

## ***Ski/Board Fit***

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There may be no way to prevent all the bumps and bruises that skiing and snowboarding deliver. However, with some preparation and targeted exercises, you may be able to avoid those season ending injuries. Most winter sport athletes wait until the snow starts falling until they prepare their bodies for the sports. If you begin training now, you will improve your endurance, core strength and overall conditioning to make this a great winter sports season.

When you think about skiing injuries, the twisting knee usually comes to mind. With snowboarding, wrist, hand and elbow injuries from falling are the most common. You must remember that your knee takes a lot of stress during skiing. While snowboarding, you will fall on your hands and wrists making them vulnerable to injury. It is important to adequately prepare the body for the inevitable forces involved in each sport. While all injuries can't be prevented, a lack of muscle strength and endurance especially in the core and lower extremity and poor physical conditioning are often contributing factors to injuries.

The term conditioning refers to all of the body's systems working in unison to produce the given outcome (ski/board). Physical conditioning refers to the development of physical fitness through the adaptation of the body and its various systems to an exercise program and/or sport. When conditioning for winter sports, we must include those demands that are placed upon the body during the activity. The major components of skiing and snowboarding include power, muscular endurance and cardiovascular strength. Think of the turns as the power and the transitions as the endurance. Regardless of the frequency in which you ski/board, a careful plan for the preseason should include training. Generally, your body will adapt the more you ski, but it's the athlete that goes "all out" for 5 straight days without training, who often sustains an injury.

Begin with a **"dynamic" warm up** of 10-15 minutes to increase core temperature and loosen muscles to prepare for a sport or exercise. Perform 20-30 repetitions of each of the following movements specific to winter sports prior to exercise or skiing/boarding.

- **Walk Ups** –calves, hamstrings, glutes, shoulders
  - In the push up position, keep hands stationary, and walk your feet to your hands, keeping your knees straight. When you feel the pull in your calves, walk your hands forward (Figure 1)
- **Heel kicks** –quadriceps, hip flexors
  - Rapidly drive your heel to your butt
- **High knees** –calves, glutes
  - Rapidly drive you knee to your chest
- **Soldier walks** – hamstrings
  - With knees straight and arms extended out in front of the body, march in place or forward kick the leg up as high as you can.

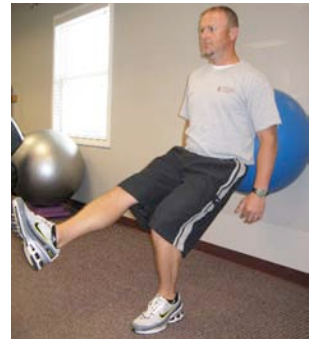


**Walk Ups**

After warming up, perform **high intensity cardiovascular intervals**. Pick your favorite piece of aerobic equipment at the gym or go running outside. Begin with a modest ratio of 1:3 hard to moderate work. For example, when running, run as fast as you can for 1 minute, then decrease to a slow jog for three minutes. Repeat these intervals for 15-30 minutes. As you get stronger, change the ratio to 2:2, increase the total time, and change your machinery. The more cross training you do the better.

When **strength training** for winter sports, focus on the muscles of the lower extremity and core. Remember that muscular endurance is the key with the lower body and core so you can ski/board all day. (3 sets 10-20 reps)

- **Single/Double Leg Wall Squat** – target the quads for those burning runs down the slope
  - Stand with your back against the wall. Balance on one foot, then slowly lower into a squat position and hold for 30-60 seconds and repeat 5 times. To increase the challenge, come up out of the squat and switch legs, then continue to alternate.
- **Lateral lunge** – lateral/side motion is key to maintaining balance and strength for the turns
  - With feet together, step out to the right and bend the knee about 45 degrees while straightening the left knee. Be sure to keep the weight on the heel and drive upward to starting position, and then repeat to the other side. Perform 3 sets of 10 reps to each side.



**Single/Double Leg Wall Squat**



**Lateral Lunge**

The control aspect of skiing/boarding primarily comes from the core muscles of your abdomen and lower back. Perform these **core exercises** to maintain stabilization and balance. (3 sets 10-20 reps)

- **Side Plank Twist** – holding one part of the body while twisting another
  - Start by lying on your side while supported on your elbow. Lift the torso up until your shoulders, hips, and legs are inline. While maintaining this position, twist and reach underneath your lower hip.
- **Push Up Knee Tuck** – use this move to get up and down from boarding falls plus overall core
  - Begin in a push up position, then lift one knee up towards the chest, then repeat with the other knee, then do a push up.



**Side Plank Twist**



**Push Up Knee Tuck**

Lastly, because skiing and snowboarding largely involve powerful transitions and jumping, add **plyometric exercises** to the routine. (Limit repetitions to 30-50 of each)

- **180 degree jump** – use this for those switching and/or tricks
  - Begin in a proper squat position (back flat, head and chest up, knees bent) and jump to the right 180 degrees. Be sure to land softly, then jump back to starting position in <math><1/2</math> second.
- **Squat Jump** – load to prepare for jump/mogul, jump, then absorb shock
  - Begin in as deep a squat as you feel comfortable then reach hands up while jumping straight up, then return to squat and repeat.

**Performing these exercises 2-3 times per week in addition to a general fitness routine will help prepare you for the upcoming winter sports season.**