

Dynamic Warm Up

by Jennifer Lockwood

Powder day! Looking forward to jumping on the first chair in the morning and finding your favorite stash of powder! A class of five expert level skiers signed up for a steeps clinic on a powder day – everyone chomping at the bit for their powder line first thing in the morning ... so *what did you do as their instructor/coach?* Freshies or a warm up run?

Yep, these are tough situations we've all been in, as a coach and a participant. It is hard to go against the grain or the "pull" of the group and encourage and teach the importance of a warm up run. However, you and your clients will perform better and be less likely to injure yourselves if you take the time to warm up appropriately to meet the demands of skiing. Part of the problem may be that we have these people for a one or two hour lesson – how do we fit it all in? What do you do to prepare yourself/clients for skiing?

Still not "sold" on the idea of a specific and dynamic warm up run? Is skiing a sport? Silly question, right!? Skiing is an active, energetic, dynamic and powerful sport. Think back to another sport that you have participated in lessons: Tennis, did you warm up with power serves or easy forehand/backhand volleys? Basketball, full court press or running drills, easy shooting – layups, stationary shots, jump shots, passing drills? Football, scrimmage or dynamic warm up of high knees, backpedals, shuffles, passing and catching drills? You get the picture. It is my goal to explain the importance of including a dynamic warm up in your every day skiing and clinics and provide you a time efficient warm up routine you can implement immediately – in the base area, lift line, on the chair and in your first run with your client(s).

First the "why." Why should we warm up at the beginning of our ski day or after lunch? Sports require movements in multiple directions, at different speeds and through various ranges of motion to enable participants to respond appropriately to elements of unpredictably in the environment.

Sounds a lot like skiing! A dynamic warm up enables the client to begin the lesson/clinic ready to meet the demands of the activity with enhanced proprioceptive awareness, muscles and joints are prepared for maximal intensity and a reduced risk of injury.

Physiological reasons for a warm up include:

- » Increase core temperature
- » Increase heart rate and blood flow to skeletal muscles, delivers more oxygen and nutrients to working muscles
- » Increase the activation of the Central Nervous System, therefore, enhancing coordination, skill accuracy, reaction time, and proprioceptive awareness
- » Increase muscle temperature preparing the muscles and joints for increased rate and force of muscle contraction and mechanical efficiency
- » Increase secretion of synovial fluid in the joints, which prepares the body for more strenuous activity
- » Improve joint range of motion, improved elasticity of muscles and connective tissue, which decreases the risk of acute injuries to soft tissues
- » Improve concentration and greater focus on exercise, resulting in psychological preparation for higher intensities (American Council on Exercise, 1993)
- » Activate prime movers and stabilizers: gluteus medius, peroneus longus, adductor longus, gluteus maximus, rectus femoris, vastus intermedius, biceps femoris, semimembranosus
- » Activate core musculature: rectus abdominus, obliques, erector spinae, quadratus lumborum
- » Mobilize hips and legs
- » Movement skill practice – balance, edging, rotary and pressure movements

The purpose of a dynamic warm up is prepare the body for movement (performance) and injury prevention. "A 'warm' muscle and lengthened fascia can generate more energy and force, and react more efficiently to any demand you place on them. That's why the dynamic warm up prepares your body for movement you will perform. Your heart rate will increase, your muscles will feel loose, and your mind and body will be fully prepared for the workout." –*Todd Durkin, MA, CSCS, author of [The Impact! Body Plan](#).*

"A dynamic warm up routine is like taking a few minutes to warm up a car that has been sitting outside in the cold temperatures all night," says Mark Verstegen, author of [Core Performance](#).

If you include a dynamic warm up you'll be dialed in physically and mentally for the rest of your ski day/lesson/clinic with significant improvement in mobility, flexibility, stability and increased speed and power output. It switches on your body's small muscles and also tunes your sense of proprioception preparing your body for random, chaotic movement by fine-tuning its nerves and feedback mechanisms ... again, sounds a lot like skiing!

A dynamic warm up is movement oriented. We will not be discussing stretching during this article. However, it is important to note that current research supports that, "Pre-activity static stretching serves to shut the body down, slow the nervous system activity, elongating muscle fibers and allowing the body to cool off – leaving the athlete ill-prepared to jump into dynamic activity." –*Fowles, Sale & MacDougall, 2000.*

Part of power generation (skiing) comes from what is called stored elastic energy or "stiffness" in the muscle and tendon. Simply put, static stretching makes you weaker and slower when used just before athletic performance. Save this for the end of the ski day and/or end of your workout!

The Powder Day lure ... warm ups are important if you plan to ski or ride all day!



Chair ride warm ups. Don't waste the ride up!
Rick Lyons and Jenn Lockwood from left to right doing: Knee lifts, Leg Extensions, Torso rotations



Next the “how.” How can we warm up effectively and with time efficiency?

“Warm up to train, don’t train to warm up.” Warm ups should be done as close to activity time as possible at the base area, lift line, during the chair ride, at the top of lift and right before the first run, ideally for 5 for 15 minutes. Begin slowly using movement patterns that are part of skiing or riding. Balancing movements, Rotational movements, Edge Control movements, Pressure Control movements = “Rehearsal Effect.” Work both sides of the body, include exercises that explore the height, width, length of skiing movements working the body through different planes of motion: linear/sagittal, angled/transverse, lateral/frontal, crossover/transverse, with multiple direction changes.

Sets of 1 to 2 with 5 to 15 repetitions or perform for a set period of time like 20 to 60 seconds each. Use a number of exercises from 5 to 15 for variety. There are dozens of different movements that can be performed and selection of these movements is dependent upon the ability level of the athlete or client. Focussing on technique where each repetition of each exercise must be performed with proper technique, focussing on quality not quantity. Remember, “garbage in, garbage out.” Teaching the body to move incorrectly and inefficiently diminishes performance and increases the chance of injury.

Warm up tips for your lesson

Welcome participants. Introduce verbal and visual ski specific cues and terminology like fore, aft, lateral, flex, extend, balance, edging, rotary, pressure, etc. Gauge and discuss form, technique and safety . Use lots of verbal imagery and have more than one way to cue an exercise or alignment tip. Start with some simple deep-breathing techniques to encourage participants to relax their shoulders and get focused.

All warm up exercises should be performed in an athletic/neutral stance. The base area and chair ride warm up exercises are typical routines that I like to implement with my clients at the start of their lesson. Once on the hill, I choose one to three drills that are appropriate for the lesson topic to

perform during the initial warm up run. I’ve suggested a few, but you may have your favorites.

Flat land base area warm ups

20 seconds each less than 5 minutes total.

- » Toe/heel rolls (fore/aft balance)
- » Big toe/little toe rolls (lateral balance)
- » Toe taps (warm up/activate anterior tibialis)
- » Leg/femur rotations – w/1 foot off the ground; feet on ground “bow ties”
- » Squat w/pole overhead reach
- » Torso rotations w/pole @ arms length
- » Side lunge w/short leg hand reach to long leg foot
- » One leg balance (boots or in skis) eyes open / eyes closed, add movement of the arms raising your arms overhead in a rainbow motion. Partner up and add a pole toss and catch while remaining balanced. Partner tap, one partner taps the balancer anywhere on their body, the balancer then must touch this spot with their hand while remaining balanced.

Chair ride warm ups

Great use of chair time! 20 seconds each less than 5 minutes total.

- » Knee lifts (see photo above), Leg extensions, avoid if knee injury exists (see photo above), Shoulder rolls
- » Rotations: Leg/femur rotations, straight leg. Torso rotations, grab back of chair with hands for assistance. (see photo above)
- » Wrist / Neck

Flat land at top of chair warm ups

Waiting for everyone to group up and get buckled. 30 seconds each less than 5 minutes total.

- » Ski pulls (stance/alignment)
- » Step and balance ski to ski
- » Hop one-ski to one-ski with a balance hold,
- » Hop turns (in boots and/or in skis)

Typically we see the following drills or tasks used to focus on skill development (or in an exam), but I use them all the time as warm up activities.

General on-hill warm ups

- » Hike, walk or march uphill
- » sidestepping and/or herringbone uphill,
- » skating and/or poling across flat terrain

- » one-ski traverse on outside leg for alignment
- » step turns for neutral stance, lateral awareness, agility
- » shuffle turns for neutral stance, fore/aft alignment, and being centered over skis
- » tuck turns

Short turns, bumps, steeps, off piste warm ups

- » Wedge turns or wedge Christies,
- » hockey stops and/or pivot slips
- » hop turns
- » whirly birds and one-ski ski whirly birds
- » reverse pivot slips

Warm up for carving turns

- » Wiggles (edging) and edge sets
- » traverse hop ski to ski
- » outside, inside and one-ski skiing
- » railroad track and shuffle turns

In summary, skiing is a dynamic sport and as ski coaches/instructors a dynamic warm up should be a specific, essential and important part of our lesson plan. A dynamic warm up is a great opportunity to teach technique and form through neuromuscular learning, or coordination! It is comprised of controlled movements through an individual’s active range of motion for each joint. This also provides a critical time to assess your client(s) fitness level and skiing abilities. Through a dynamic warm up our clients will be mentally alert, muscles and nervous system will be warm and they will be at less risk of injury and will exert more effort and achieve greater precision through their ski lesson (see Andrew Clark & Peter Twist, Twist Conditioning Canada).

As for that powder stash, after the warm up run surprise your client(s) with a secret stash – after a successful lesson, awesome powder run (and an appropriate warm up) they’ll be scheduling their next lesson! ❄️



Jennifer Lockwood is an Alpine Level III instructor and Trainer at Mt. Hood Meadows Ski Resort, Oregon and a fitness trainer at Peak Fitness NW. Email her at: jenn@peakfitnessnw.com

Post comments @ psia-nw.org