

We have been blessed with about five months of summer and so far, a great autumn. Yet, in the back of our minds the cold front that just blew in speaks of future snow. At this point, a plethora of ski fitness classes begin to emerge. Overall, most classes will get you prepared for the rigorous conditioning of winter sports activity. However, some key factors should be addressed to ensure proper performance, injury prevention and a high level of skill – so as to maximize your experience and make it more fun!

Training To Be Balanced is in its first week of its' offering of Ski Performance training. We conduct Ski Performance until Thanksgiving. It takes the body four to six weeks to neurologically adapt to an exercise stimulus or training bout. Every Ski Performance class is progressive and progresses inside the week. Soreness is not a goal in the first few weeks, but rather an introduction thus creating a base of movement. High-level soreness to the point of pain or lack of movement has a negative effect on the body. Mind you, some soreness is good but not debilitating soreness.

The weeks to follow are what we call *Shocking* (shocking the system within all exercises with shorter rest periods - providing more of a metabolic energy system development) followed by the *Overload Stage* (working toward full set of reps, but ending one or two shy from the goal is okay). This is our power endurance peak before the mountain opens and skiing and snowboarding begin. In addition, we top it off by wearing full ski gear from the waist down (excluding skies & snowboard) because the first thing that tends to burn or feel limiting is your feet inside an unfamiliar tight boot. Our goal is to begin skiing as though you never left!

How many people do you know who have had quad injuries compared to anterior cruciate ligament (ACL)? How many people do you know who have had abdominal muscle issues compared to low back pain? How many people do you know with pectoral (chest) injuries compared to rear neck or upper thoracic (middle back) discomfort or pain?

The point is this: We train what we see in the mirror. In addition, this valley offers a plenitude of “bent over or forward position” endurance sport activities such as biking, hiking, or skiing. The results - tight pectoral/hip flexor muscles, rounded backs...etc. The list goes on and I have not even mentioned what endless days sitting at the computer do to the body! If your ski performance class does not cover this then make sure you are: opening up your chest muscles and hip flexors; working the hamstring glute connection via the feet and low back muscles; keeping the core strong. Ski performance is more than burning jumps, lunges and squats.

Specifically, the quad area (front of thighs) makes up 40% of the legs. The glutes (butt), hamstrings (back of thighs), and calf area make up 60%. Where is the most potential capacity to develop power? Front or back of the legs? Most winter sports enthusiasts choose the front and continue to overwork the quads predominantly neglecting the development of the hamstring/glute muscle connection. As a result an imbalance occurs.

I reference this report from the University of Nevada every year because it bears repeating. It states: *“If the strength of the quadriceps significantly exceeds the strength of the hamstrings, then both the hamstrings and ACL become more susceptible to injury. The hamstring is required to lengthen during knee extension, and if it is relatively weaker than the quadriceps, a strain may occur. With assistance from the hamstrings, the ACL stabilizes the knee by preventing anterior translation of the tibia on the femur [lower leg bone moving forward]. This anterior translation can occur during awkward landings and sudden changes in direction. When the quadriceps is stronger than the hamstrings, excessive anterior translation may occur during dynamic activities, and the ACL will experience higher shear forces. If the hamstrings are too weak to counteract this force, an ACL injury is likely.”*

Another component that should be integrated into your ski performance class is *power development*. Powerful movements are demanded on the hill with variable terrain, bumps and variable conditions (hard packed, powder, crud). Therefore, the conditioned programs should recognize these demands by incorporating fast, resistive movements. Lunge jump switches and lateral bounding exercises together increase the amount of time to sustain activity prior to fatigue.

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

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 over again. After an intense power exercise or plyometric drills - 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, thus helping them to recover more quickly with less pain.

Whatever you choose to do prior to your winter sport activities, ensure the above are covered and have a safe and & happy pre-conditioning season!