



St. Charles Rehabilitation
Catholic Health Services
At the heart of health



Stroke: Advances, Research and Treatments

St. Charles Partners with Stony Brook Researcher to Improve Walking After Brain Injury

In partnership with St. Charles Rehabilitation, Erin Vasudevan, PhD, Stony Brook University Hospital, studies how damage resulting from a traumatic brain injury, stroke or neurological condition, such as cerebral palsy, affects the control of walking. The ultimate aim of Vasudevan's research is to develop techniques and devices to help patients who have sustained brain damage, recover their ability to walk and perform daily activities, including a return to work, school or socialization.

As a regional leader in rehabilitation care, St. Charles treats both adults and children who have sustained a brain injury and hosts the only pediatric traumatic brain injury unit in New York State.

For more information about research at St. Charles Rehabilitation, please call **(631) 474-6797**.

Participants Sought for Research Study on Post-Stroke Brain

Volunteer participants are being sought for a study examining brain function in individuals who have suffered a stroke. The study is funded by the National Institutes of Health (NIH) and utilizes brain scans of post-stroke patients to help determine how the brain has been affected. Researchers hope to enroll a total of 60 people in the study and there is no cost to participate.

"There are no intended therapeutic benefits for participating, though completion of this study may lead to new understanding and treatments for brain dysfunction after stroke," explained Andrew Goldfine, MD, Stony Brook University Hospital, the study's lead researcher and a clinical researcher with St. Charles Rehabilitation.

The study takes place at Stony Brook University Hospital and involves tests of thinking, EEG (electroencephalography) monitoring, and a PET/MRI (Positron Emission Tomography/Magnetic Resonance Imaging) scan.

Individuals who have had a stroke but do not have another brain disorder (such as dementia or Parkinson disease), and who are able to undergo an MRI scan are encouraged to apply.

For more information on how to enroll or for more information, please call the study coordinator at **(631) 474-6797**.

St. Charles Uses Acupuncture to Supplement Stroke Rehabilitation

Jun Zhang, MD, St. Charles Rehabilitation, currently uses acupuncture to supplement core rehabilitation therapy (PT, OT, speech) for stroke patients. Dating back more than two thousand years, acupuncture is a specialized treatment that involves inserting ultra-thin needles into the body's pressure points to relieve pain and discomfort, encourage the body into balance or promote natural healing.

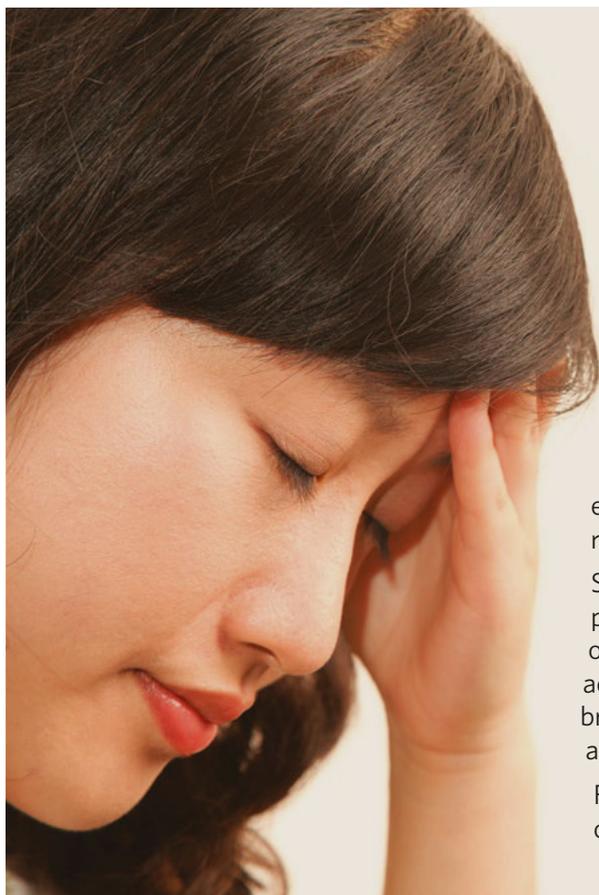
"Many studies indicate that patients treated with acupuncture get well faster, perform better in self-care, and require less nursing and rehabilitation therapy," explained Zhang. "It is a safe therapy and there is generally minimal discomfort during application."

While acupuncture is performed by thousands of U.S. physicians and practitioners to treat a variety of health conditions and prevent or relieve pain, it is more widely used in the Orient to treat conditions caused by stroke, such as paralysis, speech and swallowing problems, and depression.



The general theory of acupuncture is based on the premise that there are patterns of energy flow (Qi) through the body that are essential for health. Disruptions of this flow are believed to be responsible for disease. Acupuncture may correct imbalances of flow at identifiable points close to the skin.

For more information about acupuncture for stroke rehabilitation at St. Charles, please call **(631) 474-6797**.



Imagining Stroke Recovery: How Motor Imagery Helps Patients After Stroke

St. Charles Rehabilitation is using motor imagery together with physical exercises to help patients better recover physical abilities which may be diminished following a stroke. In motor imagery sessions, patients are asked to close their eyes and mentally rehearse a physical task that may now be difficult to perform with their body due to changes in their brain, such as a step forward with the left foot. The combination of motor imagery and physical exercises aims to help stroke survivors make greater progress in their recovery than either approach could if it were used alone.

Studies have shown that pairing motor imagery with physical training helps professional athletes improve their game time performance. Examinations of the brain reveal that physical performance and mental performance activate the same areas of the brain. In using multiple methods to promote brain activity, St. Charles therapists are capitalizing on the brain's ability to adapt and ultimately regain its control over physical tasks.

For more information about stroke rehabilitation at St. Charles, call **(631) 474-6797**.

St. Charles and Stony Brook Embark on Joint Study of Post-Stroke Apathy

Andrew Goldfine, MD, Stony Brook University Medical Center is partnering with Jun Zhang, MD, Psychiatrist, St. Charles Rehabilitation, on a study of post-stroke apathy (PSA), a syndrome marked by reduced goal-directed behavior and flattening of emotions. Dr. Goldfine is spearheading the study, which is already underway at St. Charles. Participants are selected from among individuals who have been admitted to St. Charles Hospital's Inpatient Rehabilitation unit for acute rehabilitation following a stroke.

Researchers examine which medications are effective for treatment of PSA then apply computerized cognitive testing and video EEG exams before and after treatment. The goal of the study is to develop a set of diagnostic tests which determine the specific mechanism of PSA in an individual patient. The information will be used to guide treatment.

PSA is a condition that occurs in approximately 35% of patients with stroke, and is associated with more disability and a reduced quality of life. There are no proven treatments for this condition and the underlying mechanism is not known.

For more information about stroke rehabilitation at St. Charles, please call **(631) 474-6797**.

Individuals with post-stroke apathy typically sit staring off into space and may appear to have blank minds.



St. Charles Studies Cutting Edge Stroke Technology

St. Charles Rehabilitation is conducting an investigative study about Transcranial Magnetic Stimulation (TMS), a technologically advanced rehabilitation treatment for patients who have suffered a stroke. During TMS sessions, "paddles" which emit magnetic pulses are placed over study participants' heads. The magnetic pulses pass through participants' brain tissue to deliver pain-free electrical stimulation to the superficial layer of the brain.

Researchers at St. Charles apply TMS repetitively to explore how this stimulation may affect activity in specific areas of the brain changed by stroke. Physicians from St. Charles are identifying and selecting appropriate individuals for the study from among patients admitted to the hospital's acute care rehabilitation unit.

For more information about stroke rehabilitation at St. Charles, please call **(631) 474-6797**.



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200 Belle Terre Road
Port Jefferson, NY 11777

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Therapeutic Summer Camp at St. Charles Improves Function for Children with Hemiparesis

Each summer, St. Charles is home to a very special type of summer camp.

The three-week day camp is for children with upper extremity hemiparesis, a condition involving paralysis or semi-paralysis of the arm and hand on one side of the body. Campers participate in recreational activities while their stronger arm is constrained in a cast. This form of research-based therapy is known as constraint-induced movement therapy (CIMT). The goal of the St. Charles CIMT camp is to help the children regain movement of the affected or weakened arm and hand.

"Recent studies show the value of CIMT for hemiparesis and the outcomes for our campers are remarkable," explained Jennifer Semel, MD, medical director, Physical Medicine and Rehabilitation, St. Charles.

"At the end of the three-week session, we can see documented gains in their individual assessment scores and improved function in the use of their weakened arm. Parents are delighted if their children begin to use their weakened arm more frequently at home."

For more information about CIMT camp at St. Charles Hospital, please call **(631) 474-6797**.

