a helmet. NSAA views skiing and boarding in a controlled and responsible manner – not helmets only – as the primary safety consideration for all skiers and boarders. A skier's behavior has as much or more to do with the safety of the sport as does any piece of equipment. In 2002, Lids on Kids www.lidsonkids.org debuted as a resource for consumers to learn about helmet use in skiing and snowboarding. The site contains FAQs about helmet use, fit and sizing information, general slope safety information, related articles and games, and testimonials about helmet use from well-known athletes, including members of the U.S. Ski and Snowboard Teams.

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