

HEALTH WISE

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New Treatments, New Stroke Center

Souvik Sen, MD, MPH, is leading the effort to develop a stroke center for the Midlands of South Carolina.

INSIDE

- Hot And Bothered 2
- Live Heart Healthy..... 4
- What's "Bugging" You? 5
- Treating Corneal Disease 6
- Expert Answers..... 7



UNIVERSITY OF SOUTH CAROLINA
SCHOOL OF MEDICINE

Stroke is the world's No. 3 killer, and in the Carolinas and Georgia—the so-called “buckle” of the U.S. stroke belt—stroke victims are more than twice as likely to die from stroke than those who live in other parts of the country. And for the past 50 years, South Carolina has led the nation in the number of stroke deaths.

Those grim statistics—and the opportunity to help change them over time—attracted Souvik Sen, MD, MPH, to the University of South Carolina School of Medicine to chair the Department of Neurology and lead the effort in developing a stroke center for the Midlands.

The stroke center will provide fast, coordinated treatment for stroke victims, allow-

ing physicians to assess a patient's condition and administer life-saving drugs or other interventions within one hour of arrival—the so-called “golden hour” for treatment.

The window of opportunity for treatment of stroke victims with the clot-busting medication TPA is less than three hours after the onset of symptoms—but only 3 percent of stroke victims arrive at a hospital within that timeframe. Recently, the treatment has been shown to work as much as four and one-half hours after symptom onset in a specific group of stroke victims.

“Most patients having a stroke either ignore the symptoms or hope they'll go away and delay seeking medical attention,” Sen

See Stroke, p. 3



hot and bothered

a full dose of common sense can prevent the perils of heat illness

You don't have to be a marathon runner or a high school football player practicing two-a-days to become a victim of summer heat.

Ramon Ylanan, MD, an assistant professor of family and preventive medicine at the USC School of Medicine and assistant director of the fellowship program in sports medicine, sees plenty of athletes who succumb to heat injury. But “all kinds of people get into trouble when they don't realize the severity of what can happen if they don't take proper precautions,” he said, and a few critical missteps can lead to heat exhaustion or even heat stroke—a life-threatening emergency.

“It's more prevalent than we like to think,” Ylanan said. “High heat is especially hard on kids and the elderly because they can fall ill just by not hydrating enough and not getting into the shade. Anyone, including those who are very fit, can be victimized by heat and exertion.”

The spectrum of heat illness ranges from exercise-associated muscle cramps to heat exhaustion and, ultimately, heat stroke. Someone suffering from heat exhaustion might have a normal or slightly elevated body-core temperature and experience dizziness, nausea, and intestinal cramps. Heat stroke victims experience a body-core temperature higher than 104 degrees Fahrenheit and often appear disoriented or delirious.

While heat illnesses of lesser magnitude can be treated without professional medical care, heat stroke requires immediate medical attention to avert death or permanent injury. Immersion in cold water is usually the first treatment for heat stroke victims.

Fortunately, a little common sense goes a long way in avoiding heat illness, Ylanan said. Staying hydrated is key, and the best way to know if you're adequately hydrated is to pay attention to the color of your urine, he said.

“You don't want it to be dark before you go out to exercise or work in the yard on a hot day,” he said. “Dark or amber-

colored urine is a sure sign that you're already dehydrated. So you want to see a little tinge of yellow, which indicates an adequate amount of hydration.”

Ylanan uses the analogy of a gas tank in considering the need to stay adequately hydrated in high heat. If you start out with three-fourths of a “tank” of fluid and engage in strenuous activity, your body's fluid reserves could decline precipitously. If you don't drink enough fluid to raise the level back to “full,” you could fall victim to cumulative dehydration if you then reengage in strenuous activity.

“Know your normal body weight. You can lose two to five pounds of fluid in heavy exercise, and some recommendations call for drinking a glass of water for every pound you lose,” he said.

Of course, the hotter the outdoor temperature is, the more you need to do to avoid heat-related illness. Even with full hydration, taking breaks to cool down and wearing loose, light-colored clothing are essential. If possible, avoid the peak heat period of 10 a.m. to 3 p.m.

“When it's hot enough, athletic trainers will recommend that football players not practice in helmets or pads because those items don't allow body heat to dissipate very well,” Ylanan said. “And individuals who are positive for the sickle-cell trait are at higher risk for heat illness because their peripheral blood flow is compromised.” ■



Ramon Ylanan, MD

Stay Healthy This Fall

The fall season usually ushers in cooler weather and shorter days, but you can still stay healthy. Here are some tips to help you stay fit and healthy this autumn.

Exercise regularly.

Exercise keeps your cardiovascular system strong and builds up your reserve to fight off illnesses.

Get plenty of rest.

Getting a full night's sleep helps keep your immune system functioning well. Insufficient sleep is associated with a number of chronic diseases and conditions, such as diabetes, cardiovascular disease, obesity, and depression. The Centers for Disease Control and Prevention recommends between seven and nine hours of sleep for adults.

Drink plenty of fluids.

Keeping the body hydrated is important. Don't wait until you feel thirsty to drink water.

Wash your hands.

Keeping your hands clean is one of the most important ways to prevent the spread of infection and illness. Hands should be washed thoroughly with soap and clean water. Rub your hands together to lather and scrub all surfaces for 15 to 20 seconds. If soap and clean water are not available, use an alcohol-based hand sanitizer.

Avoid sharing personal items.

Several items that we use regularly can potentially spread illnesses, including phones, water bottles, drinking glasses, utensils, brushes, and towels.

Get the Influenza vaccine.

The single best way to protect against seasonal flu is to get vaccinated each year. Fall is the best time to get vaccinated, but getting vaccinated later in the flu season—in December, January, and beyond—still provides protection, as flu season normally peaks in January or later.

New University Specialty Clinics Web Site

Patient-Friendly. User-Friendly.

Want the latest health information? Looking for a specialist for a specific health condition? Find this and more on our new and improved University Specialty Clinics Web site. Stay informed about your health. Visit us online at www.universityspecialtyclinics.org.

New features:

- health news and advice from our medical experts
- patient guide with information about accepted insurance, scheduling appointments, and more
- pay your bill online
- maps and directions
- expanded physician search



STROKE continued from cover

said. “By the time they come to the hospital, it’s too late to use clot-busting medications like TPA or interventional treatments to remove or dissolve the clot.”

Since the advent of TPA in 1996, new interventional treatments such as MERCI (mechanical embolism retrieval in cerebral ischemia) and Penumbra have been FDA approved, both of which use catheter mechanisms to physically remove clots from blocked blood vessels in the brain.

“There are new medications being tested in human trials that offer promise in treating stroke patients several hours after the onset of symptoms, lengthening the window of time for effective treatment. And new treatments are emerging for patients who have suffered transient-ischemic attacks, or ‘mini-strokes’ (which often are precursors to full strokes),” Sen said.

Already, a stroke team has been organized and includes several School of Medicine clinicians, as well as researchers across the University. Ongoing community education efforts will be important, too, as the medical school helps to raise awareness about the risk factors and treatment of strokes.

“We want to get people thinking about reducing their risk factors—smoking, high blood pressure, diabetes, high cholesterol, physical inactivity, and poor diet—because if you treat those, you can prevent 80 percent of all strokes,” Sen emphasized.

For more information about strokes or if you may be at risk, call the Department of Neurology at 803-540-1000 or visit us online at www.universityspecialtyclinics.org. ■

WARNING SIGNS AND SYMPTOMS OF A STROKE

- sudden numbness or weakness in the face, arm, or leg or on one side of the body
- sudden confusion or difficulty speaking
- sudden trouble seeing in one or both eyes
- sudden trouble walking, dizziness, or loss of balance
- sudden severe headache with no known cause

AT-RISK POPULATIONS

- smokers
- people with high blood pressure, high cholesterol, and/or diabetes

live heart- healthy

Here are some quick tips for changing your diet to help you live heart healthy

1. Reduce saturated and trans fat and cholesterol intake.

This is an important step to begin changing your eating habits because too many foods high in fat and cholesterol can lead to coronary artery disease. That means you can reduce your risk of heart attack and stroke by limiting solid fats such as butter, margarine, cheeses, whole milk, and shortening. It is best to use low-fat substitutions such as olive oil or canola oil (monounsaturated fats).

Certain meats, such as bacon, sausage, and ground beef, are high in solid fats. Eating lean meats, such as fish and poultry, will also help reduce your fat and cholesterol intake. Nuts and seeds contain polyunsaturated fats, which are also good heart-healthy choices. As a rule of thumb, your diet should consist of:

- total fat equaling 25 to 35 percent of total calories
- 200 mg./dl. of dietary cholesterol
- reducing caloric intake by 500 per day.

2. Minimize simple or processed sugars and use less salt.

The American Heart Association recommends that healthy adults eat less than 2,300 milligrams of sodium a day (that's about one teaspoon). Watching how much salt you add to your food is important, but watching the condiments you add to your food is just as important because these items can be high in salt. Look for reduced-sodium options.

Reducing processed sugars, such as white granulated sugars, from your diet is also helpful. Eating more fruit will provide a better source of natural sugars.

3. Eat lots of fruits and vegetables and whole grains.

A diet high in soluble fiber, found in fruits and vegetables, can help lower your cholesterol and reduce your risk of heart

disease. Fruits and vegetables are also good sources of vitamins and minerals and are low in calories and high in dietary fiber. The new Food Pyramid emphasizes at least two cups of fruit per day and two and one-half cups of vegetables per day. Visit www.mypyramid.gov for more information on the food pyramid.

Avoid vegetables that are fried, breaded, or covered in sauce as they are not heart-healthy and are high in "bad" fat and cholesterol. Vegetables should be steamed, fresh or frozen.

4. Control your portions.

For the most part, the portions served at restaurants are more than you can or should eat. Therefore, when eating out, consider asking for a lunch-size portion or sharing a meal. When you overload your plate, it is easy to overeat and consume too many calories and too much fat and cholesterol.

Keep in mind that indulging occasionally is okay. It's more important that you allow yourself to think long-term about eating healthy and make sure you eat healthy meals the majority of the time. ■

Source: *University Cardiology*, 803-540-1000



Augustine Agocha, MD, Ph.D., MBA
Cardiology Chief
Division of Cardiology
University of South Carolina School of Medicine

summer allergies that can “bug” you



It's summer, and clouds of tree pollen no longer hang in the air. But there are other pests lurking that can trigger allergies. Aside from grass and weed allergies, stings and bites from insects can “bug” you all summer long.

At some point, everyone has experienced an insect or bug bite that caused itching or mild pain. Bug and insect allergies are a major problem during the summer months because people are more likely to engage in outdoor activities and come in contact with various insects.

Some insect bites, such as mosquitoes, can cause localized mild reactions, including itching, nodules, bumps, pain, and redness. But according to the allergy/immunology division director at the USC School of Medicine, David Amrol, MD, systemic or fatal allergic reactions from mosquito bites are almost unheard of.

Being stung by other insects, such as fire ants, wasps, hornets, yellow jackets, and bees, can pose more serious or systemic reactions that could affect the entire body. It's not the actual bite that causes the allergic reaction, but the insect's venom.

“These insects cause more systemic allergic reactions that can be dangerous. You can be stung on one part of your body, but it causes symptoms throughout your body, such as hives all over, shortness of breath, swelling of another body part, wheezing, or vomiting, you can pass out, your blood pressure could drop, it can even be fatal,” Amrol explained. “If a systemic reaction occurs that involves anything with your throat, your breathing, your cardiovascular system, or severe gastrointestinal symptoms, you should use an injection of epinephrine and call 911 for immediate medical attention,” he emphasized.

It's often difficult to predetermine whether a sting will cause mild or more dangerous reactions. However, once someone is allergic or atopic, then there is a greater predisposition or likelihood of being allergic to other allergens. As Amrol explained, “If someone has a grass allergy, then they are more likely to be allergic to weeds, or dust mites, but not necessarily insect stings or penicillin.

“If you are allergic or have a family history, you may be slightly more susceptible to systemic reactions, but it's not a high enough risk that you would test ahead of time. You only really test if you have a reaction.”

If a systemic reaction occurs, Amrol advises that individuals undergo more testing by an allergist to confirm the allergy and receive scheduled treatments. Children do not always outgrow these reactions, so preventive measures are extremely important.

For those bug bites resulting in mild reactions, Amrol suggests the following:

- apply ice or a cool compress
- remove the stinger to prevent worsening symptoms
- take Benadryl or a topical steroid or anti-itch cream for itching or swelling.

In addition to bug allergies, many individuals may also suffer from grass allergies in the summer. Remember, if you have had a previous severe reaction to an insect bite, be sure to see a doctor for testing and to learn about preventive measures.

For more information about insect and other allergies, visit us online at www.universityspecialtyclinics.org or call the Division of Allergy and Immunology at the University Specialty Clinics, 803-799-5022. ■



David Amrol, MD

As an adult, it is rare to develop new allergies. However, adults who have no previous history of food allergies could suddenly develop food allergies triggered by shellfish, tree nuts, or peanuts.

SEASONAL ALLERGENS

Spring: tree pollen

Summer: grass and insects

Fall: weeds and ragweed



sight for sore eyes

Ophthalmologist specializes in
corneal disease treatment

Though diminutive in size—two-thousandths of an inch thick and barely the width of a bottle cap—the human cornea commands plenty of attention in the world of ophthalmology.

Diseases of the cornea (the transparent covering of the eye) are a leading cause of blindness in developing countries, and the need to treat those disorders has necessitated dramatic new surgical techniques and medical strategies.

“As thin as it is, the cornea has five distinct layers, and in some cases we can replace a single layer to fix the problem,” said Kristiana Neff, MD, an assistant professor in the Department of Ophthalmology at the School of Medicine.

“We have an amazing array of techniques at our disposal to fix corneal complications. Cataract surgery, which has been a foundational procedure in ophthalmology, hasn’t really changed much in terms of technique, but corneal surgery has become very complex.”

Neff, who joined the University Specialty Clinics a year ago, was drawn to ophthalmology because of her affinity for microsurgery—the challenge of dexterity and eye/hand coordination—and the gratifying aspect of improving, sometimes even restoring, the ability to see.

“I had a patient who had multiple failed corneal transplants and had been blind in both eyes for over a decade,” she said. “She got an artificial cornea here and was driving the next day.”

While corneal disease tends to more commonly affect adults, various disorders can target younger people. When individuals with corneal complications are very young, the need for swift surgical intervention is urgent because the brain must learn to process sight within an early window of development.

The cornea is the most commonly utilized part of ocular organ donation, and complete corneal transplants are a common procedure for cornea-trained ophthalmologists. But to

limit the potential for tissue rejection, new techniques allow more specific regions of the cornea to be replaced.

Fuchs’ Corneal Dystrophy, a disease affecting the back layer of the cornea, was traditionally treated with complete (full-thickness) corneal transplants. New techniques allow physicians to replace only the defective back layer.

In Stevens-Johnson Syndrome, patients who are allergic to drugs, most commonly sulfates, can become blinded by inflammation of the cornea’s mucus membrane. Stem cell transplants allow patients to regrow healthy membranes to replace the damaged parts.

“And with artificial corneas, you can use a clear plastic lens to avoid the need to transplant stem cells at all,” Neff said.

Neff has volunteered her professional skills with Orbis, a nonprofit humanitarian organization dedicated to eliminating avoidable blindness in developing countries. She has volunteered in Ethiopia, and Orbis has helped establish that country’s one and only eye bank to handle donated eye tissue.

Neff earned her medical degree from Indiana University, completed her internship in general surgery and residency in ophthalmology at the Medical University of South Carolina, and had a fellowship at the Cincinnati Eye Institute.

“I liked surgery [in medical school and as a biomedical engineering undergraduate doing microsurgery], loved it actually, but I also like to follow patients and their disease processes,” Neff said. “Ophthalmology allows you to develop interesting diagnostic skills as well. And most of the outcomes are good ones: the majority of problems I encounter can be fixed.”

Neff also attributes some of her interest in the field to her own childhood experiences.

“Ophthalmologists were the only doctors I liked as a child,” she said. “The visits were painless, and I could see better after the appointment.” ■

Expert Answers



Davit Mrelashvili, MD
Assistant Professor
Department of Neurology

Q What can I do to relieve a crippling migraine headache? Is it a sign of something more serious?

A Migraine is the most common cause of debilitating headaches, affecting 13 percent of the U.S. population. The first step in the management of a migraine is prevention. Eliminating the potential triggers, such as stressors, certain foods, strong odors, and poor sleep patterns can reduce most migraine headaches. If conventional measures fail or are not sufficient, over-the-counter medications should probably be the next step. Try medications such as Tylenol, Benadryl, or Ibuprofen (unless inadvisable for medical reasons) and then move on to combination pills such as Excedrine migraine, if necessary. Do not take over-the-counter medications daily, as it may lead to what's called "rebound headaches" in the long run. If headaches are still frequent and not manageable by the above-mentioned measures, seek professional medical help from your family physician or a neurologist.



Andrew Sides, MD
Assistant Professor
Department of Internal
Medicine

Q What is the difference between good and bad cholesterol?

A Cholesterol is an important substance in the human body. It is a major part of the cell membrane and also serves as a form of energy storage. There are two sources of cholesterol in the body: It is both absorbed in the foods we eat and produced by the liver. The cholesterol is packaged with a protein called low-density lipoprotein (LDL) and travels through the bloodstream for delivery to cells throughout the body.

Despite this important function, LDL is considered the "bad cholesterol." The reason is that during transport, it can stick to the blood vessel walls, forming plaques that may eventually obstruct blood flow through the arteries to cause heart attacks or strokes.

The "good cholesterol" is packaged with a different protein known as high-density lipoprotein (HDL). HDL carries cholesterol in the opposite direction, picking it up from the cells and the bloodstream to return it to the liver for processing. This decreases the amount of cholesterol that is free to cause atherosclerosis (plaques in the blood vessels).

One way to remember which cholesterol is good vs. bad: you want the HDL to be high (H) and the LDL to be low (L).



Malaka Jackson, MD
Assistant Professor
Department of Pediatrics

Q My child has been diagnosed with Type 2 diabetes. What can I do to manage it?

A The pancreas makes insulin, which helps glucose, a type of sugar, enter cells to provide fuel for our bodies. People with Type 2 diabetes often have insulin resistance resulting in elevated blood glucose levels and symptoms that include increased urination and thirst, fatigue, and blurred vision. Kidney, vision, circulation, and nerve problems can result if diabetes is not treated properly.

A Type 2 diabetes diagnosis can be a scary new reality for families. The good news is that most children will lead full and active lives after embracing a healthy Type 2 diabetes lifestyle. Management primarily revolves around increasing the body's sensitivity to insulin. Encouraging well-balanced meals with limited amounts of concentrated sugars and carbohydrates is very important. Participation in aerobic exercises that raise your child's heart rate will improve insulin sensitivity. Additional interventions such as weight loss, oral medications, and/or insulin therapy may be recommended. Tracking your child's blood sugars will assist you and your child's health care team in knowing if your child's diabetes is appropriately managed.

"Expert Answers" features commonly asked questions and the responses of our expert physicians, scientists, and health care providers. For more information about concerns you may have, contact your health care provider.



University Specialty Clinics Welcome New Full-Time Clinical Faculty



Anika Bradley, MD
Ophthalmology

Interests: Plastic and reconstructive surgery
803-434-6836



Kristen Rollins, MD
Pediatrics

Interest: General pediatrics
803-434-7945



Scott Carney, MD
Pediatrics

Interest: General pediatrics
803-434-7945



Greg Talente, MD
Internal Medicine

Interest: Pediatric internal medicine
803-540-1000



Richard Lehman, MD
Neurosurgery

Interests: Functional neurosurgery, deep-brain stimulation for Parkinson's disease and other movement disorders
803-434-8323



C. Philip Toussaint, MD
Neurosurgery

Interests: Surgical management of spine and peripheral nerve disorders
803-434-8323



Scott H. Meyer, MD
Neurosurgery

Interests: Trauma-cranial and spine, neurosurgical critical care, vascular neurosurgery, and pituitary surgery
803-434-8323



Sharon B. Weissman, MD
Internal Medicine

Interest: Infectious diseases
803-540-1000

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