

From the Membership

Off Season Conditioning Routine

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Remember Terry McLeod's Spring 2006 "10 Ways to Improve Your Teaching in the Summer?" He challenged us to write an article to help become more aware of what point we are trying to get across. In response to his challenge, this article will give you additional ideas on how to begin improving your physical conditioning for next season.

In Terry's article he gave us a number of ideas for improving our teaching, a number of which can also be specific to snow sports conditioning: Summer ski/board camps (sport specific is BEST!), inline skating, wakeboarding, dancing, mountain biking, trail running and learning a new sport!

Ski/snowboard conditioning proves to be a year-long, lifetime commitment that can NOT be accomplished easily in two months prior to the ski season. Here's an easy way to think of year around conditioning:

1. Active Rest = April - June = Be Active & Have Fun!
2. Off-season = June - August
3. Pre-season = September - November
4. In-season = December - March

Skiing/snowboarding are both primarily dynamic balance and power sports - which require nine main ingredients: balance, an aerobic base, muscular strength and endurance, flexibility, agility, quickness, speed and power.

In the **off-season** we will be addressing: balance, aerobic base, muscular strength and endurance and flexibility. All are prerequisites for sport-specific skill development in the pre-season and essential for basic health

and fitness improvements.

First, **BALANCE** is the *foundation* of dynamic skiing. Balance is the body's automatic response that enables a person to maintain equilibrium through a series of constantly changing postures. When in balance, you can better use your strength, decrease muscle fatigue and injury.

Exercises to enhance balance:

- 1 1 foot balance w/eyes open - good athletic stance: knees bent, abdominal muscles pulled in (functional tension), shoulders up-back & down, chin up, eyes focused ahead. How many touches during a timed period?
 - 2 1 foot balance w/eyes closed - keep chin & eyes up! (This exercise will strengthen your proprioception and kinesthetic awareness.)
- The following exercises will teach muscle memory with recovery movements/quick reflexes.
- 3 1 foot hop-stop & hold balanced position for 10 seconds, repeat on opposite foot.
 - 4 1 foot balance - play catch with ball & partner; toss ball against wall and catch; self toss - hand to hand while balancing on 1 leg.

Second to address for off-season conditioning is **AEROBIC TRAINING**. Aerobic training is the ability of the lungs to provide oxygen to the blood and the circulatory system to transport blood and its nutrients to tissues for sustained periods. Although skiing/snowboarding are NOT primarily cardio sports, they do require energy in order to last a long day on the hill. The more efficiently your body takes in and pumps oxygen to the

working muscles, the harder and longer you can ski without having to stop and catch your breath due to muscle fatigue. A strong aerobic base will also allow skiers an easier transition to higher altitudes. Aerobic power is reduced 30% at altitude, so if you start with a higher base of aerobic conditioning when at altitude, it won't drop as low. Summer months are the best time to improve our aerobic base. When choosing an aerobic activity pick something you ENJOY. When using machines found in an athletic club choose hill, random or interval programs. These programs have you exercise "hard" then "easy" at varying intervals - similar to skiing - stop & go.

Third, summer is the perfect time to increase total body **MUSCULAR STRENGTH** and **ENDURANCE**. Muscular strength and endurance training will help decrease muscle fatigue in bumps, fight compressive forces of high speed GS turns (strong quads), poling across flats (strong shoulders and triceps) and staying balanced in crud (strong torso/core). We want to increase functional strength - large muscle group, full range of motion, multi-joint exercises = pushing, pulling, squatting, bending, lunging and twisting movements. These exercises will improve your strength in similar ways to how your body moves on the snow - exceptions would be isolating specific weak muscles due to overuse/injury.

Exercises to enhance muscular strength and endurance:

Leg curl (many people are weak in this area, leading to low back pain): hamstring, isolated exercise

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Leg Press/Squat/Lunge: quadriceps, hamstrings, glutes

Chest Press/Push-Up: chest, deltoids, triceps

Seated Row/Lat Pulldown/Pullups: latissimus dorsi, rhomboids, trapezius, deltoids, biceps

Shoulder Press: deltoids, triceps

Triceps Kickback/Dips (specific for poling across the flats or pushup from a seated to standing position on a snowboard): triceps, deltoids

CORE STRENGTH is what gives you the power and stability to ski/board on any terrain/conditioning. Dynamic balance is *reliant* on an individuals core strength - the trunk remains centered and stable above pumping legs. In addition, the core is the body's source of power and helps maintain structural integrity when fatigued. When strengthening the core, it is important to give the abdominal muscles (transverse abdominus, rectus abdominus, external/internal obliques, lower back and pelvic floor muscles) equal focus. It is my opinion that although the ab/back muscles *may* recover quickly - they are in demand and used daily for all activities, whether seated, standing, exercising - give them a day of rest between workouts to recover and gain strength.

Exercises to enhance core strength:

Abdominal Hollowing: transverse abdominus

Kegel's: pelvic floor

Crunches: rectus abdominus

Crossover Crunches: external/internal obliques

Bridging: transverse, pelvic floor, low back, glutes, hamstrings

Kneeling Opposite Arm/Leg Lift (4 Point): stabilization -using abs, low back, pelvic floor, hip & shoulder stabilizers

This total body workout performed with one set of eight-20 repetitions to fatigue can be completed within 20-30

minutes, making for a time efficient and effective conditioning program!

Last, the off-season is a perfect time to improve your **FLEXIBILITY** - the ability to move freely in various directions by developing elasticity in the muscle and range of motion within the joints. Many snow sports injuries can be due to poor flexibility and muscle tightness. This can be attributed to poor sport specific warm-up, lack of stretching after warm-up, cold weather, powerful sport, lack of stretching at the end of the the ski/exercise day. An improvement in range of motion enhances reaction time for better balance recovery through enhanced kinesthetic sense, activated nerve endings and quicker stimulation. In addition, stretching can minimize injuries, provide insurance against falls, smoother movement over irregular terrain and improved performance. Areas to address (least flexible muscle - individual dependent): quadriceps, hamstrings, glutes, low back, hip flexors, calves, chest, triceps and abdominal muscles.

Warm-Up: Prior to all exercise and/or sport; 5-15 minutes; low intensity activity, elevate body temperature; walk, cycle, easy sport specific movement

Balance: many short bouts throughout week; 15sec-2 min; after warmup or end of workout

Aerobic: 3-6 days/week - vary the duration of each workout from day to day; (20-60 minutes) 1-3 weeks, 20-30 minutes 4-6 weeks, 30-40 min, 7-9 weeks, 40-45 min, 10-12 weeks, 45+ min; within target heart rate; talk test; mountain bike, trail run, inline skate, road bike, treadmill, elliptical, stairclimber

Muscular Strength & Endurance:

2-3 times/week, every other day (Mon/Thur or M/W/F); approximately 20-30 minute; largest muscle groups to smallest - always end your workout w/ core exercises; weight you can lift & fatigue within recommended number of reps - if > than recommended number of reps increase weight 2.5-5 pounds @ next workout; 15-20 repetitions, 4 weeks; 12-15 reps, 4 weeks; 8-12 reps, 4 weeks - reps should be performed to FATIGUE w/good technique; 1-3 sets - strength gains & time efficiency can be seen w/1 set performed to fatigue

Core Strength: 2-4 times/week; every other day or 1 day abs, 1 day low back; work the transverse abdominus, rectus abdominus, low back, obliques, repeat; slow & controlled w/deliberate movement; 12-20 repetitions, @ 20 reps perform a new exercise; 1-3 sets - perform 1 set of a variety of different exercises to prevent boredom.

Flexibility: after a 5-10 minute warm-up & after MOST IMPORTANT after all exercise and/or sports; 5-20 minutes, holding each stretch for 15-60 seconds; spend the most time on muscles w/ least flexibility; stretch to the point of slight tension WITHOUT pain!, no bouncing; static exercises or yoga; 1-3 repetitions of each exercise; 1-3 sets each

Ski/Snowboard Off-Season Conditioning Routine - Perform 2-3 days/week:

- Basic Warm-Up: low effort, low impact, building intensity from low to moderate = 5 minutes
- Flexibility: 5 minutes
- Balance Training: 5 minutes
- Cardiovascular Training: 20-30 minutes, interval in nature
- Strength Training: 20-30 minu
- Cores Strength Training: 5-10 minutes

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movements helped me keep pressure over my whole foot which resulted in more traction underfoot avoiding slipping and sliding, in most cases. The other sensation that I noticed was that with this movement, my shins were in contact with the front of my wading shoes for nearly every step and the amount of contact depended on the degree of change of slope during that step. If it was flat, the contact was fairly constant but if the bottom was angled, the contact became more pronounced which helped me keep from stumbling.



The interesting lesson from all this is that the movement patterns that we develop during skiing carry over into other athletic activities that we may pursue. I guess that I have been aware of this but never thought about it that much. So here again was the lesson that I have shared with many students. If you want to maintain balance, "constantly vary the flex of your ankles through every turn, maintain pressure over the whole foot and keep in contact with the tongues of your boots." Amazing, it works everywhere, even on the flats of North Andros Island. Oh yes, just in case you were interested, I did catch and release a number of wily bonefish (see the other picture).

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Balance Training: 5 minutes
Flexibility: 5 minutes
Total Activity Time = 70-95 minutes

In closing, ski and snowboarding conditioning when done correctly is a year long process. This off-season program will improve balance, cardio, total body muscular strength/endurance and flexibility - the foundation from which you can execute sport specific movements in your pre-season conditioning (agility, quickness, power, dynamic balance) program.

If you have any questions or would like more details on this off-season conditioning program contact Jennifer Lockwood. Jennifer is the owner of PEAK fitness NW, Certified Personal Trainer - 14 years, LifeFitness Academy member and PSIA Level III Alpine Instructor @ Mt. Hood Meadows. She can be reached at jenn@peakfitnessnw.com or 503.913.8385.

*Target heart rate - consult your physician and/or a certified personal trainer to calculate your specific target heart rate. This may not be an appropriate way to measure aerobic training intensity for all individuals. The talk test can be used for intensity guidelines: if you can carry on a conversation without stopping to catch your breath = too easy; if you can't complete a sentence without huffing and puffing = too hard.

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