

Ready or not, here it comes! Winter activities, particularly skiing and snowboarding should be in your mind! After a wonderful summer, it is never too early to prepare for the next outdoors sport activities. Our Ski Performance is about 5 weeks away but I wanted to get the mind slowly shifted.

I have one recommendation for all those who are prepping for the up and coming ski season, LEAVE THE QUADS ALONE! Jackson Hole sport activity athletes overdevelop, overuse and express way too much emphasizes on the quadriceps (front of the thighs, referred as quads). In spite of the many sport activities in this valley, it is easy for one to deduce that quadriceps development is the most important, besides, that is where the burn is always felt first, right?

During this time of year, I witness most individuals begin with strengthening the quads with typical lunges, squats, side lunges and jumps. My first question to him/her is: why are you strengthening *just* the quads? My usual responses include “my quads burn the most when I ski” or “I always feel them when I board.” I am not at all against quad strength, I am against those who predominantly train the quads and believe by developing strong quads that it is the driving force for winter sport activity preparation. It is not! The driving force is hamstring (back of the thighs) and gluteal or glute (butt muscle) muscle synergy, hip/leg proprioception (body awareness) and neuromuscular control, ACL (anterior cruciate ligament) prevention, and an equal development of strength, balance, flexibility, coordination/agility, and power.

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.

The sports injury research center at the University of Nevada, Las Vegas reports the following: “If the strength of the quadriceps significantly exceeds the strength of the hamstrings, then both the hamstrings and anterior cruciate ligament (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!