

# HEALTH WISE

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## Robotic Surgery

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UNIVERSITY OF  
**SOUTH CAROLINA**

School of Medicine

Gynecologic surgeons at the University of South Carolina School of Medicine are turning to robotic surgery to perform complex procedures and improve a patient’s recovery

“I’m bored. When can I return to work?”

Those were the words spoken by one of USC gynecologist Sarah Smith’s, first robotic surgery patients. The question came just two weeks following a major hysterectomy surgery using the da Vinci surgical robot, an advanced surgery tool that is revolutionizing the recovery process for patients undergoing complex surgeries.

Smith, M.D., an assistant professor of clinical obstetrics and gynecology, said the patient’s response is similar to many women who are finding that robotic-assisted surgery paves the way to a faster recovery than traditional open surgery.

“Most of my hysterectomy patients can return to work and normal activities two weeks after robotic surgery,” Smith said. “For traditional open surgeries where a large incision is made in the abdominal wall, the recovery time can be six to eight weeks. Robotic surgery patients enjoy smaller incisions, less post-operative pain and a lower risk of complications following surgery.”

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# Mind Matters

Geriatric psychiatrists are helping older adults stay mentally sharp later in life

**Aging is a natural process that encompasses changes to both body and mind. The onset of gray hair or skin wrinkles may signal a physical change in appearance. Sometimes emotional changes are masked behind the physical changes, and physicians at University Specialty Clinics say it's equally important to address the mental health needs of older adults as well.**

Shilpa Srinivasan, M.D., associate professor of clinical neuropsychiatry and behavioral science, said the mental health issues she helps older adults manage include dementia, depression and chronic persistent mental illnesses. While some of the illnesses such as Alzheimer's disease — a form of dementia — can develop later in life, other illnesses such as bipolar disorder and schizophrenia can burden an individual throughout their life.

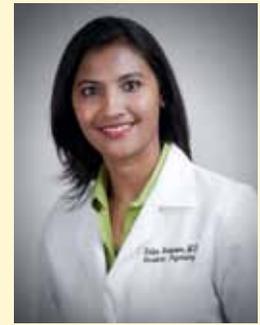
"In some cases mental health issues that we see and treat in the general adult population are still equally salient with geriatric patients," Srinivasan said. "When an individual turns 65, which is defined by Medicare as a geriatric patient, that doesn't mean their previous mental health issues have just disappeared by virtue of them crossing that threshold."

The Department of Neuropsychiatry and Behavioral Science operates a geriatric psychiatry outpatient clinic at University Specialty Clinics. A team of physicians trained in geriatric psychiatry provides many services to older adults including evaluations, treatment and medication management.

USC faculty work closely with a patient's primary care physician in many aspects of care. The collaborative approach ensures that all physicians are on the same page and meeting a patient's physical and mental health needs.

"For example, if we initiate treatment with a new medication or recommend that a medication be stopped, that decision may impact the primary care or referring physician's treatment plan," Srinivasan said. "Maintaining constant communication with all the physicians involved as well as the patient and his or her family is essential."

The onset of a mental illness might or might not present visible symptoms. Srinivasan recommends that caregivers and



Shilpa Srinivasan, M.D.

loved ones pay particular attention to changes in behavior and day-to-day functioning of older adults.

"If someone were to come in and say 'This is what I could do six months ago and this is what I'm not able to do now,' or a family member says 'Mom could do this six months ago, but she cannot do this now,' that indicates to me that there has been a change and bears examining," Srinivasan said.

The first step in diagnosing a mental illness is a clinical evaluation. Physicians will conduct a thorough interview with the patient and possibly a spouse, family members and caregivers. These interviews help physicians piece together a patient's clinical history. In addition, physicians are seeking a greater understanding of an individual's functional abilities.

Often a mental health illness can be managed by medication. Srinivasan said there are many validated psychopharmacologic treatments for mood, mental-health and dementia-related disorders. But careful consideration of other medications and medical conditions must be taken into account when prescribing medicines at the appropriate doses.

Many older adults will live long prosperous lives without ever experiencing the effects of a mental illness. For those individuals who want to reduce the possibility of a mental illness later in life, Srinivasan recommends some helpful advice.

"When looking at aging and healthy aging, a health body and a healthy mind go hand-in-hand," Srinivasan said. "So pay attention to diet, exercise and activity, and not just physical activity, but mental activity and intellectual stimulation is very important."

Srinivasan suggests learning a new activity or taking up a hobby to stimulate the brain, along with exercises such as crossword puzzles and Sudoku.

"Trying something new and different is incredible exercise for the brain," Srinivasan said.

If you or a loved one suspects that you may have a mental illness, ask to be referred to a geriatric psychiatrist at University Specialty Clinics by calling (803) 434-4300. ■



Endocrinologists help patients understand the health risks associated with diabetes



Sirinart Sirinvaravong, M.D.

# Diagnosis Diabetes

**Learning of a diabetes diagnosis can come as a surprise. It's a surprise 1.9 million Americans experience each year. The disease, characterized by high levels of sugar in the blood, is often a lifelong condition that impacts many aspects of an individual's life from their diet to their physical and emotional health.**

Nearly one in 10 Americans suffers from diabetes. To put the disease in perspective, more Americans are living with diabetes than annually donate blood, have their identities stolen and attend a NASCAR race — combined.

There are multiple types of diabetes, but two of the most common forms are Type 1 and Type 2. Type 1 is when the body does not produce insulin, a hormone needed to convert sugars, starches and other foods into energy. Onset of Type 1 diabetes can occur at any age but usually develops in children and young adults.

Nearly 90 percent of all diabetes diagnoses are Type 2, a condition that starts with insulin resistance followed by the gradual decline in function of insulin producing cells. Less than one in 10 women who are pregnant experience gestational diabetes. The condition usually disappears after pregnancy, but these women are at a higher risk for developing Type 2 diabetes later in life.

Learning to live with any type of diabetes takes time, energy and a commitment to improving one's health. Endocrinologists in the Department of Internal Medicine at University Specialty Clinics play an important role in helping patients manage diabetes. In addition to regular appointments, doctors encourage patients to make lifestyle modifications.

"Diabetics should check their blood sugar levels three to four times a day and monitor their blood pressure, as well,"

said Sirinart Sirinvaravong, M.D., assistant professor of clinical internal medicine. "I encourage all my diabetic patients to exercise at least two-and-a-half hours a week and avoid fatty foods and foods with excessive amounts of sugars and white starches."

Patients who fail to follow their doctor's recommendations put themselves at risk for diabetic complications that can result in blindness, amputation and even death. According to the Centers for Disease Control and Prevention, diabetes is the seventh leading cause of death in the United States.

Sirinvaravong identifies four major diabetic-related complications that impact diabetic patients: retinopathy, neuropathy, nephropathy and cardiovascular diseases. Often these diabetes-related complications do not occur until more than five years after the onset of diabetes. Unfortunately, most individuals do not have a clear indicator when their diabetes developed.

"Patients do not necessarily know when the onset of diabetes occurs," Sirinvaravong said. "High blood sugars can go undetected for many years."

In addition to the day-to-day management of an individual's diabetes, Sirinvaravong recommends diabetics receive an annual eye exam and regular cholesterol screenings. An annual eye exam will detect retinopathy, a condition that, left undetected, can lead to vision problems and even blindness. Since diabetes is one of the leading risk factors for cardiovascular diseases, diabetics are encouraged to receive regular cholesterol screenings to prevent a potential heart attack or stroke.

If your primary care physician suspects you may have diabetes, ask them to refer you to an endocrinologist at University Specialty Clinics by calling (803) 540-1000. ■

#### DIABETES BY THE NUMBERS (U.S. Population):

**25.8 million:** People affected by diabetes

**1.9 million:** New cases of diabetes diagnosed (2010)

**\$174 billion:** Total costs of diagnosed diabetes (2007)

*Source: Centers for Disease Control and Prevention*

# Head of the class

USC Sports Medicine offers the Midlands' leading multidisciplinary concussion testing program for local athletes



**Aaron Rodgers, Dale Earnhardt Jr., Chris Paul, Justin Morneau, Sidney Crosby—all these well-known athletes share a common bond beyond their excellence in sports. All have suffered from well-documented concussions that have sidelined them from competition at one time or another.**

A concussion is a type of brain injury that causes changes in the cognitive, emotional and physical aspects of a person. More often concussions are occurring during athletic competitions where athletes are susceptible to head and body trauma. The Centers for Disease Control estimates more than 1.6 million Americans suffer concussions annually.

At USC Sports Medicine Center, a multidisciplinary team of specialists are diagnosing, managing and treating concussions every day. Expert physicians are trained to work with athletes of all ages and have helped many concussed athletes return to the field safely. USC Sports Medicine teams with a network of athletic trainers working at high schools and colleges throughout the Midlands of South Carolina. Often these athletic trainers are the first medical professionals to see an athlete when he or she is injured in practice or a game.

“Most concussions need to be diagnosed within a few days of occurrence because the diagnosis depends upon how the injury

happened and the symptoms demonstrated after the injury,” said Jeff Holloway, M.D., assistant professor of clinical pediatrics and a sports medicine physician at USC Sports Medicine Center. “The best treatment for a concussion is rest. Having an immediate medical evaluation from an athletic trainer and a referral to a sports medicine specialist improves the chances that the concussed athlete will receive the optimal care.”

The signs and symptoms of a concussion can vary from cognitive difficulties with slurred speech and memory loss to physical ailments such as headaches and dizziness. There is no diagnostic test, such as a CT Scan or MRI, to confirm a diagnosis. Instead, doctors rely upon tools such as the SCAT2 (Sport Concussion Assessment Tool 2), a questionnaire that evaluates injured athletes for concussions, and baseline testing, a computerized test that athletes complete prior to the start of an athletic season. Having a baseline score prior to a head injury provides physicians a way to diagnose, manage and

treat a potential concussion during the season.

While physicians rely on these resources, concussions remain a medical mystery in many regards. Each person reacts differently to a brain injury and side effects can vary.

“That is the nature of concussions,” said Matthew Pollack, M.D., assistant professor of clinical orthopaedic surgery at the



Matthew Pollack, M.D.

Jason Stacy, M.D.

Jeff Holloway, M.D.

USC School of Medicine. “There is still a lot that is not understood about them. We rely on a lot of education and reassurance to try and make sure the athletes get the right amount of rest and return to the field only when it is safe to do so.”

While physical rest remains the best treatment option for a concussed athlete, mental rest also enhances the recovery process. USC Sports Medicine physicians recommend limiting computer time, television exposure and video games. In the case of reoccurring headaches, doctors recommend patients take Tylenol or ibuprofen.

Concussion symptoms usually last seven to 10 days, but in some cases they can last much longer. Younger competitors usually find recovery takes longer than older athletes. Doctors speculate that the slower recovery can be attributed to the increased vulnerability of the developing brain.

Deciding when injured athletes can return to their sport requires careful observation and evaluation. Concussion specialists at USC Sports Medicine follow national guidelines in deciding when an athlete can safely return to competition.

“When we do talk about return to play, it’s a gradual stepwise process,” said Jason Stacy, M.D., associate professor of clinical family and preventive medicine and a sports medicine physician at USC Sports Medicine. “It’s not going from doing nothing to playing in a game the next day. We put safety first and foremost when deciding when an athlete is ready to return.”

Once athletes demonstrate they are asymptomatic, doctors and athletic trainers will work with athletes, parents and coaches to map out a gradual return to the activity level before the injury. Light aerobic exercise and non-contact drills gradually lead to full contact practice and eventually a return to the field or arena.

As professional athletes like Aaron Rodgers and Chris Paul have demonstrated, it’s possible to recover from a concussion and return to elite form. But no matter the athlete’s skill level, recovery is often enhanced by patience, education and a medical team specially trained at providing superior concussion care.

If you suspect your son or daughter is suffering from a concussion, make an appointment to see a concussion specialist at USC Sports Medicine Center by calling (803) 434-7121. ■

## CONCUSSION SYMPTOMS

- Headaches
- Loss of consciousness
- Balance problems
- Vision problems
- Sensitivity to light or noise
- Memory problems
- Slowed reaction time

## ROBOTIC SURGERY continued from cover

Potential candidates for robotic surgery are women with a high body mass index (BMI), excessive scar tissue or have had multiple surgeries. Ten years ago these women would have had few surgical options.

“It is very rewarding as a surgeon to offer patients something that they were not able to have in the past — particularly women with large BMIs,” said Lisa Spiryda, M.D., Ph.D., assistant professor of clinical obstetrics and gynecology.

USC gynecologic surgeons primarily use da Vinci for complex hysterectomies and some ovarian surgeries. Even though it is referred to as a robot, the surgeon has full control of da Vinci at all times. Every movement of the robot is controlled by the surgeon’s hands.

During an operation, the surgeon sits a few feet away from the patient and views a magnified three-dimensional, high definition image in a console. Using hand controls, the surgeon is able to guide the robot’s four interactive arms, which are positioned inside the patient. The surgeon’s hand, wrist and finger movements translate into precise, real-time movements of surgical instruments inside the patient.

Surgeons operate through tiny holes in the abdomen. Each incision measures approximately one centimeter in length, or smaller than a dime.

“The small incisions leave minimal scarring and the patient experiences significantly less pain,” Spiryda said.

Smith and Spiryda have performed more than 100 robotic-assisted surgeries. The pair advises women needing an abdominal hysterectomy to consider robotic surgery and seek out a well-trained and highly-skilled surgeon.

“If a patient is told they need an abdominal hysterectomy, they should seek out a da Vinci-trained surgeon because the surgeon may be able to perform the operation in a minimally invasive way,” Smith said. “When you find a da Vinci surgeon, be sure to ask about their experience and make sure you visit a very experienced surgeon.”

Patients seeking more information about USC’s robotic surgery program should call the Department of Obstetrics and Gynecology at (803) 545-5700. ■

Cover photo: Sarah Smith, M.D. left, and Lisa Spiryda, M.D., Ph.D., right, with the da Vinci robot.

# Diagnosis determined: How a handheld ultrasound device introduces USC School of Medicine students to the potential of ultrasound technology

**In an Orangeburg physician's office, third-year medical student Terrel Sanders maneuvers an ultrasound probe on the chest of a young boy. In one hand, he guides the probe. In the other, he holds a Vscan, a pocket-sized ultrasound device that is changing the way doctors diagnose patients.**

In a matter of seconds, Sanders' Vscan produces a clear image of the boy's heart and confirms what doctors had previously suspected—a congenital heart defect.

The diagnosis represents a breakthrough moment in Sanders's medical career. After two years of training with ultrasound as a part of his medical school curriculum, he finally sees firsthand the potential and promise that ultrasonography provides to physicians and patients.

"The diagnosis reinforced everything I learned about ultrasound during my first two years of medical school," Sanders said. "I was able to recognize the heart defect, because the School of Medicine prepared me as a medical student to make the diagnosis and provided me the technology to make the diagnosis happen."

Like all medical students at the University of South Carolina School of Medicine, Terrel Sanders benefits from the nation's first integrated ultrasound curriculum that spans all four years of a student's medical education. At the USC School of Medicine, ultrasound modules and training are integrated into the basic science curriculum in years one and two.

"There is no question that ultrasound is changing how we teach and how we practice medicine," said Richard Hoppmann, M.D., dean of the University of South Carolina School of Medicine. "It's a tremendous educational and teaching tool. It helps the students understand and learn anatomy, physiology and pathology."

In 2011, the Fullerton Foundation, a South Carolina-based philanthropic organization that supports health-related programs, provided funding to establish the School of Medicine's Vscan program. The grant funds allowed the School of Medicine to purchase 30 Vscan devices and assign them to third-year medical students completing clerkships in the primary care areas of pediatrics, family medicine and internal medicine. Each student is assigned a Vscan throughout their six- or eight-week rotation.



Richard Hoppmann, M.D.



Mary Beth Poston, M.D.

The small yet powerful device fits comfortably into the pocket of a doctor's lab coat. The Vscan's portability and size makes it an optimal screening, diagnostic and disease management tool in the inpatient or outpatient care setting.

In addition, USC faculty see the Vscan as a confirmatory tool for medical students practicing in the clinical setting for the first time.

"The Vscan is an extension of the physical exam that can help you to answer very focused clinical questions as a part of the patient encounter," said Mary Beth Poston, M.D., associate professor of clinical internal medicine at the USC School of Medicine. "It can become a part of the interaction with the patient and allow physicians to give immediate feedback to the patient."

Hoppmann and Poston are among several faculty members at USC who developed the nation's first integrated ultrasound curriculum. The Vscan compliments an educational experience preparing future physicians for today's technology-driven world of medicine.

"When you look at the advances in the technology of ultrasound, it's been tremendous in the last five to 10 years," said Hoppmann, who also helped found the Society of Ultrasound in Medical Education, an organization created to bring medical educators and practitioners together to help promote the use of ultrasound in medical education.

"The technology is already here," Hoppmann said. "What is lagging behind is the health care workforce knowledgeable and skilled in the appropriate use of these devices. It is essential that academia ensure that these advances in ultrasound technology be used in the best interest and safety of the patients."

As the education gap closes, medical students like Terrel Sanders are recognizing the prominent role ultrasound is playing in their training as future physicians.

"I've grown so much as a physician from my first year until now," Sanders said. "Much of my confidence comes from my experience and understanding of ultrasound."

It's a sentiment echoed by many students at the School of Medicine, as the next generation of physicians mark medical milestones with ultrasound technology in hand. ■



## School of Medicine researcher receives \$28 million CDC grant to establish a national center for disability research



Suzanne McDermott, Ph.D.

**A University of South Carolina School of Medicine researcher is the recipient of a Centers for Disease Control grant that may have a long-lasting impact on the one in 10 Americans living with a severe disability.**

Suzanne McDermott, Ph.D., professor in the Department of Family and Preventive Medicine, will lead the five-year grant that allows for the establishment of the Disability Research and Dissemination Center (DRDC). The center will coordinate research and fellowships for the CDC's National Center for Birth Defects and Developmental Disabilities (NCBDDD).

McDermott is collaborating with Margaret Turk, M.D., professor in the Department of Physical Medicine & Rehabilitation and Pediatrics at State University of New York Upstate Medical University, and Roberta Carlin, J.D., M.S., M.A., executive director of the American Association on Health and Disability, in leading the DRDC to enhance the research and training of the CDC's NCBDDD.

The DRDC has the potential to bring in more than \$28 million in funding to support disability research in the next five years.

"We will be the funnel by which extramural research will be funded," McDermott said. "We'll solicit for research, conduct the reviews of proposals and then make recommendations to the CDC for funding. Our work will have a significant impact on the future of research related to both the prevention of disabilities such as birth defects, blood disorders and neurodevelopmental conditions and the lifetime health experience of people who have these disabilities."

By establishing the DRDC, McDermott and her colleagues aim to expand the NCBDDD's capacity to conduct research and training as well as share knowledge about evidence-based practices that promote the health and well-being of people with disabilities.

Potential areas of research at DRDC include the causes of birth defects and developmental disabilities; blood disorders such as hemophilia and sickle cell disease; and health risks to children early in life.

"Dr. McDermott is an accomplished researcher who has continually demonstrated throughout her career a commitment to improving the quality of life for people with intellectual, physical and sensory disabilities," said Richard Hoppmann, M.D., dean of the USC School of Medicine.

"With this CDC grant, she and her colleagues have a great opportunity to shape the direction of disability research in the years to come."

A 15-member advisory group of leading physicians and researchers from institutions throughout the United States will review funding proposals. In addition, DRDC is partnering with national organizations such as the Association of Medical Colleges, the Associations of Schools of Public Health, the American Academy of Pediatrics and the American Psychological Association to promote requests for proposal.

"Our external advisory committee consists of the top people in the field, and we have partnerships with the pivotal organizations that represent scholars in our field, and that is how you accomplish things," McDermott said. "This center has an opportunity to really influence the future direction of disability research."

McDermott's interest in DRDC originates from 23 years of research related to birth defects and the lives of people with disabilities. She has studied the causes of birth defects during pregnancy and identified factors that lead to the prevention of these conditions. A study she led on infections during pregnancy has become an important element of evidence-based prenatal care. Her research on soil metal concentrations led to the discovery that soil proximate to an expectant mother's home is a predictor of poor outcomes for the baby.

The CDC has funded several of McDermott's research projects related to life experiences for people with disabilities. Her current research includes examining the transition of pediatric patients to adulthood who have health issues associated with spina bifida, fragile X syndrome and muscular dystrophy.

In addition to the research potential, McDermott recognizes the establishment of the DRDC at the USC School of Medicine and partner universities could lead to improved professional education for physicians and other health professionals treating disability patients. Enhanced training, including fellowships with the CDC, could lead to improvements in public health practice.

"Disability is an important part of medicine," McDermott said. "It affects every doctor in every practice no matter whether it is an ophthalmologist or an anesthesiologist. It's important that health professionals know what conditions are associated with disabilities and how to prevent them. If we can prevent some disabilities, we'll have a healthier population and that's true for our state and every state." ■

## New Full-Time Clinical Faculty



**Tom Broughan, M.D.**  
**Surgery**

Interests: Liver, gallbladder, bile duct, pancreas, thyroid, parathyroid, hernia and stomach surgery  
Phone: (803) 545-5800



**Mark Shaffer, M.D.**  
**Family and Preventive Medicine**

Interests: Natural family planning, international health and obesity management  
Phone: (803) 434-6113



**Jennifer Hung, M.D.**  
**Ophthalmology**

Interests: Corneal transplantation and cataracts  
Phone: (803) 545-5500



**Christine Turley, M.D.**  
**Pediatrics**

Interests: Vaccine development and immunization delivery, ADHD, obesity and medical education  
Phone: (803) 434-6155



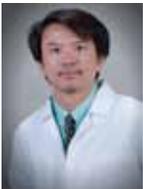
**Rebecca A. Payne, M.D.**  
**Neuropsychiatry and Behavioral Science**

Interest: Addiction psychiatry  
Phone: (803) 434-4300



**Meshia Q. Waleh, M.D.**  
**Family and Preventive Medicine**

Interests: Women's health, international medicine, preventive medicine, education  
Phone: (803) 434-6113



**Paisith Piriawat, M.D.**  
**Neurology**

Interests: General neurology and stroke  
Phone: (803) 545-6050



**Rebecca Widener, M.D.**  
**Pediatrics**

Interests: Streptococcus pneumonia infections, congenital CMV, and HIV  
Phone: (573) 434-7995

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Dean, University of South Carolina Carolina School of Medicine

**Matt Splett**

Director of Marketing and Communications, School of Medicine  
*Healthwise* editor

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