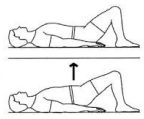
Stroke Recovery Tips

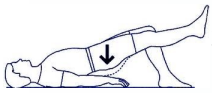
Improving Balance After Stroke

Research has shown some types of treatments to be more effective than others for improving balance after stroke. These include trunk training, virtual reality, using a Balance Trainer, and aquatic therapy. Below is a quick review of each strategy.

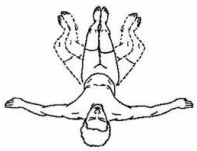
Trunk training involves various exercises to strengthen the core. Though it is not clear in research specifically which core/trunk exercises improve balance, here is a list of common trunk training activities:



1. Bridging—Lying on your back with knees bent and feet on floor. Lift the pelvis off the floor (shoulders and feet support your weight).



2. Unilateral Bridging—same as above except one leg is lifted off surface.



3. Trunk Rotation— lying on back with feet on floor rotate knees side to side; to increase difficulty raise feet off of floor with hips flexed to 90 degrees and take knees side to side.

4. Forward lean in sitting—bringing the trunk forward and back keeping the spine fairly straight rather than rounded (can use clasped hands as in picture to help get weight forward)

5. Pelvis shift forward and back—performed by arching and rounding your low back

6. Trunk lateral flexion in sitting—leaning side to side (can lean all the way down on elbow and back up). Also can sit up straight and alternate raising each hip (as if to stick a book under the hip).

7. Reaching side to side (can reach across the body as well as out to the same side)

These are just a few examples of trunk exercises. Some exercises can be made more challenging by being done on a less stable surface such as a Swiss Exercise Ball or done in standing. Various types of plank exercises or exercises in kneeling can be done as well.

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Example of Swiss Ball Exercise

Example of plank exercise

Example of kneeling exercise

Improving Balance After Stroke

Virtual reality training for balance involves using a computer that incorporates a variety of 3-dimensional environments and scenes in which patients with stroke can perform tasks and anticipate and react to objects or events. Some virtual reality systems that are currently used include CAREN (computer assisted rehabilitation environment system), VAST Rehab, SeeMe, IREX (immersive rehabilitation exercise), and MindMotion Pro to name a few. If you are interested in trying virtual reality, it is best to find a clinic that offers one of these systems. There is also cheaper virtual reality software that can be used at home on a computer, but it is best to first train with a therapist to make sure you are safe trying these balance activities at home.

Balance Trainers are machines that have platforms that support patients as they move in a horizontal and vertical plane. Most also incorporate visual cues into balance exercises through a screen that the patient watches as they are doing the balance exercises. These devices can be found in various clinics. Some of the various balance trainers include Korebalance, Neurocom SMART Balance Master, and Biodex Balance Recovery System.

Aquatic Therapy is a type of therapy that takes place in a pool or aquatic environment and allows for easier mobility because body weight is decreased significantly. Some stroke survivors who cannot stand on land are able to stand in a pool. Some of the specific aquatic therapy methods that have proved successful in research include Ai Chi and Halliwick. Aquatic therapy should always be done with a trained individual present to help. Many therapy centers as well as fitness centers offer aquatic therapy or classes. Make sure you have checked with your physician or therapist to see if aquatics is right for you. The following are examples of balance exercises done in aquatic therapy:

1. Standing and holding the pool wall, shifting weight left and right, forward and backward as far as possible. Rotating trunk left and right as far as possible. Make harder by narrowing stance or doing exercises without holding to side of pool.

2. Standing and holding the pool wall lifting one foot at a time. Increase difficulty by not holding on to pool wall.

3. Standing on one leg while the other leg pushes and pulls a "noodle" (long float).

4. Standing with wide/narrow base of support, holding a "noodle" with both hands and trying to push it in the water while maintaining balance.

5. Riding on a "noodle" and maintaining balance.

6. Standing with one leg on a "noodle".

7. Standing with both legs on the "noodle" and maintaining balance, with or without an additional task (e.g. tossing a ball)

8. Standing with both legs on a "noodle" while holding a "noodle" with both hands and trying to push it in the water while maintaining balance.

9. Walking in all directions (e.g., forward, backward and sideways) at different speeds and in different water depths.

10. Changing direction as fast as the subject can.

11. Standing with wide stance while therapist pushes the patient in different directions, with and without warning. Make harder by narrowing base of support or closing eyes.

12. Walking and being pushed by therapist to challenge balance.

There are obviously other exercises and ways to improve balance, but the ones described have shown better outcomes in current research. Staying on top of research information can help a patient know what has shown to be effective or not.

STROKE PATIENTS' EXPERIENCES

If you would like to read about stroke patients' experiences and recovery for motivation or information, please visit:

http://www.stroke-rehab.com/stroke-survivor-experiences.html

STROKE RECOVERY TIPS PAST ISSUES

To see past issues of Stroke Recovery Tips, visit

http://www.stroke-rehab.com/Stroke_Recovery_Tips-backissues.html

Stroke Rehab Exercises

There are many web-sites that demonstrate exercises for stroke. Here are a few of those websites:

GRASP

HOPE: A Stroke Recovery Guide

Stroke-rehab.com

Saebo.com

Strokewise.info

Livewellagewell.info (not specifically for stroke but demonstrates some good exercises)

Movement Disorders After Stroke

Movement disorders can occur after stroke and are often treated with medication. Therapy may be used in adjunct with meds to show patients methods to help reduce unwanted movement or to educate patients about adaptive equipment that can be used to help with activities of daily living. Below is a discussion of the various types of movement disorders that occur after stroke, medicines often used to treat the disorders and adaptive equipment that may help.

Hemiballism/hemichorea is the most common form of movement disorder after stroke. Hemiballism consists of vigorous, one-sided involuntary movements that are poorly patterned and may involve bending/ straightening or rotation. Hemichorea consists of brief, involuntary movements that are non-repetitive and appear to move from one muscle to the next. Hemiballism often occurs soon after stroke, but in some may be delayed by days, weeks, or several months. Most patients develop hemichorea within a few days of stroke. Hemiballism and hemichorea often respond to the same meds. Some meds reported used include haloperidol, clonazepam and diazepam, risperidone, topiramate, tetrabenazine, valproic acid, and, in severe cases, intramuscular injections of botulinum toxin or ventrolateral thalamotomy.

Dystonia consists of involuntary sustained muscle contractions causing twisting and/or abnormal postures or movements. Post-stroke dystonia has been attributed to lesions of the putamen, caudate, pallidum, thalamus, and the midbrain. The time between stroke and onset of dystonia is usually delayed with a range between 3 months and 3 years. Dystonia following stroke usually has a poor response to medical therapy, but anticholinergic drugs, benzodiazepines, baclofen, and dopamine depleting/blocking agents have been beneficial for some patients. Local intramuscular injections of botulinium toxin can lessen stroke-induced dystonia particularly when dystonia is focal and functionally disabling.

Myoclonus involves brief, involuntary twitching of muscles or muscle groups. Post-stroke myoclonus often does not require treatment. When it interferes with functional abilities, like eating or writing, the two most commonly used treatments include clonazepam and sodium valproate

Holmes' tremor (also called rubral, midbrain, or cerebellar outflow tremor) is characterized by a resting tremor of a limb with marked increase when attempting goal-oriented movement. The most common lesions are in the brainstem, but lesions of the cerebellum and thalamus have also been reported. The onset of Holmes' tremor after stroke is typically delayed by weeks to months. Meds that have been used include propranolol, clonazepam, levodopa, other dopaminergic agents, valproate, and levetiracetam. Because of the poor response to medications, many patients with Holmes' tremor require surgical intervention such as ventrointermedius thalamotomy and thalamic DBS (deep brain simulation).

Tics consist of involuntary twitches (motor tics) or sounds (phonic tics). Disabling tics have been treated with alpha-receptor agonists (clonidine, guanfacine) or dopamine receptor antagonists such as risperidone or fluphenazine.

Adaptive devices for movement disorders may be used to help make some activities easier. Some devices include BalanceWear for posture instability, Liftware Steady and Liftware Level for eating, and Readi-Steadi® Anti-Tremor Orthotic Glove System. Many other devices exist to help with tremors and various devices can be reviewed at https://tremoraction.org/resources/consumer-links/.

Caregivers Corner: Tips for Traveling with Your Loved One

When preparing to travel with your loved one who has had a stroke, there are several things to consider. Here is a quick guide to help decrease your travel woes:

1. Research your destination—Look online and read blogs, forums, and reviews to get as much information that you can. Find accessibility sites and information for the cities you are visiting. Know where hospitals are ahead of time and know what treatment policies are in other countries. Arrange for accessible accommodations.
2. Before attempting a long distance trip, visit local areas first for practice. Navigate restaurants, public transportation systems, local hotels, etc. to make sure you can navigate areas. This will help you determine areas of difficulty and come up with solutions.
3. When planning a trip, consider contacting a company that deals with disabled travel. Let the experts help you plan your trip.
4. Insure your trip to prevent unforeseen losses due to health issues. Various types of travel insurance can be purchased including trip cancellation, medical emergencies abroad, emergency evacuation (to get your loved one back home), lost bags, and phone assistance.
5. Be flexible and know that things may not go as planned.
6. Enroll in the Smart Traveler Enrollment Program (STEP) at https://step.state.gov/step/ which is a free service to allow U.S. citizens and nationals traveling and living abroad to enroll their trip with the nearest U.S. Embassy or Consulate. You can receive important information from the Embassy about safety conditions in your destination country, helping you make informed decisions about your travel plans. You can help the U.S. Embassy contact you in an emergency, whether natural disaster, civil unrest, or family emergency, and you can help family and friends get in touch with you in an emergency.

For more resources regarding disabled travel, visit these websites:

https://www.transportation.gov/individuals/aviation-consumer-protection/traveling-disability

http://spintheglobetravel.net/

DisabledTravelers.com

http://www.sath.org/ (Society for Accessible Travel and Hospitality

http://www.worldonwheelz.com/

http://www.handicappedtravelclub.com/ (traveling with a RV)

http://www.globaldialysis.com/ (travel info for dialysis patients)

Cognitive Rehabilitation

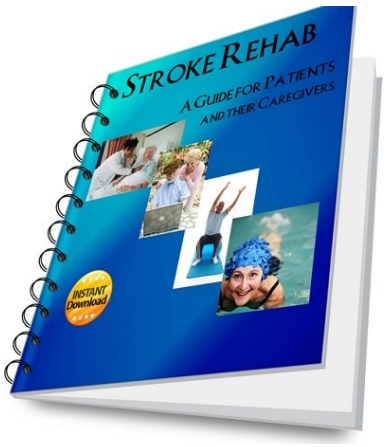
After stroke, as many as two-thirds of patients experience cognitive impairment or decline varying from mild to severe deficits including problems with memory, organization, attention, reading, math calculations, confusion, decision making/executive function, impulsiveness, impaired judgement, and decreased insight into impairments to name a few. Interventions for improving cognition are varied. Some strategies that have shown promise in research trials include exercise (focusing on resistance, balance and aerobics), pharmacological treatment (medicines prescribed by physicians), attention process training, compensatory strategies, computer training, goal management training, and music therapy.

Exercise directly improves the flow of blood in the brain and enhances the functionality of various neurotransmitters involved in cognitive processes. Cardiovascular exercise is important in this process, but it is sometimes difficult for stroke patients to participate in this type of exercise due to decreased mobility. Aquatic therapy, chair aerobics, recumbent bikes, and upper extremity bikes are ways that those who are less mobile may be able to achieve cardiovascular benefits. For those who are more mobile, walking may be a good alternative.

Pharmacological agents (medicines) that may help cognitive deficits are many. According to the Evidenced Base Review of Stroke Rehabilitation (www.ebrsr.com), some medicines that have showed positive results in research trials against vascular dementia include donepezil, memantine, and rivastigmine. EBRSR.com also reports that antidepressants may be helpful in improving cognition in post-stroke patients that do not have depression and that pentoxifylline may improve cognitive function in patients with multi-infarct dementia. These are just a few of the medicines used in treatment of cognition. One should talk to their physician about what medicines are appropriate and should ask questions about side effects, risks, and proven effectiveness of recommended medicines.

McKay Moore Sohlberg, Ph.D. and Catherine Mateer, Ph.D. developed Attention Process Training (APT) which is a multi-session exercise designed to help improve the ability to focus on relevant material while ignoring irrelevant distractions. This is important because there are many daily tasks that we perform (e.g. driving, walking across an intersection, talking on the phone, working in a busy office, cooking a meal) that will require us to focus and not be distracted by things around us. Unfortunately, there is no list available of clinicians or therapy centers who use the APT program. One would have to search their area for therapists offering the training.

Ideas for working on attention at home might include working on sustained attention which would consist of doing a task without stopping or getting distracted for a certain amount of minutes. For example, setting a timer and reading non-stop for 5 minutes and increase the time as able. Working on selective attention would be performing a task without getting distracted by background events. It might consist of reading for 5 minutes but having music or the TV on in the background and being able to tune the noise out while reading. Working on alternating attention is the ability to switch back and forth between tasks. It might consist of reading for 5 minutes, but during that 5 minutes circling all the commas you find. These are just simple examples of working on attention, but there are infinite ways to work on attention at home incorporating these techniques. It can be very simple (e.g. turning over cards) or more complex (e.g. making a meal) depending on a person's impairment. For more information on types of attention, visit http://thepeakperformancecenter.com/educational-learning/learning/process/obtaining/types-of-attention/.



Stroke Rehab e-book: A Guide for Patients and their Caregivers
$14.99

Exercise photos included

Visit
http://www.stroke-rehab.com/stroke-rehab-ebook.html

Cell Phone Apps for Cognitive Rehabilitation:

Lumosity

Constant Therapy

Thinking Time Pro

What's the Difference

Fit Brains Trainer

Elevate

Peak

Cognitive Rehabilitation Continued

Compensatory strategies for cognitive rehabilitation include mental imagery and memory self-efficacy training as well as the use of external aids such as memory notebooks, diaries, calendars, computers, timers, etc. Mental imagery techniques involve activating the memory by taking what is to be learned and creating meaningful visual or auditory images of the information. Using mnemonics would fall into this category. This is where you use acronyms or words/sentences to cue memory. For example, Every Good Boy Does Fine in reading music on the treble clef for notes EGBDF. Another example is KISS which stands for Keep it Simple Stupid which is used in various business fields. A visual imagery technique would be creating an image in your head associated with what you are trying to remember. For instance in trying to remember a last name like Singh, you would envision someone singing or if a girl's name is Holly, you would envision the flower. Or maybe you are trying to make a PIN number you can remember, so you form a L pattern on the phone. Memory self efficacy training focuses on altering negative beliefs regarding memory functioning.

Computer training has been show to improve cognition in some studies with stroke patients. There are many computer training programs available, but it is this author's opinion that computer training should be used in conjunction with other types of activities and not as a stand alone for cognitive retraining. Interacting with a computer is not the same as interaction with real people in real life situations. A positive of computer training is that it can be done from home. Some of the computer training websites include https://www.brainhq.com/ and https://www.cognifit.com/.

Goal Management Training (GMT) is an interactive program designed to improve the organization of goals and ability to achieve them. The program is run by therapists specifically trained to provide the program. The program uses in-person sessions, a workbook and home assignments. Once the program is completed the client will use the STOP, Focus, Check method that can be applied to any goal or task that needs to be achieved. GMT is centered on a simple premise to "STOP" and state one's goals periodically before and during task execution. In order to participate in the program, one would have to find a speech therapy program that offers the service. Some speech therapists now offer telerehabilitation which can be done via the computer while the patient is at home. If you do not have access locally to a therapist that offers GMT, you could research telerehabilitation alternatives.

In research it has been shown that music therapy may have a positive impact on verbal memory and focused attention in individuals with left hemisphere stroke. More studies are needed to prove it's efficacy in cognitive rehabilitation, but music can be enjoyable to many stroke patients, provide possible cognitive improvements, and can enhance mood.

If you are interested in finding ideas you can use at home for cognitive therapy, visit http://www.biaoregon.org/docetc/pdf/familymedlinks/cogrehab-UofAL-home_based_program.pdf.