



NIH-funded Research Improves Quality of Life for Stroke Victims

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Stroke is the third-leading cause of death and a major culprit in many cases of long-term disability and cognitive decline in Americans, according to the Centers for Disease Control and Prevention (CDC).

A stroke affects the arteries leading to and within the brain, and occurs when a blood vessel carrying oxygen and nutrients to the brain is either blocked by a clot or bursts. According to the American Stroke Association, more than 780,000 Americans suffer strokes each year, or one stroke every 40 seconds. The stroke association also estimates that stroke-related medical and disability expenses will cost the nation \$65.5 billion in 2008.

Research conducted at U.S. medical schools and teaching hospitals and supported by the National Institutes of Health (NIH), particularly its National Institute of Neurological Disorders and Stroke (NINDS), has led to effective preventive medicine and improved emergency treatments for acute stroke patients, as well as a better understanding of how the brain recovers after a stroke.

For example, scientists at **Boston University School of Medicine** serve as primary investigators in the Framingham Heart Study, a 60-year-old, ongoing NIH-funded health project examining the underlying causes of and risk factors for heart attacks, stroke, and other cardiovascular diseases. Among other milestones, Framingham researchers are credited with discovering that smoking and high blood pressure increase stroke risk, and that family history plays a large role in stroke risk.

More recently, findings from NIH-funded medical school studies could make a difference for future stroke patients. Researchers at the **University of New Mexico School of Medicine** have revealed that administering normobaric oxygen (pure oxygen stored at a normal barometric pressure) or drugs called matrix metalloproteinase inhibitors may limit or even reverse brain damage in stroke victims by increasing the available time window during which strokes may be treated with clot-busting drugs.

More NIH-funded research advances from U.S. medical schools and teaching hospitals:

Nanotechnology could help heal spinal trauma

An NIH grant made possible a recent breakthrough at **Northwestern University Feinberg School of Medicine** that could pave the way for new treatments for spinal cord injuries. The research team used

Mark Your Calendars! September 29, 2008

Fulfilling the Promise Capitol Hill Briefing

B-338 Rayburn House
Office Building

"Stroke Prevention and Treatment: Advances in NIH-funded Research"

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www.aamc.org/ftp/nih.htm

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"Fulfilling the Promise" is a special AAMC initiative highlighting the collaboration between the National Institutes of Health (NIH) and academic medicine. As research engines of the U.S. health system, the nation's medical schools and major teaching hospitals are

nanotechnology to create a “scaffold” that supports new nerve growth at the site of a spinal cord injury. The scaffold, made of carbon-based molecule polymers that are 10,000 times finer than a human hair, assemble into a “nanogel” upon contact with bodily tissues or fluids. In mice, a single injection of the polymer given one day after a spinal cord injury led to functional improvements that would be life-changing in humans.

<http://www.northwestern.edu/newscenter/stories/2008/04/SpinalCordInjury.html>

Information processing capacities decline in seniors

The brain’s ability to process information may diminish with age, and lead to a decreased ability to form memories, according to a new study from the **University of California, San Francisco, School of Medicine**. Study findings revealed that the brain’s capacity to both ignore irrelevant information and process information quickly work in tandem and decline with age.

<http://pub.ucsf.edu/newsservices/releases/200809023/>

Longevity gene for humans?

Researchers at the **University of Hawaii, John A. Burns School of Medicine** have discovered that a specific variation of the gene FOXO3A may be linked with human longevity. The gene, which is related to the regulation of cellular and blood sugar levels, has previously been linked to longevity in other species, but this is the first time the link has been demonstrated in human beings.

<http://www.starbulletin.com/features/20080925>

[Nutrition needed even with longevity gene.html](http://www.starbulletin.com/features/20080925)

Multiple sclerosis (and its treatments) may have different forms

Scientists suggest that people who experience the same clinical signs of multiple sclerosis (MS) may have different forms of the disease that require different kinds of treatment. The results, from the **University of Michigan Health System**, may eventually pave the way for more targeted MS treatments. The most common form of MS, relapsing-remitting multiple sclerosis, was discovered in the 1990s. But drug treatments that worked well for some relapsing-remitting MS patients had mysteriously not worked well for others.

<http://www2.med.umich.edu/prmc/media/newsroom/details.cfm?ID=419>

awarded more than half of all NIH grants to scientists through its extramural research program.

www.aamc.org/ftp
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