

ADVICE FOR SAFE SKIING, SNOWBOARDING AND SKIBOARDING (Snowblading)

Skiing and snowboarding are much safer sports than most people believe. For every one thousand people on the slopes per day, less than 3 skiers, snowboarders or snowbladers will sustain an injury that requires medical attention. If this happens to be you though, it may not only bring your eagerly awaited holiday to an abrupt end, but could also prove to be very expensive. Some injuries may mean you never ski or board again. Thankfully, most people sustain avoidable minor soft tissue injuries - nevertheless these can interfere with the enjoyment of their holiday. Without spoiling your fun, here are a few simple tips that can help to significantly reduce your risk of injury.

GENERAL ADVICE FOR EVERYONE

- a. Follow the F.I.S. code on piste safety (see below) – the vast majority of injuries occur when someone loses control. Make sure you ski/board on a slope and at a speed appropriate for your level of skill. In this day and age, if you break the FIS code and injure someone else, chances are you'll be liable to be sued for damages.
- b. Don't be tempted to skip professional instruction - injuries are commoner in beginners and bad habits learnt early on are difficult to resolve later. Even if you have lessons, take time to learn your sport – don't try to do too much too soon! There is research data to suggest that taking lessons per se may lead to an increased risk of injury *unless* you combine lessons with experience. Reducing your injury risk means a combination of proper instruction and experience.
- c. Have your own equipment checked regularly or use a reputable equipment hire company as advised by your tour rep or instructor. Don't be tempted to overstate your level of skill – longer skis are more difficult to turn and bindings set too high for your ability are more likely to cause injury. Boots should fit snugly without your ankle moving around inside. If your skis, board, boots or bindings don't feel right, don't be afraid to go back to the hire shop.
- d. Warm up and down properly – spend a few minutes gently stretching your hamstrings, thigh muscles, hips and calves before *and after* going on the slopes. Hold each stretch gently for 30 seconds – it shouldn't hurt!
- e. Recognise when you need a rest – most injuries occur after lunchtime when tiredness can begin to set in.
- f. Wear adequate clothing, preferably in layers. Don't forget good quality sunglasses, goggles and sunscreen.
- g. Helmets make sense – how valuable is your brain?!
- h. Avoid excess alcohol – not surprisingly it reduces your reaction time and has a greater effect at altitude
- i. Never ski or board off-piste alone. Be aware of the prevailing avalanche risk and, if in doubt, consult a local guide before setting out. Carry an avalanche transceiver and know how to use it.
- j. Never attempt to ski or board down a closed piste. Not only do you run the risk of serious injury or death, but you could be prosecuted and be held liable for the costs of any rescue
- k. Be aware of the risk posed by tree wells. More information can be found on www.treewelldeepsnowsafety.com

THE F.I.S. CODE OF CONDUCT

1. **Respect others:** behave in such a way that you do not endanger or prejudice others
2. **Ski/snowboard in control:** taking account of conditions, ability and terrain
3. **Choose a safe route:** take account of all mountain users around you
4. **Overtaking:** leave enough room to allow the person you are overtaking to make an unexpected manoeuvre
5. **Look both ways:** when starting a run, entering a run or setting off again after a stop to make sure it is safe
6. **Stopping on the piste:** avoid stopping in narrow places or where visibility is restricted. Always move to the side of a piste if you have to stop.
7. **Climbing and descending on foot:** keep to the side of the piste at all times
8. **Obey all signs and markers:** they are there for your safety – NEVER ski down a closed run
9. **At the scene of an accident:** you are duty bound to assist
10. **Witness:** should you witness an accident it is your duty to assist the ski patrol with any relevant information

ADDITIONAL INFORMATION FOR ALPINE AND TELEMAR SKIERS

The three main injury areas are knee sprains, minor head injuries and damage to the shoulder joint. The commonest knee injuries involve the medial collateral ligament (MCL) and the anterior cruciate ligament (ACL). MCL injuries usually occur when a skier falls, twists their lower leg and there is delay in or failure of the ski binding to release. Get into the habit of checking your binding settings every day by performing the 'self test'. This simple procedure basically involves you trying to release each boot from its binding at both the heel and the toe. If you can't manage this, then quite simply your binding is set too tight and should be adjusted!

To test the heel release

With your ski flat on the ground, slide your foot back until your leg is out straight. Now try and lift the heel of your boot out of the binding. Don't use too much force or you'll strain a muscle!

To test the toe release

With your ski angled so that the front inside edge is on the ground, try and twist your boot inwards so that the toe should twist out of the front of the binding. Once again, don't try too hard and end up injuring yourself!

If you can't release either the heel or the toe from the binding, then using a screwdriver (if you don't have one, then try any hire facility or ask at a ski patrol station) reduce the binding setting by 0.5 and try the release procedure again. Keep reducing the binding setting like this until you can release your boot yourself. Don't worry, doing this won't make the binding too loose but will reduce the risk of a knee injury from the binding not releasing when it should!

Regarding ACL injuries, we know that certain situations increase the risk of this injury –

- Attempting to get up whilst still moving after a fall
- Leaning right back on your skis or attempting to sit down after losing control
- Attempting to recover from an inevitable fall
- Landing after a jump off balance to the rear with the legs straight.

To avoid ACL injuries remember the four golden rules* –

1. **WHEN YOU'RE DOWN, STAY DOWN** - Don't try to get up if you've fallen until you stop sliding
2. **KEEP YOUR KNEES FLEXED** - Don't fully straighten your legs when you fall - try and keep them bent
3. **DON'T LAND ON YOUR HAND** – Keep your arms facing upwards and forwards
4. **LAND WITH YOUR KNEES BENT** – Don't jump unless you know where and how to land. Always land on both skis with your knees bent

Other tips for skiers

Try and avoid skiing with your hands inside the ski pole straps. This locks your hand to the pole in a fall, the pole then acts as a lever across the thumb increasing the risk of injury. Straps should be used in deep powder snow though to minimise the risk of losing your pole!

Contrary to popular belief, it has been proven in several studies that skiers cause far more accidents on the slopes than snowboarders. Keep a close eye on everyone else on the piste!

Telemark skiers have a much lower risk of injury than alpine skiers but should consider using release bindings as these have been shown to reduce the incidence of lower leg injuries. Leather boots are associated with more ankle injuries, plastic boots with more knee injuries.

(*adapted from "Training Tips for Knee Friendly Skiing", © Vermont Safety Research 1997)

ADDITIONAL INFORMATION FOR SNOWBOARDERS

The commonest injuries are to the wrist, head and shoulder. Fractures are twice as likely as amongst skiers. Wrist injuries are the number one enemy of snowboarders, especially beginners who are at the highest risk. Wrist guards have been conclusively demonstrated to reduce the risk of serious wrist injury and snowboarders are encouraged to use them. There are many myths surrounding wrist guards – that they cause injury further up the arm for example, that are simply not true! You can find more information on wrist guards by visiting www.ski-injury.com/wrist.htm. You will find information on that page with specific recommendations for wrist guards.

Other important points for boarders :-

- a. Soft boots are recommended for beginners – reinforced if possible to reduce the incidence of ankle injuries
- b. Always attach the board to your lead foot with a security leash. Secure this before getting into your bindings to prevent a runaway" board which could cause injury to others as well as being an expensive loss to you!
- c. In a fall, try to keep your arms tucked in to your sides with your fists clenched. This simple step may reduce the risk of dislocating your shoulder and/or breaking your wrist!
- d. Stop on one side of the piste and kneel or stand facing up-hill in order to see oncoming traffic rather than sitting down in the middle of the piste facing down the slope
- e. If jumping, always ask someone to act as a spotter near the landing zone so you know the landing area is clear. Don't try big jumps before you are ready. Jumps gone wrong are the major cause of spinal injuries amongst snowboarders.
- f. The rear foot should be detached from the bindings when ascending on lifts. This can make using and dismounting from lifts tricky as it's more difficult to control the board with one foot. In effect you have a fat ski on and this can predispose you to twisting injuries to the knees. Placing a stomp pad between the two bindings can help this as it gives your free boot somewhere on the board to grip.
- g. Boarders should be aware of persistent severe pain after an ankle injury – snowboarding is associated with an important fracture – of the lateral process of the talus bone – that is often diagnosed as an ankle sprain. If you have ongoing severe pain after 7-10 days go back to see a doctor. This injury is rare and most doctors outside of ski areas will not have heard of this injury – but it is important as it can lead to arthritis if undiagnosed. It may not show on normal x-rays and may require a CT scan to diagnose. If present it needs review by an orthopaedic surgeon. Be persistent!!!

ADDITIONAL INFORMATION FOR SKIBOARDERS

The commonest injuries are to the knee, lower leg and ankles. Injured snowboarders have the highest rate of fractures of any snow sport

- a. Lower limb injuries are associated with the non-release system on skiboards – be careful going at high speed!
- b. From 2005, you can choose to buy the Salomon 90 and 99 skiboard models with a release binding fitted for an extra £50. Alternatively, if you already own a non-release Salomon skiboard, you can buy a release plate which is simple to fit for £65. Well worth considering!
- c. Don't simply fit an alpine release binding to your skiboard – studies have shown it will not be able to release your leg in time to prevent an injury
- d. For details on other release binding systems now available for skiboards – see www.ski-injury.com/skiboard.htm

Try skiboarding with poles – it improves your balance which may reduce the likelihood of a fall

Helmets

Helmets help reduce the incidence of many head injuries such as those from glancing blows, impacts with hard snow/ice and swinging T-bars. However, there is no evidence that any helmet can prevent death when the wearer hits an object at 25mph or more (the average speed of most intermediate skiers). So whilst I strongly recommend helmet use, please don't think your helmet makes you invincible- it doesn't. If you do decide to buy a helmet make sure it meets either Central European (CE) standard EN1077 or one of the American standards - ASTM 2040 or Snell RS98. Helmets that meet the Snell standard are the toughest. Look inside the helmet and check on the label that it is certified to one of these standards.

Snow sports are great fun and we as doctors and ski patrollers love it as much as you do. What we don't love is seeing someone injured (or worse) unnecessarily. Don't get paranoid but keep these tips in mind and hopefully you'll enjoy many years of injury-free skiing, snowboarding and skiboarding.

Initial treatment for minor soft tissue injuries

1. **Protect** – the injured area. Don't re-injury yourself. Seek advice from a physio if you're not sure if its okay to re-exercise the injured area or not.
2. **Rest** – the affected area as much as possible. Small, gentle movements are ok to keep the injured part mobile
3. **Ice** – apply ice in a towel/cloth to the affected area for up to 15 minutes at a time, every 2 hours. Do not apply heat (including a soak in a bath!) for the first two days after injury. It will cause more swelling
4. **Compression** – apply an elasticated bandage to help minimise swelling
5. **Elevate** – the affected area – use a sling or a foot rest when applicable
6. **Drugs** – an anti-inflammatory such as ibuprofen is ideal and can be bought cheaply at most chemists. It should be taken as soon as possible. Check with the pharmacist beforehand if you are unsure if it is suitable for you. Ideally anti-inflammatories will have maximum effect if they are taken regularly for 5-7 days, not just here and there when you feel sore. Although they are pain killers, they are doing a lot more than just killing pain. You can take a different pain killer such as paracetamol or cocodamol (both available from chemists without a prescription) as well as an anti-inflammatory.

For further information on snow-sports injuries, their incidence, causes and prevention, visit

www.ski-injury.com

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This information sheet has been compiled to give general advice on reducing snow-sports injury risk. Whilst this has been prepared in good faith, integrating the latest research information on ski and snowboard injuries, the author can accept any liability whatsoever for any accidents, injuries or complications howsoever caused arising from following this advice.