

EMORY | health

PATIENT CARE, RESEARCH, AND EDUCATION FROM
THE **WOODRUFF HEALTH SCIENCES CENTER**

MAKING BETTER DOCTORS

Marcus Welby, move over **2**

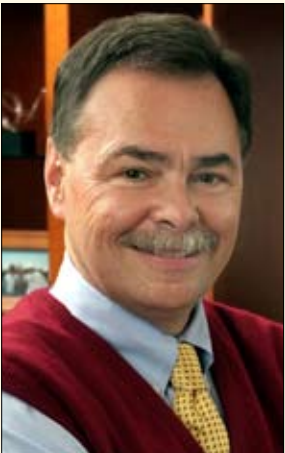
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Andrew Ban

FROM THE EXECUTIVE VP



The goal-brick road

If you're a regular reader of *Emory Health*, you may already be familiar with the Woodruff Health Sciences Center's vision—transforming health and healing . . . together. What may be new to you are the overarching goals recently defined by broad input from faculty and staff to help us achieve that vision. Simply put, we want to be the model academic health sciences and services center for the 21st century. We want to set the highest quality as the hallmark of all that we do. And we want to be a terrific place to work. I hope you'll read my "on point" column on page 24 to learn more about our goals and what they mean

to the community we serve.

As you look through this issue, you'll see outstanding progress toward these goals in a series of innovations we're pioneering to save and improve lives, not only here in Atlanta but also around the country and the world. You'll meet four Emory medical students, two of whom are completing their training this year under our traditional curriculum and two who recently completed the first full year of a groundbreaking new curriculum. This dramatically different approach to medical education features interactive small-group learning, mentoring, and clinical experiences integrated early and often into the curriculum. And you'll meet a patient who was so transformed by his experience at Emory Crawford Long Hospital that he returned to nursing school at Emory and now works in the unit where he underwent lifesaving surgery eight years before.

Read on, and you'll discover how an Emory geneticist is fighting to make screening for genetic metabolic disorders available to all newborns throughout the region and to ensure that consistent, high-quality care is available to them throughout their lifetime—regardless of insurance status. And you'll learn about a vaccine being tested at Emory that holds the potential to prevent the devastating effects of Alzheimer's by slowing the accumulation of amyloid plaques in the brain.

These and the other breakthroughs you'll read about in this issue of *Emory Health* result from a common set of goals among our service missions in research, education, and patient care—and from the determination of our faculty and staff to achieve them. These goals and the people who are making them a reality distinguish the Woodruff Health Sciences Center among academic health centers nationwide, making us a recognized leader in health innovation. They serve as the cornerstone of our ability to continue transforming health and healing . . . together.

Fred Sanfilippo, MD, PhD
Please share your feedback at evphafeedback@emory.edu.

This dramatically different approach to medical education features interactive small-group learning, mentoring, and clinical experience integrated early into the curriculum.

Emory Health

Executive Vice President for Health Affairs
FRED SANFILIPPO, MD, PhD

Editor
RHONDA MULLEN

Art Director
PETA WESTMAAS

Graphic Designer
IVEY MILTON

Director of Photography
JACK KEARSE

Production Manager
CAROL PINTO

Contributors
MICHELLE BOONE, CHRIS HICKEY
(illustration p. 16)

Executive Director, Health Sciences Publications
KARON SCHINDLER

Associate Vice President, Health Sciences Communications
JEFF MOLTER



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Send all correspondence to **Emory Health**, 1440 Clifton Road, Suite 318, Atlanta, GA 30322; call 404-727-8166; or e-mail rhonda.mullen@emory.edu.

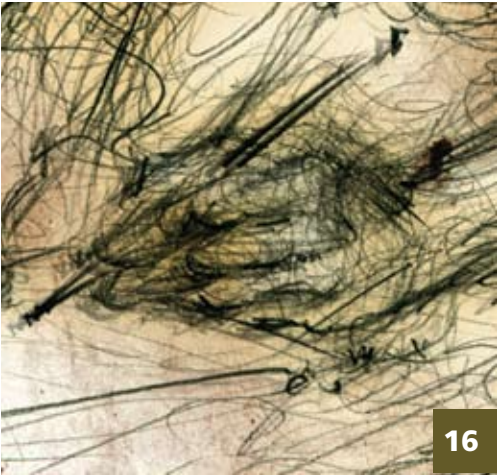
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Newly clarified goals of the Woodruff Health Sciences Center will impact you, whether you are a patient, neighbor, friend, alumnus, partner, faculty or staff member, or student.

The first day of school at Emory's nursing school was Evans' birthday, his 57th, an age when many people are starting to think about retirement. 12

What do you think? *Emory Health* welcomes your comments—pro or con—about topics and issues covered in this magazine. Please send comments, letters to the editor, address changes, and other correspondence to *Emory Health*, 1440 Clifton Road, Suite 318, Atlanta, GA 30322; email to rhonda.mullen@emory.edu; or call 404-727-8166.

Teaching values in medicine is something that's caught, not taught. **A new approach at Emory is molding students into the best doctors they can be.**

Making Better Doctors

By VALERIE GREGG • photographs by JACK KEARSE

"I realized this is what practicing medicine is all about. Medical school is first and foremost about learning to take care of people."

PEARL RYDER, M2
ELLSWORTH, MAINE

Pearl Ryder was only six months in when she had to tell her first patient he was HIV positive.

"I was still on very shaky legs at that point," she says, now beginning her second year at the Emory School of Medicine. "It was very real, intense, and nerve-wracking. I had to call my mom afterwards."

Luckily, the "patient" was a completely healthy actor, one of several the school hires to play patients stricken by a variety of illnesses and disorders to help students practice their clinical skills.



Medical students learn more from what they experience than from what they hear, says Associate Dean William Eley (center). Emory's new curriculum exposes students to patients from Day 1.

Ryder's HIV-positive patient returned the next week and once again blew her mind. This time, after she reviewed test results with him—viral load, immune cell counts, and other indicators of how well his body was fighting the virus, he asked for Viagra.

"It sure surprised me," she says. "But I got a grip on myself pretty quickly. I knew I had to be open-minded. He had a low viral load, his disease was well controlled, and he had a strong health care team that he saw consistently. Using condoms, he should be able to have a sex life. I had to be nonjudgmental and open to his needs."

This time she called her mother brimming with pride and excitement over a job well done. "I told my mother that this experience was making me a more compassionate person," she says. "It was a powerful moment for me. I realized this is what practicing medicine is about. Medical school is first and foremost about learning to take care of people."

Ryder is a member of the class of 2011, the first class at Emory's medical school to experience a dramatically revamped curriculum aimed at meeting the changing, and challenging, needs of health care today. Since the day of that first HIV diagnosis, Ryder has earned a wealth of confidence in her abilities as a diagnostician, caregiver, and doctor-to-be.

"I have learned so much in a year that it boggles my mind," she says. "There has been so much medical language, science, and process in terms of patient care to learn. I really don't know how I've absorbed it all, but I have. The only explanation is that the manner in which we've been taught has been extremely efficient and effective."

The new approach to training doctors came after several years of planning and study. The overhauled curriculum seeks to turn out passionate, capable clinicians who are critical and creative thinkers, dedicated to bettering society, and destined to be leaders. It goes about that through several approaches: small interactive group learning, fewer large lecture-style classes, clinical experiences integrated into scientific coursework early and often. Students also work one-on-one with a mentor physician in an outpatient clinic once a week, every other week, for the first year.

Exposing new medical students to real patients—not just actors—is a powerful component, says William Eley, executive associate dean for medical education and student affairs. "Medical students learn more from what they see and experience than from what they hear. There's an old saying that the values of medicine are caught, not taught."

For example, in the first weeks of school, a 26-year-old woman with cystic fibrosis visited the first-year students. Within a week, she was dead. "When the students found out, it was sobering," says Eley. "But it also inspired them to become the best doctors they could be."

More than a test score

Much was different three years ago, when Earl Johnson started medical school at Emory. He and fellow students of the class of 2009 referred to their first year as "boot camp."

"The first year, there was a pretty universal freak out," he says. "It was intimidating. I studied way too much and tried to learn too much too quickly. You can only cram so much information into your brain within a certain period of time. So really, there was probably a fair bit of over-studying that was a waste of time."

It wasn't until Year 3 that Johnson's classmates entered the hands-on setting of the clinic and were assigned their first patients. The aspiring plastic surgeon has found the change to clinical rotations radically different, and he's jazzed about the opportunity. "We take our own notes on patients, order studies for patients, and discuss cases with faculty. We learn by doing," Johnson says. "In surgery, we go in and help out. We do some procedures. Yesterday, I did my first lumbar puncture!"

Until the fall of 2007, Emory's curriculum resembled that of most other medical schools in the United States—intense basic science lecture classes for two years with little patient care activities until the beginning of clinical rotations in the third year. That

"The first year, there was a pretty universal freak out."

EARL JOHNSON, M4
CATONVILLE, MARYLAND

approach emphasized rote memorization of vast amounts of information.

Charlene Wong, now in her fourth year of medical school at Emory, found the sheer amount of information at the beginning of her training to be enormous. "We memorized a lot of material that I'll probably never use during my career," she says. "Biochemistry probably has the worst reputation for impractical memorization, though the course directors try their best to include only the more relevant clinical material. But there is a reason that we're asked to memorize all of this information—it's stuff we need to know for the board exams. And Emory has proven that it knows what to teach because we consistently do well on the board exams."

The U.S. medical licensing exam, commonly known as the boards, originally was conceived to license physicians to practice medicine in combination with a degree from an accredited medical school. Three parts in all, it was instituted at a time when there were few links between clinical and basic sciences. These days, medical schools tend to teach to the test. However, the national organization that offers the exams is considering going to one combined test—partly in response to schools like Emory that are pushing the boundaries of medical education.

"As it stands now, the make-up of the medical licensing exams ties the hands of people who want to do an innovative curriculum," says Eley.

Emory's first-year students are worried that they will perform less well on the boards because of the school's switch to the nontraditional approach. The new curriculum sets students to take Part I of the boards after only a year and a half of schooling, much of which is spent in clinical situations.

But Eley believes Emory's brand of teaching doctors will earn its graduates some of the best residency placements in the country.

At least one member of the new class thinks so, too. Pearl Ryder acknowledges that "everyone's anxious about boards, but then everyone's always anxious about boards anyway. I feel like if my score is a few points lower, it'll be worth it, because this new approach to learning is so much better. What's important to me is to become the best doctor that I can be, not a test score."



If it ain't broke,

Emory is already ranked among the top 20 medical schools in the nation and climbing. It has a highly competitive applicant pool, accepting 1 in 43 students who apply. Those applicants tend to score in the top 5% of the MCAT, the exam required to apply to medical school. The school is also strong on the research front as one of the fastest growing recipients of NIH awards in the country. It remains young and nimble enough to implement change without the wrenches that time-honored tradition can throw into the works. So with all that going for it, why make a major change?

For one thing, rapid advancements in medical knowledge and technology are changing how medicine is practiced. Research breakthroughs are making their way expediently to patients' bedsides. Medical students in the 21st century have more to absorb, and they must take that knowledge and apply it on the spot.



“We have real class solidarity. Emory just seems to attract certain kinds of people so you don’t get a sense of competitiveness that you might find elsewhere. We all helped each other.”

CHARLENE WONG, M4
RALEIGH, NORTH CAROLINA

are intensely motivated, competitive, and driven—to relax, share concerns, and blow off steam. Being around people who are practicing in the real world also raises the candor and seriousness of discussions.

“The new curriculum is more complicated than ‘here’s your textbook and here’s your class schedule,’ and the society system helps,” says Eley. “In the societies, students get a chance to talk about the things they worry about: How will I have a family? Is it scary to be sued? What will happen if I make a mistake? Will I make a mistake?”

The new curriculum also carries forward the best of tried and true Emory traditions, such as “week on the wards.” Early in the first year, students spend a week assigned to a clinic, inpatient service, or emergency department. Banooni, for example, found himself in a neurology clinic with another student in only the second week of school.

“We knew absolutely nothing about neurology,”

he says, “but we were able to shadow a neurologist for a week. It was our last chance to observe the medical practice from the eyes of a layperson. I would see cases during the day and go home and look them up that night. It left me feeling as if I needed to get into the classroom and learn as much as I could. I realized during that week on the wards that I didn’t know anything. That was probably the largest motivating factor. I realized how much I had to learn.”

The same, but different

When Earl Johnson went through his first two years under the old curriculum, he had to constantly remind himself that thousands of people before him had made it through medical school. They had

What he learned

“One particular patient was in his 30s before anyone told him he had a real medical disorder and was not just crazy. He was born with myotonic dystrophy and suffered through an excruciating childhood because of it. It took an astute neurologist at Emory to diagnose this disorder, which causes problems with muscle relaxation. For example, if the patients with this shake your hand, they can’t let go right away. This man was so excited that he could impart some knowledge and understanding on us medical students. He grew up in a small town where no one had ever heard of his condition. He told us stories about being in class as a child and being called on to stand up and being unable to take a first step. He would be locked into a standing position after the teacher had called him up to the board. Everyone thought his problems were psychological. Or if he started to run, he might fall over at first because his muscles would just lock up. I learned an incredible lesson from this man. I realized what a trial it can sometimes be for patients to get an accurate diagnosis. It wasn’t the medical aspect that most fascinated me. It was the human aspect, the patient’s description of his life.”

ANDREW BANOONI, M2
BLOOMFIELD HILLS, MICHIGAN



survived and become doctors, and so would he. “But it was most definitely a grind for just about everybody,” he says. “No spare time. No downtime. It’s all intensive.”

But the Emory medical students who have just completed their first year have a different experience to share. They agree that there is little downtime, and they’ve certainly encountered difficult work. But from the start, that work has seemed infused with purpose. Little unproductive rote learning. Interactions with patients from the get-go. Encouragement to raise questions.

“Of course it’s difficult,” says Banooni. “One thing I wasn’t prepared for was how happy I am. I expected to be miserable. People tell you the first couple years of medical school are something you survive. But I’m ridiculously happy here. It’s a function of my classmates,

the curriculum, and the attention the faculty gives the students.”

Ryder has found she’s been able to maintain a somewhat balanced lifestyle, still having time to exercise and even sing with the school’s choral ensemble, the Emory Spinal Chords. She also thinks the balance and integration of the basic sciences with the clinical training early on in her education is making her a more empathetic doctor. “Emory is teaching us a nurturing way to practice the profession,” Ryder says. “Of course, science is important. But medicine is much more than just science.” ☐

WEB CONNECTION To view a video about the new approach to training medical students, see whsc.emory.edu/multimedia_som.cfm.

Newborns with metabolic disorders **struggle not only for insurance coverage but also their lives.**

FOOD FIGHT

It's the news no one wants to hear just after they've given birth: their new baby has a genetic disorder. With some of the disorders, the infant most likely will suffer severe mental retardation or even die without rigid dietary restrictions or special foods.

Then, imagine that the news gets worse. The insurance company won't cover the necessary special food, and the family has to come up with thousands of dollars for formula—an unanticipated expense it can't cover.

For more than 15 years, Rani Singh, a mother herself, has witnessed this scenario too many times. As director of the nutrition program at Emory's Genetics Metabolic Clinic, she has helped parents through the maze of managing their children's genetic metabolic abnormalities such as phenylketonuria (PKU), galactosemia, or maple syrup urine disease (MSUD). These disorders affect the way the body processes food into energy. For many years, she saw children in the clinic who were diagnosed too late, after their brains were irreversibly damaged.



By VALERIE GREGG



More of Singh's patients are developing normally because they have been on a specialized diet practically from their first meal.

Metabolic disorders affect the way the body processes food into energy. Eating too much meat, poultry, fish, or dairy products can lead to brain damage or even death.

States began screening newborns for a few metabolic disorders in 1962. Today, every newborn in Georgia is screened for more than 50 genetic metabolic conditions. As a result, Singh watches more of her patients develop normally because they have been on a specialized diet for their condition practically from their first meal.

"It's a joy to see these children come in at ages 2, 5, and into their teenage years and see that they are completely normal," she says. "That is possible only with special formulas and medical and modified foods as well as very close management of their diets."

Singh and her colleagues have worked diligently for more than a decade to make sure that Georgia screens all newborns just after birth for genetic abnormalities. Efforts like this have helped make Georgia a leader in this area. Recently, the state received a sensitive new technology called tandem mass spectrometry provided by the March of Dimes. The technology can detect more than

50 genetic disorders, the majority of which are treatable with nutritional intervention. Georgia's state health department made this testing available to every infant in the state in January 2008, with Emory playing a pivotal role in ensuring that affected children are appropriately diagnosed and entered into proactive treatment.

Babies in other states have been less fortunate, but that is changing rapidly. This past year, Singh and her team received a \$1 million grant from the U.S. Health Resources and Services Administration (HRSA) to bring consistency in genetics testing and treatment to the Southeast Genetics Collaborative. The group comprises southern states, the U.S. Virgin Islands, and Puerto Rico.

The effort ties in with Emory's emphasis on prevention and the university's Predictive Health Institute, Singh says. "We predict the disorders with genetic testing, then prevent the actual disease state through clinical care

and personalized nutritional intervention. When we used to see these kids who were already damaged or sick, we were very much in reactive mode. Now we have an opportunity to be proactive, pick up these kids before they are symptomatic, to prevent and possibly arrest their disease."

After the entree

The staples of childhood—chocolate milk, barbeque chicken wings, and hotdogs—are off limits for children with most of the common metabolic disorders. PKU, MSUD, and isovaleric acidemia all affect how the body breaks down protein. Eating too much meat, poultry, fish, or dairy products could mean irreversible brain damage or death. Patients must adhere to a low-protein diet consisting mainly of medical formula, fruits, and vegetables for the rest of their lives.

As if a meticulously controlled diet wasn't bad enough, finding good primary care for these children after they become adults is nearly impossible, Singh says. When many of her patients grow up, they simply continue to come to the Emory genetics team for follow-up because there is nowhere else to go.

Additionally, there are no consistent published treatment standards for adults with these disorders. Emory is leading regional and national efforts to change that. After serving as a key member of the HRSA Southeast Genetics Collaborative committee on newborn screening and long-term follow-up, Singh recently was asked to work on a national HRSA group to standardize newborn genetic data collection throughout the country.

Moving beyond newborn testing to treatment is her current challenge. Ideally, treatment should be accessible to every patient in all 50 states, and legislation would require health insurers to pay for medical foods with specialized formulas and modified foods. Singh hopes to make nutrition treatment for children and adults more consistent and available, regardless of their insurance situation.

That, however, is a tall order. After the initial diagnosis, patients with metabolic disorders need extensive follow-up: ongoing parental education about diet, frequent and regular visits to the clinic for babies, further testing and diagnosis, treatment, nutritional management, evaluation, and continued nutritional education and neurologic testing throughout life. "As state newborn screening programs expand their screening panels to include more conditions, it is imperative to



Finding good primary care for children with metabolic disorders as they grow into adults is difficult, so they continue to see pediatrician Rani Singh and the Emory genetics team.

have functioning, long-term follow-up programs in place," argues Singh in an abstract recently submitted for publication.

Currently, follow-up care and treatment programs are few and far between. "A lot of funding has gone into the screening process, but now we must concentrate on the huge gap in what happens afterwards," Singh says. "We've come a long way, but we still have far to go."

A full-course plan

Pediatricians often don't understand metabolic disorders, according to Singh, and neither do health insurers. Required medical foods for these disorders cost an average of \$7,000 a year. Many insurance plans don't consider the special medical foods to be medicine and consequently fail to cover them. With no national medical policy in place for insurance coverage of medical foods, policies vary widely from state to state.

the special diets. "Just because nutrition is the main medical intervention doesn't mean it isn't a pharmaceutical need," she says. "Nutrition can arrest the disease and completely stop it from progressing. It's terrible that we can predict the disease and prevent it, but we cannot give care because of insurance."

Singh is drawing on the power of numbers to address that challenge. The Public Health Informatics Institute, an Emory partner, and others figure largely in her long-term plan for following newborns who test positive for genetic metabolic abnormalities. The local, nonprofit institute is helping develop a long-term informatics program to process data on the infants collected in the Emory metabolic disorders clinic over months and years. Tracking treatments and outcomes will help researchers develop models for best practices for long-term treatment.

"This is a chance for us to catch up with the clinical history of this disease, how it progresses over a lifetime," says Singh. "We also hope to work with informatics to come up with a uniform process for every baby diagnosed. We're proposing a model to diagnose the baby, confirm the diagnosis, and then standardize treatment and management."

In the past, PKU, MSUD, and other similar conditions were like genetic natural disasters ready to wreak havoc as soon as a baby's first meal. Soon, through a combination of informatics, changes in national health policies, and passionate work by researchers and clinicians, they may be digested and shut down before they ever start, giving kids the chance to live to be healthy adults. 🍌



WEB CONNECTION For a related article in Emory Magazine, see emory.edu/EMORY_MAGAZINE/2008/summer/metabolic.html.



He's only two weeks into the job, still working under the supervision of a preceptor nurse but with increasing responsibility for patients. Unit 21 is a 41-bed, step-down surgical nursing unit for patients who are preparing for or coming out of major open heart or lung surgery. The busiest at Emory Crawford Long, the unit is a challenging place to learn to be a nurse.

Just the day before, for example, Evans and his preceptor were in charge of a 40-year-old patient admitted for open heart surgery. The man was diabetic and obese and needed four drip bags including ones for insulin and heparin—both of which require complicated protocols. Between finger sticks to check blood glucose every hour and the math calculations to determine correct dosages, this



one patient could keep even an experienced nurse like his 25-year veteran preceptor busy for an entire shift, Evans says. But the two nurses had others to attend to as well, including taking a complete history on a newly admitted patient.

Evans is used to such challenges. Getting this far—from patient to nurse—has involved selling a house and downsizing, reorganizing a business, going back to school to get a nursing degree, even changing his self-image. “It has been a long journey,” he says, “the hardest thing I’ve ever done.”

That journey began when he told his wife, Maria, and teenage daughter Marra that he wanted to switch careers. He and Maria had built an editorial services company together for the past 20 years, and her support in taking charge

He was their patient. Now he's one of them.

By RHONDA MULLEN

RRANDY EVANS HAS COME FULL CIRCLE. Eight years ago he lay in a patient bed in Unit 21 at Emory Crawford Long Hospital, recovering from quadruple bypass surgery, lucky to be alive. Recently he started working in Unit 21 as one of the registered nurses who care for people, like himself, who have just come through a life-changing operation.

How does that feel? “Absolutely frightening,” Evans says.





of the business allowed him to go after the prerequisites he needed to apply to nursing school.

“As an editor, I had always thought of myself as a word person,” Evans says. “I had never taken a science course that I wasn’t forced to take.”

Yet there he was at age 55, enrolled at Georgia Perimeter College in microbiology and organic chemistry courses that were “way out of my comfort zone,” he says. He wanted to continue nursing studies at Emory, so he buckled down to get the grades it took to be admitted. The first day of nursing school at Emory’s Nell Hodgson Woodruff

“You’re scared you’ll hurt somebody for what you don’t know,” Evans says. “You can draw up the wrong dose of insulin and kill a patient in seconds. It’s a big job.”

School of Nursing was Evans’ birthday, his 57th, an age when many people are starting to think about retirement.

“I felt like the aged mascot for a class of mostly women,” Evans says. “I was older than most of my professors.”

Still, he had the motivation to overcome his hesitations. He had a second chance at life, and he wanted to do for others what he had

seen nurses do for him. After the surgery, as he watched his nurses monitor medications, keep a close watch on vital signs, and be there for his family, his admiration for their dedication grew.

At one point, Evans remembers, “I just decided I’d like to be one of them.”

Cracking open a chest, a life

Leading up to his heart surgery, Evans had ignored initial signs of trouble despite a strong family history of heart disease. He regularly had run 40 miles a week, and he ate a healthy diet. When he and Maria adopted their daughter, he stopped exercising for a year, but soon enough he got back to walking. Only then, as he crested some hills in the neighborhood around the Emory campus where he lived, he felt pain in his chest. It usually went away. Meanwhile, he was getting weaker and weaker. Eventually, he didn’t even have the energy to mow his lawn. The chest pains started coming on at night, growing until finally they didn’t go away at all.

Evans finally submitted to his wife’s urging and went to the emergency room. When an EKG and blood test were normal, he was sent home. But his wife, who knew in her own heart that things were not normal, pushed for more testing. The next day he returned for a stress test. During the test, it was clear to Evans from the expression on the cardiologist’s face that there was a problem. He then was sent

to the catheterization laboratory, where the findings of an arteriogram revealed many major blockages in four coronary arteries.

“There was no reason I should have been alive,” Evans says.

Within days, he found himself in a place he didn’t want to be—facing surgery at age 51, just as his dad had at age 60. During that earlier surgery, the elder Evans had a stroke, and afterwards, his quality of life plummeted. “He was wheelchair bound,” Evans says of his dad, “and all the things he and Mom had talked about that they would do when he retired went undone.”

With that history in his head, Evans clearly remembers the lead-up to surgery. In the early morning hours of a Tuesday, he awaited, with excruciating chest pain, his quadruple bypass surgery, scheduled for mid-afternoon at Emory Crawford Long. Nurses put nitroglycerine under his tongue. They asked him on a scale of one to 10 the number of his pain. They hung a nitro drip, and still the pain continued. (The actions are all the clearer now as Evans goes about Unit 21 doing those very same things for patients.) Finally, the surgeon was called in from home, and Evans was rushed into the OR for emergency surgery.

But Evans had a better outcome than his father. His surgeon, John Puskas, was conducting a clinical trial for off-pump cardiac

artery bypass surgery, which is performed without a heart-lung machine to oxygenate blood and pump the heart during surgery.

The off-pump technique today has become the standard at Emory hospitals. Because Evans’ heart was in such distress by the time he reached the OR, Puskas was unable to

perform the surgery off-pump. However, during his last semester as a nursing student, Evans had the opportunity to observe the surgeon perform the off-pump procedure.

Cracking open a chest is hard on a person, and the recovery is tough. But Evans did well. There were days when he didn’t feel like doing anything, even six weeks out. But slowly, life returned to normal. He even ran the Peachtree two years out in a race that was symbolic for him.

He also started working with an organization for heart surgery survivors, Mended Hearts. Every Wednesday morning as a Mended Hearts visitor, he would talk with patients on the same Emory Crawford Long unit where he had been a patient. The patients were usually one or two days out of surgery, and Evans shared his story with them and encouraged them in their own recoveries. He saw how much good that did, and he felt like he was giving back.

That experience sent him back first to school and now to Unit 21.

Do no harm

“You don’t come out of nursing school knowing how to be a nurse,” says Evans. “All nurses will tell you that the first year is very stressful, and they doubt themselves and their ability to be a competent nurse.”

New nurses realize the responsibility they have assumed, that they can do great harm without proper supervision, indoctrination, and on-the-job learning. And there is much to learn—how to keep pace, complete the necessary paperwork, follow the proper protocols, learn admit and discharge procedures, and manage medication schedules for multiple patients.

Evans feels that the veteran nurses on Unit 21 want him to succeed. He says he learns something new every hour. He’s learning to remove chest tubes and central IV lines. He’s running hard to keep up, to pay meticulous attention to administering medications correctly.

“You’re scared you’ll hurt somebody for what you don’t know,” he says. “You can draw up the wrong dose of insulin and kill a patient in seconds. It’s a big job. I’ve had a couple of days where I’ve come home and told Maria, ‘Oh, my god, this is too hard.’ Then a couple of days, I’ve felt like I was on my game. Who knows? When I go back next on Saturday, I may get kicked in the teeth again.”

On one of his good days, Evans came onto a shift to find a frightened patient surrounded by her husband and daughter. She was supine, stiff, and so wracked with pain, she almost didn’t breathe. As Evans entered the sickroom, the husband, exasperated by the number of staff people in and out, snarled, “Who are you?” Evans explained to the patient, “I’m going to be your nurse for the next four hours, and I know how you feel.” Then he shared that he had been right where she was. He had gone through what she was going through. He knew she thought she’d never be the same again. Yet he knew, like himself, she was going to be all right. The woman burst out crying in relief. Later, her husband came and found Evans in the hall. “You really helped her,” he said.

Evans thought back eight years to one of his own nurses, who still works on Unit 21, to how helpful he’d been, how dedicated, how caring. He was like that nurse now. After a long journey, he was one of them. 🙏



Evans now works on the same unit where he recovered from quadruple bypass surgery. His presence reassures patients that they too can recover and maybe even run the Peachtree like their nurse.

WEB CONNECTION For a podcast about Evans’ journey from patient to nurse, visit whsc.emory.edu/r_evans.html.

The essentials of essential tremor

Four years ago, an engineer in her late 50s was experiencing difficulty in doing her job, and she came for treatment at Emory’s Movement Disorders Center. Clinician Claudia Testa diagnosed the patient’s condition as essential tremor (ET), a common and complex neurologic movement disorder that may affect the hands, head and neck, face, jaw, tongue, voice, trunk, and sometimes rarely, legs and feet.

Testa learned that the patient’s large family in North Georgia included others exhibiting the same symptoms.

Curious, the physician began making weekend trips to visit these family members in their homes and even attend family reunions. On those visits, she took a computer loaded with touch-screen software to measure the degree of essential tremor seen in performing simple tasks such as handwriting. Eventually she gathered data from more than 60 family members, whom she continues to follow. Family data are key to investigating possible genetic causes of tremor, about which little is known.

Today Testa’s work spans a shrinking divide between practicing medicine and doing the research on which that practice is based. She has become a passionate advocate for not only understanding but also educating others about ET, which is often misunderstood by physicians and patients alike.

“Many health care providers fail to recognize ET or categorize it as a benign disorder, whereas patients often prefer to think of it as a trait rather than something needing

treatment,” says Testa. “Yet ET disrupts social lives and work abilities, interrupting one’s ability to do something as simple as securing a button or writing down a phone message.” In extreme cases, it may preclude participation in the daily activities that most people take for granted, such as walking easily across a room or eating. It is not benign—and it can be treated.

Part of what complicates diagnosis and confuses patients is that ET is actually a family of disorders covering a wide range of symptoms. While some ET cases may have a clear genetic connection, others may not. Similar tremors can be drug induced, psychogenic, or related to strokes, dystonia, or Parkinson’s disease. Non-ET tremors require different treatments, even when the symptoms appear similar to ET.

Further complicating the diagnosis, patients also may experience more than one disorder at a time, such as ET plus Parkinson’s. One indicator that separates ET from Parkinson’s is a positive response to ethanol, and physicians find that some ET patients are self-medicating with alcohol. Another dividing line is that psychiatric and behavioral symptoms for ET often relate to anxiety while people with Parkinson’s usually manifest depression. The main distinction is tremor type: ET is generally worst with actions such as handwriting while Parkinson’s disease tremor is usually worst

at rest. Another differentiator is that ET and Parkinson’s tremors respond to different medications.

A clinical diagnosis is challenging. Because risk factors and underlying causes are unknown, health care providers fall back on defining aspects of “classic” tremor in making a diagnosis, using scales of duration (usually three to five years) and family history as supporting evidence.

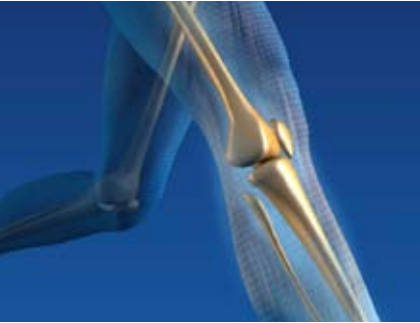
Although there is no cure for ET, it can be treated successfully. Treatment options include behavioral therapy, medication, and surgery.

In extreme cases, essential tremor may preclude participation in daily activities that most people take for granted, such as walking easily across a room or eating. It is not benign—and it can be treated.

Emory is offering a quarterly series of community education events, supported by the International Essential Tremor Foundation and Medtronic. Topics have included specific ET manifestations such as voice tremor, treatment options, clinical and translational research, and the roles that physical therapy and exercise play in ET. —Laura Hauser

WEB CONNECTION For more information about essential tremor community seminars at Emory or Emory’s local ET support group, contact Lynn Ross at 404-728-6300 or slross@emory.edu. For research participation, contact Lisa Miyatake at 404-728-6364 or lmiyata@emory.edu. Emory events also are posted on the International Essential Tremor Foundation website. The IETF offers support groups, referrals, and advocacy for research at 888-387-3667 or www.essentialtremor.org. Committed to “shaking up awareness about ET,” the foundation recently hosted its first national fundraiser, Tulips for Tremors, which raised more than \$51,000 through the sale of tulips.

Less pain, more gain



Consumers have long been able to purchase custom-fitted golf clubs, individually tailored designer clothing, and specially molded bras. Now add to that list a custom knee.

The Emory Orthopaedics and Spine Center is offering patients with moderate arthritis in their knees a new implant that is custom-fitted. Like traditional implants, the iForma replaces worn-out cartilage between the joints of the knee. However, with traditional knee surgery, orthopedists have to cut a large incision in the bone to fit an implant, leading to a long recovery time. Because the new stainless steel implant requires little to no bone cutting, it can be inserted in an outpatient procedure and speeds up recovery.

The best candidate for the implant is a 40- to 60-year-old with early to moderate osteoarthritis in one knee compartment who has exhausted traditional treatments. Those might include either medications, joint injections, knee cartilage removal, or arthroscopy.

Eventually all knee implants, even knee replacements, wear out, according to Emory orthopedist Sam Labib. Although doctors are unable to predict the iForma implant’s life expectancy, Labib hopes it will last a decade.

“The implant is not a cure for arthritis,” Labib says. “The implant won’t turn you into a runner. But you can have less pain, and it can push back the date for a knee replacement. As we live longer and longer, we’re seeing patients having knee replacements earlier and earlier. We now have patients in their 80s who are on their fourth knee replacement.”

Of the seven patients who have received the new implant at Emory, five experienced less knee pain and an improved quality of life. Emory is the first medical center in Georgia to offer the iForma implant. —Kay Torrance

Editor’s note: As consultants to ConforMIS, Inc., the manufacturer of iForma, Labib and other Emory orthopedists advised the company about the implant’s design.

WEB CONNECTION For more information, visit www.emorysports-medicine.org or call 404-778-3350. To schedule an appointment, visit www.emoryhealthcare.org or call 404-778-7777.

A better bladder repair

The pin on S. Robert Kovac’s white coat reads, “Because we’ve always done it that way,” just below a red cautionary sign. The Emory pelvic reconstructive surgeon’s pin refers to bladder tacking, a procedure that surgeons have performed for more than a century in an attempt to repair bladder prolapse. He believes there is a better way.

Bladder prolapse occurs when tissues supporting the bladder fail. Over time, the bladder strains against the vaginal wall and prolapses outside its normal position within the vagina. Bladder prolapse can cause discomfort, pressure, and urinary and sexual dysfunction, and it usually occurs in older women who’ve experienced vaginal childbirth, loss of estrogen, and repetitive pelvic muscle straining.

While bladder tacking may provide temporary relief from pain and vaginal protrusion, it fails more than half the time, with repairs typically lasting less than five years. More recently, surgeons have inserted plastic mesh to improve on the dismal failure rates of bladder tacking. However, the mesh repair has failed to live up to its promise, frequently eroding through the vaginal wall and causing bleeding and pain with coitus. It often needs to be removed.

“I thought we needed a new approach to the issue,” says Kovac, the John D. Thompson Distinguished Professor of Gynecological Surgery. He has developed a new procedure that has a long-term, 90% success rate in his patients.

“I frequently see women who’ve had five to 10 bladder tuck operations,” Kovac says. “It’s like multiple attempts at failure.”

Assumptions about ways in which supportive tissue tears in vaginal birth have formed the basis for the bladder tacking procedure. In this new procedure, Kovac sutures the supportive tissue of the bladder to the normal supportive sites, using graft materials that

assist in remodeling the torn supportive tissues.

A procedure he developed effectively addresses a common side effect of bladder prolapse. Urinary incontinence affects approximately half of Kovac’s patients.

When the tissues surrounding the urethra fail to prevent urine loss, Kovac uses a pubic bone stabilization sling to address the complication. In this procedure, a graft is placed under the urethra and is secured to the pelvic bone with bone anchors.

Kovac says his improvements on the older procedures have occurred because of a better understanding of pelvic anatomy. The advent of MRI has allowed doctors to see more clearly how pelvic organs function.

Kovac has shared these new techniques with more than 1,000 surgeons in the United States. “Because we’ve always done it that way” has given way to “because we’ve got a better way to do it.” —Kay Torrance



WEB CONNECTION For more information about the bladder repair procedure or for an appointment at the Emory Center for Pelvic Reconstructive Surgery & Urogynecology, call 404-778-7777 or visit www.emoryhealthcare.org.

Ladies' MAN

Backed by 20 years of study, Emory emergency medicine physician Don Stein and his research team recently proved what they had long suspected—that the sex hormone progesterone may offer protective effects to the brain. In April 2007, Stein’s article in the *Annals of Emergency Medicine* showed that giving progesterone to patients soon after brain injury helped reduce the risk of death and lowered the degree of disability. Soon after, a front-page *Wall Street Journal* article heralded Stein’s discovery, and this summer he received recognition from yet another national consumer publication. *Ladies Home Journal* has named Stein one of four winners of its Health Breakthrough Award for 2008, which recognizes medical professionals

who have transformed an area of health that dramatically benefits women and families. For more on Stein’s research, see whsc.emory.edu/_pubs/em/medicine/index.html. To watch a video about using progesterone to reduce brain injury, see whsc.emory.edu/multimedia_4patients.cfm.

Beyond watching, waiting, and hoping



THE PROGRAM’S GOAL IS TO HELP FAMILY MEMBERS UNDERSTAND AND RECONNECT WITH OLDER LOVED ONES, WHO ARE STRUGGLING TO COPE WITH OVERWHELMING LIFE CHANGES.

Hazel’s* grown children want their Mama back. They watch, wait, and hope for a glimpse of the witty, capable woman who once had enough energy to care for her family, practice her faith, manage an office, and enjoy gardening, books, and canasta with friends.

All Hazel seems to do now is sit in her favorite chair and stare, occasionally shifting her gaze from a couple of yellow chickadees outside the window to the only light in her den, a TV that blares loudly enough to rival a rock concert. When the phone rings, she either can’t hear it or doesn’t trouble herself to answer. Supper, if she eats at all, often consists of half an English muffin and a handful of Hershey kisses. Within the past year, Hazel has undergone hip surgery and experienced the deaths of both her younger sister and a dear friend.

Hazel’s children know all this, and they’ve seen her weather previous adversities successfully. However, this time is different. They miss the Mama they knew.

In response to such concerns, the Wesley Woods Transitions Senior Program, which provides education and medication management services and structured day psychiatric counseling for older adults, has launched a related program, Families in Transition. The program’s goal is to help family members understand and reconnect with older loved ones, who are struggling to cope with overwhelming life changes. According to Pat Rich, the group’s facilitator, Families in Transition “embraces the family, caregivers, and the older adult. It is broadly focused on both the needs of the caregiver and the care recipient, covering a range of aging-related issues, such as physical and mental illness, memory problems, intergenerational relationships and communication, role changes, deaths of loved ones, and/or changes in living arrangements.”

The program involves both education and support. The educational aspect helps families understand the biologic and psychologic problems of the older adult, identify individual needs, and locate available resources.

The facilitator also leads a group discussion with families, which focuses on caring for caregivers who are faced with the challenges of their loved one’s changing emotional and practical needs. Group members offer support to one another and exchange ideas and experiences to help alleviate feelings of burden and forestall caregiver burnout and depression.

For those with a Hazel in their lives, there is now a step beyond watching and waiting. —Perky Daniel

**Hazel’s story represents a composite sketch rather than an actual description of one particular person’s or family’s experience.*

WEB CONNECTION Families in Transition groups help families find ways to develop healthier relationships with elderly loved ones. They meet on the first and third Tuesdays of every month from 6:30 to 7:30 p.m., 52 Executive Park South, Suite 5200, Atlanta, GA 30329. Referring physicians or interested participants may contact Ed Lawrence at 404-728-6975 or ed.lawrence@emory-healthcare.org for more information.

Transparent health care

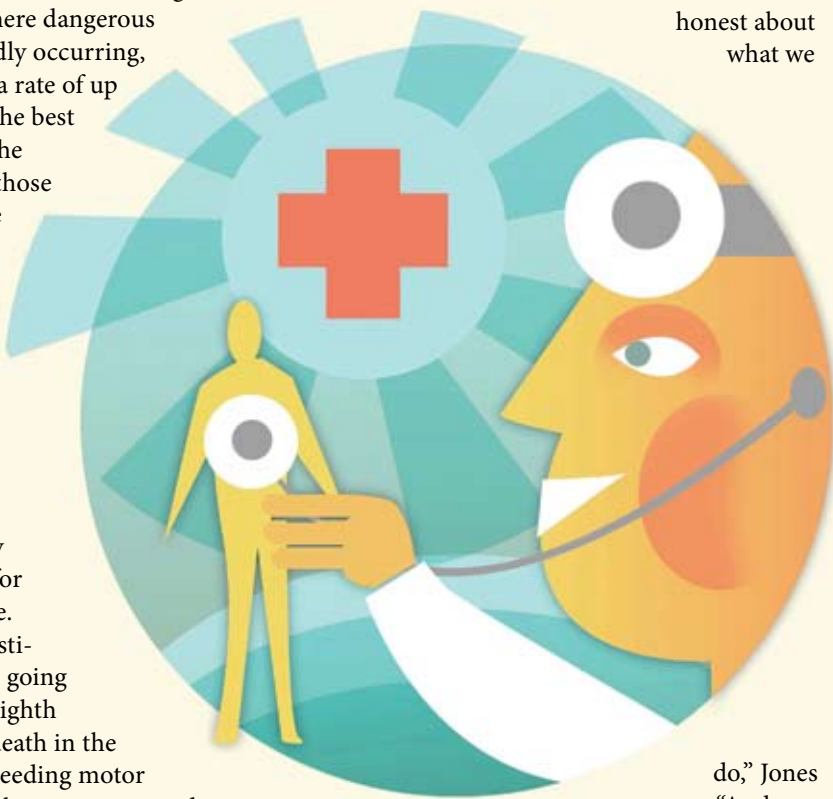
MOST HEALTH CARE SYSTEMS TEND TO PUNISH EMPLOYEES FOR MAKING MISTAKES. And there are plenty of mistakes to punish. Research on the limits of human reliability shows that people who work in high stress environments, where dangerous activities are rapidly occurring, commit errors at a rate of up to 25%—despite the best of intentions. In the health care field, those mistakes translate into 50,000 to 100,000 deaths from medical errors each year.

“That’s like an airplane falling out of the sky every day,” says Hal Jones, director of quality support services for Emory Healthcare. “Even the lower estimate would make going to a hospital the eighth leading cause of death in the United States, exceeding motor vehicle accidents, breast cancer, and AIDS.”

Emory Healthcare finds that statistic unacceptable, and the system has embarked on an unusual approach to lowering fatalities, asking employees to admit mistakes to

management, colleagues, and patients. And it is developing a new disclosure policy for doctors, nurses, residents, and health care teams to encourage that approach.

“We want to be honest about what we



do,” Jones says. “And we want employees

to have confidence that when a mistake is made, it’s an opportunity for all of us to learn and to improve.”

Developing a more transparent health

care system will take time, says Jones. People are still afraid of being punished and of being sued. Moving to the shared vision of Emory Healthcare leadership requires nothing less than a change of culture.

Toward that end, leaders have identified five organizational attributes key to achieving this vision: 1) fair and just culture, 2) patient- and family-centered care, 3) transparency, 4) shared decision-making, and 5) cultural competency. For example, in the area of cultural competency, leaders want all members of Emory Healthcare teams to be fully aware of the effect of racial, economic, and education differences on how patients and their families respond to and participate in health care.

From the patient- and family-centered care perspective, they also want patients and families fully involved in health care decisions—what Jones calls a shift from “doing for patients and families” to “doing with patients and families.” Patients’ families will be encouraged to participate in health care to the extent that they choose. Old visiting hour rules will disappear, replaced by a model that invites families to be fully present with loved ones, staying at the bedside during procedures and even life-threatening situations.

It’s a logical move for the way medicine should be practiced today, Jones says. “In so many situations and from so many important perspectives, no one knows more about the patient than the family.” —Rhonda Mullen

A hospital isn’t built in a day



With an engineering background focused on improving products and delivery at Ford, Peterson brings an industrial understanding of teamwork to his job as COO of Emory Crawford Long Hospital.

DANE PETERSON’S JOB AS CHIEF OPERATING OFFICER OF EMORY CRAWFORD LONG HOSPITAL IS PRETTY STRAIGHTFORWARD. No matter how good things already are at the midtown hospital, he is supposed to make them better.

For patients, better means a hospital ever more centered on their needs and those of their families and caregivers, a place where “we don’t do things to patients but with them,” says Peterson. For employees, that means creating “a fair and just culture,” where physicians and staff have confidence that we know everyone makes mistakes and that our first response when mistakes are made is going to be “what can we, together, learn from this,” not “who is at fault and who should be punished.” And for neighbors in the community surrounding the hospital, better refers to expanded health services for intown workers and dwellers and the hospital’s help in efforts to make midtown be—and feel—accessible and safe. Already a major employer in the area, the hospital will only increase its impact in light of Emory’s plans for new clinical and research space on the midtown campus.

Peterson comes to this anything-but-simple job well prepared. Most recently, he was associate administrator, then interim COO, of Medical City Dallas Hospital, a 677-bed hospital owned by HCA. Trained as an industrial/operational engineer, with an MBA from Stanford, he first honed his skills for improving products and delivery in multiple engineering positions at Ford and other industrial organizations. When he made the switch to health care six years ago (“to work among mission-driven people,” he says), he brought an understanding that good things don’t get done unless they involve the whole operation. Also they must be spelled out in ways that can be understood, widely accepted, and measured, says Peterson.

The overriding “good thing” he sees in Emory Healthcare is an attention to quality. In COO parlance, that’s the degree to which activities increase the likelihood of desired health outcomes, patient safety, and customer service.

In Peterson’s first nine months on the job, beginning in December 2007, here’s a glimpse of how he’s helping boost that quality.

■ a focus on the “big four:” patient satisfaction, physician satisfaction, employee engagement, and financials built on growth opportunities that will be here today and tomorrow. Surveys are under way in some of those areas. He is also looking for ways to reinvest in the hospital leaders, what he calls “sharpening the saw.”

■ issues discussions with physicians. How to improve start time for the first case in the operating room. How to better handle diversions, when the number of patients needing emergency service exceeds capacity at Atlanta hospitals. He listens, prioritizes issues, and communicates timetables.

■ making employees’ jobs easier and more fulfilling. Sometimes that means a pat on the back. Often it means making it easy to do the right thing. A nurse who is struggling with a piece of tubing has less time to focus on a patient who may be giving off a nonverbal signal that something is not right. Creating systems and processes to avoid such distractions (and chances for errors) and making sure that the hospital has the right resources in the right place to handle the needs for every patient is sometimes easier, however, than building more time for interactions with patients and families into staffing budgets. “We won’t get there in a day,” says Peterson, “but we will get there.”

Peterson was drawn to Emory Crawford Long because of its mixture of private and academic physicians, a structure that “makes any operational improvements here applicable to the majority of the nation’s 4,500 hospitals,” he says. He loves the hospital’s interaction with residents, students, and researchers from Emory’s schools of medicine, nursing, and public health. His eyes also light up when he discusses the biomedical partnership between Emory and Georgia Tech, one that is expected to strengthen with the addition of new research space on the midtown campus.

This year, Emory Crawford Long Hospital celebrates its 100th birthday with historical exhibits (from a wooden stethoscope to a Y2K survival guide), tours, and other activities. Given the ambitious goals for the hospital’s second century, Peterson may not play golf as much he once did, but today he finds bigger rewards in the day-to-day job. He is helping create an environment that will improve care for patients and make everyone associated with the hospital proud. The job will take more than a day. —Sylvia Wrobel

That’s a lot of candles

Established in 1908, Emory Crawford Long Hospital opened with 26 beds in downtown Atlanta. These 100 years later, the hospital has grown to a 511-bed, community-based, acute care teaching facility, admitting nearly 23,000 patients in 2007 and employing more than 2,700 staff. For a full history, visit www.whsc.emory.edu/multimedia_eclh_100.



WEB CONNECTION For more information about services at Emory Crawford Long, see www.emoryhealthcare.org/hospitals/eclh/index.html.

An Alzheimer’s trio

Emory researchers recently began three separate clinical trials that take a similar approach to Alzheimer’s disease. They are using the immune system to target beta-amyloid, a naturally occurring protein that clumps together and forms plaques in the brains of Alzheimer’s patients.

The first trial tests an active vaccine, which uses part of the beta-amyloid protein. The Alzheimer’s vaccine is expected to stimulate antibody production. The study’s main purpose is to evaluate the vaccine’s safety, possible side effects, and how well it stimulates the immune system.

“Harnessing the patient’s own immune system may make it possible for us to change the course of the disease, rather than simply treat its symptoms,” says Allan Levey, Emory’s chair of neurology, who is leading the study.

Previous research on mice genetically engineered to develop a condition that resembles Alzheimer’s found that vaccination with beta-amyloid early in life protected the mice from plaque formation and mental decline. Older mice also showed some benefit from vaccination.

Accumulation of beta-amyloid appears to have negative effects that are unique to humans, says researcher Lary Walker at the Yerkes National Primate Research Center. Beta-amyloid is normally present in animals, although its function remains unclear. Beta-amyloid even forms plaques in older monkeys, but they don’t seem to suffer the same consequences, Walker says.

An earlier clinical trial of a beta-amyloid vaccine in humans was halted because a small fraction—approximately 6% of the participants—developed brain inflammation. Despite the unacceptable safety profile of the vaccine, patients who developed antibodies against amyloid protein (about 20% of participants) appeared to benefit.

The new vaccine, developed by Merck, uses a smaller piece of

the beta-amyloid protein. By using the smaller section of the protein, developers hope to avoid activating T cells, the shock troops in an inflammatory response.

Two additional trials at Emory are testing passive treatments for Alzheimer’s, where a vaccine is replaced with pre-made beta-amyloid antibodies either from human donors or genetically engineered particles that resemble human antibodies.

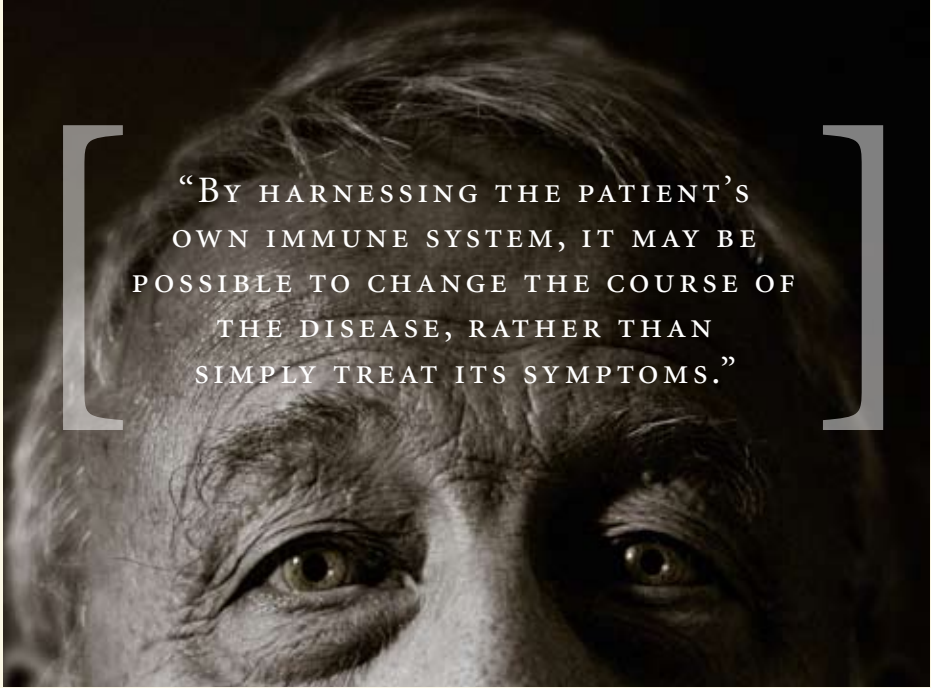
Although financial analysts have predicted that the antibody treatments could make billions of dollars if successful and approved

by the FDA, Emory neurologist James Lah sounds a note of caution. “It is important to keep in mind that the previous immunotherapy studies failed,” he says. “These are first and foremost research studies that gather information.”

In related news, Elan and Wyeth announced preliminary results in June for a phase 2 clinical trial of an antibody against beta-amyloid called bapineuzumab. (Phase 3 trials are under way now.) The pharmaceu-

tical companies believe that the antibody treatment helps some patients but only those who do not carry a particular form of the gene ApoE. This “bad” form of ApoE, dubbed ApoE4, is associated with an increased risk of developing Alzheimer’s disease. Geneticists estimate that non-carriers of ApoE4 make up 40% to 70% of the Alzheimer’s disease population.

The development of antibody treatments presents a challenge to people who have Alzheimer’s in their family. Until this year, genetic tests for ApoE were approved only for people with existing dementia, but the commercial availability of the tests is expanding. Lah advises people to forego testing if they are asymptomatic, considering the potentially devastating impact on one’s life outlook. Professional societies of geneticists also agree with that advice, but practice may shift as consumer choice increases and more people opt to open Pandora’s box. —Quinn Eastmann



Beyond rickets

VITAMIN D DEFICIENCY CONJURES UP A DICKENSIAN IMAGE OF PALE, MALNOURISHED CHILDREN WORKING IN BLEAK FACTORIES. But today an expanding number of health researchers see vitamin D deficiency as an unrecognized epidemic of the 21st century. By some estimates, more than a third of healthy adults in the United States have inadequate amounts of vitamin D in their bodies.

Why? Blame a life spent indoors. “Our ancestors were hunter-gatherers who spent most of their time outside,” says Emory neurologist Marian Evatt. “Compare that to people nowadays. We go from our offices to our cars to our homes. I know my kids spend less time outside than I did when I was growing up.”

The consequences of avoiding the sun are becoming clearer. Researchers are finding that vitamin D not only plays a role in bone formation but also that deficiency may contribute to Parkinson’s disease, cancers, and disorders of the immune system. Emory scientists are probing the role of vitamin D deficiency in diseases ranging from colon cancer to lung fibrosis.

At a recent meeting of the American Academy of Neurology, Evatt presented her team’s research on 100 patients with Parkinson’s disease. Their study was sparked by a finding reported in 2007 that areas of the brain most affected by Parkinson’s appeared to have receptors for vitamin D. The Emory study found that a majority of the Parkinson’s patients who participated showed deficient levels of vitamin D—significantly more than Alzheimer’s patients or healthy people. Evatt’s team sees the results as striking, considering that their study group came from the sunny Southeast rather than a region with long winters, where vitamin D deficiency might be a bigger problem.

More recently, Evatt has begun a pilot study where Parkinson’s patients are given large doses of vitamin D. She is investigating whether the increased dose will restore deficient levels of the vitamin in their bodies and possibly address their neurologic symptoms.

Only a few foods in nature contain substantial amounts of vitamin D, such as salmon and tuna. Most Americans get their doses through exposure to sunlight or by eating fortified foods, including milk and packaged cereals. People with dark skin or who live at high latitudes tend to need more vitamin D.

Emory endocrinologist Vin Tangpricha, who heads a laboratory dedicated to vitamin D research, recommends a supplement with at least 1,000 international units (IU) of vitamin D or 5-10 minutes of sunlight daily. People with fair skin or a family history of skin cancer

may want to limit that to a couple of minutes, he says.

Whether supplied in the diet or formed by ultraviolet rays reacting in the skin with a chemical relative of cholesterol, vitamin D still has to be converted to an active form by enzymes in the liver and kidney. It eventually travels into cells, where it binds to a receptor protein and helps turn on a variety of genes. In this respect, it acts similarly to estrogen and other steroid hormones.

Throughout most of the 20th century, doctors thought that vitamin D’s major role was forming strong bones by improving calcium absorption in the intestine, Evatt says.

More recently, scientists have uncovered examples of its effects in other parts of the body, including the production of peptides that fight microbes in the skin, the regulation of blood pressure and insulin levels, and the stimulation of regeneration in the nervous system.

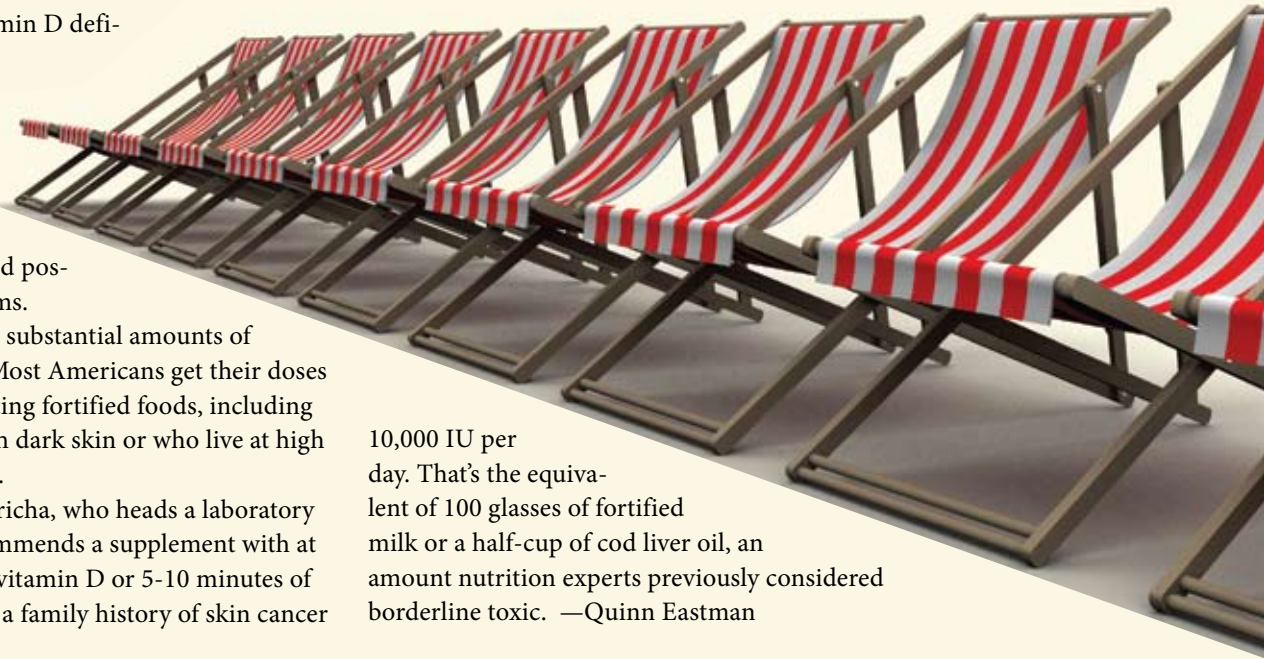
“In a way, it’s the hormonal equivalent of oxygen, because it’s hard to tease apart all of the effects of its absence,” Evatt says.

A question now facing vitamin D researchers is: how much is too much?

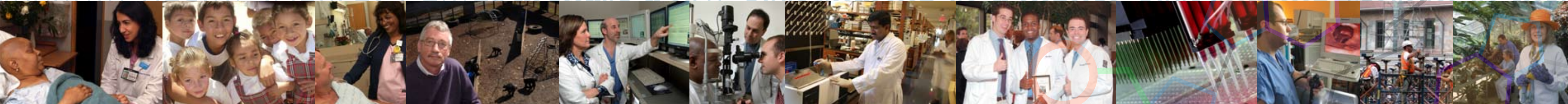
Tangpricha is tackling the challenge of delivering the vitamin to people who have a tough time absorbing it, such as those with cystic fibrosis and the elderly. He and his colleagues are comparing the effectiveness of tanning lamps vis-a-vis high doses of dietary supplements.

Both his preliminary results and Evatt’s studies indicate that people who lack vitamin D may benefit from very high doses, up to

By some estimates, more than a third of healthy adults in the United States have inadequate amounts of vitamin D in their bodies. Why? Blame a life spent indoors.



10,000 IU per day. That’s the equivalent of 100 glasses of fortified milk or a half-cup of cod liver oil, an amount nutrition experts previously considered borderline toxic. —Quinn Eastman



WHAT OUR VISION HAS TO DO WITH YOU

By FRED SANFILIPPO



Whether you are a patient who has visited our hospitals or clinics recently or you are a staff member who walks through our halls everyday, you've probably noticed the banners waving across campus. They announce an ambitious and worthy vision—"Transforming Health and Healing ... Together." You may think those words are just a clever slogan with pretty artwork. You may wonder, what does that have to do with me?

The answer to that question is clearer now, thanks to a recent effort to refresh the goals of the Woodruff Health Sciences Center (WHSC). In short, no matter who you are—patient, neighbor, friend, alumni, partner, faculty, staff, or student—it has everything to do with you.

Refined after extensive study by a diverse group of faculty, staff, and supporters, the new goals make it crystal clear how each of us can play a role in contributing to the WHSC's vision.

A model for the new century

That role begins with understanding the core philosophy behind our primary goal: For us, being the best means doing

the most good. Aspiring to be a model academic health center is fueled not just by competitive ambition to be the best, but by an altruistic desire to do the best—because lives depend on it. Being number one is terrific, but it's even better when that predominance means we save and improve more lives at home, across the country, and around the world. And showing how this might best be accomplished is a noteworthy goal. Just as Johns Hopkins provided the model for academic medical centers in the 20th century, our goal is to provide the model for academic health centers in the 21st century. We've already been working hard toward this goal by striving to develop the appropri-

ate organizational structures to match our desired functions and to facilitate the outstanding programs that distinguish the WHSC among its peers.

The highest quality in all we do

Commitment to quality isn't just about our reputation. It's about providing superlative cutting-edge and compassionate care to our patients and the people who love them. It's about offering the most innovative and com-

ASPIRING TO BE A MODEL ACADEMIC HEALTH CENTER IS FUELED NOT JUST BY COMPETITIVE AMBITION TO BE THE BEST, BUT BY AN ALTRUISTIC DESIRE TO DO THE BEST—BECAUSE LIVES DEPEND ON IT.

prehensive education possible to the country's brightest medical, nursing, and public health students. And it's about pioneering the most extraordinary research, resulting in the lifesaving breakthroughs you read about each quarter in this magazine—and from which you or someone you love already may have benefited.

The best place to work

Fortunately for us—and for the community and the readers like you whom we serve

—the WHSC is filled with outstanding folks who support and embody our goals. As the second largest private employer in Georgia, we strive to make this a good place to work. We want our faculty and staff to be engaged and enthusiastic, not only because they're the best and brightest and they deserve it, but also because a committed team provides the best service.

Walk through any WHSC facility, and you'll see that helping people is our passion. You'll find that each and every one of our talented team members plays an important part in transforming health and healing. Because our goals are so ambitious, it will take the concerted efforts of our entire WHSC community to achieve them. And it will take the support, awareness, and understanding of those outside these walls too.

The Woodruff Health Sciences Center has always had the vision, the talent, the brains, and the courage to be extraordinary. Now we also have a crystallized set of goals around which we're rallying as a community and through which we'll continue transforming health and healing ... together, with you. ☐

Fred Sanfilippo is Emory's executive VP for health affairs, CEO of Emory's Woodruff Health Sciences Center, and chairman of Emory Healthcare.

Goals to live by

We will transform health and healing together by being:

1. The 21st-century model for an academic health sciences and services center
2. An international leader in the highest quality patient care, research, education, and public service
3. A collaborative, inspirational environment that attracts and retains talented people.

"In some ways, depression is like headache or fever. It's a constellation of symptoms that can be caused by many things."

RESEARCHER HELEN MAYBERG

"There are very few decisions that people make that are truly individual decisions—even things that we consider individual preferences. **What clothes to buy, what to eat, or whom to go out with are influenced tremendously by the context that we find ourselves in.** So, even things that we think of as our own choice are influenced by the social context."

NEUROECONOMIST GREG BERNIS

"People who have inherent disorders of their immune systems can't defend well and then they die from a common infection. **A simple herpes simplex that causes a fever blister can wipe them out in a short period of time.**"

IMMUNOLOGIST MAX COOPER

The sounds of science

These quotations are from a new series that brings science alive through sound. *Sound Science* is an Internet-based audio show, featuring new web broadcasts twice a month. Sponsored by Emory's Woodruff Health Sciences Center, the program presents compelling information about Emory's cutting-edge research and innovative scientists, along with provocative commentary on timely health topics.

Coming soon to the series, researcher Helen Mayberg discusses a promising treatment for severe depression known as deep brain stimulation, which she describes as "a pacemaker to the brain." Immunologist Max Cooper talks about T cells, B cells, eels, and chickens, and what they have to do with the immune system—quite a lot, it turns out. And neuroeconomist Greg Bernis discusses a new field of neuroeconomics based on how the brain works and makes decisions. A blend of neuroscience, economics, and psychology, the new field promises to lead researchers to a better understanding of how people and groups make choices, which in turn can inform policies.

The goal of the series is to bring conversations on transforming health and healing to a wide audience, according to the series' host and science writer Robin Tricoles. Upcoming podcasts and videos will feature topics such as the psychology of cancer, sepsis and acute lung injury, the use of stem cells for heart repair, and rare cancers such as those of the bladder, bone, gastric system, and head and neck.

To hear about some of the best ongoing scientific research today, visit whsc.emory.edu/soundscience.



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WOODRUFF HEALTH SCIENCES CENTER
1440 Clifton Road, Suite 318
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