

# EXPLORE THE EXTREMES

by Jenn Lockwood

Explore, have FUN and get out of your comfort zone while exploring the extreme ranges of movement available in the fundamental mechanics of skiing.

Are you in search of the "perfect turn"? Admittedly I have spent countless hours practicing tasks and body movements to master the elusive "perfect turn." I have witnessed others doing the same. My best advice was - go ski! You should explore a variety of terrain and challenging conditions, slow things down, and speed things up. You'll learn more from challenging yourself, losing your balance and regaining balance than all that practice in the quest of the "perfect turn."

The most powerful lesson I've learned is there are MANY ways to make the "perfect turn" and experimenting with how you move can help you learn to be more adaptable to changing terrain, conditions and speed; versatility is the goal. Specifically, explore with the extreme range of movement in the body, specific to the five fundamental mechanics in skiing. How flexed or extended can you be while skiing? Try initiating turns with whole body, upper body, and lower body rotation? Can you make turns with only inclination or angulation? Make turns pressuring the tail of the ski, tip of the ski, tip of the ski at initiation and tail at finish. When we explore the extremes in lessons I witness students laughing and being more playful on their skis, and students discover which movements create the most effective ski performance for the desired outcome. When we experiment, play, have fun and laugh, we are more open to learning.



Exploring the extremes allows a student:

- To learn how the body moves and adjusts to forces, flow, space and time, and how these movements affect the ski performance.
- To practice in discovering the optimum movement for ski performance.
- To gain awareness of the appropriate range of motion and recover when thrown out of balance, over-rotated, pressured or edged.

Drills are boundless when exploring extremes!

HERE ARE THREE OF MY FAVORITES:

## 1 ON A SCALE OF 1 TO 10

### Skill: Pressure

*Fundamental: Control the relationship of the center of mass to base of support to direct pressure along length of ski.*

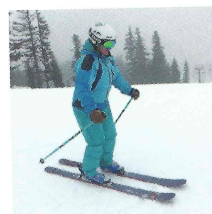
### How to:

- Set the scales. 1= pressure applied as far forward on skis with ankles flexed, knees, hip and spine extended; 10 = pressure applied to tails of skis with ankles extended, knees flexed and hip and spine extended. All other numbers move from one end of the spectrum to the other.
- Before starting, ask each group member which number they think will lead to the best position for best ski performance. Upon hearing their answer state, "Let's go ski and find out!"
- Partners ski single file. Partner behind calls out a number between 1-10 and allows the front partner to ski a number of turns in that position; repeat with a different number and switch partners.
- Allow each skier an entire run to explore all positions.
- Gather at chairlift: What did it feel like at a "1"? "10"? Did the turn shape vary? Did the skis skid, slip, slide? What did you feel in your body?

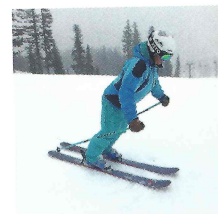
In February, I used this drill with a group of National Ski Patrolters at Anthony Lakes. Prior to executing the drill they all stated that "5" was the best position for ski performance. At the end of the drill, they stated "3-6 is the best position and it varied depending on the pitch of terrain and speed we skied." **A-HA!** These ski patrolters learned the power of experimenting in a fun and relaxed way while discovering the "sweet spot" to best direct pressure along the length of the ski based on environment, accuracy and speed.



TEN >>>



FIVE



<<< ONE





## 2

## BARBIE vs. THE GORILLA

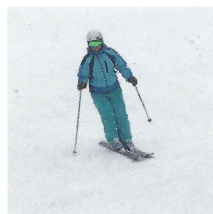
### Skill: Edging

*Fundamental: Control edge angles through a combination of inclination and angulation.*

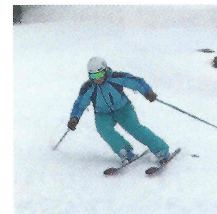
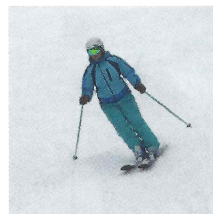
### How to:

- Barbie Doll/Leg Locker Turns: Begin in a tall, extended and narrow stance. Initiate the turn with inclination and maintain an inclined position throughout the turn. This results in minimally edged and pressured skis that make a skidded turn.
- Cowboy/Gorilla turns: Begin in an over-flexed, wide stance. Initiate a turn in a flexed and inclined position and develop angulation through the finish of the turn.

Students preferred Cowboy/Gorilla turns over the "Barbie Doll" turns because the skis could be more easily edged, pressured and rotated to create a rounder and more controlled turn. However, as one student mentioned, "I think a stance somewhere in the middle of the two might be JUST RIGHT." **A-HA!** The student has discovered that skiing with the ankles, knees and hips flexed, with feet hip width apart, they are in a better position to effectively blend their skills to utilize ski design throughout the turn.



Barbie ▶▶▶



◀◀◀ Cowboy/Gorilla

## 3

## WHOLE BODY ROTATION vs. LEG ROTATION EXPERIMENT

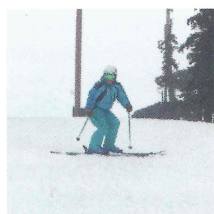
### Skill: Rotary

*Fundamental: Control ski rotation (turning, pivoting, steering) with leg rotation, separate from upper body.*

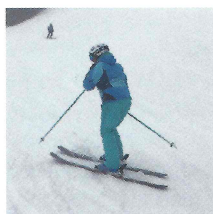
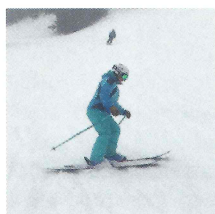
### How to:

- Form 2 teams, in separate lines
- Boots only (or with skis)
- Team 1 performs hop turns using whole body rotation. Team 2 performs hop turns using leg rotation. Perform 20 hop turns, the team that completes 20 first are the winners. Who will finish first? Team Leg Rotation, or Team Whole Body Rotation?

I've used this exercise successfully during Steeps Clinics. Each time I've completed this drill the leg rotation team has finished first. This has demonstrated that steering with the legs will complete a turn more quickly than whole body rotation. Quick turns are essential on steep and narrow terrain. Next I ask, "When would whole body rotation be effective?" There is flat terrain often from the steeps to the chair and we'll perform flat 360 spins. **A-HA!** Through these drills students discover the different application of whole body and leg rotation.



Legs ▶▶▶



◀◀◀ Whole Body

**Breaking news: There is no "perfect turn"!**

There are a variety of turns that are "perfect" for a variety of desired outcomes, turn shape and terrain. Exploring the fundamental mechanics of skiing can help students gain awareness of how they can move, how far within each range they can move while still maintaining control, balance and the ability to create the desired outcome of the ski performance.

Skiing the extremes can be fun, absurd, hilarious and goal-directed. As a final point, in providing FUN exercises you can keep participants loose, relaxed and laughing; providing a memorable and enhanced learning environment.



## QUICK TIP

### GETTING D.I.R.T.-Y

by Pete Borowski

A quick tip to help with Improving the intermediate/advance skier in the Steeps and/or off-piste by making adjustments to: "D.I.R.T."

I have often noticed a pattern of movement associated with intermediate to advanced level skiers when they are faced with challenging conditions i.e. steep pitch or crud or a combination of the two. Their movements tend to be out of sync with the terrain and/or conditions that they face. This is evident by their turn shape and by the movement pattern that leads to this turn shape. In other words, their turns appear to be z-shaped in nature.

This shape is marked by a quick movement of body parts at the top of the turn, which in turn is associated with an abrupt reorientation of the skis from one set of edge to the next set of edges. I think that, in effect, the turn shape of these types of skiers often takes on the appearance of a z-shape turn because of a resistance to spend little if any time in the fall line as they move through the apex phase of their turn. Additionally, these same skiers have often bled off too much speed as they approach the start/top of the new turn causing them to be stuck in place just as they need to re-orient their skis down the hill off their old set of edges and on to the new ones.

To try to address this issue on the spot, I avoid changing these students' movement patterns significantly, despite how crude the movements might be. Instead, I focus on giving feedback that is simpler in nature by focusing on the duration, intensity, rate, and timing associated with the way in which these skiers execute their turns. The mantra that I have running in my head goes like this: "slow down to speed up". To do this I'll focus on getting the student to spend a little more time going down the hill parallel to the fall line by asking them to slow down the speed in which they re-orient their skis from the old set of edges to the new one. I try to get them to articulate their body parts more slowly as they move down the hill through the apex of the turn. As a hook, I might show the student how patience at the top of the turn can lead to high performance later in the turn (See inserted pictures: "Patience").

Having gotten the student to move more slowly through the apex of the turn, I then give feedback that orients these skiers to focus on carrying this higher degree of speed across the fall line and into the start of the new turn. I'll often use the analogy of riding a bike at this stage, pointing out that skiing can be like riding a bike where if we move too slowly we're more likely to become unstable and tip over or get stuck.

I think there are two main reasons why I have experienced regular success with this sort of instruction. First, it's a low risk high upside change for learners. All the student has to do is to slow his or her movements down a little bit. They're just changing the rate in which their skis are re-oriented. Yes, there is fear associated with this process but approaching this change incrementally seems to offset much of the anxiety. The other reason why I think this sort of instruction has been successful has to do with the fact that nothing significant is being changed or taken away from the skiers. We're just adjusting the movement patterns ever so slightly so that momentum is increased while reducing the possibility of have abrupt in-elastic interactions between the ski and snow due to a sharp z-shaped turn.



▲ Pete demonstrating patience of spending a little more time at the top and bottom of the turn.





▲ Demonstrating pressure management at the top of the turn.  
(photo: Bre Huston)

How does this tip manifest itself among different groups of students? With a group of younger students, 6-8 years old are skiing in an open parallel on most blue terrain part of the struggle is helping to facilitate the development of touch on the snow, starting from the feet up. In this case, we often see a z-shaped turn with most of the pressure at the end of the turn where energy doesn't necessarily transfer from turn to turn. For this group, starting to develop a touch for pressure is instrumental to starting to blend skills in turns. To top it off, the amount of time you have to keep the group focused can be small. For this group, practicing a traverse across the bumps with a focus on making it smooth and feeling the difference in where we flex and extend to determine which is smoother and helps to carry momentum across the bumps most effectively. We can then relate it to how we link turns together to make our turns smoother down the hill on groomed terrain.

manage pressure after fall line are two areas that could help them in reaching a goal of getting faster in a race course. Again, the goal is to exaggerate pressure distribution by simply side slipping and moving weight fore and aft to determine the effect of moving pressure.

In both cases the groups had slightly different tendencies. In the younger group, a more rotary focused turn is naturally what develops from a wider base of stance. In the older group, tipping of the skis without a lot of rotary occurs after developing a sense for how to roll to an edge in the turn however both groups benefit from exploring how pressure changes the ski to snow interaction. This is a pattern seen across many groups of skiers as well, which is why this quick tip is effective across many learning scenarios. There is an arsenal of drills and tactics that can be used, all moving towards developing a better sense of skill blend as well as movements that are occurring lower in the body in the lower legs and feet.

With a much older group of expert skiers I take a slightly different approach to the exploration of pressure distribution. In this particular group they have developed a great sense for tipping their skis on edge in order to shape the turn, however earlier pressure to shape the turn before fall line and how they

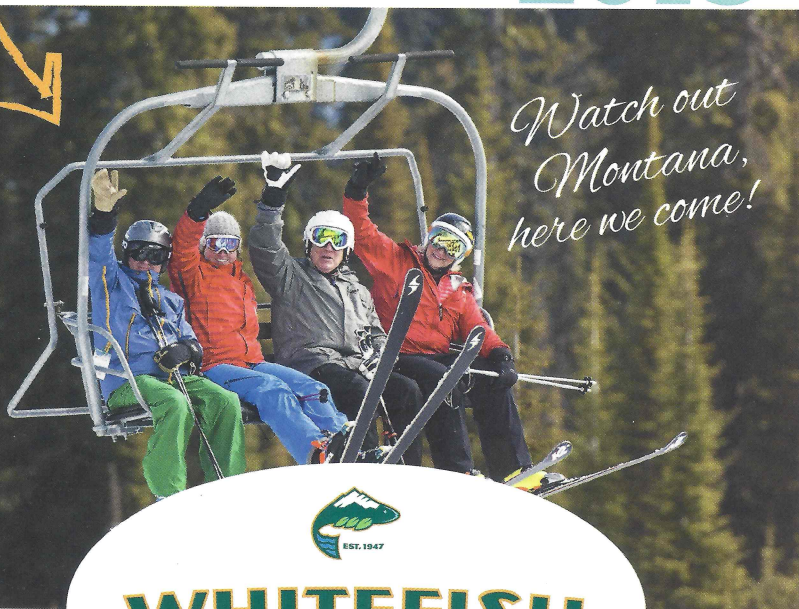
▼ (Left) Demonstrating pressure through the bottom of the turn at various skill levels. (photos: Left- Jake Salvador; Right- Bre Huston)





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## QUICK TIP

### ALL ABOUT THE PRESSURE

by Bre Huston

At the beginning of every season I seem to find myself in about the same spot. Skiing feels a little awkward after a few months off, and it takes a run or two before I feel like I know how to ski again. Every now and then throughout the season the awkward run makes an appearance again and I find myself feeling similar in my movements.

What is the feeling I am referring to? The feeling of feedback from the snow being transferred as energy through my body.

Some people would better connect with the feeling of ineffective static movements. In essence, instead of being able to effectively distribute pressure through a turn, the pressure builds and eventually has to go somewhere. Sometimes this is absorbed by the body, or is exhibited in chatter or a built up of pressure low in the turn and is not transferred to the next turn. Sometimes the root of effective skiing is in going back to basics and focusing on a sense of awareness in small movements. For this reason going back to how we distribute pressure through a turn is often a great step towards feeling something different or even more effective in our movement patterns. This manifests itself in slightly different ways depending on the ability, age and focus of the group but in each case the approach is similar.

I first start with one thought:

How can I help the group to feel something different in their pressure distribution?

In the case of my own skiing going, back to pivot slips helps to establish an exaggeration to how pressure can be used to affect one's ability to successfully stay within a corridor and rotate the skis beneath the center of mass. Starting with a simple sideslip and moving weight for aft is one way to determine a baseline comparison for pressure that is towards the front of the ski, versus the back of the ski and finally in the center.

Now that a baseline is established, I can then move into pivot slips with a better sense of self feedback for where I am distributing pressure and finally take the pivots into a small to medium radius turn with a different sense of touch and inevitably the feeling of a much smoother turn than when I first started out.



# northwest

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