



From the Research and Clinical Trials Administration Office

Gene Therapy to Prevent Amputation in Patients With Critical Limb Ischemia

The Section of Cardiology is studying the effectiveness of innovative angiogenic gene therapy in promoting new blood vessel growth and preventing amputations in patients suffering from critical limb ischemia, the most severe form of peripheral arterial disease. During the 12-month study, participants will receive four injections of the investigational study medication or a placebo into the leg muscle at two-week intervals.

Participants must meet the following criteria:

- Be 50 years of age or older
- Have stable skin ulcers or noninfected gangrene on a foot or leg
- Be diagnosed with PAD at the stage of critical limb ischemia

This is a partial list of inclusion and exclusion criteria. The principal investigator at Rush is **Jeffrey Snell, MD**. For more information, contact Christina Giannoulis at (312) 942-9489.

Stenting and Aggressive Medical Management for Preventing Recurrent Stroke in Intracranial Stenosis

The departments of neurology and neurosurgery are participating in a five-year, NIH-funded study to determine the best course of treatment to reduce the risk of stroke patients suffering another stroke. Investigators will compare the effectiveness of aggressive medical management of high cholesterol and hypertension combined with stenting to widen a narrowed intracranial artery vs. intensive medical therapy alone. Rush is the only site in Chicago participating in the study, which is the first to look at the long-term benefits of Wingspan, the only FDA-approved stent designed to open clogged arteries in the brain.

Participants must meet the following criteria:

- Be between 30 and 80 years of age
- Have had a stroke or transient ischemic attack within 30 days of enrollment
- Have stenosis of a major intracranial artery

This is a partial list of inclusion and exclusion criteria. **Demetrius Lopes, MD**, is the principal investigator at Rush. For more information, contact Dr. Lopes at (312) 315-9174.

Programs and Services Spotlight

Cartilage Restoration Center at Rush

One of the busiest centers of its kind in the nation, the Cartilage Restoration Center at Rush provides comprehensive treatment for patients with cartilage defects resulting from wear or trauma to the knee, ankle, hip, shoulder and elbow joints. The goal of treatment is to reduce pain and disability while minimizing the number of surgeries patients will need over their lifetimes.

The multidisciplinary center features seamless collaboration between orthopedic surgeons and basic scientists in the areas of biochemistry, biomechanical and materials testing, histology, immunohistochemistry, and tribology and wear analysis. The team is led by **Brian Cole, MD, MBA**, an orthopedic surgeon with Midwest Orthopaedics at Rush, who recently co-authored the first textbook about biologic joint reconstruction (published in January 2009).

These experts are considered worldwide leaders in cartilage restoration techniques as well as translational research on innovative methods for harvesting, preserving and assessing tissue. The following are among the many contributions by cartilage physician-researchers at Rush:

- They were instrumental in determining optimal prolonged fresh preservation techniques — now used by tissue banks nationwide to preserve donated cartilage.
- They helped develop an impaction profile that tells surgeons the optimal amount of force to use when inserting grafts during implantation — findings that led to industry-wide changes in the instrumentation and procedures used during cartilage transplants.

State-of-the-Art Cartilage Repair

The center offers a full range of advanced treatment options for cartilage defects, including the following:

- Rush is the only hospital in Illinois — and one of the few nationwide — using **cartilage transplants to repair damaged shoulder joints**. For younger patients in severe pain, with limited movement because of cartilage injury or wear, transplants are a new and emerging option that can help them return to an active lifestyle.
- Orthopedic surgeons at Rush are among the most experienced in the world at **meniscus transplantation** and pioneered surgical techniques that are performed in an outpatient environment almost entirely arthroscopically.
- An advanced technique for cartilage regeneration, **autologous chondrocyte transplantation** involves harvesting cells from a patient's own cartilage, then reimplanting the cultured cells into the knee to repair and resurface areas of cartilage loss.
- Used for smaller defects, **osteochondral autografts** are small sections of the patient's own bone and cartilage that are removed from a nonweight-bearing area of the knee and transplanted into a damaged area.
- **Allograft reconstruction**, used to repair larger areas of bone and cartilage loss, involves transplanting a piece of freshly donated cartilage and bone rather than the patient's own tissue.

Participating Physicians and Researchers

Orthopedic Surgery and Clinical Research

Brian Cole, MD, MBA, section head, Cartilage Restoration Center at Rush
Orthopedic surgeon, Midwest Orthopaedics at Rush
Nikhil Verma, MD, orthopedic surgeon, Midwest Orthopaedics at Rush

Basic Science Research

Susan Chubinskaya, PhD, the Ciba-Geigy Professor of Biochemistry
Vincent Wang, PhD, director, sports medicine research
Markus Wimmer, PhD, director, Section of Tribology

To refer a patient to the Cartilage Restoration Center at Rush or for more information, call (312) 432-2381.

Clinical Trials to Advance Cartilage Restoration

Physician-researchers at the Cartilage Restoration Center at Rush are currently exploring two innovative methods for repairing articular cartilage of the knee. After leading successful phase I trials, Rush is now enrolling patients in phase III trials for the cartilage autograft implantation system (CAIS) and the DeNovo NT/ET (natural tissue/engineered tissue) graft. Rush is the leading site in the country for both trials.

- The DeNovo NT/ET trial involves implantation of cartilage generated from juvenile chondrocytes.
- In the CAIS trial, cartilage tissue is minced into small fragments, placed into scaffolds and implanted into the defect, where it generates healthy new tissue.

For more information, including inclusion and exclusion criteria, contact Michelle Karlin at (312) 432-2381.



Clinical CORNER

Study to Identify Best Rehabilitation Therapies for Patients With Traumatic Brain Injuries

Rush and nine other health care facilities across the United States and Canada have been awarded a \$4.3 million grant from the National Institutes of Health to identify which rehabilitation therapies, or combination of therapies, can best help people with traumatic brain injuries. Rush is the only center in Illinois participating in the study.

The five-year study will prospectively evaluate the treatment of more than 2,300 patients who have suffered moderate to severe traumatic brain injuries. Outcomes will be catalogued and correlated with both the patients' characteristics and therapeutic interventions. Researchers will then analyze which therapies and medications were most successful in improving outcomes for patients with different types and severities of traumatic brain injuries.

Research to date has been limited in identifying the best treatments for the range of symptoms, according to **James Young, MD**, chairperson of the Department of Physical Medicine and Rehabilitation and an internationally recognized expert in the treatment of brain injuries. By isolating individual components of therapy as applied to patients with different degrees of traumatic brain injuries, researchers expect to be able to prescribe best practices for rehabilitation, raising the standard of treatment in facilities across the country.

Study Reveals Education May Not Slow Progression of Memory Loss

While a higher level of education may help lower the risk of Alzheimer's disease, a new study shows that once educated people start to become forgetful, a higher level of education does not appear to protect against how fast they will lose their memory. The study findings were published in the February 3 issue of *Neurology*.

In the study, researchers tested the thinking skills of 6,500 people from the Chicago area whose average age was 72. Participants' education levels ranged from eight or fewer years to 16 or more years of schooling. Interviews and tests about memory and thinking functions were given every three years for an average of 6.5 years.

At the beginning of the study, those with more education had better memory and thinking skills than those with less education. However, education level was not related to how rapidly these skills declined during the course of the study. Results remained the same regardless of other factors related to education, such as occupation, race and the effects of practice with the tests.

"These are interesting and important findings, because scientists have long debated whether aging and memory loss tend to have a lesser effect on highly educated people," says study author **Robert S. Wilson, PhD**, of the Rush Alzheimer's Disease Center.

INTRODUCTIONS The following is a list of physicians who joined the Medical Staff of Rush University Medical Center between November 1 and December 31, 2008. The Medical Staff Office and the Office of Marketing and Communications have made every effort to publish accurate information that is as complete as possible; if, however, the information below is incorrect or we have omitted information, we apologize and ask that you contact Muriel Coleman in the Medical Staff Office at (312) 942-5496.

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IN THE NEWS:

Rush Honored With Chest Pain Center Designation

In January, Rush became the first hospital in Chicago to be designated as an accredited chest pain center by the Society of Chest Pain Centers. To earn chest pain center accreditation status, hospitals must meet or exceed a wide set of stringent criteria, including significantly reducing the amount of time it takes for a patient experiencing potential symptoms of a heart attack to see a physician; creating more effective systems to get patients into the cardiac catheterization lab in the shortest amount of time; and providing a specialized observation setting where physicians are better able to monitor patients when it's not clear whether they are having a coronary event.

To meet these criteria, Rush has implemented numerous strategies, including the following:

- The emergency department now has a single tele-pager activation process that rapidly calls six health care specialists, including an interventional cardiologist and two additional cardiologists, to the emergency room to quickly determine an accurate diagnosis and initiate treatment. Unlike at many hospitals, members of the emergency department staff at Rush have the authority to activate this process without a cardiologist's consultation based on certain diagnostic criteria.
- Emergency department and cardiology department faculty and staff meet once a month to review cases and discuss potential improvements. These meetings also include personnel from the departments of quality improvement, hospital administration and nursing.

The accreditation process required close coordination between the emergency department, cardiology, pharmacy, internal medicine and other departments across the Medical Center. To coordinate and implement the new protocols for addressing chest pain, Rush has created a multidisciplinary leadership committee consisting of physicians, nursing leaders and representatives from pharmacy, security, environmental services and other areas.

"This is a great accomplishment for our team. We strive to be leaders in the management of acute coronary symptoms within the Chicago community. This achievement is consistent with our commitment to quality and is a testament to the whole team, which has been working tirelessly to achieve this important milestone," says **James Calvin, MD**, section chief of cardiology.

Kudos

Rush recently received the Outstanding Achievement Award from the American College of Surgeons' Commission on Cancer. The American College of Surgeons gives the award to programs that demonstrate a "commendation" level of compliance with seven standards, including cancer program leadership, cancer data management, clinical services, research, community outreach and quality improvement as well as a compliance rating with 29 other standards. The cancer program at Rush has received the award each of the two times it has been surveyed.