In real estate we would say that what matters the most is location, location, location. In painting we would say: preparation, preparation, preparation. In snow sports we would say: balance, balance, balance. And “no,” this time I am not talking about balancing on our equipment as we snake down the hill, but the balance within a resort area. There must be a proper balance within the ski area in order to best serve our guests. For example, in my opinion, a resort with no Ski and/or Snowboard School might as well shut down. It’s like kids going to school, which has no teachers. No matter how great the snow is on the slopes, no matter how great equipment is under foot, no matter how well fed and clothed one is – if one cannot ski or ride, I don’t think they will enjoy their time at the slopes. Then, why should they come in the first place or, for that matter return again? So, why am I saying all this? We, the instructors need to realize how important our role is in the entire ski/snowboard industry. It is in our power to make it or break it. We need to step up to the plate and always give 100% effort in a cheerful, courteous, and professional manner. We are important to our guests and to the success of the entire snow sport industry!

Since we are all in it together, it is so very important to recognize why we teach. In my opinion we teach because we want our guests to ski/ride better. If our guests ski or ride better, they will enjoy themselves more and they will come back again for more, and they will bring their kids and friends with them, perhaps for years to come. They will financially support our great sport. Thus, we teach because we want the industry to stay ALIVE. Besides, isn’t it just so good to share with our guests, and among ourselves, our knowledge of the sport? I know, so it is not all about money, but also about our love for the sport. However, many try to make a living out of it.

Since we want our guests to learn our great sport, this brings us to another question: what makes instructors good teachers? And why is that an important question? Because better we are, better guests can learn, better they will become, more often they will return, more money they will spend, etc. There were many guest surveys performed at resorts all around the country. According to those surveys, the first thing that is most important to our guests is an instructor that truly cares about the guest’s well-being. Can the guest and the instructor connect? Is the instructor a truly caring person? The second most important thing to the guest is whether the instructor is knowledgeable enough.
and can instruct in an effective and fun way. Does the instructor know the heart of the guest’s problem? Can the instructor make learning a fun experience?

I would think that every resort’s management recognizes the value their ski/snowboard school, and knows that instructors must be motivated like any other human beings that have important work to do (for the functionality of the ski area, in our case.) Here is a short list of a few things that I know that some resort’s managements do for their ski and snowboard instructors.

- Provide regular and required training sessions.
- Provide and encourage attendance at dry-land training sessions.
- Reimburse the entrance fees paid by those instructors who pass a certification exam.
- Provide higher salary for higher certified instructors.
- Provide raises as the season goes on.
- Provide higher pay to those instructors that teach private request lessons.
- Provide free meals at the mountain’s cafeteria every so often, especially if the business is slow.
- Provide parties with entertainment for instructors.
- Upper end instructors are requested to free-ski in their Ski/Snowboard School official jackets to advertise excellence in skiing and riding and promote lesson sign-ups and reduce need for the instructor to carry extra coats and take time to go back to the locker room to change.
- Members of the management come to the Ski/Snowboard School to provide a pep-talk.
- Newsletters and other instructional materials are published and/or distributed on regular basis.
- If you know of other things that Ski/Snowboard Schools do to keep instructors energized, perhaps you can send me that information. Furthermore, at some resorts patrollers are given discount coupons for ski/snowboard lessons, like 10% off or $5 off or something like that. Patrollers give those coupons to those guests they feel need lessons desperately in order to avoid potential crashes.

As you can see, Ski/Snowboard Schools around the country play a very important part in maintaining balance within their resort. We need to remember this so we can be excited every time we come to the slopes. We make up a big piece of the ski area puzzle. For instance, publication of Peak Performance hopes to encourage, inform, educate, promote and excite all us instructors. I hope you will take time to read it and share your feedback with me. There is so much that we can learn from each other. Please, write me at Kosmalaw@bellsouth.net. In addition, all previous issues of Peak Performance are posted and downloadable from my web page found at www.mathsci.appstate.edu/~wak/.

Again, Happy Valentine’s to you all!

Main Course

A Paradox of Skiing
(Continued)

And They Still are NOT
Witold Kosmala and Mike Simmons

By Gordon Carr
PSIA-E Alpine, Level II

Well, I’m still here so apparently January’s article didn’t incite uncontrolled “skier rage” directed at you-know-who; or, maybe I’m still here because I decided to write this one even before the January missal was published so no one could get at me. I think the latter is probably correct. Anyway, this article will be about one legged skiing exclusively on the inside leg of a turn…the usual non-support leg…the awkward and scary scenario. Thanks
to Earl Brown, a terrifically funny guy who made cold chair rides a pleasure, for the inspiration for the idea of “paradox.” This and January’s article are dedicated to him.

Now to get on with it...we won’t start by dropping one ski at the lift and heading up but will start with progressions which will build skill and confidence in a sensible way. Remember this is not the way to ski; but the drills in this article combined with the January article’s tasks are ways to develop bullet proof balance and hone the ability (quoting Sean Smith) “to have a positive selective effect on any skill on either ski at any point in the turn.” It probably goes without saying, but realize AND remember, you aren’t meant to feel totally comfortable when skiing on the inside edge of the inside ski in a turn with the outside ski held off the snow. But you can get good enough at it so you can step outside yourself and stand with humility and in awe of some of the adaptive, one leg, amputees who race aggressively and confidently with only one ski turning both ways!

Take as an example and for inspiration Dianna Golden who lost one leg to cancer at age 12. At the age of 25, she started a winning streak of 10 World and 19 US championships including winning gold in all four events, Slalom, Giant Slalom, Downhill and the Combined in 1987 and 1988. She also won a Gold Medal in GS at the 1988 Olympic Games in Calgary when adaptive skiing was a demonstration event. In 1990 after abandoning “outrigger” and using regular poles, she was recorded traveling 65 mph in a downhill race!

Or consider Michael Milton, who in 2006 broke the Australian national ABLE-BODIED skier speed record while skiing in France. Michael bested the old record of 212.26 kph set by an able-bodied, two legged skier in 1997 with his speed of 213 kph to become the fastest Australian skier AND he did it on one leg! 213 kph...132.35 mph! So don’t give up on this developmental drill later because of a case of the “scareds” or jitters when doing this on the Magic Carpet or Easy Street!

One other thing: all the ski instruction books I have ever read struggle with “how to label each ski” in describing leg or foot movements and snow tool performance on the snow. It gets complicated, goodness knows: “downhill” and “uphill” don’t directly correspond to “support leg”; the support leg goes from being “uphill” to “downhill” on high, early edge change turns. But for purposes of these drills I think one thing is constant. We can conceptualize turns as two arcs, facing opposite ways linked at the turn transition, the Magic Diamond, when the crossover and edge changes occur (see Figure 1, at right). With this frame of reference the “inside” and “outside” ski of a turn, I think, become self evident and are constant at least during each turn. What at the Magic Diamond was the outside ski of the completed arc of the turn becomes the inside ski of the impending arc of the next turn.

So let’s get on with it! In the spirit of last month’s article and probably more important for these drills, we need to start slowly and reasonably to build skill levels and confidence with skiing and turning on the “inside edge” of the inside ski (remember for the purposes of these drills, the inside edge of the “inside ski” is INSIDE relative to the arc of the turn and NOT INSIDE IN RELATION TO THE OTHER SKI).

Like in the article last month about balancing and skiing on just the dominant, familiar and relatively comfortable leg and ski, I’ll describe a progression leading to one legged skiing. But this article will present progression drills designed to get you skiing on the edge most inside the turn arc of the inside leg and ski and with the other, outside ski held totally off the snow. For the adventurous perhaps one day you will leave one ski in the locker room and really reap the rewards. This will be an unfamiliar and uncomfortable feeling situation for most skiers who if they have ever gotten to this inside edge of the inside ski they were likely on the verge of a fall. But hang in there; there are huge balancing benefits when this scenario is skied deliberately! The primary benefits of all this month’s drills are they promote: a.) bullet proof balancing skills; b.) muscle movements to keep both feet back under the hips at ALL times; and, c.) confident and assertive muscle movements to produce rock solid, lateral cross-overs at the Magic Diamond of turn transitions. Because we will be doing these drills mostly directed toward the totally “wrong” leg and ski, the really awkward one, we probably ought to practice each drill of the progression many more times than we did with last month’s progression before moving on. Also, these are not
make a really aggressive cross
that you CAN get to that new inside
benefit of this drill is contained in that "f
leave that scary first placement of the inside edge at the Magic Diamond until later. But the final goal AND
make the step.

make a few turns to regain your composure, and start the steps again. If it is particularly difficult at first, just
the right ski. This will not feel "normal" or comfortable at first but stay on an easy trail and persist, y

inside ski AND onto the awkward inside
first step at cross-over" to get your body moving down the hill enough so that you CAN get to that new inside-the-arc edge of the new inside ski! To do this you have to commit to and make a really aggressive cross-over with enough additional forward and diagonal movement to engage the ski tip to initiate the turn.

Peak Performance
After your comfort has developed with stepping through the turns, the next drill is to Skate into the Turn. Again on a mellow slope, as you approach the apex of the turn and are shaping the e.g. Right Turn balancing on and with most pressure building on the outside Left leg and ski, pick up the RIGHT ski off the snow and point it into the direction of the new turn but more diagonally up the hill (an “up” diverging direction from the original turn arc and a gain in elevation) while simultaneously pushing off the outside, left ski in a skating step. If you have angled the right ski (in this example) higher into center of this turn, the inside edge (the right edge, the edge most inside the arc of the turn) of that right ski will support you for the glide and will tighten the arc of the turn as you pick up and bring the left ski into position for the next turn. Then as your center of mass crosses over at the Magic Diamond of the next turn, the weight and balance which was on the right leg and ski (but “wrong” edge) will roll over to the other, “normal” edge of the right ski and a turn to the left will begin with both skis on the snow with most balance and pressure slowly building on the right leg and ski until the apex of that turn and you repeat the skating sequence only with the other, left foot. A lot of this is timing and trust: timing to begin the skate step at the apex of a turn when the skis are in the fall line and not so late that the turn is already almost complete; and, trust that the gliding ski onto which you have skated and on which you are gliding on the inside (awkward) edge will continue turning…and it will. With this task anytime you bobble the usual dominant outside ski is still there to plop on the snow to finish turns traditionally (and comfortably.) If you get one of these right every 5 or 6 at first, you are on your way. Again that strong leg will produce more comfortable turns when it is the one onto which you have skated onto the “wrong” inside edge.

So now we come to it: making medium radius turns on the inside leg and ski and inside edge of that ski while holding the outside ski off the snow. Initially both skis will stay on the snow, but the percentage of weight and balance on each ski will be increasingly modified on each successive run. The article last month leading to one legged skiing on the “normal” dominant and support leg produced, essentially, skiing with 100% of the balance and weight during turns supported on the outside leg and inside edge of that ski (the normal way) but with the inside ski held off the snow. For purposes of this set of drills let’s assume that the “typical” weight and balance distribution is 60% outside leg and ski and 40% inside leg and ski during normal skiing. This month to get to that one legged inside ski goal, we will make a series of runs where gradually more and more weight and balance shift to the inside leg and ski of the turns.

After making a run or two really tuning into the kinesthetic sensations in your feet and the pressure difference between the two feet during your typical turns, ski several runs with 50/50% balance distribution throughout the turn and turn transition…on two skis EQUALLY ALL the time. This is not as easy as it sounds…few people ever ski solidly two footed. 50/50 distribution may take a while…work on it. Just getting to 50/50% will have improved your skiing. Then up the ante to 60% on the inside leg and ski of a turn and get comfortable with that. Of course the next level is 80% on the inside ski. In order to make turns with the 80% balance and weight on the wrong leg and ski, you really have to tip and incline your whole body uphill during the shaping and completion phase (the last 2/3rds) of a turn to keep the inside edge of the inside ski engaged and to keep that wrong edge holding the developing pressure. This is NOT the normal way…in turns with normal movement patterns we don’t whole body tilt except briefly at cross-over. In the “normal” movement patterns of dynamic parallel skiing, after the very brief inclination at cross-over, we ski into angulation at the fall line to maintain pressure on the inside edge of the outside ski during the shaping and completion phase of the turn and to avoid “blowout.” But remember this is a drill, so let yourself “whole body tip” all the time to get that inside edge of the inside ski engaged at the Magic Diamond, arcing into the new turn and holding throughout. Remember it is the Left Edge of the Left Ski drawing us into Left Turns and the Right Edge of the Right Ski drawing us into Right Turns! This will NOT feel comfortable for many a run but persist; remember Dianne and Michael! The other ski is there, already on the snow (albeit lightly) any time you need to revert to usual muscle movement patterns to recover balance. While doing these increasingly awkward shifts of distributions of balance to the unnatural feeling inside ski and edge (remember: the inside edge relative to the arc of the turn NOT relative to the other ski), only you will know, for sure, just how much you are using that “wrong ski and edge” during turns; force yourself and stay honest for the drill. (Well, maybe Len, ZT, Doug MacLeod, Jim Hanson, and Witold might notice what you are doing. But many intermediates initiate and complete turns with whole body tipping up hill and the really only sure-fire give-away of what you are doing in this drill is “which ski is producing the most snow spray.”)

Of course now the Semi-Final is to totally lift the outside ski of the turn off the snow and not set it back down
until the next Magic Diamond when the lifted ski is to become the new inside ski of the next turn. It will feel like skating on one leg, making slow rounded turns on the Left leg and ski on Left turns and on the Right leg and ski on Right turns, just on the inside edge always. Ice skaters do this all the time and sometimes even raise the leg lifted off the ice into a horizontal position...incredibly graceful looking. (Ask Wendy Snyder about this; she told me the maneuver is called a Spiral. And by the way, not to put undue pressure you understand, but this one ought to feel OK for you, Wendy.) In order to even do this, you MUST keep your ankles flexed and your foot back under your hips; the least bit of retreat away from the direction of travel, especially at the Magic Diamond, and your weight shifts to the tail of the ski and a fall is imminent. Also, you MUST commit to projecting your body aggressively across the inside, support ski at turn transition to GET TO that new inside edge (remember again it is the edge inside the arc of the turn.) This is the difficult “leap of faith” the first time (& 2nd, 3rd, 4th etc) you do it and if not done in combination with staying forward with consistent pressure exerted on the ski shovel, you won’t turn at all and you’ll bobble (my nice word for “fall”). Said differently, you’ll be staying forward enough that the pressure will be exerted on the ski tip with the PINKY TOE of the foot on that inside ski. This is the awkward feeling as typical turns develop with most pressure exerted with the Great Toe side of the foot on the outside ski. (This is the pattern of feelings of one legged skiing with the final drill from last month.) With this drill, and the one to come, the Grand Finale, so to speak, it is OK to lightly drag the inside pole to “feel for the snow.” For the initial, momentary bobbles, it is there to get you back balanced over the ski; but keep the pole drag as light as possible.

Now the final leap into the abyss, The Grand Finale. Get to the mountain early when no one is on the Magic Carpet and leave one ski in the locker room. Pick a good cold day when the snow and grooming are perfect! Maybe start out in line with the bottom of the Ski and Snowboard School deck so that you are on the gentle part of the slope and give it a whirl. There are no short cuts, no crutches; you just have to take the plunge. With only one ski on, even the turn transition to the “normal” turn for the leg with the ski is awkward. You MUST stay forward and not let your one boot get out from under your hip. Also don’t casually put your empty (no ski on it) boot onto the snow to regain balance; you are moving much faster than you think (or can walk in ski boots)!! Touching down, even lightly, with the boot is likely to spin you around. Careful the first few times; be ready to ride turns out to an arcing stop; you’ve done that already. Use your inside pole assertively if necessary to help with the balance at first. If you have alignment issues this may not be a drill possible to even do. Custom foot beds which provide a solid base for your foot also make this balancing act easier. But having come this far, even if your efforts are tentative and you think you are not doing this correctly, you really will have already improved your overall balancing skills and your two footed skiing by just forcing yourself to move along this drill progression ladder.

A short personal note: years back when I started on this path, after finally getting things sorted out on “wrong edge, single, inside ski turns with my left leg, I found it simply impossible to do them with the right leg...not fear...not timidity...I simply could NOT get up forward and cross over my right boot to get to the right edge of the right ski with enough pressure to initiate a right turn. Not-with-standing all the words of encouragement from colleagues (“What’s wrong with you? Are you afraid or something, you wuss?”) Never did figure that one out since I did this on some moderately serious terrain with the left leg...what did they think, that I was ½ afraid?!) Anyway turns out, you see, although I have legs of equal length, one hip socket is higher than the other resulting in my shuffling the right foot forward so I could keep both skis flat on the snow. But once that boot was out slightly in front, I couldn’t get up and over it to get to the right edge of the right ski hence couldn’t do this drill to the right. The fix? A really observant boot fitter put a 1/8” full insole lift in the left boot so I could get the right foot back under my hip. A lousy 1/8” inch! And to think of all my trials (and falls) all to no avail.

So this progression gets to be a serious challenge but one that will, I guarantee, improve your two footed, normal skiing performance even if you don’t make it to 65 mph in a GS race on one ski like Dianna did. There are alternative progressions leading to this one-legged skiing and there are certainly more challenging final tests like medium speed White Pass turns on serious terrain or slow speed Pendulum Turns. But just one legged turns both ways on the Magic Carpet or Easy Street will have given a transformational boost to your two footed skiing.

Sorry for the length of these two articles, but it takes a lot of words to describe body movements and ski performance...these drills are visual, DO, stuff. So on a free run sometime, instead of just schussing down Easy Street back to the locker room, have some of these drills in mind and give ‘em a whirl. Glad I wrote this before
the gang read January… Huh? What’s that sound of many ski poles tap, tap, tapping on my door?… Witold! How could anybody have gotten a pre-publication copy?… What am I going to dooooooooo….aghhhhh…helpyyyyy!

COME ON GANG,
JUST THINK COLD

Ski Tips

Skier in the “Back Seat”

By Witold Kosmala
PSIA-E Alpine, Level III

Visual cues are:

• Skier has hard time turning.
• Ankles are bend less than knees (they have “lazy” ankles).
• Hips hang out in the back as if they were sitting on a chair. Butt is behind the rear ski binding.
• Tails of the skis are pressured more than tips.
• Skier looses control of speed, skis jet.
• This is a common problem with females with large hips and people with long thighs.
• Often arms are too low.
• Skier can see 1/3 of their outside boot when turning.
• Pole plants are not correct.
• Upper body is vertical instead of being perpendicular to the slope.
• This one is harder to see, but thigh muscle should be mushy when in the transition. So, one in the back seat will have very firm thighs, which try to support the skier’s body. Skier will tire out quickly without skiing much at all.

Note: sitting back with knees bent more than ankles does not automatically put the skier in the back seat. In fact, this position is religiously found in racers and mogul skiers.

Ways to fix the problem:

• Think about proper body alignment. Try flexing ankles rather than bending knees.
• Stand up taller, move pelvis forward.
• Tighten butt muscles. Put a coin between butt cheeks and don’t drop it.
• Squeeze a bean between boot cuff and the shin and don’t let it drop. But, if you squeeze it too much, it will hurt your leg.
• Drive with your chin and arms.
• Plant poles correctly so that arms do not drop and so that poles pull the body into the turn.
• Do side slips.
• Do pivot slips.
• Do “J” turns.
• Do hockey stops.
• Traverse on one ski.
• Do bunny hops along the medium radius turns.
• Do leapers.
• Do bellows turns.
• Do hop to shape drills.
• Do hop turns.
• Do 1,000 steps.
• Skate
• Make as many turns as possible in a designated space.
• Put imaginary clocks on top of your ski boots with your feet going right through their centers with 12 o’clock pointing straight through the boot cuff. When you ski, pressure boot cuffs only between the hours of 10 and 2 o’clock.
• Stand on your toes.
• Try to do early edge engagement.
• Consider visiting a professional boot fitter and see whether heel risers would be needed.

Shin Bang

By Witold Kosmala
PSIA-E Alpine, Level III

What is it? Skiers can have shin pains for many different reasons. Some pains will be internal, others external. Shin bang will leave a mark, but having a mark doesn’t mean you have a shin bang. Simply your shins might be sensitive to the constant pressure. Shin splints and other tendon and muscle strains as well as inflammation can be very painful and need a separate discussion.

What causes it? Shin bang is when shins bruise and this might be caused by:

• Sensitive skin
• Abrasive clothing
• Excessive rubbing of shins against boot cuff
• Shin hitting against boot cuff
• Improperly fitted boots and/or improperly buckled
• Walking in ski boots
• Teaching skiing in ski boots which are loosened
• Using boots which are too soft or too stiff
• Using stance that is too far forward or too far back
• Skiing on rough surface, (we don’t mean difficult.)
• Jumping
• Not using enough functional tension
• Weak calf muscles

Ways to prevent shin bang

• Don’t do what we listed above which causes shin bang.
• Toughen your shins and skin by wearing ski boots around your house before ski season begins. Make sure you buckle the boots like you would when skiing.
• Start your ski season by skiing only a few hours a day, and only every other day.
• Don’t unnecessarily exert excessive pressure on the boot cuffs.
• Use foot beds or orthotics to hold your heel in place and prevent foot from sliding around.
• Make sure your boots are properly fitted. Things to look for:
  1. Are the boots too tight?
  2. Are the boots too large, already packed out and your foot is sliding around?
  3. Are your Velcro straps tightened enough?
  4. Is your heel staying in the heel pocket or not? Do you have to over tighten bottom cuff buckle to keep your heel down?
  5. Is the shell of your boot pivoting in the correct place or is the ankle flexing in a different place than the boot?

Peak Performance
• When skiing use functional tension of shins and calves to keep lower legs from moving too freely forward and backward.
• When you jump, land perpendicular to the slope so your feet will be moving the same speed as the skis.
• Shave your shins and use slick socks. For padding use spongy, sticky on one side products found in drug stores. Do not use anything that will move your stance back, like 1/4 – inch thick silicone pads.

Ways to repair the damage
• Soak in warm Epsom salt-water solution after skiing.
• Take anti-inflammatory pills to reduce swelling
• Sleep with your legs lifted up before and after skiing.
• Rest, take days off from skiing.
• See a professional boot-fitter. Talk to them about heel height, boot canting, flex index, proper sizing and padding.

Health Course

Saving That ACL

By Gordon Carr
PSIA-E Alpine, Level II

This article is a re-issue of an article with the same title from a while back. But we ought to be thinking of safety for our guests AND ourselves all the time, so I thought it was worth another run.

I hope if you remember nothing else from my blathering on in all these past articles, you will attend to and incorporate this information into your daily skiing. The source of the following information is from a National Ski Patrol Safety film shown frequently in the mid 1990s. Again a big thanks to Flint Harris from the Sugar Mountain Ski Patrol for making a copy available to Witold last year. My thoughts about this film are based upon copious notes I have taken during multiple viewings of the film.

Believe it or not, there are film companies who have randomly filmed people on ski slopes, many of whom are filmed prior to and during a ski fall. Orthopedic experts and ski safety experts examining these thousands of clips have isolated 6 clear and obvious body and ski positions as precursors and predictors of an impending Anterior Cruciate Ligament tear. The fewer of the 6 precursors present, the less likely the ACL tear. When no precursors are present, the skier usually avoids the ACL injury. When ALL SIX are present, an ACL injury is almost certain.

What are the six precursors of an ACL tear?:
1. Uphill arm back
2. Off balance to the rear
3. Hips below the knees
4. Uphill ski unweighted
5. Weight on the inside edge of the TAIL of the downhill ski
6. Upper body generally facing the downhill ski

When all six are present an ACL tear is imminent and rapid response is necessary if that injury is to be avoided. Notice many of the six elements involve gross bodily positions and would be difficult to change in this rapidly exploding situation. But there are several elements of this scenario YOU CAN CHANGE with immediate muscle movements if you keep your wits about you. They are:
1. Drive arms forward aggressively
2. And bring the hands over the skis
3. Since the uphill ski is unweighted MAYBE you can bring the skis together.
For sure you can do numbers 1 and 2, and this will reduce the potential of an ACL injury to some degree. Remember, the fewer of the 6 present, the less likely an injury. Also, even though a fall is unbelievably instantaneous, (which we all know too well!) there is a sequence to the events, and as you “touch down” it may be possible to bring your legs and skis together AND KEEP YOUR KNEES FLEXED. Avoid stiffening a leg to try and “stop the fall.” But FOCUS ON THE HANDS!

Also for the gals: please pay special attention to this topic. You need to really focus on movements which can minimize risk of ACL injury while skiing; you are at up to 10 times greater risk of an ACL injury than men in ALL competitive sports! Factors thought to be related to (but not predictive of) this huge difference include: the angle which the femur makes with the hip socket (the Q angle); the smaller actual size of the ACL itself; the size of the intercondylar notch where the ACL crosses the knee; and, pelvis width. I don’t know from ice skating, basketball, soccer, track and field, etc, but in skiing you can do the several things mentioned in this article which can at least reduce the ACL tear risk during a fall.

Of course accidents are just that; unexpected and rapidly evolving occurrences. But based upon my spectacular ones, (and I’ve had a few) oddly enough, time seems to slow down, and often it is possible to take some protective actions. Driving hands aggressively forward and over the skis may not seem intuitively obvious, but these are two things which can be done rapidly and which will take away TWO of the SIX precursors of the ACL injury. That may be just enough! So when the fall is imminent and unfolding, develop the mental discipline to DO what you can to protect those wonderful ACL’s!

STAY SAFE

Is it Good to Lick your Lips?

By Witold Kosmala
PSIA-E Alpine, Level III

Saliva is the worse enemy for dry lips. It contains various digestive enzymes and will actually try to digest the lip skin, called *stratum corneum*. (This is the layer of skin that peels off after a sunburn.) Saliva will cause inflammation in the corners of the mouth, it will make lips dry, red and painful. Dry lips shrink and thus may split, bleed and be very painful. Contrary to popular belief, licking lips to moisten them will make them more dry and more chapped. Research shows that licking lips wears the *stratum corneum* down, leaving them vulnerable to environmental exposure, (like dry air), to chemicals and germs.

But, even when lips are subjected to just clean water (like any part of human body), why do they dry out? The easiest way to answer this is to picture bread that is in a plastic bag in order for it to stay moist. Plastic bag plays the role of *stratum corneum*, as the outer layer of the skin. It is the moisture inside the bag that keeps the bread fresh, not what is on the outside. But, if the bag (meaning skin’s outer layer) deteriorates, like due to sun, chemicals in the water, soaps, saliva, dry air, wind, aging, germs, etc., bread dries out, that is, skin’s lower layers loose water and oils that keep the skin soft and pliable.

To keep lips from drying out, put moisture into them from inside and not from outside. If lips are dry, they are dehydrated. Your body needs water! Applying water from the outside just makes the situation worse. For one, there are still chemicals in it, and then when it dries on the skin it destroys its outer layer. There are temporary lip balms that can be used to soothe chapped lips, but they do not hydrate them. They actually seal water away from the skin, just like wax on your car keeps water off.

Vertigo

By Witold Kosmala
PSIA-E Alpine, Level III

We will only discuss vertigo that is a condition which healthy skiers/riders get. Vertigo is a mental disorder that makes you feel that you or the world around you is moving, or spinning. Subjective vertigo is when you feel that...
you are moving, and **objective** vertigo is when you feel that your surroundings are moving. There are very few things that cause vertigo in healthy skiers/riders, unlike dizziness, which can have a great number of causes. General vertigo is caused by problems with the brain or the inner ear. Common causes of skier/rider vertigo are:

- by sudden head movements
- by falling and obtaining a head or neck injury.
- by severe headache caused by change in elevation or by dehydration
- by total white-out conditions caused by wind and blowing snow. When its white all around, there is nothing to focus your eyes on.
- by decreased blood flow to the base of the brain.
- by inflammation within the inner ear.

The best thing in a white out is to:

- head for the trees, they block the wind and give eyes something to focus on, (and collect powder.)
- get a good set of goggles so that you can make out the snow definition.
- close your eyes.
- ski/ride behind someone else.

Motion sickness pills help in preventing vertigo, as well as good hydration. Decongestants and inflammation reducing medication can also help in repeated occurrences of vertigo.

**Turn to Wisdom**

- If you spend your whole life waiting for the storm, you’ll never enjoy the sunshine.
- Success is to be measured not so much by the position that one has reached in life as by the obstacles which he has overcome.
- Practice today with tomorrow in mind!
- There is no way you can do a wrong thing well.
- “Practice as you Play, Play as you Practice,” *by Steven Davis of Mammoth Mtn, CA.*

**Thoughts for the Month**

- What is the difference between the edge angle and the platform angle?
- What is the difference between square turns and box turns? What are these turns used for?
- What are the hop turns and what are they used for?

Elaborations on last month’s **Thoughts for the Month.**

**In snow sports, what is the difference between pivoting and steering?**

**Answer.** Pivot: turning skis or boards from one side to the other, but not going forward or backward any at all. Steering: turning skis or boards from one side to the other while moving forward or backward. Thus, in steering, edging is involved and steering results in a shaped turn.

**Does steering depend on edging, or does edging depend on steering, or are they independent of one another?**

**Answer.** Steering depends on edging. You cannot steer a flat ski. Rotary on a flat ski results in a pivot. Edging does not depend on steering. You can traverse a hill on edges without steering. You can even just there and edge at the same time, like standing across a fall line.
Should you, or should you not lick your lips to moisturize them?
Answer. See the article on page 10.

What is skier’s/rider’s “vertigo?”
Answer. See the article on page 10.

This and That

MY BOOT STORY CONTINUES

Often a good story hits the news, but the audience only hears its beginning and rarely its end. I did that to our readers when I wrote about my ski boots in the February 2010 issue of Peak Performance and then again in April 2010 and February 2011. So, to those interested here is more up-to-date situation pertaining to my peculiar situation.

After the miraculous recovery from my skiing accident that took place on March 4, 2008, I am still going through an interesting process of getting myself back on the skis. As we all know, skiing performance greatly depends on body’s position over the skis. My reconstructed right leg’s dorsi-flexion is only 90 degrees with also other constraints present. So, just to put my knee close to being over the toes, my right foot needs at least 1 inch high heel rise. In the Fall of 2008, I started my venture with an unbuckled, huge rear entry rental boot on my right leg and my performance boot on the left. Gradually I was replacing my right boot with smaller sizes and other rear entry boots of higher performance. Eventually, in January of 2010, Corty Lawrence at Footloose Sports at Mammoth, CA customized Nordica Dobermann Spitfire matching ski boots for me. (Some work was also done by Irwin Mallory at Sports and Expeditions Center at Hunter, NY later that March.) My right boot now looks like my left, but it is actually very different. It has risers on the inside as well as on the outside. It has a drop in the toes and many other special features. Until my last visit to Mammoth on the beginning of this year, the problem was that my heel risers weren’t high enough to move my knee far enough forward. Also, since my right knee was lifted about 15 mm, my hip was tipped about the same amount. Skiing with the hip higher on the right side 15 mm than the left, made skiing challenging in its own right. A month ago, Corty raised my entire left boot 7 mm, (at least for now,) while adding a few more mm to the heel on my right leg. My hip is better now, but still I am not quite lined up. Perhaps another 8 mm rise on the left leg would be good. That decision will be made with time. One thing that will never change is the nonexistent flex in my right ankle. That is equivalent to having a boot with flex index of 500. Now, that makes one STIFF boot.

Corty Lawrence in his store's boot workroom working on my red boots.
As we all know, technology is quickly changing. Now the new vacuum boots by Fischer are making the news. My brother Andrzej, a trainer for the Mammoth Mtn. Ski School, skis in them and likes them better than the racing Nordica Dobermanns that used to fit him like a glove. So who knows, perhaps one day there will be a way to fit something to my massed up leg that will suit me better than what I have now. But, skiing continues and I am grateful to be out there with you. I count my blessings all the time, do you?!

Here is a machine used in fitting Fischer vacuum boots in Footloose Sports at Mammoth.

**NEWS FROM PSIA-E**

**Online Exams**

Members pursuing Alpine, AASI or Adaptive Level II or Level III Certification are required to take the online Professional Knowledge Exam as part of the exam process. A passing score of 70% or higher is required for all disciplines. Snowsports School Director’s signature is NOT required for the Professional Knowledge online exam process. The cost for the online exams is $10. Each $10 registration allows the member 2 exam attempts to pass. Members will have access to the online exam from August 15 through April 15 each season.

- **AASI Members** – Register for Event # 983 for the Level II online Exam or Event # 984 for the Level III online Exam. Candidates will have two attempts at the Professional Knowledge online Exam. The exam consist of 50 multiple choice and true-false questions. You will be allowed 50 minutes to complete the exam. If you are unsuccessful on the first attempt, you will have the opportunity to attempt a second time after a waiting period of 48 hours. If you are unsuccessful a second time, you will need to register for the online exam again. Members are strongly encouraged to complete this step PRIOR to the on-snow portion of the exam. Exam candidates will not receive their Certification (this includes your Pin) until all parts of the exam process have been successfully completed. Also note, the cost of the on-snow exam has been reduced by $10 keeping the overall cost of the process equivalent to last year.

- **Adaptive Instructors** – Register for Event # 985 for the Level II online Exams or Event # 986 for the Level III online Exams. In each case, you will receive a separate link to the exam(s) you are eligible for. In the Adaptive Discipline, there are four separate modules with a corresponding professional knowledge exam. Once your application has been processed, candidates will receive a link to the exam(s) for each module they have not taken or passed. Candidates may (or chose not to) attempt all professional knowledge exams they are eligible for regardless if you attempt the on-snow portion of the exam. Candidates will have two attempts at each Professional Knowledge online Exam. Each exam consists of 20 questions. You will be allowed 20 minutes to complete each exam. If you are
unsuccessful on the first attempt, you will have the opportunity to attempt a second time after a waiting period of 48 hours. If you are unsuccessful a second time, you will need to register for the online exam again. Members are strongly encouraged to complete this step PRIOR to the on-snow portion of the exam. Exam candidates will not receive their Certification (this includes your Pin) until all parts of the exam have been completed. Also note, the cost of the on snow exam has been reduced keeping the overall cost of the process down. PLEASE NOTE – Adaptive Snowboard Professional Knowledge exams will be given at the event – these exams are not available on-line.

1. The ATS exam consists of 20 multiple choice questions related to Alpine skill development, movement patterns, mechanics, PSIA history and organizational structure, the snow sports industry and safety.
2. The Blind / DD exam consists of 20 multiple choice questions, ten questions related to visually impaired instruction and ten questions regarding developmentally delayed.
3. The Three track / Four track exam consists of 20 multiple choice questions, ten questions regarding three track skiers and ten questions regarding four track skiers.
4. The Mono / Bi exam consists of 20 multiple choice questions, ten questions regarding mono ski and ten questions regarding bi ski.

• **Alpine Members** – Register for Event # 980 for the Level II online Exam or Event # 981 for the Level III online Exam. Candidates will have two attempts at the Professional Knowledge Exam per season. The exam consists of 50 multiple choice questions. You will be allowed 50 minutes to complete the exam. If you are unsuccessful on the first attempt, you will have the opportunity to attempt a second time after a waiting period of 48 hours. If you are unsuccessful a second time, you will not be eligible to attempt the Professional Knowledge online exam until the following season. Alpine members must pass the online exam PRIOR to registering for the Part 2 – on snow Teaching portion of the exam.

• **Nordic Instructors** – The Telemark and Cross Country Professional Knowledge Exams will continue to be administered at the event. We expect to have these exams available online next season.

**Children’s Specialist Events**

The Children’s Specialist (CS) events involve a significant amount of prep work prior to the event, including an online quiz. These are not general children’s education clinics.

• Candidates taking the Children’s Specialist will be evaluated on-snow to receive this Professional Designation. Many sample scenarios for the on-snow portion of the course are provided in the workbook.
• Members are required to thoroughly complete the appropriate workbook PRIOR to attending the CS event. Members who do not have a completed workbook at the event will be transferred to another clinic or allowed to reschedule another CS event later in the season.
• Upon receipt of the participants CS application in the PSIA-E office, a link to the online quiz will be emailed. Participants in the CS must receive 80% or higher on the quiz. The online quiz will evaluate information contained in the workbook. Passing the quiz and thorough completion of the workbook meets the national requirement of an 80% score on the workbook.
• Members are strongly encouraged to complete the quiz PRIOR to the on-snow portion of the exam. CS course participants will not receive their credentials until all parts of the CS process have been successfully completed.
• Complete details on the Children’s Specialist courses are available on the PSIA-E website.

**PSIA-E Exam Information**

Questions about the changes to the Alpine Level II Exam process?

As first reported in the summer 2011 issue of the SnowPro (PSIA-E/AASI Education & Programs Update; page 7) some important changes are coming to the exam process for attaining the Alpine Level II certification
beginning in the 2012-13 season. Though these changes do not affect the current season we are already fielding questions in the division office about these changes. In an effort to clarify some of the confusion and misperceptions of what these changes mean in terms of time and cost required to complete the Alpine Level II exam process we have set up a special web page that provides details on all related exam elements.

**Alpine Level II Exam Transition**

An enhanced Alpine Level II exam process will begin in the 2012-13 season. For members who begin or have started the Level II exam process *prior to April 15, 2012* the requirements will be under the current (2011/12 season) exam format. For members who begin or start the Level II exam process *after April 15, 2012* the requirements will be under the NEW (2012/13) exam format. Requirements of the NEW system (2012/13) can be completed in any order unless it is specifically indicated otherwise. **All exam requirements must be attained prior to registering for the part 2 (on snow teaching exam).**

**2012/13 Alpine Level II Certification Requirements**

- Pass the Level II online exam. Note: must be passed inside of 5 years of the passing date of the Level II, part 1 (skiing exam).
- Attain a NASTAR Silver Medal. Note: the NASTAR Silver medal must be attained within 5 years of the passing date of the Level II, part 1 (skiing exam). *Note: Holding a USSA Level 100 certification can be used in place of the Silver medal requirement. There is no date limit on the USSA certification.*
- Attain the Children’s Specialist 1 credential (CS1). This can be done any time prior to registering for the part 2 (teaching exam).
- Attend an approved exam prerequisite course that the member feels will be most beneficial to them for either the part 1 or part 2 of the exam. An exam prerequisite course is valid for the season it is taken and the following season.  
  **Note:** The CS1 course is an approved prerequisite course. If a member desires to use the CS1 course for the required exam prerequisite course then the CS1 must have been attained within the exam prerequisite time requirement (within 2 seasons of taking either the part 1 or part 2 exam).
- Pass the part 1 (skiing exam). Passing the part 1 (skiing exam) will be valid for the season it is taken and the following 2 seasons.
- Pass the part 2 (teaching exam).

**In summary:**

Starting in the 2012-13 season, members seeking their Alpine Level II certification will be required to meet the current (2011/12) exam requirements and these additional requirements:

- Attain the CS1 credential.
- Either: Attain a NASTAR Silver Medal or obtain the USSA Level 100 certification.

If you have any questions, feel free to contact PSIA-E office.

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Funny Turn

IN A PICKLE

I was in bumps most of the day after the mountain got feet and feet of fresh but heavy snow. It was so good to get to a smooth flat surface. My thighs asked me to give them a little stretch. So, I moved to the side of the slope and tried to please them by performing the pictured maneuver. It felt so good, but then … my ski poles sunk and so did the tip of the ski behind me. That sure put me in a pickle with my other leg bend about 90 degrees in front of me.

So, now what? Will it be a slow fall with possible ACL injury, or will I try to jerk it for a quick release? Neither one was my first choice, especially that my friends already left and I had no time to roll all over the snow. My left leg was beginning to burn from squatted position truly in the “back seat.” Balancing on that burning leg, I managed to pull the poles out of the “glue.” Then, balancing together with the poles I tried for my right leg to pull the ski out, which was sunk almost to the toe piece of the binding. That put some extra strain on tired hamstring, which tried to pull the ski out using the same path as they used when going in. That snow was just so thick and ski so wide. I moved gently forward on my left leg with hopes of a circular move helping my hamstring.

OK, so I did it! I deprived spectators from putting up a show. So much for a nice stretch. I had to do all my stretching on the go while trying to catch up with others. I sure learned my lesson – don’t trust your poles to hold you up when surface is questionable.

By Witold Kosmala

YOU KNOW YOU'RE A SKI OR BOARD INSTRUCTOR WHEN...

• you analyze everyone skiing under you when you are going up on the lift.
• you try to angulate in the driver seat when cornering on roads with an inclination.
• you've got "winter friends" and "summer friends."
• you are completely comfortable in barely above freezing days in nothing more than short sleeves and a vest because you KNOW that you'll be teaching three year olds and sweating through everything in just a couple of minutes.
• you have dreams of counting kids in the lift line!

Mike Hicks, thank you for amusing us with these statements. We can all relate to them. Mike was a ski instructor at Whitetail Resort, PA now for 20 years and going strong. He is an awesome skier and a wonderful person. Mike is a PSIA Alpine, Level III certified trainer for his ski school.

Pet of the Month

After months of practice, Frieda Carolina von Carr was very annoyed to learn that Jousting was NOT a recognized Olympic sport. Reluctantly she switched to Track and Field where the Long Jump and the Cat Chase will be her events. You go girl!