Yoga and Stroke

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The contents of this bibliography do not provide medical advice and should not be so interpreted. Before beginning any exercise program, see your physician for clearance.


Abstract: Purpose. A preliminary investigation of the effects of a yoga intervention on individuals with chronic post-stroke hemiparesis. Background. Individuals post-stroke report an impaired health status due to reduced activity. Yoga offers alternative exercise that can be easily adapted for individuals post-stroke. Method. 4 subjects with chronic post-stroke hemiparesis participated in this single-case design. Primary outcome measures were the Berg Balance Scale (BBS) and Timed Movements Battery (TMB). Secondary outcome measure was the Stroke Impact Scale (SIS). Baseline phases ranged from 4-7 weeks. The 8-week intervention phase consisted of 1.5-hour yoga sessions, 2 times/week in the subject's home. Primary outcome data were collected weekly. Secondary outcome data was collected pre-baseline, pre-intervention, and post-intervention. Results. Significant improvements were demonstrated in TMB in Subjects 1, 2 and 4; and in BBS in Subjects 2, 3 and 4. Summary. Yoga may be beneficial to individuals post-stroke. Further investigation is warranted to further examine the effects of yoga in this population.

__________. Restoring Wholeness after Stroke. Forthcoming Fall 2003. Author email: jbastille@netzero.net.


Abstract: Background and Purpose. This was a preliminary investigation of the effects of a yoga-based exercise program on people with chronic (greater than 9 months) post-stroke hemiparesis. Many people who have had a stroke report an impaired health status because of a reduced level of activity. Proponents of yoga contend that it offers a gentle alternative exercise program that can be easily adapted for people who have had a stroke. Subjects and Methods. Four subjects with chronic post-stroke hemiparesis participated in this single-case study. The primary outcome measures were the Berg Balance Scale (BBS) and the Timed Movement Battery (TMB). A secondary outcome measure was the Stroke Impact Scale (SIS). The baseline testing phase varied for each subject and ranged from 4 to 7 weeks. The 8-week intervention phase consisted of 1.5-hour yoga sessions, 2 times per week, in the subject’s home. The primary outcome data were collected each week, and the secondary outcome data were collected before the baseline testing phase and before and after the intervention phase. Results. Subjects 1, 2, and 4 had improved TMB scores, and subjects 3 and 4 had improved BBS scores. Discussion and Conclusion.
The results suggest that yoga may be beneficial to people who have had a stroke. Further investigation is warranted to further examine the effects of yoga in this population. [Bastille JV, Gill-Body KM.]

**Bell, Baxter.** Answers the question: “I teach yoga to stroke survivors, and I’m concerned about overdoing it. I’ve introduced pranayama, simple twists, and easy forward bends. I work slowly and focus on breath-work. Do you have any other recommendations?” *Yoga Journal.* Article available online: http://www.yogajournal.com/practice/967_1.cfm.


From the website: “This training is intended for master’s level therapists in the areas of speech-language pathology, physical therapy, occupational therapy, mental health and other related disciplines who have a strong interest in providing holistic, movement based therapy. At the end of the six month training, the student will have the necessary tools, perspective and direct experience to provide effective and rewarding yoga based therapy.

“With six hours of weekly direct observation of and participation in Integrated Movement Therapy sessions, bi-weekly meetings with instructors, direct instruction in the areas yoga, language and learning, mental health, as well specific disorders, our training program is comprehensive and demanding. Because it is also highly individualized, it is unmatched in quality . . .”

“You will come away from this training with the knowledge, spirit and confidence to effectively use a yoga based therapy approach in your work. You will understand and be able to implement each of the six core principles of Integrated Movement Therapy, and will have plenty of ideas for creatively incorporating them into your therapy sessions. You will gain an understanding of a yoga based, wellness, perspective and be able to see your students in a new light. You will learn about specific disorders, including autism, ADHD, stroke, addiction, depression, Parkinson’s Disease, anxiety and head injury, and how to use a yoga based approach with them.”

*About Integrated Movement Therapy:* “Integrated Movement Therapy™ is a holistic therapy approach for people of all ages, from infancy to adulthood. Using yoga based movement and breathing techniques, Master’s level therapists address the unique
challenges of people with special needs in a calm, supportive, and nurturing environment . . .

“Integrated Movement Therapy (I.M.T.) was developed by Molly Kenny, founder and director of the Samarya Center, combining her experience and background in speech-language pathology, mental and behavioral health, and yoga. I.M.T. has been used successfully to promote wellness and positive self-image in individuals with autism spectrum disorders, Asperger’s Syndrome, AD(H)D, Prader-Willi syndrome, dyspraxia, depression, and anxiety, as well as with stroke survivors, individuals experiencing profound grief, those recovering from illness or injury, and adults living with autoimmune diseases . . .

“The I.M.T. approach is based on two overarching philosophies: that the student is already perfect and whole, and that the student and teacher are both unlimited in their abilities to heal. Supporting these beliefs is an empirically sound, brain-based therapy in which the therapist combines skills from conventional Master’s level training with yoga philosophy and practice to help the student reach his or her highest potential for a rich and peaceful life.

“Integrated Movement Therapy was developed to capitalize on the positive effects of movement generally and yoga specifically, and to directly affect frontal lobe efficiency, thereby increasing physical and cognitive functioning and improving therapeutic outcomes. I.M.T. has six core principles: Structure and continuity, Physical stimulation, Social interaction, Language Stimulation, Self-calming (attention/concentration/focus), and Direct self-esteem building. Each of these principles corresponds to specific areas of challenge, and therefore has specific positive effects in the therapeutic environment.

“At its most deconstructed level, Integrated Movement Therapy works because it addresses each aspect of the individual using a highly structured, multi-modality teaching method. However there is another integral aspect to this approach that, in the end, is truly the heart of this therapy and why it works. Yoga based therapy by definition, should have a spiritual and philosophical bent that separates it from conventional clinical interventions; that is, a focus on the divine being that exists within each individual, no matter how distracting the external manifestations of the diagnosis might be. Integrated Movement Therapy works on the principle that encouraging and developing the self-esteem of the individual is the single most important factor in increasing skills in all areas. To this end, in our therapy we focus on what is right, the goodness or divinity of the individual, and write our goals and develop specific therapy programs to increase these positive aspects.”


_Jetschgo-Schwarz, Elisabeth._ Stroke patients: Excellent improvement through therapeutic Yoga. A case report. _Yoga Studies, May-Aug 2002._

**Moore, Debbie.** HealthCare Adaptive Yoga. Sharp HealthCare, Rehabilitation Services, Recreation Therapy, San Diego, California. Tel. 858-541-3048.

“There are many physical and mental benefits derived from practicing hatha yoga. Most yoga classes are designed for students who can do standing poses. Sharp Rehabilitation Services Recreation Therapy offers an adaptive yoga class designed for individuals with physical limitations. At Sharp, recreation therapist and yoga teacher Debbie Moore leads a class using modified poses and no standing poses. The weekly class is performed from raised mat tables in the physical therapy gym. The class is open to anyone in San Diego who has a physical limitation. Current students include those with spinal cord injury, stroke, multiple sclerosis, post-polio and other mobility limitations. Due to the adaptive nature of the yoga class, many of the students state that they receive the same benefits from practicing hatha yoga as their able-bodied counterparts. These benefits include increased feelings of relaxation, deeper breathing, increased flexibility, increased posture or alignment, and less muscle stiffness and pain.”


On Heather’s experience as a Yoga teacher working one-on-one with an elderly woman who had experienced a severe stroke.


At twenty-one, Barbara suffered a severe stroke which left her paralyzed and unable to speak. Supported and inspired by the courage and determination of other patients, she embarked on the profound and life-affirming journey of rehabilitation and self-discovery. Her book recounts how she learned to live again, from her first difficult steps to her triumphant turning point in India. Barbara is a Yoga teacher, practicing Healing Yoga Therapy in Florida, and is also the chief of staff at the National Stroke Medical Education Institute.

___________. Healing yoga for the stroke survivor and caregiver. Paper presented at the 10th International Conference on Yoga for Positive Health, University of South Florida, Tampa, 15-17 Dec 2000. Email: barbnewborn@yahoo.com.


On the author’s recovery from a severe stroke at age twenty-one and her subsequent Yoga therapy work with other stroke and severely disabled clients.
Paulyn, Marie. Stress Out program. Stress Release Concepts, 191 Eglinton Avenue East, Suite 302, Toronto, Ontario M4P 1K1, Canada, 416-489-0232. (Marie has worked successfully with stroke patients in this Yoga-based program.)


Reder, Alan. Ram Dass reborn: Three years after suffering a major stroke, the man who helped open Western minds to the mystical influence of India talks about the unexpected gifts of inhabiting a disabled body. Yoga Journal, Jul/Aug 2000, pp. 98-103, 172-174.


Yoga Biomedical Trust. Stroke classes. URL: http://freespace.virgin.net/yogabio.med/ (click on “Yoga Therapy & How to Try It,” then click on “Index-Alphabetical,” then click on “Strokes”).


Dalia Zwick is a physical therapist with a Ph.D. in physical therapy (NYU), M.Sc. in exercise physiology (LIU), and extensive clinical and academic experience working with people with neurological involvement.

Of Related Interest

“About 40 percent of stroke survivors suffer serious falls within a year of stroke and now research may point to a possible explanation: balance problems while getting dressed.”


Conclusions: “Cooling causes reduction in motor neuron pool excitability [and] thus causes reduction in spasticity. Sustained passive stretching also causes reduction in spasticity. Both are equally effective in reducing spasticity in chronic spastic hemiplegics.”


“The bending the head back can press on an artery in the basilar artery system, which supplies blood to the brain in the back of the head, and causes dizziness. Pressure or a kink in the artery can lead to a stroke.”


“. . . Some women hover over the toilet; they don’t put their butts down. That hovering could be harmful—first, because the bladder isn’t fully emptied and now, it appears to raise the risk of stroke. No, this study doesn’t look at hovering. It looks at squatting, but it is similar . . . One-third of stroke deaths occurred while people were squatting. In India, it’s traditional for people to squat instead of sit or stand. They’ve found that not only do one third of strokes occur while squatting, the risks go way up if the people are squatting and doing their business.”


“Researchers are trying to see if acupuncture can poke away at the debilitating effects of stroke.

“A pilot study to compare the effects of real acupuncture to sham acupuncture in treating stroke patients is being conducted by researchers at the New England School of Acupuncture, Massachusetts General Hospital, Spaulding Rehabilitation Hospital, Harvard Medical School and Harvard School of Public Health.”
“Computerized imaging of gait and limb movements and magnetic resonance imaging (MRI) of the brain will be among the methods used to evaluate potential acupuncture benefits.

“This study will look at a number of clinically driven questions about how effective acupuncture can be in reducing some physical impairments, removing functional limitations and enhancing the quality of life in patients with chronic hemiparesis,” says principal investigator Dr. Peter Wayne, director of the acupuncture school.

“For the study, researchers are looking for people who have had a stroke at least six months earlier, and still experience weakness on one side of their body. Participants are being recruited through Spaulding Rehabilitation Hospital.

“This year, an estimated 750,000 Americans will suffer a first or recurrent stroke. That works out to a stroke every 45 seconds. Stroke is the leading cause of adult disability.”

Ivanhoe Newswire. Stroke robot. Ivanhoe Broadcast News, Aug 2000. Available online at: http://www.ivanhoe.com. For more information, contact: Judith Tortolano, Public Affairs (jtorolano@partners.org), Spaulding Rehabilitation Hospital, 125 Nashua Street, Boston, MA 02114, 617-573-700. (Discusses use of a robotic device as a partner in stroke rehabilitation to give patients an extra push when needed to complete a movement.)

__________. Stroke stimulation. Ivanhoe Broadcast News, Nov 2000. Available online at: http://www.ivanhoe.com. For more information, contact: Lauren Larson, University of Florida, College of Health Professions, Health Science Center, P.O. Box 100253, Gainesville, FL 32610-0253, 352-846-1153. (Discusses electromyography-triggered neuromuscular electrical stimulation as an assist to movement therapies.)


“A recent study shows middle-aged men who show signs of psychological distress have more than triple the risk of dying from a stroke than those without these symptoms. Researchers say the association between stroke and depression held true only for fatal strokes.”


“As many may know, predicting a stroke is nearly impossible for doctors. There are risk factors, including heart disease and diabetes, but what if a doctor could look in your eyes and tell you with near certainty that one day you might have a stroke? Here is a man who is working on just that.”
“Women who complain of balance problems after stroke are significantly more likely to experience a fall than those who say they don't have a problem with balance, report British researchers.

“Falls are a large problem in the elderly, but even more so in those who experience a stroke. About 40 percent of all people who suffer a stroke will fall within the first year, and research shows stroke survivors who do fall are four times more likely to break a hip than those without stroke . . .

“Results show the strongest risk factor for falls was due to difficulty of maintaining balance while dressing. Women who complained of this problem were seven times more likely to fall than others. Those who reported overall balance problems, dizziness, or a spinning sensation were about five times more likely to experience a fall.”


“In Chinese medicine, wind-stroke refers to what is commonly known in Western medicine as ‘cerebral vascular disease,’ which can cause cerebral vascular accident . . .

“Tui Na hand manipulations provide a platform on which the body anchors itself and at the same time creates balance and stability. A therapist, with an understanding of the patterns of principles of wind-stroke, can successfully assist in 75 to 90 percent recovery.”


From a review by Bellaruth Neparstek, Health Journeys: . . . Page, Levine, Sisto and Johnston of the Kessler Medical Rehabilitation Research and Education Corporation randomly assigned 13 stroke patients with stable motor deficits in their affected upper limbs to either standard care (one hour of therapy three times a week for six weeks, administered by the same physical and occupational therapists) or standard care plus a 10-minute guided imagery session after each regular therapy session. The imagery group also practiced imagery at home twice each week. The standard care patients participated in a control intervention consisting of exposure to stroke information.

After the intervention, the The Fugl-Meyer Assessment of Motor Recovery (Fugl-Meyer) and the Action Research Arm Test (ARA) was used to assess outcomes. The standard care group remained virtually the same. The standard care plus imagery group’s scores improved by 13.8 and 16.4 points respectively, on the Fugl-Meyer and ARA. The study concludes that imagery is a clinically feasible, cost-effective complement to therapy that may improve outcomes more than participation in therapy only for this population.

**Wallace, B. Alan.** Successful treatment of AIDS, cancer and other diseases by Tibetan medicine: An interview with Dr. Yeshi Dhonden. *Mandala*, May-Jun 2000, pp. 60-65. (Brief mention of the relative efficacy of Tibetan medicine for stroke patients.)

**Wilson, Barbara Alden.** Stroke—new developments in rehabilitation. Ivanhoe Broadcast News, April 1999. Available online at: http://www.ivanhoe.com. (Discusses the supported ambulation system, forced-use therapy, and other developments.)

**Ongoing Research**

**Melissa Kerr, SPT**
Wheeling Jesuit University
 Wheeling, WV
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Melissa is a physical therapy student working on her doctoral project on the topic of Yoga and patients with chronic stroke who have reached a plateau. Contacted IAYT April 2005.