

# STRENGTHENING FOR SKIING

As we approach the snowy season more people are preparing to get back on the slopes. This article is to help advise you on exercises to get you ready for the slopes and reduce your chance of injury. Before getting into specific exercises though, let's go over a bit of what is required. If we look at skiing, the predominant direction of movement is going downhill at different angles with our knees slightly bent. This position is maintained for sustained periods with undulating surfaces and changing directions with or without poles. There is also a time on the lifts where your skis are hanging on your feet – this is an especially important part for those of you hoping to return post knee-operation or ACL injury. (If this is too painful, try crossing the other ski underneath to take the weight off your injured one).

We will mainly focus on preparation for the downhill. The sooner our muscles fatigue, the sooner we increase the load on our tendons and ligaments, have reduced control, and therefore have a higher chance of injury. In general, the stronger you get your legs before returning to the slopes the better. This involves training for both endurance and strength. As you ride down, you need to be able to maintain your position and also have some reserves left to increase force in one or both legs to change direction or respond to changes in terrain or other obstacles. This should be replicated in your training. In order to train endurance, try your exercises/cardio with high repetitions and low weight. In order to train strength, opt for less repetitions (8-12) with higher weights. The goal with these strength sets is that you are fatigued by the end of your third set. If you get to your last set of 12 and still have a few reps left, up the weight next time around (this excludes bar squats which you should finish feeling like you could do a couple more reps).

Vary your training throughout the week to target endurance, strength, and plyometric/stability/control type exercises. If you are unfamiliar with squatting techniques I recommend covering this with your physio/trainer before adding much weight to these movements. If you are unsure of which exercises are best for you, we are available in clinic to give you advice and help you with maintaining the correct form.

In this handout I will focus on leg strengthening exercises, but training your core (notably the obliques) will also be helpful for you to maintain control and endurance on the slopes.

Here are some exercises I recommend in preparation for skiing:

1. Squats. There are many forms of squats that may be suitable for you. Each version has a different focus and has slight differences in what muscles you engage. Keep variation in this as much as possible. And specifically for skiing, try adding in some squats with your heels raised on a plate or ramp to simulate the downhill position that you will be in. Another option is adding some Spanish squats to load and strengthen your ACL and patellar tendon prior to riding. As the majority of the time riding is hanging on the quads with minimal hip bend, this is what we want to start introducing in preparation along with the versions you may already be doing.
2. Box jump downs. These can be done with single or both legs depending on your level. This is to improve your awareness of your where your body is on space and improve your landing technique. Admittedly, the mechanics are quite different to skiing, but the principle of body awareness remains the same. Try to land and stick the landing without your knee falling in or needed to take a recovery hop in order to keep your balance. A higher box will make this exercise harder. Feel free to start on a step of some sort to start if needed – the emphasis is largely on form and control for this one.

3. Balance work. There's loads of options with this. Start with balance work on the floor and progress to wobble boards if you prefer. For floor balance work, some options include tandem walking (as if on a tight rope), standing on one foot and passing a kettlebell/dumbbell around yourself in both directions, eyes closed single leg balance work, single leg toe touches, etc.
4. Jumping and agility. Again, there are lots of options for this depending on the equipment you have. There are lots of resources online for agility drills with cones and ladders which may be suitable if you have access to those. Another option is working on single leg jumps for distance over a line. For this, find a line on the floor or carpet that you can follow. Start at one end of the line so that it is directly in front of you. On one leg the whole time, jump forward as far as you can and jump over the line. Cross back over the line each time you jump while trying to jump forward as far as you can. These exercises work to improve your landing mechanics and awareness of position of space, as well as getting power to push off from a less stable position.
5. Lunges/split squats. This is added separately from the squats above as this position requires a lot more balance control than double leg squats. Lunge walking or Bulgarian splits squats are good additions to improve control with a narrower base of support and will prepare you for the balance challenges involved going down the hill.

This writing is a general overview to help guide you in preparation for the winter season, and is more directed towards those that ski rather than snowboard. For those who snowboard, consider adding some more side lunges, squats pressing a ball against the wall (glute med strengthening and control), or something similar. Explore exercises that mimic the movements required in what you are hoping to do and start strengthening those. And if in doubt, add some core!

The specific exercises you include will be individual to you based on how you move, your goals, what you enjoy, and what equipment you have available. Take advantage of the huge amount of resources online, and if you want further guidance before you start your training feel free to see one of us in clinic to help you assess what exercises are most suitable for you.



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Contact us at 099192555 to book a consultation at either our Britomart or Wynyard location.

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