What is Balance Training?

Balance training refers to a type of exercise that focuses on improving your ability to maintain, achieve or restore balance during any posture or activity, and prevent you from falling. These may be movements performed with eyes closed, on one leg, or more complex forms such as yoga, Tai Chi, and dance.

Balance training works either by improving your brain's ability to recognize and respond to stress or by increasing the muscle and nerve capacity to resist a loss of balance quickly.

Balance training involves practicing gradually more difficult postures until they are mastered, and then progressing to the next higher level of difficulty.

As long as the basic principle is followed, it does not matter whether the exercises are done by themselves, as a separate training session, incorporated into strength training sessions, practiced while carrying out daily activities such as standing in line, cooking, doing housework, talking on the phone, or form part of a more extensive routine of yoga, tai chi or dance.

Activities that challenge balance while holding steady (static balance) or moving (dynamic balance) are familiar forms of balance training. Standing with one foot in front of another, lifting a foot off the floor, and shifting weight in various directions are three examples of common balance exercises. Other forms of exercise such as Tai-Chi and dancing are also effective at improving your balance.

PRINCIPLES OF BALANCE TRAINING

To improve your balance, you have to practice balance activities that you find challenging.

As you improve, you need to continually progress your exercises to ensure they remain challenging.

The key to improve your balance is to always exercise at a level that you have not quite mastered, yet is still safe.

If you have mastered an exercise, it means that you can perform it perfectly for the whole time planned, without feeling that you are about to fall or need to grab something for support, like a wall or piece of furniture.

For example, you are able to stand on one leg using only one fingertip to support yourself, with minimal amount of wobbling, and no need to increase your hand support for a full 15 seconds.

At this point, you would progress to the next most difficult level- standing on one leg with no hand support.

All balance exercises should be done slowly, as this challenges the body more and therefore produces greater adaptation.

The essential feature is progression driven by challenging yourself with tasks that are slightly beyond your reach to stimulate improvements in balance control.

5 Key principles for improving balance

1 Reduce your base of support

Your base of support is all the parts of you that are in contact with the floor or something that is holding you up. For example, if you are standing and holding onto a table, your hands and feet are your base of support. As you reduce your base of support, you increase the difficulty of balancing. For example standing with your feet apart is standing with a wide base of support, standing with them together is a narrow base of support. It is more challenging for your balance to stand with a narrow base of support.

You can reduce your base of support and challenge your balance during everyday activities while standing, walking, turning or transferring.

2 Shift your centre of mass

Shift weight to the limits of sway

When you shift your body weight to a position just short of where you lose your balance you are moving to the limits of sway. You can do this in either a side-to-side or forwards and backwards direction. You can make moving to the limits of sway more difficult by decreasing your base of support or by holding at the final position for a longer period of time.

Shift weight from foot to foot

For good balance you need to be able to shift your weight from one foot to the other, as you do whenever you walk. You need to be able to do this from side to side, forwards and backwards and slowly and quickly. This is important to be able to maintain your balance when you are moving about. Shifting your weight from foot to foot becomes more difficult as you decrease your base of support, for example by having your feet close together and not holding onto a chair.

Step over objects

Safely and confidently stepping over objects is important to be able to deal with obstacles like gutters and uneven surfaces. You need to be able to go forwards and backwards as well as side-to-side. If you can smoothly and safely shift your weight, then you will be more in control and less likely to lose your balance in the face of unexpected or challenging obstacles.

Change directions

Turning or changing directions while walking requires balance as you need to avoid over-balancing in order to prevent yourself from falling. The smaller the radius of the turn, and the quicker you perform the turn, the more difficult this becomes. Sometimes it is more difficult to turn right vs. left, and practicing turning in the less comfortable direction can provide a major stimulus to your turning abilities.

5 Key principles for improving balance

3 Reduce your sensory input

Good balance requires input from many different sensory organs including your vision, vestibular (inner ear) system, and your peripheral nervous system (ability to feel the ground beneath your feet) as well as proprioception (knowing where your body is in space).

Disruption to any of these systems, such as having cataracts or hearing loss or sensory loss from diabetes, or a joint replacement in the knee for example, can make balance difficult.

You can use these facts to artificially reduce sensory input and make your balance training more difficult.

For example, closing your eyes will immediately make any balance exercise more difficult. Similarly, putting a pillow underneath your feet reduces your ability to sense the ground and make the slight alterations in ankle muscle contractions needed to maintain an upright posture. A soft carpet or compliant surface such as sand or soft grass is also more difficult to maintain balance on than a hard fixed surface such as concrete or tiles.

4 Perturb the environment

If the ground is moving beneath you, such as when you are on a train or escalator, balance is more difficult. In an exercise setting, using a gym ball or balance ball can provide a significant challenge and requires activation of core muscles in your trunk as well as your legs and feet to stay upright.

5 Add a cognitive distractor

Your brain is actively engaged in coordinating all of the incoming sensory information from your feet, eyes, muscles, and vestibular system in order to maintain your balance.

If you are also trying to do a completely different mental task at the same time, such as performing calculations or remembering objects or speaking in another language, you will have to work harder to keep your balance, thus improving it further. This level of balance enhancement is usually added once you have mastered the earlier challenges described above.

The better you get, the more difficult you can make the cognitive task, so that you keep improving over time.

Intensity and Progression

Intensity in balance training refers to the degree of difficulty or challenge of the postures, movements, or routines practised.

The appropriate level of difficulty or "intensity" for any balance enhancing exercise is the highest level which can be tolerated without inducing a fall or near-fall. For example, if the goal is to hold the tandem stand (standing with the toes of one foot touching the heel of the other foot) for 15 seconds, then if you can only hold the posture for 10 seconds before grabbing the wall for support, this is the appropriate initial training intensity. But if you can easily hold the posture without support for 30 seconds, the intensity is too low for you as it does not pose sufficient challenge to your balance.

When training your balance, we recommend you use the following scale to help you find the right exercise intensity for you.

Progression in intensity is the key to improvement, as in other exercise domains, but this concept of mastery of the previous level before progression must be adhered to for safety. The aim is to exercise at a level that you find challenging, yet safe.

Volume and Frequency

Research shows that to improve your balance and reduce your risk of having a future fall, you should aim to perform exercises that challenge your balance, for at least 2 hours per week for a minimum of six months.

This can seem like a lot, but if we break it up, this means 20 minutes/ 6 days a week, or 30 minutes 4 days a week. You can also break it into short sessions throughout the day. For example, you could do 10 minutes in the morning and 10 minutes in the afternoon.

A reasonable recommendation would be to start with 20 minutes a day (this can be done in two 10-minute sessions) 2-3 days per week, and slowly progress to try and exercise most days of the week. A good way to achieve this is by incorporating balance exercises into your everyday life activities.