



A Better Quality of Life for Stroke Victims

Stroke is the third-leading cause of death and a leading cause of long-term disability and cognitive decline in the United States, according to the Centers for Disease Control and Prevention. According to the American Stroke Association, more than 780,000 strokes occur each year in this country, or one stroke every 40 seconds.

U.S. medical schools and teaching hospitals, together with the National Institutes of Health (NIH), are working to find more effective treatments for stroke patients and to better understand how the brain recovers after a stroke.

The following examples of recent NIH-funded research advances achieved at these institutions hold promise for patients at risk for or recovering from a stroke.

2008

University of New Mexico School of Medicine

Researchers have developed a novel MRI imaging method to demonstrate blood-brain-barrier leakage in patients with vascular dementia. This is the first time such leakage has been sensitively quantified in these stroke patients.

Emory University School of Medicine

Experts have found that a new structural class of drugs, called glutamate receptor antagonists, is a potential treatment for the neurological degeneration associated with stroke. The new compounds are neuroprotective, yet free of the previous side effects of this class of drug.

University of Arkansas for Medical Sciences

Researchers created a mouse model to study the role of zinc in normal brain function and in neurological diseases in which the zinc-binding site of certain brain receptors—called NMDA receptors—was destroyed. This mouse model will help establish the zinc site of NMDA receptors as a novel target for developing new drug treatment for stroke and other brain diseases.

University of New Mexico School of Medicine

According to recent findings, treatment with normobaric oxygen or matrix metalloproteinase inhibitors may extend the time window available to treat stroke with clot-busting drugs, which can reverse or limit brain damage.

2006

Emory University School of Medicine
University of Alabama School of Medicine
University of Florida College of Medicine
University of North Carolina at Chapel Hill School of Medicine
Wake Forest University School of Medicine
Washington University School of Medicine

Results of the “EXCITE” clinical trial—a multisite study of upper extremity rehabilitation for recent stroke victims—indicate that restraining a patient’s use of the “good” arm/hand while training the weak arm/hand for up to six hours daily for two weeks improved motion function.

Emory University School of Medicine

In clinical trials across more than 40 academic institutions, it was determined that a very low-fat diet with increased carbohydrates does not significantly reduce the risk of stroke, colorectal cancer, coronary heart disease, cardiovascular disease, or invasive breast cancer in postmenopausal women, although it does lower breast cancer incidence.

2004

Medical University of South Carolina College of Medicine

Researchers discovered a class of drugs that blocks activation of inflammatory cells, which may be used to treat conditions caused by inflammation of the brain or spinal cord—such as stroke, multiple sclerosis, Alzheimer’s disease, and spinal cord injury.

Johns Hopkins University School of Medicine

Research results indicate that exercise can lessen the effects of stroke, heart disease, and diabetes. Even a moderate program of physical exercise reduces risk factors such as high blood pressure, elevated blood glucose levels, abdominal fat, and abnormal cholesterol levels.

2003

Pennsylvania State University College of Medicine
University of Iowa Roy J. and Lucille A. Carver College of Medicine

Computer algorithms can now quantify the geometry and hemodynamics of intracranial aneurysms from three-dimensional computer images. Preliminary data suggest that aneurysm shape may be a better predictor of potential rupture than aneurysm size.

For more information about how medical schools and teaching hospitals are fulfilling the promise of medical research, go to: www.aamc.org/ftp