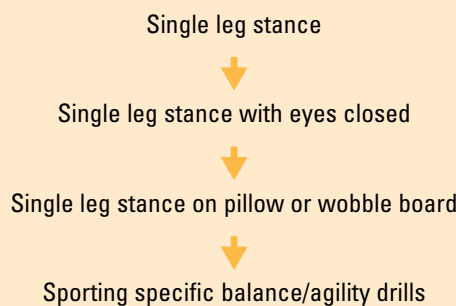


BALANCE & AGILITY

exercise principles



TRAINING REGIME



The body balances by using three systems:

- Vision,
- The vestibular system (inner ear),
- Proprioception.

Following an injury to a weight bearing joint your ability to balance is effected as a result. In order to improve balance we are only able to effectively train one of these systems, proprioception.

Proprioception is your body's ability to sense the position of a body part in space. Each joint contains mechanoreceptors. They take in information about a joints position and relay it to the brain creating a sense of position that the body can then adjust to in order to maintain balance. Following an injury this system is impaired and **will not return to its previous ability, unless it has been challenged or trained to a sufficient level.**

We are able to challenge and train proprioception simply by impairing or challenging one of the 3 systems.

- Remove vision to challenge the remaining systems by closing your eyes.
- Challenge proprioception by decreasing your base of support (standing on one leg) or altering the surface (standing on wobble boards, BOSU balls etc.)
- Spinning yourself in a circle will challenge balance by impairing the vestibular system, although this one is not recommended!

If you are able to return your proprioception and ability to balance back to pre-injury levels you are **much less likely to cause a similar injury in the future.** Having your ability to balance and proprioception at a high level also helps to improve performance in most sports.

Agility is the ability to move, and change direction quickly and easily. This is closely related to balance but

also draws on the body's ability to create forceful movements in short time periods. This ability is crucial to performance and injury prevention in many sports and can be improved through specific training. The best agility drills are typically ones that emulate closely the chosen sport or task.

The following is a sample of some commonly used agility exercises.

Agility ladder

Purpose: Improve speed, accuracy of foot placement, and co-ordination and control of feet.

- 2 feet in each square
- Start behind the ladder facing down it.
- Step with either foot into the first square, followed by the second foot into the same square.
- Complete this for the length of the ladder.
- Your aim should be to increase speed whilst maintaining accuracy.

Hopping drill

Purpose: Increase power/strength emphasizing neuromuscular control.

Lateral Hops over Cone

- Stand with a 15cm cone to your left.
- Hop to the left over the cone softly landing on the balls of your feet land bending at the knee.
- Repeat this exercise hopping to the right.
- This can be progressed by increasing height jumped or by trying to improve speed and accuracy of the movements.

Cone drill

Purpose: Improving speed and the ability to change direction rapidly.

- Mark out a box with cones 10m x 10m, with one centre cone

• Start in the back left corner of the box

- Run to the centre cone, then to the front left cone
- Run across to the front right cone
- Run backward to the centre of the box and then out to the back right corner
- Run across to the back left cone.

This drill can then be reversed, aiming to improve time taken to complete.

Agility focused programs have also been developed in order to improve sporting ability and reduce injuries. The most widely used program is the **PEP program**, created by the Santa Monica Orthopaedic and Sports Medicine Foundation. Research has been undertaken and the program was found to decrease ACL injuries in a population of female soccer players. This shows the potential for training agility in sports people to prevent serious injuries.

For more information please contact your nearest PHYSIOSOUTH clinic or call (03) 332 6487 and let us arrange an appointment for you.

