Technical and Background Information

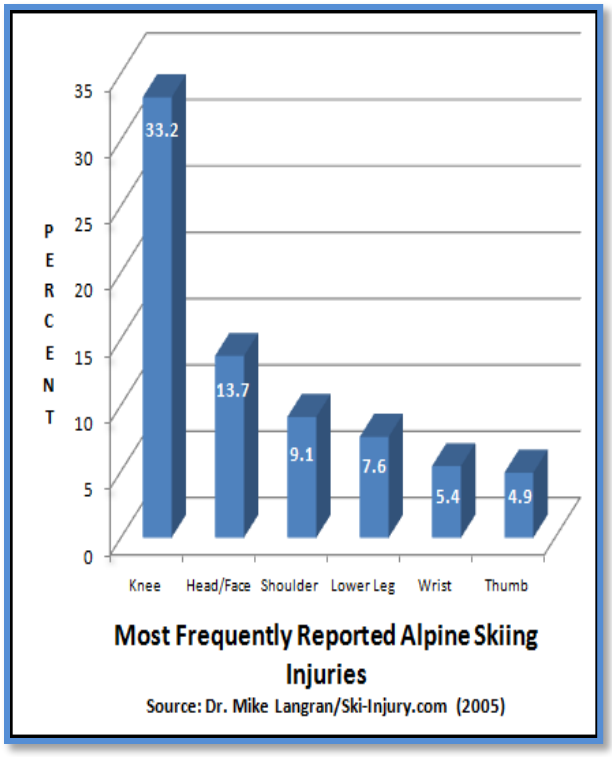
Safer knee binding

The Problem – Knee Injuries

Fory years ago, ski companies introduced a new kind of alpine binding that was able to reduce the incidence of broken legs – at that time, the #1 ski injury. This new concept gave skiers a good reason (more compelling than style) to buy new equipment – ***they could reduce their risk of injury***. Within a few years, virtually every skier had purchased new bindings, and broken legs became a thing of skiing lore – a statistical asterisk.

About 10 years later, ski brakes were invented, all but eliminating head lacerations (which had then become the #1 injury in skiing). Once again, skiers flocked to buy the safer bindings.

But just as the industry started to celebrate, skiers began to hurt their knees. Not many at first, but the problem got worse. Then, with the advent of shaped skis, it skyrocketed.



Now, knee injuries are an epidemic. Each year, 70,000 people injure an ACL on skis. ***70,000!*** Knee ligaments account for 1/3 of all reported skiing injuries - the largest percentage - by far - of any injury in the history of the sport, affecting every kind of skier on every kind of terrain.

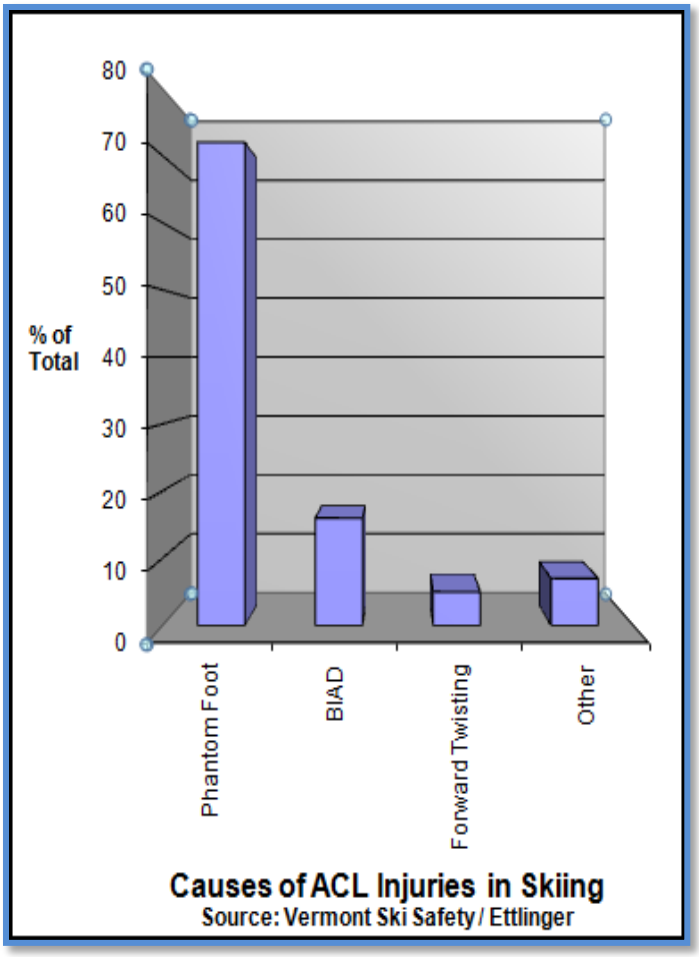
On average, an ACL costs nearly $25,000 to repair, and requires up to a year of costly, painful physical therapy. All this makes ACL injuries on skis a $1 billion-a-year problem – by far the biggest medical problem the ski industry has ever seen. This injury can *permanently* damage people and it also damages the sport itself. ***One out of five skiers who injure an ACL never skis again.***

Yet, after all these years, bindings have stayed the same. They've been restyled – over and over - ***but they haven't really changed.*** They became commodities, declining in quality and price, often "bundled" with skis, further lowering their perceived value. And still today, all ordinary bindings provide exactly the same things in the same way – basic, two-dimensional release functions (lateral toe and forward heel) - that they have for forty years.

KneeBinding – The Solution.

Nearly ¾ of all ACL tears in skiing are caused by a well-understood and long-documented injury mechanism called "phantom foot." KneeBinding attacked this by creating an entirely new concept – a third dimension of release – that specifically recognizes phantom foot loads and releases just before the forces are great enough to otherwise injure the ACL. It is ***the first and only binding in the world that can mitigate knee injuries while actually reducing unwanted releases***.

This 3rd dimension isn't an add-on. It isn't a bell or a whistle, or a gimmick. KneeBinding's patented *PureLateral*™ heel release offers a fundamental change to the way ski bindings operate. It is as big a step forward as the binding safety standards that evolved 40 years ago.



See For Yourself – Sit down (hips and knees bent) and pull your foot straight sideways to the outside. Your leg can't bend that way. The stress you feel in your knee is exactly why most knee injuries take place. KneeBinding can detect these forces and can release ***directly sideways*** before they would otherwise hurt your knee.

No other binding offers this type of release.

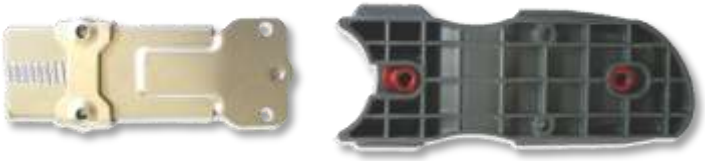
KneeBinding is the solution to the last remaining major leg injury in skiing.

KneeBinding Advantages

KneeBindings offer many innovative advantages over ordinary bindings.

PureLateral™ is Safer: The # 1 reason people purchase KneeBindings is because they're safer. A lot safer! This innovative new design dramatically reduces the chances of a knee injury on skis - without pre-release issues.

Lever|Edge™ Performance: KneeBindings ski better! Bindings provide the critical interface between the ski and the boot, generating leverage over the ski's edges and greatly influencing performance. If you carefully examine the way ordinary bindings interface with the ski boot, you'll find weaknesses. The boot platforms are often curved or non-rigid. And ordinary boot platforms (front, rear, or both) are not as wide as the sole of the boot – thereby reducing leverage. KneeBinding corrects all of these deficiencies. Our boot platforms are so wide we have to cantilever – or extend - the boot platform out over the edges of some skis. It creates a sense of extra power - of leverage and control you can immediately feel on snow. Our mounting system is the WIDEST in the industry – the screw pattern extends a full 55mm – 20% wider than most – for better security and leverage.



Flex|Float™ Retention: Most bindings are mounted in a way that creates "flat" areas which prevent the ski from flexing naturally. These not only inhibit the performance of the ski, but also contribute to pre-release issues during moments of intense ski flex. Skiers often find themselves "cranking" their heel settings up to keep their bindings from pre-releasing. But now, ***skiers can switch to a better binding***. KneeBinding has an innovative, floating mount system that allows the toe and heel to *move* slightly on the ski – just enough to allow the ski to flex the way the manufacturer intended, and to help prevent pre-release.

Customized Stance/Balance: KneeBinding offers another first – a "configurable" ramp angle. The default is an aggressive 6.0mm difference between the height of the heel platform and the height of the toe platform. This produces a more dynamic stance for skiers on today's new ski designs. But it also ***gives skiers the freedom*** to set this angle to anything they like. KneeBinding's lifter kits, in 1.5mm increments, allow ramp delta from 6.0mm to 0mm, and *even a reverse delta* of 1.5mm or 3.0mm. KneeBinding lifter kits are engineered to compliment our floating mount system.

Flat Ski Listings: KneeBinding is the world's only independent alpine binding company, so it is our mission to make sure our bindings can be used with EVERY flat ski from EVERY manufacturer. KneeBinding has undertaken to provide the industry with a comprehensive table of flat skis. This table currently has nearly 300 models from many manufacturers on it, and is growing every week. Please click on this image, or on this link for a Comprehensive Table of Flat Skis for 2011/2012.

***Snow Scraper*:** Before you step in, you remove the snow from your boot soles. You hit them with your poles, toe-kick the ski tails, scrape them against the binding heel or toe, or even reach down to work on your boot sole with your gloved hand. KneeBinding has even solved this problem. The straight, flat and wide brake treadle is a perfectly sized, shaped, and positioned snow scraper!

***Easier Step-In*:** When you step into your KneeBindings, you discover that they close firmly and solidly, with only half the effort of most ordinary bindings. They almost seem to *grab* your boots and pull them in. It is as if your bindings can't wait to get out on the slopes.

American Ingenuity and Quality*:** Many bindings are painted and can scratch, but KneeBindings are crafted from the finest machined stainless steel and the best industrial resins. They have fewer moving parts, fewer points of failure, and they're engineered to be really, really tough. The result is a ski binding that performs to the highest standards that look great after years of use. ***KneeBindings are made in America – right in Vermont – a place well-known for the highest standards of quality and craftsmanship.

KneeBinding Summary

Safety - KneeBindings are a lot safer than ordinary bindings – they can reduce the risk of ACL injuries by as much as 75%. They also ***perform better*** (Lever|Edge™), and ***retain better*** (Flex|Float™) than ordinary bindings, so skiers are left to wonder if there is any reason NOT to take advantage of the additional safety provided by KneeBindings.

KneeBindings are Really Different - If you look closely at all ordinary bindings, you'll notice they're different colors, different prices, and different companies – but ***they do exactly the same things*** (lateral toe and forward heel) and they do them, basically, the same way. But when you look at a KneeBinding - you can't miss that third adjustment – that ***PureLateral™*** heel release. And ***no other binding has it***.

Don't confuse this with "turn-tables" or "diagonal" bindings, or upward toe releases. None of these claims to prevent knee injuries; their makers all warn they do not. Turntables have side lugs/bars that completely prevent the heel from releasing sideways. "Diagonals" must open upward ***before*** they can open sideways (most knee injuries are rear-weighted, preventing "diagonal" heels from opening at all). And upward toe releases do not sense any force when your leg is pulled sideways.

If you want to reduce your risk of an ACL injury on skis, KneeBinding's patented ***PureLateral™*** heel release is ***the only technology proven to mitigate knee injuries on skis***.

Are KneeBindings Right For You?

Previously Injured? - If you know someone who has had a knee injury, you know how bad it can be. If you've been injured, you are even more likely to get hurt again. You need to mitigate your risk, and KneeBinding can help – lowering your risk of injury by up to 75%!

Women – You're at even greater risk of ACL injuries on skis than men, and most of you know it. You push yourself just as hard, but you don't need to take unnecessary chances. KneeBindings are as good as, or better than, anything else on the market, and they are the ONLY binding that can reduce the chance of knee injuries. For 2010, we've introduced ***a new model especially***

configured for women – the KneeBinding KB9-L. It looks great with all the new ski graphics and is tuned to the ideal ramp for most women – 3.0mm.

Parents – You'd never let your son or daughter ski without a helmet, so why would you let them ski without KneeBindings? ***Knee ligament tears account for 1 in 3 of all reported ski injuries!*** KneeBindings may cost a little more, but they're the safer choice for kids of all skiing abilities - even junior racers and freestylers.

Young Adults – You may dream of an Olympic medal, or of just "sticking" a 60-foot 900. But if you hurt your knees now, you may never get the chance. When a young person suffers an ACL injury, they may not even be able to get surgery until they finish growing. ACL tears end more competitive skiing careers than any other injury. And ***only KneeBinding's patented PureLateral™ heel release can reduce the risk of such an injury***.

Men – You'll pound bumps and catch air, but you still want to get to work on Monday morning. KneeBinding provides a great skiing experience, *and* greatly reduces the chances of an injury. Slightly stiffer and lighter, the ***KB12C (Carbon Fiber) model*** offers a safer, premium experience for even the most aggressive skiers.

Preparing to Buy KneeBindings

Selecting Skis – Many people arrive at a shop having already decided to buy KneeBindings. If you are remounting skis you already own, check with the dealer to be sure your skis will work with KneeBindings. Or - ask them to help you find skis that compliment your new KneeBindings. KneeBindings must be mounted on "flat" skis – that is skis that do not have a raised rail built into the ski itself. Most skis sold in North America are "flat," and most specialty shops offer a variety of flat skis, in every waist size, for men and women.

Fun Stuff! – KneeBinding provides shops with various materials they can share with customers. Retailers may be able to give you stickers, 3D glasses, a postcard, or a brochure.

Technical Training – Your retailer was professionally trained by KneeBinding. We taught them how to mount and adjust, and how to make your experience the best it can be. They may have helped you evaluate whether it is better to purchase KneeBindings or to risk knee injuries by using an ordinary binding. And, your KneeBinding Specialty Retailer knew that helping you choose KneeBindings was a way ***to keep you safer so you can ski longer.*** And that's very good business.

The KneeBinding Skier

You purchased KneeBindings, and had them mounted. You were probably already aware of the risk of knee injury. You may have sustained an ACL tear yourself, or you know someone who has. You did it because you want to ski hard and have fun, and because you don't want to get hurt if you don't have to. And now you know how well they ski – how much more edge grip you get, and how secure you feel when you ski on them. You may have selected them for increased safety, but only after you were sure you would not compromise on performance and retention.

You might have even realized you were becoming part of ***the next big thing in skiing***. You knew that people would ask you about your new KneeBindings. You will get satisfaction from being a leader in the quest to make our sport safer.

On top of that, you're happy you bought ***the only brand of alpine bindings made in the U.S.A.***

We, at KneeBinding, are delighted by your choice, and we look forward to hearing about your experiences. Please contact us any time!

Thank you,
John Springer-Miller
Chairman, KneeBinding Inc.

