Ski Safety

Ski fitness and conditioning

Fitness, strength and conditioning is of primary importance in avoiding injury whilst skiing. Particularly if skiing is only undertaken on vacation perhaps one or two weeks of every year. It is important to appreciate that in a new season a long time has passed since you previously skied and your fitness, skill, timing and conditioning will no longer be what perhaps it was the year before. A program of several weeks or months of physical training is required followed by several days of conditioning and practice on the slopes to regain and revise those skills and timing which are so important to avoid injury.

Do not try to ski yourself into shape. Be in shape before you get to the top of the mountain. Poor fitness and conditioning are major contributing factors of ski injuries. Prepare months before your planned ski trip with a good strengthening and conditioning program. Aerobic and stretching exercise helps promote fitness. Exercise should target the hip and thigh muscles such as cycling, Stairmaster, step aerobics, cross trainer and swimming. Weight training, using light weights and high repetition, will compliment your aerobic training. Heavier leg presses promote the important quadriceps and calf strength important for those parallel turns and bumps.

Ski lessons

Many and possibly most ski injuries are caused by poor technique and speed control. Few skiers take time each year to revise, practice and revisit the techniques previously used. By Learning proper technique from a trained professional and revising this at intervals the technique and skill level can be maintained and improved each year. Studies show that the high level skiers have fewer injuries. A ski instructor will help you advance through the novice levels more quickly. Even advanced skiers can benefit from professional instructors by refining their skills which will help to avoid injury. It is not usually advised that friends or family members are used to teach you how to ski. Use a certified ski instructor.

Equipment maintenance

Properly adjusted ski bindings, based on your weight, height, level of expertise, type of ski and skiing conditions can significantly reduce your chances of ski injury. Many serious injuries could be avoided altogether if this simple advice was universally adhered to. Properly adjusted modern ski bindings have made a substantial impact on reducing ski knee injuries. If you own your own skis, have your bindings checked and serviced by a certified ski shop. Whether you rent or own your skis, make sure the release mechanism of the ski binding is tested while in your presence. The author has always taken the step of reducing the release setting by two DIN settings for the first two days each season and then by 1 DIN setting for the third and fourth day. Once the conditioning, fitness and skill level has returned to some degree are the settings then returned to the standard level. Although this may result in some premature release in the

first few days, it encourages good speed control, balance and turning skill control in the first few days back on skis each year or each holiday.

Eye protection

With regard to eye wear, ski goggles or sun glasses provide your eyes with the best protection. They improve visualization by reducing the glare and wind. They provide mechanical protection against projectile debris and snow. More importantly, goggles protect against harmful ultraviolet light. Use a lens that have UV light protection rating. Cataracts are an ageing process which is a result of exposure to ultra-violet sunlight. In snow where the glare at altitude is extreme the risks of developing cataracts later in life may be significantly reduced.

Proper boot fit

Like ski bindings, the modern ski boot design has dramatically decreased lower extremity injuries. When selecting a boot, comfort and proper fit is important. When testing the boot in the store, keep the boot tightly buckled while walking about simulating skiing motions for as long as possible. If it does not fit in the shop, it will not fit on the slopes. A bad boot fit usually results in the skier unbuckling the boot to some degree in order to ski without pain. This response can result in a dramatic reduction in your ability to control your skis, which increases the possibility for accidents. If possible use of a similar hire boot for a few days skiing helps with choice.

Recognising fatigue

Recent scientific evidence suggests that fatigue is a major factor contributing to ski injuries. Skiing requires finely coordinated sustained muscle contractions. Most would admit that skiing tired is potentially dangerous. Yet, denial allows some to believe that they are exempt. Exercising common sense in understanding your own physical limits will help you to avoid injury when fatigue develops. In the UK it is a noticeable effect that skiing injuries occur most commonly either on the first run of the day when tired, stiff and not warmed up or alternately on the last run of the day and even the last run of the last day when fatigue and speed are the major causes. Perhaps good advice is always to make the last run of the day smooth, controlled and stylish rather than a mad dash for speed.

Alcohol

Skiing steep, snow covered mountainous terrain at speed is technically demanding, dangerous and at times life threatening activity. Alcohol has the recognised effect of reducing fine muscular control, reducing reaction times and reducing the appreciation of risk and removing fear. Restricts prohibit drinking whilst driving, flying or operating machinery yet some often drink whilst skiing. Understandably this appears ridiculous and a significant risk. Many injuries occur immediately after lunch where alcohol has been consumed or otherwise associated with skiing. The risks of alcohol consumption whilst skiing should be appreciated..

Beware of the chair lift

One of the most dangerous areas on the ski mountain is not the Double Black Diamond Slopes, it is the chair lift. Failure to concentrate during the critical moment of get off from the chair lift has resulted in many ski injuries, mainly to the knee. Often these injuries occur when someone steps on the back of your ski. By trapping your ski, this results in a backward twisting fall which is a common mechanism for knee injuries. If you ride on quad chairs, it is best to sit on the outer seats. By occupying the centre seat, you must avoid two people rather than one when disembarking. Conventional snow skiers should be aware of the additional risks when riding the chair lifts with snowboarders. Snowboarders sit on chair lifts with their snowboards angled at 45°. They must plant and pivot off the chair lift upon disembarkation. Because of the position and angle of the board, the potential for trapping the back of your ski increases which can result in a backward twisting fall.

The art of falling

Anyone who has ever donned a set of snow skis has experienced a fall. Research has been compiled from analysis of thousands of ski injuries and scores of video tapes of actual knee injuries. These studies have identified certain manoeuvres which are potentially dangerous and can lead to knee ligament injuries.

They often occur when the skier is:
1) attempting to get up while still moving after a fall
2) attempting a recovery from an off-balanced position
3) attempting to sit down after losing control

A profile has been recognized when these situations occur:
1) Uphill arm is back.
2) Skier is off-balance to the rear.
3) Uphill ski is un-weighted.
4) Hips fall below the knees.

You are advised to:
1) Place your arms forward.
2) Skis together.
3) Hands over skis.
4) Do not fully straighten your legs when you fall, keep them flexed.
5) If a fall is inevitable or in progress relax!: tuck your arms in, flex your knees, keep your chin down and try to land on your hip or shoulder, not your knee or outstretched hand.
5) Do not try to get up until you stop sliding.

Dry ski slopes

Whilst dry ski slopes provide the opportunity to learn to ski, practice skills and familiarise oneself once again with the art of skiing. They are associated with a particularly high risk of injury. The mesh arrangement of the artificial slope accentuates the risk. The mesh catches, skis, knees arms and most particular thumbs. In the medical profession "Dry slope skier's thumb" is a recognised type of fracture commonly associated with dry ski slopes.

Orthopaedic opinion

Ski safety is a subject affected by many variables. Despite the best efforts, control of these variables cannot always be achieved. Fortunately, the ski injury rate has decreased over the years. Lower extremity injuries, primarily to the knee, account for 30% of all ski injuries. It should be noted that if a knee injury occurs, such as a ligament sprain or a tear, there is usually no minimum time period in which these injuries need to be repaired. Research has shown that most acute knee injuries respond better to surgery once the acute swelling is allowed to subside. In these cases, a second opinion should be considered rather than the lure of immediate surgery. Fortunately the tendency of immediate surgery to be advised in the ski resort has been curtained in favour of delayed surgery after transport home where a longer term view of medical care and follow up can be arranged.

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