

# Prep for ski performance by diversifying

**W**ith the snow we received this weekend, this article regarding winter conditioning seems to be late.

The time for what I call "ski performance" preparation has begun. Take advantage of the valley's many opportunities to participate in ski group training sessions. If you have read past articles, you are acquainted with Training to be Balanced's philosophy of full preparation for any sport activity. All facets of training require strength, balance, agility/coordination, flexibility and power.

Kathleen Leopardi-Anderson - a certified strength and conditioning specialist and 2000 official trainer and judge at the World Extreme Skiing Championships in Valdez, Alaska - provides an excellent breakdown of winter conditioning for most winter sport activities. I've paraphrased one of her articles below.

The general focus of a winter conditioning program includes the following components: cardiovascular conditioning metabolic training, strength training, power training, balance and stabilization, plyometrics, and stretching. Although each winter sport activity differs in movement and required energy and muscle demands, a conditioning program using a variety of exercises can combine training requirements for each sport. For example, by mixing a snowboard-specific movement with a Nordic-specific movement, one can increase anaerobic power while developing muscular endurance.

Cables and exercise bands are ide-

al tools because a variety of planes and vectors against gravity allow one to mimic a given sport movement pattern. If the movement of skiing or snowboarding can be mimicked in a "dry land" setting, the results will be stronger and more efficient "on-snow" action.

Elliptical machines are great conditioning tools because they mimic the action of snowshoeing more than any type of cardiovascular equipment. Variations of speed, incline and direction demand action from the whole hip complex. Skate and classic skiers can benefit, as well, because the lower leg musculature of the tibialis anterior (front muscle of the shin bone), gastrocnemius and soleus (calves) really burn during an intense cross-country session.

Alpine and telemark skiing and snowboarding are classified as anaerobic activities, so it is important in the conditioning program to work toward buffering the wastes in the lactic acid environment. This buffering refers to the muscles' ability to work with lactic acid present. Progression and variation of certain exercises help to prolong the onset of fatigue and improve the ability to perform in a fatigued state. The overall "on hill" goal is to do a nonstop run on a deep powder day.

Another essential conditioning goal is to increase one's overall strength. Although strength demands differ for varying winter activities, a general program will increase one's basic strength, while involving the trunk and extremities to create a well-oiled machine. For

Nordic skiers and snowshoers, the strength training goal is to use power movements at medium resistance to increase power endurance.

Skiers' and snowboarders' strength requirements are different from those for the aerobic sports. Anaerobic sports require heavy loads at repetitions of 12-15 for the lower body. Core strength is utilized in all downhill movements. The power of the turn comes from the center of mass, or core. The advanced technology of the shaped skis and boards are wider and shorter. A strong core will allow the rider to stay in the fall-line at a faster speed, thus producing a more powerful carve. Back extensions performed on the floor work extensor muscles along the spine. In addition, these exercises performed on a stability ball work not only the back extensors but also the hamstrings and gluteals.

Power development is a must. Powerful movements are demanded on the hill with variable terrain, bumps and variable conditions (hardpack, powder, crud). Therefore, the conditioned programs should recognize these demands by incorporating fast, resistive movements. Lunge jump switches and lateral band hops together increase amount of time to sustain activity before fatigue.

Balance exercise increases one's stability, therefore improving performance and reducing chance of injury. Single foot balance squats and balance step-ups on unstable surfaces such as wobble boards, balance cushions, or half-dome balls increase the stability of knees and ankles. Foam roller exercises are also great unstable training tools.

Jumping drills or plyometrics are a great way to increase metabolic demands of the conditioning workout,

as well as placing greater demands on leg strength. Plyometrics are very demanding early in the conditioning program, so start with short time intervals and small movements. Gradually progress to increase amount of time to sustain activity before fatigue.

For Nordic skiers and snowshoers, power skipping with arm action is ideal. For snowboarders and skiers, box jumps (both straight up and from the side), tele jump lunges, and tuck jumps will get the heart rate up to the anaerobic zone. Sport-specific movements with unstable surfaces and benches add instability, which is perfect in mimicking the outdoor environment.

Keeping muscles loose and flexible is ideal for sound recovery. Stretching the upper and lower extremities throughout the workout keeps blood from pooling in a fatigued muscle, and helps regenerate the muscles to perform intense activity once again. After an intense power exercise or plyometric drill, stretch the hip complex. After the workout, allow the heart rate to come down before sitting or lying down. Then do a full body stretch of the upper body, core and lower extremities. Post-workout stretching allows the body to fully relax and prevents muscles from feeling too stiff after the intense conditioning workout.

Next month's article will include exercise descriptions and possibly many different illustrations. Good luck and train hard.



## Training to be balanced

Augie Hernandez

*Augustine (Augie) Hernandez Jr. owns Training to Be Balanced LLC. He is a movement specialist in most sports. Reach him at [augie@t2bb.net](mailto:augie@t2bb.net) or [www.trainingtobebalanced.net](http://www.trainingtobebalanced.net).*