



## STROKE

### Might Virtual Drumming Help Stroke Survivors Recover?

Is it possible that virtual reality—the stuff of Matrix movies and futuristic fantasy—helps elderly stroke survivors along the road to recovery? Researchers from the University of Toronto think it's a question worth investigating, and have already begun a pilot study of stroke survivors 60 years and older to explore the possible benefits of this immersive, interactive, 3-D computer experience.

Theoretically, the researchers explain, virtual reality can encourage competence, expression and pleasure in leisure activities in older stroke survivors. They believe that virtual reality has the potential to offer people with disabilities greater control over events in their environment, thereby contributing to a sense of competence and satisfaction with life.

How might this be possible? The Mandala® Gesture Xtreme virtual reality system uses a video camera as a capturing and tracking device to give the user the sense of being immersed in the virtual environment. The user sees herself on a television

screen while the virtual reality system responds to her movements. The user does not have to wear, touch or hold anything, making this system especially ideal for the disabled elderly. By means of the system's video gesture capability, the user's movements (reaching, bending) trigger visible or invisible icons to score points and manipulate animations, such as playing a virtual drum kit.

One concept the investigators use to illustrate how disabled elderly interact with and may benefit from virtual environments is entexturing—the awareness of the body with respect to a variety of sensory stimuli (space, light, colour, sound) and the regulation of activity surrounding the body in

order to produce a finely articulated and satisfying whole. In the virtual environment shown here, the user was required to reach out to the sides and across her body to hit

the various drums placed around her. By hitting the drums, the user is executing an activity by responding to auditory and visual stimuli, creating a rhythm and expressing creativity.

The use of virtual reality, according to the investigators, can be a positive addition

to the lives of people recovering from stroke. Although they will be focusing on the social and psychological benefits of virtual reality, the potential physical gains, such as improved balance and range of motion, merit exploration as well.



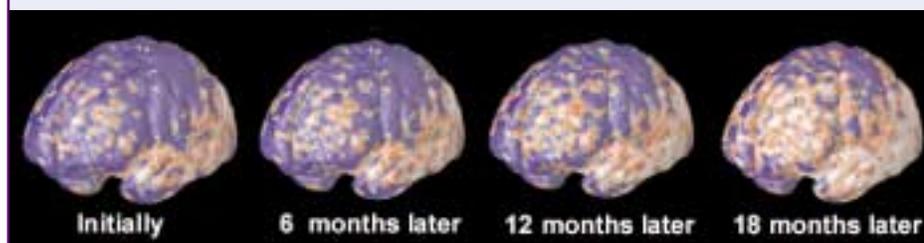
## DEMENTIA

### Novel Brain Mapping Reveals Spread of AD

A novel brain mapping technique has provided the first quantitative, dynamic visualization of the spreading wave of cortical atrophy in the brains of living patients with Alzheimer disease (J Neurosci 2003;23:994-1005).

Using this unique mapping method, Australian neuroscientists were able to visualize dynamic patterns of atrophy in 52 high-resolution MRI scans of 12 patients with AD and 14 elderly matched controls. Based on these scans, dramatic time-lapse videos were created, showing sequential loss of gray matter in four dimensions as it spread over time from temporal and limbic cortices into frontal and occipital brain regions, while sparing sensorimotor areas. The visualized patterns of cortical atrophy correlated with the AD patients' progressively declining cognitive ability and mirrored the sequence of neurofibrillary tangle accumulation observed at autopsy. AD patients were found to lose an average of 5.3% grey matter per year compared to a loss of only 0.9% in the healthy volunteers.

In the future, such images may offer researchers a potent tool for assessing the impact of therapies on dementia as well as for evaluating the spread of the disease.



## THE WEB

### From St. John's Wort to

With the popularity of herbs, botanicals and other natural remedies continuing to explode, a unique web-based resource recently launched by Memorial Sloan-Kettering Cancer Center will help fill the information gap for both medical practitioners and the general public.



The web resource includes monographs on 135 agents, providing clinical summaries of each, as well as the purported uses, mechanisms of action, adverse reactions, drug interactions and links to scientific research and critiques. The website provides invaluable information for physicians that is comprehensive and current, and will be continually updated by the Chief of Integrative Medicine at MSKCC and a pharmacist and botanicals expert. Discover what you don't know at: <http://www.mskcc.org/aboutherbs>.