What is balance training?

You need good balance to sit and to walk safely. Balance training focuses on practicing and improving the body's ability to perform coordinated movement of the arms and legs while maintaining a balanced posture (i.e. without falling, stumbling or feeling wobbly). This is usually achieved through rehearsal of tasks such as reaching for objects while holding the body straight. Sitting and standing training should be started as soon as possible after a stroke, because these are basic necessary tasks in daily life.

Why train balance after a stroke?

Balance is a basic requirement for active, independent and safe movement of our bodies in daily life. Before your stroke you probably balanced your body in sitting and standing automatically, without thinking about it. After a stroke you may have to concentrate very hard to maintain your balance while doing simple things like putting on your socks or standing at a sink to brush your teeth. Even people who experience only a small problem with balance may have difficulty when walking outside on uneven ground or when crossing the street.
Are there different kinds of balance training?

Yes, there are different ways to retrain balance after a stroke.

**Functional balance training**
Balance training has recently focused more on functional, task-specific training. In functional training the individual who has had a stroke works on typical tasks that people perform in their daily lives, such as reaching into a cupboard for a cup or plate, or trying to carry a grocery bag.

**Body weight support**
After a stroke, some individuals are too weak or find it too difficult to do therapy in sitting, standing or walking. If this is the case, your body weight may be supported either by your therapist who supports you as you stand and walk, or by a body harness. A body harness will support you safely while you stand and walk.

An information sheet regarding Body Weight Supported Treadmill Training is available through the StrokEngine website.
Hydrotherapy
Sometimes balance training is done in a therapeutic pool – this is called hydrotherapy. The water makes your limbs lighter as you are not moving against gravity. It provides support and stimulation so that you can work on your balance in a safe environment. Your therapist will usually work in the water with you to make sure that you are well supported and safe.

Pictures courtesy of Lynda Huey M.S. CompletePT Pool and Land Physical Therapy in Los Angeles, California. Photo by Robert Reiff

Proprioception training
Proprioception is the awareness of where your arm or leg is in space. For example, after a stroke some people have difficulty knowing where their hand is when their eyes are closed. Proprioception is important to achieve proper balance. As we work on improving balance, proprioception gets trained as well.

The other types of balance training you might hear about are:

The Bobath Approach
Bobath was a physiotherapist who developed a treatment approach that analyzes and interprets how you move after your stroke. After a stroke many people use movements that are different from the way they moved before. Your therapist will work on training and modifying your movements to help you accomplish daily tasks. Usually a therapist will guide your arms, legs or trunk through the correct movements so you can re-learn to do the activities correctly.

Visual Feedback or Biofeedback for Trunk Control
Your therapist will use a mirror in front of you or a video camera system to track your body, arms or legs while doing activities like catching a ball or placing objects on a shelf. This allows you to see how you are moving and to try to correct your movements.
Vision-Deprived Training
With your eyes covered, your therapist will help you do activities like standing on one or both legs or trying to sit on a pillow or simply getting up from a chair and sitting down. This challenges your balance more than when your eyes are open, so it is an activity that you are likely to try as you get better.

Independent Practice
This approach requires you to work on your balance on your own. For example, during your independent exercise your goal might be to stand on both legs with equal weight or to try and sit on both buttocks with equal pressure.
**NOTE:** you should only try this once your therapist tells you that you are safe enough to do so.

Balance Biofeedback
After a stroke it is typical to put more weight on your "good" leg. But, it is important that you also put weight on your weaker leg. While you are standing, your therapist will use a computer screen with a special mat that senses how much pressure goes through each foot. The computer records how much weight you put through your weaker leg so that you can see the information on the screen. This gives you immediate feedback about how well you are doing. At first the goal may be to increase the amount of weight you put on your weaker leg; next it may be to put an equal amount of weight on both legs when you are standing. Eventually, you may try to put more weight on your weaker leg. This is important because as we walk, we need to put our body weight through one leg at a time.

Perceptual Training
This technique focuses on improving the awareness of your arms, legs and trunk in space. For example you might be asked to touch your knee and then your forehead while the eyes are closed.
Multisensorial Training
Following a stroke, you may become overly reliant on visual information to help maintain your balance. Multisensorial training is a form of rehabilitation conducted while restricting the amount that you see. It focuses on the amount and intensity of your movements and exercise without placing emphasis on how well you perform them.

Does balance training work after a stroke?

Researchers have done experiments to see if balance training helps people who have had a stroke.

Task-Oriented Interventions
One high quality study looked at task-oriented interventions for walking. The results showed that improvements were seen in the person’s confidence in their balance.

Perceptual exercises
The results from one high quality study showed that perceptual exercises reduced the amount of body sway. After a stroke it is common to have more body sway, which makes you more unsteady on your feet.

NOTE: even without a stroke everyone has a certain normal amount of body sway that we are not aware of.

Bobath Approach
One high quality study showed that the Bobath approach did not improve independence in normal daily living, sitting balance, standing balance and the amount of weight put on the weaker leg.

Independent Practice Training
There is limited research from one fair quality study which showed that when independent-practice training is combined with therapy based on the Bobath approach it does not improve balance after a stroke.

Task Specific Reaching Training
One high quality study found that task specific reaching does not improve how evenly you distribute your body weight through both buttocks when sitting. The same study also showed that such training does not improve your ability to equally put your body weight through both feet while standing.
Visual Feedback Training
There is limited research based on two fair quality studies suggesting that visual feedback training does not result in improvements in balance. It is worth noting that one study did find important gains in the ability to perform self-care activities such as washing, toileting, dressing, grooming.

Balance Biofeedback Training
There are conflicting findings for this treatment approach. Three fair quality studies found no real gains in balance after using this training method. In contrast two high quality studies on balance biofeedback training found that balance did improve after a stroke. Another high quality study demonstrated that biofeedback for trunk control training can improve quite standing balance (not when walking or reaching).

Are there any side effects or risks?
Balance is important to prevent falls. When you are balance training you should always be supervised by an individual who knows about safe balance training practices. At one point you will probably begin practicing balance exercises with your family or friends. Before you do this your therapist should show them safe ways of working with you.

Who provides the treatment?
Balance training should be performed or supervised by a trained health professional. A variety of health professionals provide balance training as part of their treatment including Occupational Therapists, Physical Therapists or Exercise Therapists.

Information on this web site is provided for informational purposes only and is not a substitute for professional medical advice. If you have or suspect you have a medical problem, promptly contact your professional healthcare provider.