

# BATRAC

## Bilateral Arm Training with Rhythmic Auditory Cueing Bilateral repetitive rhythmic training intervention



### Therapy Restores Arm Function Years After Stroke

-- E.J. Mundell

FRIDAY, June 25 (HealthDayNews) -- Stroke patients left with impaired arm movement for an average of nine years made impressive gains after undergoing a new kind of physiotherapy, researchers report.

What's more, the therapy, called bilateral repetitive rhythmic training intervention (BATRAC), appears to work by re-wiring the brain's motor control circuitry.

"This is the first study to prove that BATRAC therapy also has a neuroscience basis," said German researcher Dr. Andreas R. Luft, of the University of Tübingen.

"Being able to observe changes in brain biology that account for treatment effects brings BATRAC therapy out of the shade of non-scientific treatments," he added.

The findings were reported Friday at the World Stroke Congress meeting in Vancouver, Canada.

Depending on severity, stroke can leave patients with motor deficits ranging from temporarily slurred speech and impaired movement to a more permanent immobility.

"Physical therapy is absolutely necessary for successful recovery once the stroke has occurred and brain tissue has died," Luft said in a prepared statement.

But hopes for regaining lost movement decline if disability continues for months or years after a stroke.

In their study, Luft's team had 20 long-term stroke survivors engage in six weeks of either standard physiotherapy -- in which physiotherapists passively move the patient's trunk, shoulder, arms and hand -- or BATRAC. In BATRAC, patients push or pull a T-bar in rhythmic time with a metronome for four, 5-minute periods per day.

All of the study participants had suffered a stroke between 10 months and 39 years prior to the therapy, for an overall average of 9 years.

According to the researchers, six of the eight patients in the BATRAC group gained improvements in arm function, while no such improvement was seen in the 12 patients taking regular physiotherapy.

Using sophisticated MRI techniques, the researchers also detected what they called "reorganization of central motor networks" in the brains of those patients whose arms improved after BATRAC, according to Luft. This type of brain reorganization was not seen in patients taking normal physiotherapy, they added.

"Our hypothesis is that brain reorganization is the mechanism by which BATRAC improves function in chronic stroke patients," Luft said.