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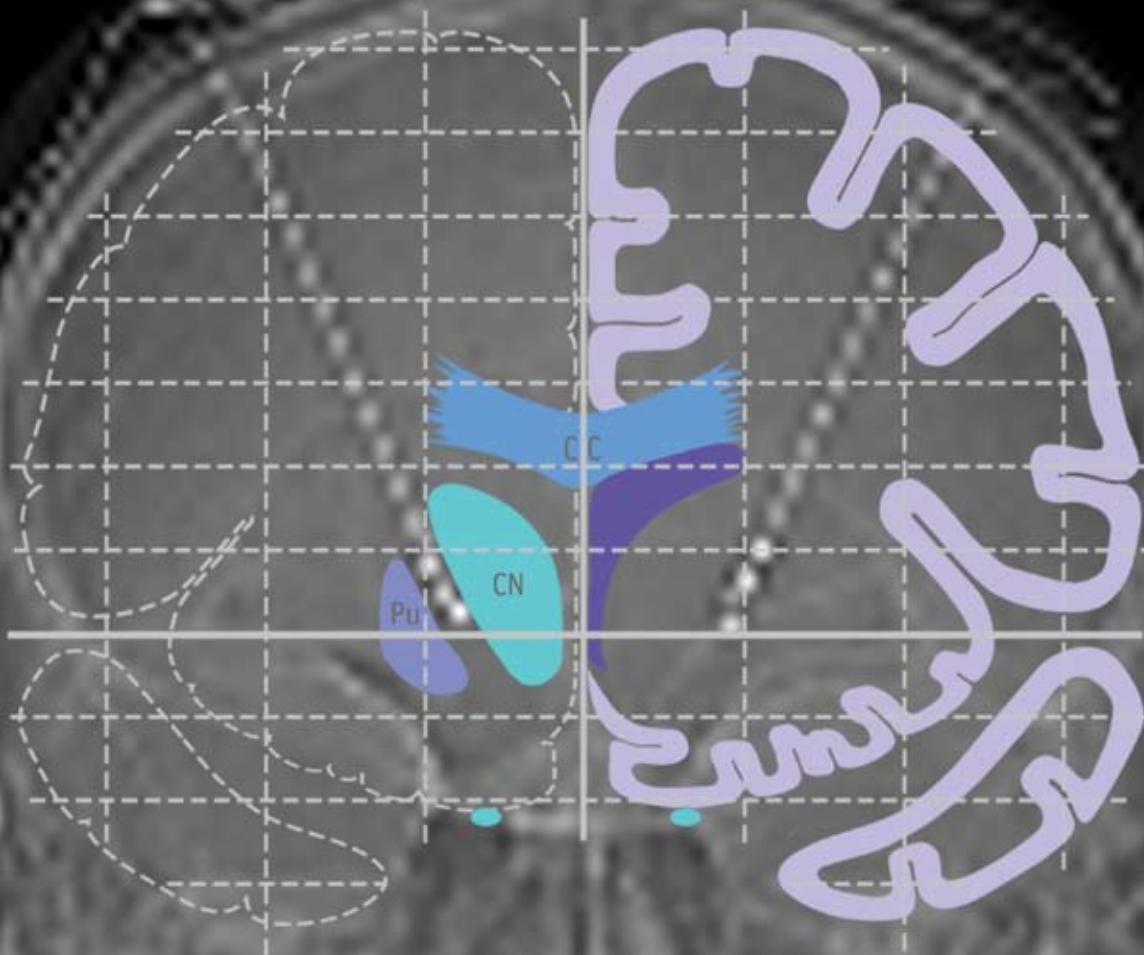
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Parkinsons' Patients Get Help From a Pacemaker for the Brain

*Magnetic Navigation Improves
Ablation for Irregular Heart Beats*

Angioplasty Saves Diabetic Patient's Leg

*Study Could Aid Development of
Improved Blood Pressure Drugs*



Parkinsons' Patients Get Help From a Pacemaker for the Brain

Deep Brain Stimulation

One million people in the United States have Parkinson's disease, and only a small number of them are getting the best treatment available. Potentially 10 percent to 20 percent of individuals who experience disabling tremors, wearing-off spells after several years of taking medications or dyskinesias could benefit from Deep Brain Stimulation (DBS).

Brain surgery for Parkinson's disease dates to the 1940s. Using electrodes, surgeons would heat tissue and destroy small parts of the brain responsible for abnormal movements. These surgeries produced moderate benefits, but at the risk of causing neurologic deficits or hemiballismus.

In the 1980s, Swiss neurosurgeon Alim-Louis Benabid, MD, discovered it was not necessary to destroy tissue; tremors instead could be stopped with electrical signals. His discovery led to DBS, and in 1997, the Food and Drug Administration approved DBS for essential tremor and tremor in Parkinson's disease.

A pivotal 2001 study in the *New England Journal of Medicine* found that DBS significantly improved symptoms in Parkinson's patients who could not be further improved with medications. The FDA approved DBS for advanced Parkinson's disease motor symptoms in 2002 and for the humanitarian use of DBS for primary dystonia in 2003.

In the procedure, the neurosurgeon drills one or two dime-size holes in the skull and inserts one or two electrodes about four inches into the brain. A connecting wire from the electrode runs under the skin to a battery implanted near the collarbone. The patient is awake and answering questions for the surgeon as the procedure progresses. Surgical risks include infection, hemor-

rhage and stroke. Adverse effects of electrical stimulation, which are reversible, could include jolting sensation, numbness or tingling in the face or hand, dizziness, dyskinesia, muscle spasms, slurred speech, double vision and depression.

Douglas Anderson, MD, professor of neurological surgery at Loyola University Chicago Stritch School of Medicine, was among the first neurosurgeons in the nation to treat Parkinson's disease using DBS. He has treated approximately 50 Parkinson's patients with DBS, and has seen remarkable results. "For some patients, DBS can quell or eliminate tremors," Dr. Anderson said. "It increases the percentage of time that a patient is functional." Dr. Anderson said that, although patients' response to treatment may vary, overall he is pleased with the results. "Patients are more mobile and can move more freely," he said. "Occasionally their medications can be reduced."

DBS has been called a "pacemaker for the brain." It is a last resort treatment for Parkinson's patients who no longer benefit from drugs, or who experience unacceptable side effects. DBS is not a cure, and it does not stop the disease from progressing. But in the right patients, DBS can significantly improve symptoms, especially tremors. DBS also can reduce rigidity and dyskinesias.

"This treatment is an adjunct, not a substitute, for medications," cautions Dr. Anderson, who believes collaboration with neurologists is vital to the overall successful treatment plans for patients with movement disorders. Neurologists whose patients could benefit from DBS can be referred to Loyola's Movement Disorders Clinic. Good candidates for DBS are Parkinson's patients who are strong enough to survive the surgery, who do not have other complicating issues such as

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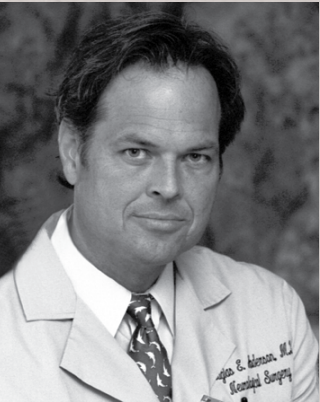


“The great advantage of DBS over earlier surgical treatments is that it’s reversible.....If there are side effects, we can turn the device off and reverse them.”

Douglas Anderson, MD

dementia, and who are no longer adequately benefiting from drug therapy.

Psychosurgery still makes many people uneasy. It often brings to mind the sinister frontal lobotomy depicted in the novel and 1975 movie *One Flew Over the Cuckoo’s Nest*. But psychosurgery today is nothing like the Hollywood depiction. “The benefits of DBS and other psychosurgeries outweigh the risks,” Dr. Anderson said. “The great advantage of DBS over earlier surgical treatments is that it’s reversible. If there are side effects, we can turn the device off and reverse them.”



Currently DBS is being studied for several psychiatric conditions, including depression and obsessive-compulsive disorder. DBS is among the treatments offered at Loyola University Health System’s new Movement Disorders Clinic. Specialists at the clinic also treat essential tremor, dystonia, Huntington’s disease and tic disorders.

For more information on DBS or the Movement Disorders Clinic at Loyola, call (877) MDs-LUHS and ask for ext. 6-5122. ~

DBS 2001 Clinical Trial Results as reported in the *New England Journal of Medicine*

The clinical trial was conducted by the Deep Brain Stimulation for Parkinson’s Disease Study Group, an international collaboration. Researchers performed a prospective, double-blind crossover study in 134 patients. Investigators compared scores on the motor portion of the United Parkinson’s Disease Rating Scale when the device was randomly turned on or off. Three months after the procedure, stimulation of the subthalamic nucleus was associated with a median improvement in the motor score of 49 percent, compared to when the device was turned off. During the first six months, the percentage of time during the day patients had good mobility without involuntary movements increased from 27 percent to 74 percent. Similar improvements were seen with stimulation of the pars interna of the globus pallidus. Seven patients had intracranial hemorrhage, and the leads had to be removed from two patients because of infection.

2003 Case Study Reported in *Journal of Neurosurgery*.

In 2003, Douglas Anderson, MD, associate professor of neurological surgery at Loyola University Chicago Stritch School of Medicine, and a colleague published a case report about DBS treatment on a 35-year-old obsessive-compulsive patient. The woman had received minimal benefit from antidepressants, cognitive therapy and electroconvulsive therapy. Before surgery, her behaviors included repeated urges to pull her hair out and checking her mailbox 20 times a day. She was unable to work and scored 34 of a possible 40 on the Yale-Brown Obsessive Compulsive Scale. Three months after surgery, her OCD score had dropped to 7. At 10 months, she was able to “return to the workforce and all compulsions had abated,” Dr. Anderson wrote in the *Journal of Neurosurgery*.

2008 Case Studies Reported at the *American Society for Stereotactic and Functional Neurosurgery*

Dr. Anderson presented case reports about two patients treated for body dysmorphic disorder and debilitating headaches.

Body dysmorphic disorder is excessive preoccupation with minor or imagined flaws in appearance. Dr. Anderson’s patient was a 20-year-old man who obsessed on perceived flaws with his nose and other facial features. He had attempted suicide once, and described his life as a “living hell.” Eight months after DBS surgery, the patient reported mild depression and obsessive compulsive disorder, but no symptoms of body dysmorphic disorder. “While this is a single case report with all the limitations inherent as such, the patient has reported steady psychological progress, the absence of body dysmorphic disorder symptoms, increased activity and energy — confirmed by both family members and his psychiatrist,” Dr. Anderson reported.

The second patient was a 43-year-old woman who suffered paroxysmal hemicrania headaches around the orbit of her right eye. She would typically get 10 to 20 attacks per day, each lasting 2 to 20 minutes. The headaches did not respond to either medications or a nerve block. But as soon as the DBS device was turned on, the woman reported the pain went away. A year after surgery, she remained headache-free. Dr. Anderson said this was the first reported case of DBS for refractory chronic paroxysmal hemicranias. A limitation was the lack of neuroimaging during attacks. More study is needed to determine the potential of DBS for managing refractory headaches.

Magnetic Navigation Improves Ablation for Irregular Heart Beats

Loyola University Health System has become the first Chicago-area hospital to treat heart problems with a magnetically guided catheter that is much more precise than manual catheters. And it is easier on the heart.

The metal-tipped catheter is guided by two computer-controlled magnets, one on each side of the patient. It can be used to treat irregular heart beats, to open clogged arteries and to place electrical leads for certain types of pacemakers. The \$1.5 million system is housed in the new William G. & Mary A. Ryan Center for Heart & Vascular Medicine on the Loyola medical center campus in Maywood.

“It allows you to go exactly where you want to go in the heart, with millimeter accuracy,” said David Wilber, MD, George M. Eisenberg Professor of Cardiovascular Sciences, Department of Medicine, and director of the Cardiovascular Institute and Division of Cardiology, Loyola University Chicago Stritch School of Medicine.

“The system allows a skilled cardiologist to be even better,” said interventional cardiologist Joseph Akar, MD, PhD, assistant professor, Department of Medicine, Cardiology, Stritch. “It extends the physician’s range of skills.”

One of the first patients Dr. Akar treated with the new system is Susan Surges, 54, of Minooka, Ill. Before her surgery, Ms. Surges’ heart would occasionally begin beating as fast as 200 times a minute. “It would feel like it was pounding out of my body,” she said. “It would hit without warning, and it was scary.” Since her treatment, Ms. Surges has had no further episodes of supraventricular tachycardia.

Unlike a standard manual catheter, the magnetically guided catheter is soft and flexible, so it is gentler on the heart. In rare cases, a stiff catheter can puncture a hole in the heart. While the hole almost always

will heal by itself, the cardiologist has to end the procedure. And in a small minority of such cases, surgery is required to repair the hole.

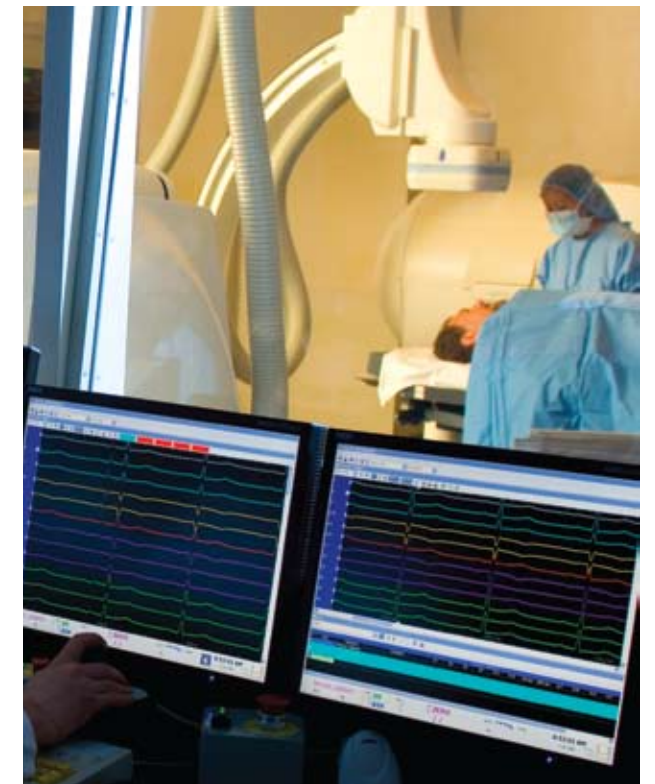
The new catheter is guided by magnets mounted on pivoting arms on either side of the patient. As the magnets pivot, the magnetic field changes, pulling the catheter in the desired direction.

The cardiologist sits in a control room next to the procedure room. On a computer screen, the cardiologist maps out the catheter’s next move; the computer executes the move by adjusting the magnetic field. “Instead of controlling the catheter by hand, you control it by computer,” Dr. Wilber said. “It’s all about precision.”

One of the main uses of the system is treating atrial fibrillation and other types of irregular heartbeats. The tip of the catheter emits radio frequency energy that the cardiologist uses to ablate the tissue where the erratic electrical signals are originating.

Manually threading a catheter to reach spots that are triggering irregular heartbeats can be challenging and requires negotiating the catheter through difficult twists and turns. But magnetic navigation is much more precise than the manual technique, and it also reduces the amount of X-ray exposure to both patients and physicians.

Loyola’s equipment will be used to treat hundreds of patients each year for irregular heartbeats, coronary artery disease and heart failure. ~



Angioplasty Saves Diabetic Patient's Leg

Bernice Smith of Maywood already had lost her right leg to diabetes, and her left leg was in danger of amputation, but there was a chance it could be saved if adequate blood flow could be restored. Ms. Smith's podiatrist, Ronald Sage, DPM, professor, Department of Orthopaedic Surgery & Rehabilitation, division director of Podiatry, Loyola University Chicago Stritch School of Medicine and medical director, Podiatry, Loyola University Health System referred her to Loyola interventional cardiologist Robert Dieter, MD.

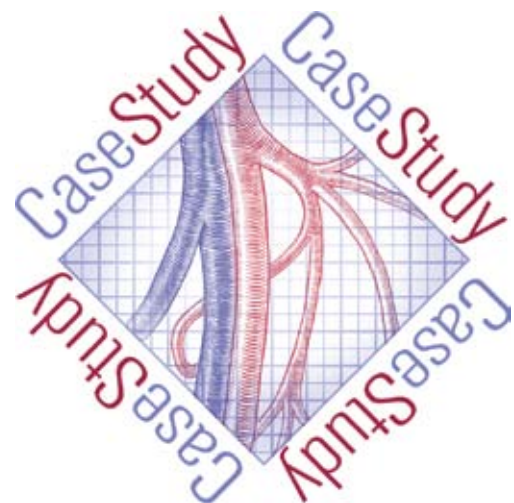
Using a catheter, Dr. Dieter performed a difficult balloon angioplasty in a major artery in Ms. Smith's left thigh, similar to the technique used to open clogged heart arteries. Dr. Dieter placed a stent to keep the artery open. The procedure restored blood flow to Ms. Smith's leg, which had started to turn gangrenous. Although Dr. Sage had to amputate Ms. Smith's toes, the rest of her leg was spared. "I can't stop thanking both of them for saving my leg," she said.

Diabetics in the United States undergo more than 80,000 amputations per year. About half the cases are partial foot amputations and half are amputations of the leg, either above or below the knee. And the number of amputations is increasing due to the aging population and increased incidence of diabetes.

Diabetes is among the main risk factors of peripheral artery disease. The same factors that increase the risk of heart attacks and strokes — diabetes, smoking, high blood pressure and cholesterol — also increase the risk of peripheral artery disease. Lifestyle changes and medications usually can control PAD, but some require invasive treatment. Similar to heart bypass surgery,

the surgeon utilizes a vein from the leg, or an artificial graft, and routes blood flow around the blockage.

Interventional cardiologists also have begun doing PAD angioplasties. They insert a catheter in a groin artery and then guide it to the blocked artery. Reaching blockages can be difficult. And some blockages are extensive running from the hip to the knee, or even to the ankle, Dr. Dieter said. "It can be a technically demanding procedure," Dr. Dieter said he receives several referrals a month from podiatrists for similar circulation problems. "It's a great team effort," he said.



Study Could Aid Development of Improved Blood Pressure Drugs

A study, which was conducted by Loyola University Health System researchers and funded by the National Heart Lung and Blood Institute and the American Heart Association, could aid in the development of safer and more effective blood pressure drugs and help researchers predict whether drugs intended for other conditions, such as Alzheimer's disease and epilepsy, would have either the detrimental effect of increasing blood pressure or the beneficial effect of lowering blood pressure. The findings could apply to drugs that are under development or already on the market.

"The implications are broad," said Kenneth Byron, PhD, associate professor, Department of Pharmacology, Loyola University Chicago Stritch School of Medicine (Stritch), and senior author of the study, published in the May issue of the *Journal of Pharmacology and Experimental Therapeutics*.

About one in three adults in the United States, approximately 73 million people, have high blood pressure. The condition can lead to heart disease, heart failure, stroke, kidney failure and other problems. According to the American Heart Association, high blood pressure killed approximately 55,000 people in 2004 in this country alone — a 56 percent increase from 1994.

"There's a need for more blood pressure medications," said Ivan Pacold, MD, associate professor, Department of Medicine, Cardiology at Stritch. "Some patients need several drugs to control their blood pressure, but might experience side effects such as kidney problems or chemical imbalances from one of the drugs."

At Loyola, Dr. Byron's research team discovered that certain classes of drugs can

have dramatic effects on blood flow and blood pressure. The mechanism for this effect involves potassium channels, cellular gateways where potassium flows out of a cell. This flux of potassium is essential for normal heart, digestive and muscular functions.

Researchers investigated a particular type of potassium channel in laboratory studies. They found that when a given drug blocks these potassium channels in the muscle cells of artery walls, blood pressure increases. Conversely, if a drug opens up potassium channels, blood pressure goes down.

"By observing the impact of a drug on these particular potassium channels, you can predict its impact on blood pressure," Dr. Byron said. "Here at Loyola, we have worked out how to accurately measure these channels in the muscle cells from the artery wall. So far we are the only lab in the world that has succeeded in doing this."

For example, an experimental drug for the treatment of epilepsy likely would lower blood pressure because it opens the potassium channel, but an experimental Alzheimer's disease drug, which blocks the potassium channel, probably would have the opposite effect. Being able to measure potassium channels will help physicians know which medications to prescribe.

"We still are in the early stages of this work," Dr. Byron said. "But with continued funding, we believe our findings could lead to major benefits in the treatment of hypertension or stroke."

Co-authors of the study, all from Loyola, are Alexander Mackie, Liubov Brueggemann, Kyle Henderson, Aaron Shiels, Leanne Cribbs and Karie Scrogin.



Depression in the Medically Ill



By : Murali Rao, MD, DFAPA, FAPM

Associate Professor and interim chair of the Department of Psychiatry & Behavioral Neurosciences
Department of Psychiatry & Behavioral Neurosciences, Loyola University Chicago Stritch School of Medicine

Director, Consultation/Liaison and Emergency Psychiatry,
Loyola University Health System

A Diagnostic Challenge

Depression can be a complex and challenging condition especially in the medically ill. Feeling “sad” or “blue” or “down in the dumps” does not necessarily constitute clinical depression. However, the wide range of symptoms of feeling sad or low, fatigued or being disabled to the extent that a patient may be unable to get out of bed in the morning or perform simple routine tasks, should alert the clinician to the possibility of co-existing clinical depression. Often many of the symptoms are regarded as understandable responses or reactions to the physical illness. Studies clearly have established that these depressive disorders are amenable to psychological or pharmacological treatments. These interventions also are effective for managing patients with problems of alcohol misuse, those who present after episodes of self harm and those who somatize their problems.

Depressed patients are more likely than non-depressed patients to:

- Have more hospital days and more outpatient visits
- Suffer greater disability
- Suffer poorer quality of life
- Experience suicidal thoughts and even commit suicide

Major depression is at least twice as common in hospitalized medical patients compared to depression in the general population. The prevalence rate of major depression in patients with co-morbid medical illness can be as high as 30 percent in the hospital setting.

It may be better to risk over-diagnosing depression than to leave depression untreated. Studies have shown that treatment of even minor or sub-syndrome

depression has beneficial effects on the overall functioning of the physically ill individual and enhances treatment compliance for the co-existing medical illness as well as during the recovery and rehabilitation process. It has been well established that patients who have Diabetes Mellitus Type II, major depression is both a precursor as well as a co-morbid illness. This also is the case in cerebrovascular and cardiovascular diseases.

Medical Conditions and Depression

Cardiovascular System – Major depression in patients hospitalized following a myocardial infarction (MI) is an independent risk factor for mortality at six months and increases mortality three-to five-fold. Its impact is at least equivalent to that of left ventricular dysfunction and history of previous MI. For more information, read Depression following Myocardial Infarction. Impact on six-month Survival by N. Frasure-Smith, MD, PhD, professor of psychiatry at McGill University, Montreal, Quebec, and a senior research associate at the Montreal Heart Institute.

Cerebrovascular System – Depression occurs in approximately 40 percent of patients with acute stroke and has been linked to poorer cognitive and physical recovery. An association between depressive symptoms and stroke mortality was reported in the American Journal of Psychiatry in 1993. The report stated that stroke patients with in-hospital depression were three-and-a-half times more likely to die during 10 years of follow-up than patients without depression.

Cancer – Discovery of cancer followed by acute stress and anxiety and/or dysphoric states could be poorly understood in traditional medical settings. Pain and depression are the most common neuropsychiat-

ric presentations, and they are followed by fatigue, distress and various disabilities. As the disease progresses, immunologic changes and the effect of treatment could be an additional burden contributing to depression. It is important to acknowledge the patient's symptoms and treat them vigorously with CBT, sleep wakefulness management, stress management and antidepressant drug therapy.

HIV-AIDS – In addition to social stigma in the early stages, even when physically well, drug issues, HIV's later physical effects —nausea and fatigue with anti-retrovirals, HIV-related apathy, mood disorders and cognitive impairments — are seldom recognized early in the course of the disease.

The Six Cs

The association of depression and physical illness could be best understood as a bi-directional relationship:

- Cause and effect – response /reaction to illness or treatment
- Consequence – of treatment with medications (steroids and other immunosuppressants, cancer treatments especially with interferons) should be considered. Consequence of various medical illnesses (Depression occurs in 30 – 40 percent of patients with acute stroke or myocardial infarction and has been linked to poorer cognitive and physical recovery).
- Complication – Depression should be considered a strong new risk factor among other pre-existing risk factors especially anxiety or panic states, through increased sympathetic activity, mobilization of free fatty acid from adipose tissue, thrombogenicity and platelet activation, agglutination,

thrombus formation, particularly in coronary and cerebrovascular disorders.

- Co-existence – or pre-existence of depression. Hypoactive delirium presenting as depression needs to be ruled out.
- Contextual – Effect of illness and its impact on life situations (job, relationships, finances, etc.)
- Contributing Factor – as described above

Detection of Depression

Detection of depression in the medically ill can be difficult for two reasons. First, it may be regarded as a normal reaction to physical illness. Second, the common somatic symptoms of depression such as anorexia, insomnia and fatigue are often due to the medical illness, so the symptom pattern cannot be relied upon to make a definitive diagnosis.

It can be challenging to determine whether the root cause of the symptoms is from the underlying physical illness or the disease process or from depression or anxiety. It also is difficult to gauge the severity of depression or anxiety.

Questions to Raise

- Does the person's distress appear to be very severe?
- Is the mood change persistent (lasting more than two weeks)?
- Is there evidence of a failure to adjust to the illness?
- Is the person expressing suicidal ideas?
- Is the person's physical function poorer than expected?
- Is the person's recovery from illness slower than expected, or has the rehabilitation been particularly difficult?
- Is there poor social interaction (patient does not respond to family visits)?
- Are family members expressing concern?

Asking upfront “Do You Feel Sad or Depressed?” seems to be the simplest and many times the most yielding single researched question when evaluating the patient. ~

Useful Questions to Elicit Emotional and Cognitive Symptoms

(as presented in A Practical Guide, Royal College of Physicians and Royal College of Psychiatrists)

- | | |
|------------------------------------|---|
| Low mood: | How are you feeling; how is your mood? |
| Tearfulness: | Do you become tearful easily?
Are you more weepy than normal? |
| Anhedonia: | Have you lost interest in things that are pleasurable? Are you still enjoying the things you used to? |
| Loss of interest: | Are you able to keep your interest going? |
| Poor concentration: | How is your concentration? Can you read the paper or watch TV and take it in? |
| Irritability: | Are you more snappy than usual? |
| Panic attacks: | Do you get easily anxious and panicky? |
| Diurnal change in Moods: | Is your mood worse at any particular time of day? How do you feel when you wake up? |
| Guilt, self-blame: | Do you find yourself blaming yourself or regretting things? Do you ever feel like a burden on others? |
| Worthlessness: | How do you view yourself, in comparison to others? |
| Low self-esteem: | Do you ever feel very unsure of yourself or feel you have little to offer compared to others? |
| Pessimism and Hopelessness: | How do you feel about the future? |
| Thoughts of dying: | Are there ever times when you feel you just want to go to sleep and never wake up? Do you some times feel life is not worth living? |



Easier Screening for Esophageal Cancer

Screening for esophageal cancer no longer requires conscious sedation or general anesthesia when performed with a new ultra-thin scope. A patient can see results right away and return to work immediately.

Lee Akst, MD, assistant professor of otolaryngology at Loyola University Chicago Stritch School of Medicine (Stritch), is one of the first doctors in the Chicago area to offer the new screening procedure, trans-nasal esophagoscopy, or TNE.

Candidates for TNE include patients who have long-term acid reflux with symptoms such as heartburn, throat irritation, dry coughing and throat clearing. In acid reflux patients, stomach acid backs up and into the esophagus. In response, the esophagus develops cells similar to stomach cells. These cells are resistant to stomach acid, but are more likely to develop cancer.

The traditional way to screen for this precancerous condition is to insert a scope through the mouth into the esophagus. A camera on the tip of the scope provides a view of the esophagus. Because the traditional scope is passed through the mouth, sedation is often required to keep patients comfortable. This sedation is one of the greatest risks of esophageal screening, and it also lengthens the procedure. From the pre-procedure evaluation to waking up from anesthesia can take several hours.

The TNE scope is only about 5 millimeters in diameter, thin enough to insert through the nose rather than the mouth. Because the scope is thinner than traditional scopes, no intravenous sedation is required. Dr. Akst numbs the patient's nose with an anesthetic spray, but the patient remains fully conscious. The patient feels pressure in the throat, but no pain, and the procedure generally lasts less than five minutes. Patients can drive themselves home as soon as the procedure is over.

Dr. Akst has performed more than 100 TNE procedures, and has had excellent results.

Virtually Easing Pain

Loyola University Hospital, a recognized leader in burn care, introduced a virtual-reality video game to help patients play their way to pain relief. To a patient recovering from severe burns, no place would be



more soothing than a polar landscape of gently falling snowflakes, snowmen, penguins, igloos and icy rivers. That's the thinking behind the interactive game currently used to manage pain felt by burn patients during wound care and physical therapy. Loyola is the first hospital in Illinois and only one of a handful across the nation that is employing this 21st century technology.

"Severe burns are one of the most painful injuries a person can endure," said Richard Gamelli, MD, Robert J. Freeark Professor of Trauma Surgery and chair, Department of Surgery, Loyola University Chicago Stritch School of Medicine. "Anything that we can do to lessen the pain and suffering of patients during treatment is a plus. This system is the next step in helping us to do that."

The virtual-reality system eases pain of treatment by immersing burn patients in a wintry, computer-generated environment. Its interactive, multi-sensory features put patients in a deep freeze of distraction, leaving less attention for the processing of incoming pain signals. It's similar to what has been done with music, movies and even two-dimensional video games, but more effective because it involves problem-solving activities that emphasize coolness.

Research related to these types of systems supports the theory showing that burn patients undergoing wound care report that their pain drops dramatically when

they engage in virtual-reality programs. A recent MRI study at the University of Washington, Seattle, found that "virtual reality actually reduces the amount of pain-related activity in the brain."

During treatment, a patient wears a stereoscopic, position-tracking helmet that displays a world of three-dimensional graphics. The patient is also equipped with headphones and a mouse that allows the patient to throw snowballs. Along with sound effects, the system has the ability to let the patient pipe in their favorite music while they play the game.

The virtual-reality system has further application beyond burn care. It's been used to help people overcome phobias and post-traumatic stress syndrome. It's also been used in urological procedures, dentistry and to control pain during physical therapy for cystic fibrosis patients.

Study Shows Promise For New Immune Function Test

Doctors play a delicate balancing act when prescribing immune-suppressing drugs to organ transplant patients. The drugs must be strong enough to suppress the immune system so the patient does not reject the transplanted organ, but not so strong the patient becomes vulnerable to infections. Loyola researchers evaluated the immune function test and believe a new blood test might help doctors strike the proper balance.

The test measures the energy level of immune-system cells called lymphocytes. In the Loyola study, researchers found that patients with high-energy lymphocytes did not develop infections. Those with low-energy lymphocytes were vulnerable to infections such as pneumonia, herpes and urinary tract and skin infections.

Loyola cardiologist Biljana Pavlovic-Surjancev, MD, PhD, gave a poster presentation summarizing the findings at the American Transplant Congress in Toronto on May 31. The congress is the joint annual meeting of the American Society of Transplant Surgeons and the American Society of Transplantation. Dr. Pavlovic-Surjancev is an assistant professor, Department of Medicine, Division of Cardiology, Heart Failure/Heart Transplant Program, at Loyola University Chicago Stritch School of Medicine.

Doctors traditionally have monitored the immune system by counting the number of immune cells in a sample. The new test monitors just how active those cells are by measuring an energy-carrying molecule called adenosine triphosphate, or ATP, that's released from the cells. The higher the ATP level, the more active the cells.

The Loyola team analyzed 37 samples from 26 heart transplant patients. Fifteen patients with infections had lower ATP levels than 11 patients who did not have infections. Patients with infections also had low immune cell counts.

"Infection is associated with a low level of immune cell function in this small study," Dr. Pavlovic-Surjancev said. "It will take additional studies to find out if this test can help us see the risk of infection before infection occurs."

Authors of the study, all from Loyola, are Dr. Biljana Pavlovic-Surjancev; Prasanth Lingam, MD; Nilamkumar Patel, MBBS; David Marmor, MD; James Sinacore, PhD; Brian Susskind, PhD; and senior author Alain Heroux, MD. Dr. Heroux is associate professor, Department of Medicine, Division of Cardiology, Loyola University Chicago Stritch School of Medicine and medical director of the Loyola Heart Failure/Heart Transplant Program.

More than 600 heart transplants have been performed since the Medicare-approved program began in March 1984. Loyola is one of the oldest and most active programs in the U.S.

Grant to Address Nursing Shortage

Loyola University Chicago Marcella Niehoff School of Nursing (Niehoff) and Edward Hines Jr. VA Hospital (Hines) have teamed up to help ease the critical shortage of nurses within the Department of Veterans Affairs (VA) system and the Chicago area.

The VA has awarded a \$3 million Enhancing Academic Partnerships grant to Hines and Niehoff that will enable the school, which offers top-rated nursing, dietetics and health systems management programs, to hire additional faculty and increase student enrollment.

"This is quite an accomplishment and the Marcella Niehoff School of Nursing is

excited to partner with the Department of Veterans Affairs to help address this serious problem afflicting our health-care system," said Mary Klotz Walker, RN, Ph.D., FAAN, Dean of Niehoff School of Nursing.

"The expanded role of VA in the education of nurses will ensure the Department has the nurses needed to continue our world-class health care for veterans," said Secretary of Veterans Affairs Dr. James B. Peake. "The VA Nursing Academy expands our teaching faculty, improves recruitment and retention and creates new educational and research opportunities."

The Hines/Niehoff partnership is one of 10 collaborations currently funded by the VA throughout the United States. The grant will allow:

- * The expansion of Niehoff's bachelor's degree program by matriculating into junior level classes transfer students who have associate's degrees in other fields or 60 credit hours from a four-year college or university.

- * The opportunity for qualified Hines nursing staff to instruct Niehoff students in the Hines clinical environment. Close to 80 Niehoff students will receive clinical training at Hines this fall.

- * The creation of a joint Hines/Niehoff Nursing Center for Integrated Mental Health Care. The purpose of the center will be to support educational, practice and research activities related to better integrating mental health concepts into the primary, acute and long-term nursing care of patients.

- * Enhancement of Hines recruitment/retention program of new baccalaureate graduates by implementing a nurse residency program, expanding the VA Learning Opportunities Residency Program for nursing students and using local and VA funding to meet the educational debt reduction and/or continuing education needs of graduates.

The American Association of Colleges of Nursing has reported that in 2006 more than 38,000 qualified applicants were turned away from entry-level baccalaureate degree programs in nursing schools because of insufficient numbers of faculty, clinical sites, classroom space and clinical mentors. VA currently provides clinical education for approximately 100,000

health professional trainees annually, including students from more than 600 schools of nursing.

New Research Hematologist Focuses on Pediatric Cancer Care

Charles Hemenway, MD, PhD, renowned for his work on childhood leukemia, is Loyola University Chicago Stritch School of Medicine's newest endowed professor, the Ronald McDonald House Charities Endowed Professor in Pediatric Hematology Oncology.

Dr. Hemenway's investigations are focused on finding new treatments for mixed-lineage leukemia (MLL). This disease is caused by a gene anomaly in which a piece of chromosome 11 has broken off and attached itself to another chromosome. Although children with MLL receive the same treatments as patients with the more common acute lymphoblastic leukemia (ALL), MLL patients tend to relapse faster after chemotherapy and their cure rate is between 10 - 50 percent, compared to up to 90 percent for children with ALL. The current thinking is that MLL is a separate cancer from ALL that requires its own medications and treatments. The National Cancer Institute recently awarded Dr. Hemenway a grant for his investigation into an approach to block the formation of proteins necessary for the formation of MLL Leukemia.

"Dr. Hemenway is a wonderful addition to the faculty at the Stritch School of Medicine," said Paul K. Whelton, MB, MD, MSc, President & Chief Executive Officer, Loyola University Health System (Loyola), Vice President for the Health Sciences, Loyola University Chicago. "He is a superb clinician, nationally recognized researcher, and skilled educator who is strongly committed to the mission and future of Loyola as a world-class health sciences center."

Dr. Hemenway earned a medical degree at the University of Massachusetts in Worcester and a doctorate in genetics at Duke University in Durham, N.C. He came to Loyola from Tulane University in New Orleans, where he had spent 11 years as a researcher. Although research takes up the bulk of his time, Dr. Hemenway also sees patients and supervises graduate students in the laboratory.

Loyola University Hospital Tower Opens

Following years of planning and design and more than 25 months of construction, the Grand Opening of the new Loyola University Hospital Tower was held on April 6. The event attracted local dignitaries, donors and the media.

The grand opening was the culmination of extensive planning by Loyola University Health System administrators, physicians and nurses who worked closely with architects and engineers. The result is a technologically advanced, 176,000-square-foot building that houses the new William G. and Mary A. Ryan Center for Heart & Vascular Medicine, 64 deluxe private patient rooms, 12 large operating suites, state-of-the-art equipment and many amenities. ~



What's Inside the Loyola University Hospital Tower?

- 12 state-of-the-art operating suites, designed with surgeons' input and powered by machinery concealed on the third floor. One of the ORs is a dedicated robotic room where minimally invasive surgical procedures are done with the assistance of a robot. Each OR is video-integrated and lies adjacent to a pathology lab, allowing for immediate testing of tissue that helps to guide surgeons' decision-making.
- 64 private patient rooms that let natural light shine in or allow for optional subdued lighting. All have wireless access, sofa beds for visiting family members and flat-screen TVs. Many have views of the Chicago skyline.
- 4 cardiac catheterization suites designed by interventional cardiologists. Each suite can convert to a cardiac OR if a surgical intervention is required.
- 4 cardiac electrophysiology (EP) suites, one that offers magnet-guided navigation for cardiac ablation therapy.
- Private pre/post procedure holding areas for both the catheterization and electrophysiology laboratories are equipped with TV monitors to allow patients to review footage from their procedure with their physicians.
- 3-Tesla (3-T) MRI unit, the strongest MRI available for patient use in the Chicago area.
- Pharmacy robotics that allow for precise medication delivery for each patient.
- Bedside computer charting to maximize the time the nurse spends with a patient.
- Next-generation surgery-prep equipment, including a touch-screen tracker system for instrument trays and an automatic washer/decontaminator.
- Meditation garden
- Art that has been carefully selected to harmonize with the designed space, achieving a holistic healing environment.
- An 18-foot cascading water feature
- A décor selected to promote calm and healing
- Privacy-coded patient tracking system for family members waiting for a patient to leave surgery and recovery.

New Clinical Research

Bone Health

Bone Loss after Lung Transplant

The purpose of this study is to investigate the use of risedronate for the prevention and treatment of bone loss post lung transplant. Adults who have undergone lung transplant may be eligible.

For enrollment, please ask for extension 6-8223. The principal investigator is Pauline Camacho, MD.

Bone Grafts

The purpose of this one-year study is to compare patient outcomes when hind-foot and ankle fusion surgery is done with a synthetic bone graft material versus the patient's own bone. The material under study combines a tissue growth factor, recombinant human platelet-derived growth factor (rhPDGF) with a synthetic bone matrix, Beta-tricalcium phosphate (Beta-TCP).

Adults may be eligible if they:

- have not previously had surgery at the planned fusion site
- do not have an active neoplasm at the fusion site
- do not have a metabolic disorder
- are not taking medications that adversely affect the skeleton, or
- are not allergic to yeast-derived products.

For enrollment, please ask for extension 6-2026.

The principal investigator is Michael Pinzur, MD.

Cancer

Breast Cancer - Decreasing Risk of Recurrence

The purpose of this five-year study is to determine whether women (who have already taken five years of hormonal therapy) have a lower risk of recurrent cancer if they take letrozole, an aromatase inhibitor (AI), for five additional years

Participants must be postmenopausal and have:

- Stage I to III breast cancer; and
- completed five years of hormone therapy with either five years of an aromatase inhibitor (AI) or up to three years of tamoxifen followed by an AI.

For enrollment, please ask for extension 7-3222.

The principal investigator is Shelly Lo, MD.

Breast Cancer - Radiation Therapy for Breast Cancer

The purpose of this 10-year study is to compare patient outcomes using partial vs. whole.

Adult women considering participation must have confirmed breast cancer.

For enrollment, please ask for extension 6-2568.

The principal investigator is Kevin Albuquerque, MD

Breast Cancer - Chemotherapy for Breast Cancer

The purpose of this 15-year study is to compare patient outcomes using three different chemotherapy regimens.

Participants must be at least 18 years old and:

- have had breast surgery no more than 12 weeks prior to enrollment
- have not received prior chemotherapy or radiation therapy
- have cancer present in at least one lymph node, or if no lymph nodes are involved, have tumor size of at least 2 cm.

For enrollment, please ask for extension 7-3222.

The principal investigator is Kathy S. Albain, MD.

Breast Cancer - Ovarian Preservation during Breast Cancer Treatment

The purpose of this study is to determine if suppressing ovary function during chemotherapy can reduce the incidence of premature menopause, which is often caused during adjuvant chemotherapy for breast cancer.

Eligible patients must be between 18 - 50 years old and:

- have had surgery to remove all of the tumor and plan for chemotherapy after surgery;
- have a specific type of receptor status of tumor (which is determined by the pathologist);
- have no history of prior cancer or prior chemotherapy; and
- be able to perform most or all of self-care activities.

For enrollment, please ask for extension 7-3222.

The principal investigator is Kathy S. Albain, MD.

Call (877) MDs-LUHS and ask for extension shown for each trial.

Breast Cancer - Metastatic Breast Cancer

The purpose of this study is to compare patient outcomes after fulvestrant plus anastrozole versus anastrozole alone.

Adult postmenopausal women with a diagnosis of metastatic disease and who have

- estrogen and/or progesterone receptor-positive disease
- not had adjuvant therapy within the prior year.

For enrollment, please ask for extension 7-3222.

The principal investigator is Kathy S. Albain, MD.

Breast cancer - Treatment after Surgery

The purpose of this study is to compare patient outcomes using hormone therapy alone or hormone therapy together with combination chemotherapy.

Potential participants must be estrogen- and progesterone-positive and:

- have no positive lymph nodes
- have a tumor size between 1.1 cm - 5 cm
- may have prior Oncotype Dx testing if the score is between 11 and 25.

For enrollment, please ask for extension 7-3228.

The principal investigator is Kathy S. Albain, MD.

Breast cancer - Decreasing Ovarian Estrogen in Pre-menopausal Women

The purpose of this five-year study is to see if shutting down a woman's ovaries plus giving tamoxifen is better at preventing the return of breast cancer than just giving tamoxifen alone in premenopausal women. It also will test whether a newer hormone drug called exemestane plus suppression of the ovaries is better than tamoxifen plus suppression of the ovaries. The side effects of these different treatments will be studied.

Participants must be premenopausal with stage I to stage III breast cancer that is estrogen- and progesterone-receptor positive.

For enrollment, please ask for extension 7-3222.

The principal investigator is Kathy S. Albain, MD.

Breast Cancer – Preventing Metastasis

This three-year study is being done to find out if adding a drug (a bisphosphonate) to hormonal or chemotherapy will help prevent cancer from spreading to the bones.

Participants must have a diagnosis of breast cancer and

- be receiving either hormonal therapy or chemotherapy for breast cancer treatment;
- have a dental exam within six months of starting the study.

For enrollment, please ask for extension 7-3222. The principal investigator is Kathy S. Albain, MD.

Cervical or Endometrial Cancer

The purpose of the 10-year study is to test whether a new radiation therapy delivery technique called intensity-modulated radiation therapy (IMRT) can reduce radiation side effects to normal tissue, including small bowel and large bowel, during radiation.

Potential participants must have undergone a hysterectomy within seven weeks prior to study entry.

For enrollment, please ask for extension 6-2568. The principal investigator is Kevin Albuquerque, MD.

Lung Cancer – Preventing Metastasis

The purpose of this study is to determine if giving radiation treatments to the brain can prevent spread of cancer to the brain and to determine the survival of patients who have received radiation treatments to the brain.

Adults over 18 may be eligible if they:

- have stage IIIA or IIIB non-small cell lung cancer
- have completed all therapy for lung cancer
- have had a complete response, partial response or stable disease following therapy
- can enroll within 16 weeks of completing any previous therapy.

For enrollment, please ask for extension 6-2568. The principal investigator is Edward Melian, MD.

Cardiovascular Health

Cardiovascular Health – Aortic Aneurysm

The purpose of this five-year study is to assess patient outcomes following a thoracic stent graft system.

Adults who are considering surgery for repair of thoracic aneurysm may be eligible to participate in this study.

For enrollment, please ask for extension 7-2503.

The principal investigator is J. Michael Tucheck, DO.

Cardiovascular Health – Cardiovascular Risks

The purpose of this four-year study is to determine if the study drug helps reduce cardiovascular risks.

Potential participants must be over age 55 and have abdominal obesity.

For enrollment, please ask for extension 6-6638.

The principal investigator is Michael Schneck, MD.

Cardiovascular Health – Heart Transplant

The purpose of this 24-month study is to compare a study medication regimen with a commonly used medication regimen.

Adults (18-70) who will undergo a heart transplant for the first time may be eligible.

For enrollment, please ask for extension 7-2738.

The principal investigator is Alain Heroux, MD.

Peripheral Arterial Disease

The purpose of this clinical research is to determine if bone marrow cells that are harvested from bone and expanded can be used as a method for treatment of critical limb ischemia in patients with peripheral artery disease.

Patients with critical limb ischemia due to peripheral artery disease may be eligible to participate in this study.

For enrollment, please ask for extension 6-2026.

The principal investigator is Patrick Stiff, MD.

Diabetes

Diabetes and Nocturia

The purpose of this four-day trial is to determine whether the severity of nocturia is related to renal function, glucose control and fluid intake in patients with and without diabetes.

Females aged 18 and older, both diabetics and non-diabetics, may be eligible.

For enrollment, please ask for extension 6-4188.

The principal investigator is MaryPat FitzGerald, MD.

Diabetes and Quality of Life

The purpose of this NIH-funded, eight-week study is to determine quality of life in adult women with Type 2 diabetes.

Adult women who have depression, stress and anxiety may qualify.

For enrollment, please ask for extension 6-9303.

The principal investigator is Susan Penckhofer, PhD.

Gastrointestinal Health

Diarrhea

The purpose of this six-week study is to compare the effectiveness and safety of the research study drug with another drug called vancomycin, in the treatment of clostridium difficile-associated diarrhea.

Males and females aged 18 and older may be eligible.

For enrollment, please ask for extension 6-3268.

The principal investigator is Stuart Johnson, MD.

Endocrinology

Vitamin D Deficiency

The purpose of this study is to determine the effect of vitamin D deficiency on muscle weakness, fatigue, bone pain, muscle weakness, deconditioning and feeling of well being in general and to find out whether supplementation with vitamin D will improve these symptoms.

For further information or participation, please ask for extension 6-8223.

The principal investigator is Pauline Camacho, MD.

Pediatric Health

Pediatric Health – Conjunctivitis

The purpose of this study is to compare patient outcomes with gatifloxacin ophthalmic solution to moxifloxacin hydrochloride ophthalmic solution for bacterial conjunctivitis (pink eye) in infants (birth to 31 days).

For enrollment, please ask to page Dr. James McDonnell or ask for extension 6-2027. Participants will be evaluated by James McDonnell, MD.

Pediatric Health – Crohn's Disease

The purpose of this study is to evaluate patient outcomes after treatment with adalimumab.

Children who are 6 - 17 years old and have a diagnosis of Crohn's disease for at least 12 weeks that is confirmed by endoscopy or radiologic evaluation may be eligible.

For enrollment, please ask for extension 6-3268.

Skin Health – Psoriasis

The purpose of this study is to compare patient outcomes with two different doses of a psoriasis medication compared to a placebo.

Patients who have a diagnosis of psoriasis documented for at least six months and have plaque psoriasis greater than or equal to 10 percent of their body surface area for at least two months may be eligible.

For enrollment, ask for extension 6-2026. The principal investigator is Stacy McClure, MD.

Women's Health

Healthy Women – Breast Cancer Prevention

The purpose of this five-year study is to help determine whether a medication can prevent breast cancer.

Healthy post-menopausal women who have an increased risk for developing breast cancer may qualify for this study.

For enrollment, please ask for extension 7-3228.

The principal investigator is Kathy S. Albain, MD.

Healthy Women – Nocturia

The purpose of this four-day trial is to determine whether the severity of nocturia is related to renal function, glucose control and fluid intake in patients with and without diabetes.

Females aged 18 and older, both diabetics and non-diabetics may be eligible.

For enrollment, please ask for extension 6-4188.

The principal investigator is MaryPat FitzGerald, MD.

Healthy Women – Urinary Health

The purpose of this NIH-sponsored, single-visit study is to understand why some women develop urinary incontinence and others do not.

Adult women without urinary incontinence are eligible.

For enrollment, please ask for extension 6-4188.

The principal investigator is Kimberly Kenton, MD, MS.

Prevention of Urinary Incontinence

The purpose of this NIH-sponsored, surgical study is to determine the need for incontinence prevention at the time of vaginal surgery for prolapse.

Adult women without urinary incontinence who plan vaginal surgery for prolapse repair are eligible.

For enrollment, please ask for extension 6-4188.

The principal investigator is Linda Brubaker, MD, MS.

Prolapse Treatment

The purpose of this NIH-sponsored, surgical study is to determine the optimal vaginal surgery technique for prolapse.

Adult women with urinary incontinence who plan vaginal surgery for prolapse repair are eligible.

For enrollment, please ask for extension 6-4188. The principal investigator is Linda Brubaker, MD, MS.

Urinary Incontinence Treatment

The purpose of this study is to determine the efficacy of botulinum toxin A for urinary incontinence in women with multiple sclerosis.

Adult women who have multiple sclerosis and have urinary incontinence are eligible.

For enrollment, please ask for extension 6-4188.

The principal investigator is Elizabeth Mueller, MD.

Stroke

Stroke – Carotid Occlusion Surgery Study

The purpose is to study patient outcomes using brain artery/vein bypass surgery versus best medical therapy.

Eligible patients will have had a stroke or transient ischemic attack (TIA) within the past 120 days and documented obstruction of a carotid (neck) artery.

For enrollment, please ask for extension 6-6638.

The principal investigator is José Biller, MD.

Stroke – Patent Foramen Ovale

The purpose of this randomized study is to compare patient outcomes following device closure or best medical therapy.

Potential participants must have had a stroke or TIA within the past six months and documented patent foramen ovale (heart abnormality).

For enrollment, please ask for extension 6-6638.

The principal investigator is Michael Schneck, MD.



For a complete listing of clinical trials at Loyola University Health System, visit www.LoyolaMedicine.org and click on For Physicians and then Resources/Clinical Trials.

Call (877) MDs-LUHS and ask for extension shown for each trial.



CME Events

Office-based Procedures in Laryngology and Esophagology: Course and Workshop

Saturday, Sept. 20, 2008

Sponsored by: Loyola University Chicago Stritch School of Medicine, Department of Otolaryngology and the Division of Continuing Medical Education
Held at: Loyola University Chicago

Lewis Tower Building
Beane Hall, 12th floor
820 N. Michigan Ave.
Chicago, IL 60611

Course Director: Lee M. Akst, MD

CME credit: A maximum of 6.75 AMA Category 1 Credits

Topics to be discussed include:

- Indications for use of office-based procedures in laryngology and esophagology
- Appropriate indications for use of office-based laryngeal injection
- Laser surgery
- Transnasal esophagoscopy
- pH probe testing
- Functional endoscopic evaluation of swallowing.

Hands-on demonstration of various procedures will be included.

Pediatric Subspecialty Update

Saturday, Oct. 4, 2008

Sponsored by: Loyola University Chicago Stritch School of Medicine, Department of Pediatrics and Division of Continuing Medical Education
Held at: LUC Stritch School of Medicine

John & Herta Cuneo Center

Tobin Hall

2160 S. First Ave.

Maywood, IL 60153

Course Director: Karen Judy, MD

CME credit: A maximum of 3 AMA Category 1 Credits

Topics to be discussed include:

- Acute and chronic forms of ITP and assess treatment options
- Common food allergies – risk factors, avoidance and treatment
- Type 1 diabetes management – insulin pumps
- Diagnosis, infection control and MRSA treatment
- Nonepileptic paroxysmal disorders
- Identification of child abuse

The Loyola University Chicago Stritch School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. The Loyola University Chicago Stritch School of Medicine takes responsibility for the content, quality and scientific integrity of this CME activity.

Physicians should only claim credit commensurate with the extent of their participation in the activity.

For additional CME offerings or more information, visit www.LoyolaMedicine.org/cme or contact the CME office at (708) 216-3236 or (800) 424-4850.

Loyola Medical News

Executive Editor: Jan Ciccarelli

Contributing Writers: Nancy Creighton, Perry Drake, John Griffin, Pam Montagno, Jim Ritter

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E-mail: marcom@lumc.edu

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Loyola University Health System
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