

Perturbation Training for Fall-risk Reduction Among Stroke Survivors

by: **Maureen Pekosh**

Practice makes perfect. For stroke survivors, an on-going study at the University of Illinois at Chicago is proving just that. Statistics and participants agree. "Chronic stroke survivors are able to retain adaptive reactive balance skills to reduce fall risk."



The CDC estimated medical costs to treat falls exceeded \$50 billion in 2015. The physical, mental, and psychological impairments often accompanying stroke heighten fall risk. Fear of falling worries many stroke survivors. Few studies have been done on falls in stroke survivors after rehabilitation release. One published study found a 27% increase in falls when comparing older adults with and without stroke. Traditional rehabilitation focuses on regaining functionality. This study aims to "enhance stroke survivors' defense mechanisms against falls and possibly reduce healthcare cost."

The study employs perturbation training. Ambulatory individuals, wearing a safety harness to prohibit falling, walk normally on an instrumented walkway. They are told a slip could be introduced on the surface on either side at any time. Participants are asked to attempt to prevent or recover from falling. Initial responses were backward compensatory or multiple steps. After the training, regardless of the level of impairment, individuals fell less and exhibited improved compensatory stepping response. This demonstrated short term retention of learned stability control. Follow up training showed that even severely impaired stroke survivors "exhibited preserved implicit error-based feedback learning". Stroke survivors can be taught how to avoid a fall.

Dr. Tanvi Bhatt, PhD PT Principal Investigator explained that initially participants possess inefficient recovery strategies. Experiencing repeated slips slowly caused participants to react differently. The trailing leg is placed in front of the slipping leg and falls are lessened. This training it is hypothesized helps develop predictive ability in the central nervous system where motor memory is stored and updated by experiences and training. Once participants lessen slip intensity, they are better able to successfully recover.

This perturbation training mimics real life. Slips occur on both limbs. Every participant walks a predefined number of times. This amount of repetition was shown to cause necessary adaptations in previous preliminary studies.

Dr. Bhatt adds, this study will "help to design effective balance training and fall prevention interventions, thereby facilitating clinical translation of such laboratory-based training paradigms." Stroke survivors and non-stroke adults over age 60 are needed to continue this research. The protocol is safe and yielding promising results. Participants are reimbursed. With winter approaching, please consider participating.

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Study Information Contact: 312-413-9772

Welcome New SSEEO President Randy Crabtree

Randy became a stroke survivor in 2014. He connected with SSEEO while looking for answers after his stroke. He immediately felt the compassion and support of everyone in the organization.

Randy started volunteering shortly after that at health fairs, events and started spreading the word about SSEEO. He has a passion for raising awareness of stroke prevention and helping others in their post stroke journey.

Randy and his wife Kathy have two sons. As a family they enjoy traveling. They are also avid sports fans and enjoy both watching and playing sports.



Survivor Story....Meet John Hunt

On a Sunday afternoon, April 21, 2012 my life took an unexpected detour. I had just finished mowing the lawn and was in the kitchen getting a drink of water, when I started feeling a little dizzy, then my right leg went partially numb.



After many tests, it was determined that I suffered an ischemic stroke. My left internal carotid artery was fully occluded, which means there is no blood flow through that artery which probably occurred as a result of some trauma to that artery. The body is an amazing thing, over time with less blood flow through the left carotid artery; the body compensated and started forming small collateral arteries from my right side to compensate for reduced flow from the left. When the stroke occurred, it was a fairly mild stroke.

However, my life did change after that event, not in a bad way, just a change. I am more careful and conscience about what I eat, make sure I exercise regularly, and visit my doctor every 6 months.

Before the stroke, I volunteered at Advocate Condell Hospital and it little over a year ago, the volunteer coordinator sent out an email, asking if anyone would be interested in helping make calls to discharged stroke patients. I was very interested since I went through a similar experience. So, I have been making [SSEE Stroke Survivor2Survivor](#) calls to patients or caregivers. The purpose is to see how they are progressing and if they need additional information in their journey to recovery.

Throughout my life and this health obstacle, I have been blessed with great family support and love. My wife of almost 40 years, Mary Ann and our three grown children, Eric, Emily and Brandon have always been a great blessing and strength to me, which is very comforting.

I am very grateful that I have been given an opportunity through SSEE to help and encourage others by taking on a more leadership role in the organization as a Board Member.

Young Stroke Committee

A common misconception is that stroke affects only older adult. However, there has been a 44% spike of young Americans (under 45 years old) hospitalized due to stroke over the last decade.



Having a stroke at a young age has many different challenges than strokes that occur later in life. Career, finances, insurance and raising a family are just a few of the hurdles. Also, young adults are typically unaware of the risk factors, warning signs and can be misdiagnosed due to their age.

To address the needs of young stroke survivors, [SSEE](#) held its first **Young Stroke Committee** meeting on Wednesday, September 18th. A group of young stroke survivors shared their stroke stories and obstacles. The committee came to the meeting ready to share ideas for education, resources and future events with the goal to support young stroke survivors and increase stroke awareness.

If you are a young stroke survivor interested in learning more about the [SSEE Young Stroke Committee](#), please contact christine@sseo.org.

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