

CLEARBROOK

CHIROPRACTIC AND MASSAGE CLINIC

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Rehab Program for Balance and Proprioception

What is Proprioception?

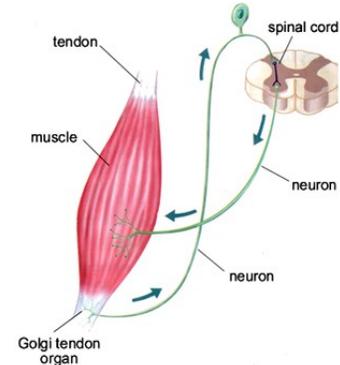


Proprioception is our sense and awareness of the position of our body parts and is closely linked to balance. Having good proprioception helps to reduce the risk of injury.

Located within the muscles, tendons, ligaments and other soft tissues of the body, are tiny sensors which relay information about joint position, pressure and muscle stretch to the brain. These proprioceptors are specialised sensory receptors on nerve endings within these structures.

Once the proprioceptors have sent information to the brain, the brain then reacts, making changes to the body's position, as required. Examples of proprioceptors include muscle spindles, golgi tendon organs and pacinian corpuscles.

Balance training fine-tunes this proprioception system and improve endurance of your balance and stability muscles. Over time it can help prevent injury, improve coordination, and reduce fall risk.



How can Proprioception be Improved?

Proprioception can be improved through certain exercises. These exercises should begin as soon as you are able to do them pain free. Generally in lower limb injuries, this is as soon as full weight bearing is possible. This kind of exercise can start very simply, without the need for equipment using single leg balance exercises.



To further challenge this sense, a device such as a balance board (wobble board), wobble cushion or rocker board can be used. Balance board exercises are quite simple and can be gradually progressed to make them harder as you improve.

Having good proprioception helps to reduce the risk of injury. The following exercises improve the co-ordination of the joint which is usually damaged with a lower leg injury, especially ankle sprains, helping to prevent recurring injuries.

Engage Your Abs



Before each move in our workout, first engage your abdominals by tightening them -- without holding your breath -- as if preparing to take a punch. You'll activate the core muscles surrounding your spine and tone your entire abdominal area. Engaged abs also help prevent injury when lifting. If you have a medical condition, be sure to check with your doctor before this or any new fitness program.

Stork balance



Start with this beginning move, keeping a stable chair or a wall within arms' reach. With feet together, pick up one foot -- knee facing forward or to the side. Hold the position for 30 seconds. Switch feet and repeat for four reps on each foot.

Once this is accomplished you can try closing your eyes to increase the difficulty. The next step is to balance on an unstable surface such as a wobble cushion, pillow, or half foam roller.



Leg Swings



Stand on your right leg and raise the left leg 3-6 inches off the floor. With arms at your sides, swing your left leg forward and backward, touching the floor for balance, while keeping your torso erect. Now, repeat the moves, but don't allow your foot to touch the ground. And finally, swing your left foot to the left side, holding your right arm out. Switch legs and repeat

One-Legged Clock With Arms



Balance on one leg, torso straight, head up, and hands on the hips. Visualize a clock and point your arm straight overhead to 12, then to the side (three), and then circle low and around to nine without losing your balance.

Increase the challenge by having a partner call out the different times to you. Switch to the opposite arm and leg and repeat.

Heel toe balance



The heel toe balance exercise, sometimes called a tandem stance is designed to start to work on proprioception and balance. This is a good build-up to wobble board work. The patient stands with the involved foot immediately behind the other foot, with the toes touching the front heel as shown. This position should be held for 30 seconds without losing balance.

One-legged Clock With Legs



Balance on one leg, torso straight, head up, and hands on your hips. Straighten the other leg to the front, and imagine yourself as the center of a clock. Point that foot to 12, 9, and then cross over to 3 o'clock while holding your balance. Increase the challenge by having a partner shout out the different times to you. Switch to the opposite leg and repeat.

Clock on an Unstable Surface



Once you master balance moves on solid ground, try them on an unstable surface such as a BOSU platform. Stand near a wall or other support, for safety. Start in the middle of the board on two feet at first. When you feel comfortable, carefully give the one-legged clocks a try. It's harder than it looks!

Medicine ball catch



The medicine ball catch exercise is designed to challenge the single leg balance with an unknown. Start off standing on a single leg. Get a partner or friend to throw a ball towards you so you can catch it. Maintain your balance throughout. Start with gentle throws directly towards your body. As you improve try slightly harder throws or throws slightly off to the side or overhead. A further challenge is to do the same exercise whilst balancing on a wobble board.



[Play video](http://www.sportsinjuryclinic.net/rehabilitation-exercises/lower-leg-ankle-exercises/medicine-ball-catch) <http://www.sportsinjuryclinic.net/rehabilitation-exercises/lower-leg-ankle-exercises/medicine-ball-catch>

Wobble balance board exercises



Wobble boards are excellent for ankle proprioception and strength training post injury as well part of your normal training routine to help prevent ankle sprains. A range of different exercises can be performed from simple mobility circles up to eyes closed one legged squats. Watch the video below for a few example of how to do balance board exercises.

[Play video](http://www.sportsinjuryclinic.net/rehabilitation-exercises/lower-leg-ankle-exercises/wobble-board-exercises) <http://www.sportsinjuryclinic.net/rehabilitation-exercises/lower-leg-ankle-exercises/wobble-board-exercises>

Balance board workout starting easy and getting harder

1. Whilst sitting down place the wobble board under the feet and slowly rotate it a number of times in each direction. This is good for improving ankle range of motion and control.
2. Stand on the wobble board, feet shoulder width apart. Hold on to a chair for support if needed and rock the board forwards and backwards, then side to side. Do this for 2 to 3 minutes.
3. Stand on the wobble board, feet shoulder width apart. Rotate the wobble board round so that the edge of the board is in contact with the floor at all times. Again try this for 2 to 3 minutes.
4. Balance on the wobble board for as long as you can without the edges touching the floor. Aim for over 2 minutes without touching the floor.
5. Rotate the wobble board in a circle but do not allow the edge of the board to touch the floor. Aim for 2 minutes.
6. Balancing on the board with both feet, perform small knee bends to challenge your balance. Gradually bend your knees further into a squat.
7. Again balancing with both feet, reach both arms out in front of you. Rotate your upper body around slowly from side to side.
8. Balancing with both feet, throw a ball against a wall and catch it on its return. You can also do this with a partner.
9. Do all of the above exercises with your eyes closed! This will make them considerably harder!
10. Stand on the wobble board with one leg. Rock the board from front to back for 1 minute and then side to side for 1 minute.
11. Again stand on the wobble board with one leg only. Rotate the board in a circular motion in one direction for 1 minute then repeat in the other direction.
12. Try to balance on the wobble board with one leg only! How long can you go for?
13. Balancing on one foot, perform small knee bends to challenge your balance.
14. Still on one foot, point your arms out in front of you and rotate the upper body from side to side.
15. Balancing with one foot, throw a ball against a wall and catch it on its return. You can also do this with a partner.

If you can master all of these exercises then your proprioception and balance are good! If not, keep working at it and you should soon see improvements.

More Advanced Balance Exercises



One-legged Squat

Stand with your feet hip-width apart. Point your left foot out front, just barely touching the floor for balance and push your hips back and down into this challenging one-legged squat position. Your right knee is bent, chest upright, eyes forward, and your arms out front. Slowly push up to return to starting position. Switch feet.



Lunge With Reach

Stand with feet together, arms straight out to the side at shoulder height. Now, lift one foot up, pause momentarily, and lunge forward. Your hips should drop down until your front thigh is parallel to the floor. Maintain a flat back and hold your arms straight in front of you. Push off with your front leg to return to starting position. Repeat on the other side.



Staggered-Stance Squat

Stand with your feet shoulder-width apart, head up, and chest high. Take a staggered position by bringing the toe of one foot, even with your other heel. Hold this stance as you sink into a squat, but don't let your heels pull up off the ground! This move requires a shift in balance and readies you for more dynamic moves.



Single-Leg Dead Lift

Balance on your left foot, engage the abs, and bend forward at the hips while reaching toward the ground with your right hand. Hold on to a 5- to 10-pound weight and raise your right leg behind you for counterbalance. Tighten the buttocks as you return to the starting position. Keep your knee relaxed and back flat throughout the movement. Switch legs.



Side Lunge With Front Reach

Stand with feet hip-width apart. Hold a ball with both hands, elbows bent, in front of your chest. Step to the right and press your hips down and back, as you push the ball out in front of you. Keep your left foot flat on the floor. Now, push off with your right leg, pull the ball back in towards you, and return to the starting position. Repeat on the opposite side.



Side Lunge With Sideways Reach

Stand with feet hip-width apart. Hold a ball with both hands, elbows bent, in front of your chest. Step to the right and place right foot firmly on the floor; press hips down and back as you push the ball out in front of you and then rotate the ball to your right and back to the front; keep left foot flat on the floor. Push off with your right leg and return to starting position. Switch sides.