

# Preventing Alpine Skiing Injuries

## Facts on alpine skiing injuries

Skiing is a popular sport and there is a broad range of ages and standards among skiers. It is a physically demanding sport that requires strength, flexibility, endurance, cardiopulmonary fitness, good anticipation and reflexes. The skier, ski equipment and the environment all play a role in both the occurrence of injuries and their prevention.

### *How many alpine skiers?*

- ◆ The Alpine Resorts Commission estimates a participation rate of 10-12% of the population.
- ◆ Alpine, or downhill, skiers represent 75% of participants in alpine sports.

### *How many injuries?*

- ◆ Injury rates, based on Victorian Ski Patrol reports, are estimated to be between 1.5 and 3.9 injuries per 1000 visitor days.
- ◆ During the 1995 Victorian season, ski patrollers recorded an average 2.8 callouts/1000 visitor days at all resorts.

### *When do injuries occur?*

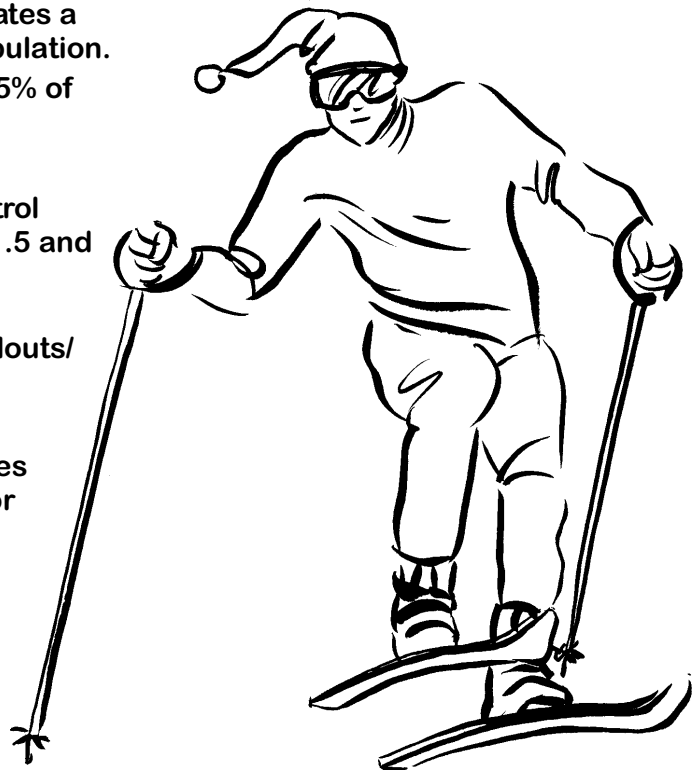
- ◆ Injuries tend to occur at particular times of the day, mostly in the late morning or late afternoon.

### *Who is injured?*

- ◆ Evidence suggests that beginners and less experienced skiers have a higher risk of injury than intermediate or advanced skiers.

### *The cause and type of injuries*

- ◆ Sprains, lacerations, fractures and bruising are the most common types of injuries.
- ◆ Knees are the most common body part injured accounting for between 20 and 32% of all alpine skiing injuries.
- ◆ Inadequate release of bindings has been implicated in lower limb injuries. Binding release performance may be influenced by the quality of the binding, inadequate adjustment and the condition of the ski boot sole.
- ◆ Upper extremity injuries account for 17-25% of all skiing injuries. Thumb injuries are particularly common.
- ◆ Falling on to the thumb and retention of the ski pole in the hand during a fall contributes to many thumb injuries. New types of handle design may reduce this type of injury.



### *References*

- ◆ Kelsall H, Finch C. A review of injury countermeasures and their effectiveness for alpine skiing. Monash University Accident Research Centre. Report No. 99. 1996.

### *Acknowledgments*

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## Safety tips for alpine skiing

### *Good preparation is important*

- ◆ Undertake pre-season conditioning and training.
- ◆ Warm up and stretch before the day's skiing.
- ◆ Novice skiers should undertake ski instruction to accelerate skill improvement. This instruction should also emphasise proper functioning of equipment and teach proper falling techniques.
- ◆ Establish the snow conditions and take them into consideration, along with your skill level, before skiing.



### *Equipment: suitability and maintenance*

- ◆ Seek professional advice when choosing equipment to suit your activity, skill level and size.
- ◆ Keep equipment in good working order.
- ◆ Ensure adjustment of ski bindings is undertaken by a professional. Properly adjusted ski bindings have the potential to prevent lower limb injuries.
- ◆ Boot characteristics such as individualised fit and comfort, temperature isolation and lack of pressure areas will help prevent injury.
- ◆ Ensure all rental equipment is properly fitted and adjusted.
- ◆ Protective headgear may prevent head injuries and is recommended for children. Ensure helmets are a modern variety with perforations or ear holes to assist with hearing.
- ◆ Wear suitable clothing, particularly a hat or helmet and gloves, to protect against variable alpine conditions.
- ◆ Eyewear that gives ultra-violet protection and a sunscreen with a high SPF should be worn, even on cloudy days.

### *Increase safety with sound techniques and practice*

- ◆ Read and practice the safety recommendations in the SnowSafe booklet, produced by Snow Sports Victoria.
- ◆ Be aware of, and adhere to, skiers' courtesy and safety codes.
- ◆ Be aware of the grading of ski runs. Only ski on runs suitable to your skill level.
- ◆ Do not ski too fast and out of control.
- ◆ Do not ski in out-of-bounds areas and never ski alone.

### *Other safety tips*

- ◆ Children should only ski with a responsible adult.
- ◆ Be aware of hazards such as snow making or grooming machines, or natural hazards such as trees and rocks.
- ◆ Alcohol can negatively effect your skiing performance and can be a contributing factor to hypothermia.
- ◆ Adequate rest, nutrition and energy replenishment will enhance performance and reduce the likelihood of injury.

### *If an injury occurs*

- ◆ Ensure all injured skiers receive adequate treatment and rehabilitation before resuming skiing.

#### *For further information contact:*

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