

# Robert Kelch Chosen to lead U-M Health System

University of Michigan president Mary Sue Coleman has named noted physician, researcher and health care leader Robert P. Kelch (M.D. 1967, Residency 1970) to serve as the university's executive vice president for medical affairs and lead the U-M Health System. Kelch's appointment begins September 15.

Kelch returns to the U-M — where he received his medical training and spent nearly all his professional career — after nine years in health leadership roles at the University of Iowa. He succeeds Lazar Greenfield, M.D., who has served on an interim basis since August 2002.

In his new role, Kelch will oversee all three components of the U-M Health System: the U-M Hospitals and Health Centers, which have more than 11,000 employees and a 2003 operating budget of \$1 billion; the U-M Medical School, which has more than 2,100 faculty and 1,500 students and trainees, and received more than \$290 million in research awards in fiscal year 2002; and the M-CARE managed care organization, which has 203,000 members. All three are ranked among the best in the nation.

"Bob Kelch is an outstanding administrator and physician-scientist who is eminently qualified to lead our health system," says Coleman. "I had the pleasure of working with Bob at the University of Iowa, and I saw firsthand his accomplishments as dean and vice president. He established a model partnership between the medical college and the hospitals and clinics, greatly improved fund raising, developed new scientific and educational facilities, and oversaw a significant enhancement in the national stature of that health system. He has broad vision, a deep commitment to the missions of academic medicine, humane understanding, and a love for the University of Michigan."

Kelch has most recently served as vice president of health affairs at the University of Iowa since the position's creation in November 2002, with full oversight of the hospitals and



Robert P. Kelch

clinics, the Carver College of Medicine, and the Hygienic Laboratory; and strategic planning, capital planning, and fund raising for the health science campus, including all health care schools and units at the university.

Before that, Kelch served as vice president for statewide health services from 2001 to 2002, dean of the Carver College of Medicine from 1994 until February 1 of this year, and professor of pediatrics since his arrival at Iowa in August 1994.

"Returning to my alma mater to help lead one of the world's best medical centers is an exciting opportunity for me. I am eager to rejoin the Michigan team and I am especially pleased to have the opportunity to work once again with President Coleman," says Kelch.

A noted endocrinologist who has written more than 110 scientific publications, three books and nearly 100 book chapters, Kelch was elected to the prestigious Institute of Medicine in 1996, and has been named repeatedly to the *Best Doctors in America*. He is a past chairman of the American Board of Pediatrics, and a past president of the Society for Pediatric Research. In addition, he is a past

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member of the executive council of the American Association of Medical Colleges and currently chairs its advisory panel on research.

After postgraduate laboratory research training in pediatric endocrinology at the University of California, San Francisco, Kelch returned to the U-M Medical School as an assistant professor of pediatrics in 1972. He rose to associate professor in 1975 and professor in 1977. In 1979, he was named acting chair of pediatrics, and became chair in 1981 — a position he held until his departure for Iowa in 1994. His successor as chair of pediatrics at U-M, Jean Robillard, M.D., also succeeded him as dean of Iowa's Carver College of Medicine this February.

The position of executive vice president of medical affairs, and its responsibility for leadership of the U-M Health System, was created by the regents in 1997 to coordinate and unify the activities of the U-M Hospitals and Health Centers, the U-M Medical School and M-CARE.

—KG

# Breast Cancer's Killer Cells

## U-M RESEARCHERS DISCOVER FIRST TUMOR-INDUCING CELLS WITHIN SOLID TUMORS

**O**f all the neoplastic cells in human breast cancers, only a small minority – perhaps as few as one in 100 – appears to be capable of forming new malignant tumors, according to research by scientists in the University of Michigan Comprehensive Cancer Center. Their discovery could help researchers zero in on the most dangerous cancer cells to develop new, more effective treatments.

“These tumor-inducing cells have many of the properties of stem cells,” says Michael Clarke, M.D., professor of internal medicine, who directed the study. “They make copies of themselves – a process called self-renewal – and produce all the other kinds of cells in the original tumor.”

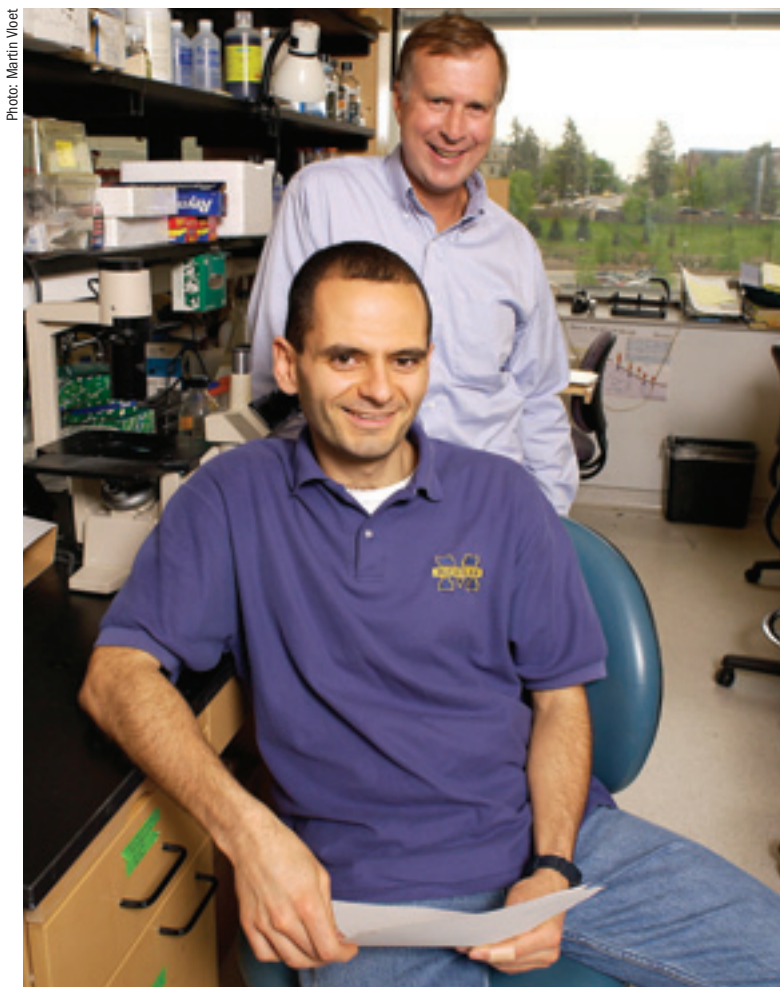
Although similar cells have been identified in human leukemia, these are the first to be found in solid tumors, Clarke adds. The cells were isolated from primary or metastatic breast cancers removed from nine women treated for cancer at the U-M's Cancer Center.

The discovery, reported recently in the *Proceedings of the National Academy of Sciences*, may also explain why current treatments for metastatic breast cancer often fail, says Max S. Wicha, M.D., an oncologist and director of the U-M Comprehensive Cancer Center.

“The goal of all our existing therapies has been to kill as many cells within the tumor as possible,” Wicha says. “This study suggests that the current model may not be getting us anywhere, because we have been targeting the wrong cells with the wrong treatments. Instead, we need to develop drugs targeted at the tumor's stem cells.”

All cancer cells have a unique pattern of proteins, similar to a fingerprint, on their surface membranes, explains Muhammad Al-Hajj, Ph.D., a U-M post-doctoral fellow and first author of the *National Academy of Sciences* paper. “We used specific antibodies and flow cytometry technology to segregate the cancer cells within a tumor into isolated populations based on their surface protein markers,” Al-Hajj says. These isolated cell populations were then individually injected into immune-deficient mice and the mice were examined for tumor growth every week for up to six months. Al-Hajj found only one small group of cells was capable of forming new cancers in mice.

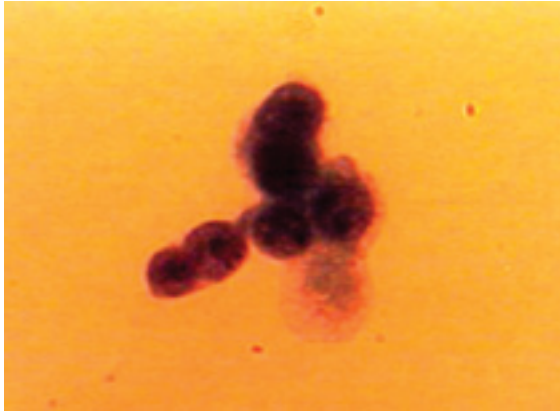
“As few as 100 to 200 of these tumor-inducing cells, isolated from eight of nine tumors in the study, formed ➤



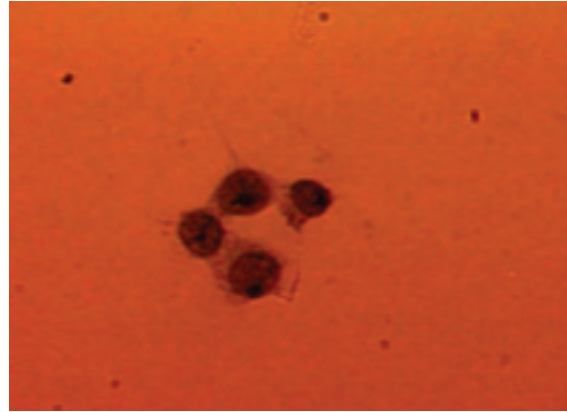
Muhammad Al-Hajj and Michael Clarke

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## Breast Cancer's Killer Cells *(continued)*



**Non-tumorigenic cells:** Although these cells are malignant, they are incapable of forming new tumors. They have a limited proliferation capacity.



**Tumorigenic cells:** Cells capable of forming new tumors.

Courtesy: Muhammad Al-Hajj

tumors in mice, while tens of thousands of the other cancer cells from the original tumor failed to do so," Clarke says.

Given that tumor-inducing cells now have been identified in breast and blood cancers, Wicha and Clarke believe it is likely that similar cells drive the development of other types of cancer, as well. The Center is establishing a new research program to identify stem cells in other cancers and develop new therapies to destroy them.

"This is not a cure for cancer," Clarke emphasizes. "But it is a very promising lead, which will focus our efforts to try to find a cure for cancer."

The U-M study was funded by the National Cancer Institute. Sean J. Morrison, Ph.D., a Howard Hughes Medical Institute assistant investigator and U-M assistant professor of internal medicine, was a collaborator in the research study.

—SFP

For an expanded version of the story and a video clip:  
[www.med.umich.edu/opm/newspage/2003/tumorsc.htm](http://www.med.umich.edu/opm/newspage/2003/tumorsc.htm)

For more about breast cancer:  
[www.cancer.med.umich.edu](http://www.cancer.med.umich.edu)

## Medical School Named 8th-Best in U.S.

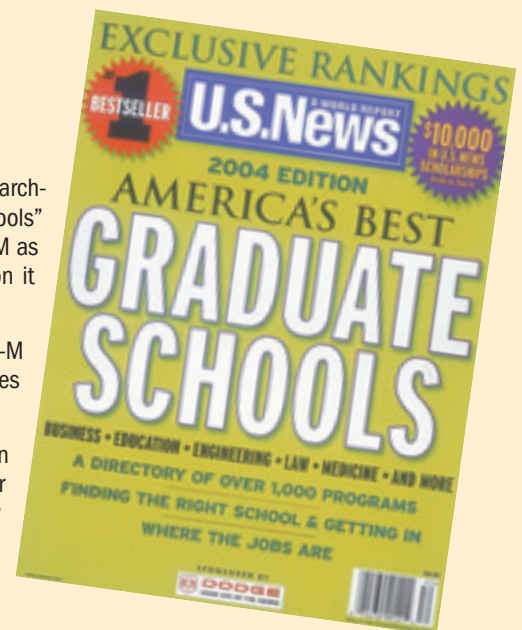
The University of Michigan Medical School continues to be among the top 10 research-oriented medical schools in the country, according to the annual "Best Graduate Schools" rankings released April 4 by *U.S. News & World Report*. This year's rankings placed the U-M as number eight among the nation's 125 accredited medical schools, retaining the position it held last year.

*U.S. News & World Report* also ranks medical schools in eight specialties, and the U-M Medical School made the top 10 in four: family medicine (ranked 4th, a jump of six places from last year), geriatrics (7th), internal medicine (8th) and women's health (9th).

"Our faculty's emphasis on providing the finest education for tomorrow's doctors was an important element in our ranking this year," says Dean Allen S. Lichter (M.D. 1972). "Peer recognition is a significant part of the *U.S. News* methodology, and we're honored to know our peers hold the U-M Medical School in such high regard."

—MBR

See this year's complete rankings: [www.usnews.com](http://www.usnews.com)



# Depression during Pregnancy: More Common than Once Thought, and Significantly Under-Treated

## THE FETUS IS ALSO AFFECTED

A recent U-M study of nearly 3,500 Michigan women revealed a troubling pattern of under-diagnosis and under-treatment of depression during pregnancy. Conducted by researchers from the U-M Depression Center, the study suggests that as many as one in five pregnant women may experience symptoms of depression during pregnancy, but few receive treatment for it.

“Doctors used to think of pregnancy as a ‘honeymoon’ away from depression risk, but this is turning out to be a myth,” says Sheila Marcus (M.D. 1983, Residency 1991), a clinical assistant professor of psychiatry at the U-M Medical School, who directed the study. “We now know that the hormones and brain chemistry involved in

depression are affected by changes in other hormones related to pregnancy. And we know this can affect the fetus, also.”

According to Marcus, growing scientific evidence suggests that hormone imbalances associated with depression can adversely affect the fetus or put a woman at higher risk for postpartum depression. Fortunately, Marcus notes, recent studies have shown that some standard depression treatments — including some antidepressant drugs — do not appear to increase the risk of birth defects.

Explains Marcus, “We need to educate women about the signs of depression, and encourage them to be open about how they feel during pregnancy and after delivery, rather than feeling guilty and embarrassed.”

Recurrence of depression during pregnancy is a significant issue that deserves special attention, Marcus says. Because of depression’s cyclical nature, women who have had depression at any time in their lives may be symptom-free when they become pregnant. But data from the U-M study suggests they are twice as

likely as other women to develop depression during pregnancy — and their increased risk of post-partum depression is well-known.

Twenty percent of the pregnant women in the U-M study scored high on a standard survey of depression symptoms, but of those, only 13.8 percent were receiving any mental health counseling, drugs or other treatment. Only about 24 percent of those who had suffered from depression in the last six months were

Studies show that babies born to depressed mothers have lower birth weights, higher risk of premature birth and birth complications, delayed cognitive and language development, and more behavioral problems, according to Marcus. Even minor depression, Marcus notes, may affect the fetus.

being treated for depression during pregnancy. About half the women who were taking medications for depression before they became pregnant stopped once they conceived.

Many women believe that antidepressants are unsafe for pregnant women and fetuses, says Marcus. Some drugs — such as lithium, used to treat the bipolar form of depression — are indeed associated with an increased risk of birth defects. But no increased risk has been found with other drugs.

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Marcus hopes the results of her study will help clinicians and women understand the importance of recognizing and treating depression in pregnancy. “Women with a history of depression should be targeted for more intensive assessment during early pregnancy,” Marcus



Photo: Getty Images

Photo: Martin Voet



Sheila Marcus

says. “And clinicians should watch for depression in those who are not working, are unmarried, have health complaints, and those who use alcohol and cigarettes during pregnancy.”

In addition to Marcus, the study’s authors include Heather Flynn, Ph.D., a psychologist and member of the U-M Depression Center Women’s Mood Disorders Program; and Frederic C. Blow, Ph.D., and Kristen L. Barry, Ph.D., of the U-M Department of Psychiatry and the VA Ann Arbor Healthcare Center. The research was funded by the University of Michigan Health System.

—KG

For an expanded version of the story:  
[www.med.umich.edu/opm/newspage/2003/](http://www.med.umich.edu/opm/newspage/2003/pregdepression.htm)  
[pregdepression.htm](http://pregdepression.htm)

Information on women and depression:  
[www.med.umich.edu/womensguide/](http://www.med.umich.edu/womensguide/pages/23.html)  
[pages/23.html](http://pages/23.html)

U-M Depression Center:  
[www.med.umich.edu/depression](http://www.med.umich.edu/depression)

# New Chair for Biological Chemistry

## DEPARTMENT EMBARKS ON 'AN IMPORTANT PERIOD OF GROWTH AND CHANGE'

William L. Smith (Ph.D. 1971) is the new chair of the Medical School's Department of Biological Chemistry and the Minor J. Coon Professor of Biological Chemistry. Smith was formerly chair of biochemistry and molecular biology at Michigan State University. His U-M appointment was effective on May 1, 2003.

"Bill is a distinguished scientist with nearly 30 years of expertise in prostaglandin biochemistry," says Dean Allen S. Lichter, M.D. "He has an active research program, which has been continuously funded by NIH since 1976. His leadership experience will be invaluable as our Department of Biological Chemistry begins an important period of growth and change."

"Biological Chemistry is a department in transition," Smith says. "Retirements and departures over the last five years give us a valuable opportunity to reshape the department. Recruitment will be the department's biggest challenge, but also our biggest opportunity."

The department has already started recruiting new faculty in structural enzymology, transcriptional regulation, signal transduction, and protein processing and folding. "These are all key areas where the department has been strong historically and where we can build," Smith says. Another top priority will be moving research laboratories so all department faculty will be together in one contiguous space in the Medical Science Research Building complex.

Smith says he plans to continue his teaching and NIH-funded research at U-M. He studies the biochemistry of hormones called prostaglandins. Prostaglandins regulate many important body processes — including blood vessel relaxation or constriction, uterine contractions, and increased body temperature to fight infections. They cause swelling, redness and inflammation, which often develop after an injury. But uncontrolled production leads to chronic inflammation, the joint damage of rheumatoid

**"Recruitment will be the department's biggest challenge, but also our biggest opportunity."**

arthritis, and possibly cancer and cardiovascular disease.

Author or co-author of 98 articles in scientific journals and 59 book chapters, Smith is currently an associate editor for the *Journal of Biological Chemistry*. He is a member of the American Association for the Advancement of



William Smith

Science, the American Society of Biological Chemists, the American Physiological Society and the American Society of Nephrology.

—SFP

## Genetics 101

So scientists say they've sequenced all the genes in the human genome, but you still don't know what a genome is. And two guys named Watson and Crick discovered something about DNA 50 years ago, but you have no idea why it's such a big deal.

Now there's a Web site that can help. Called "Genetics: The Symphony of Life," it includes basic information about genetics and medicine for the general public, students, teachers, or anyone who is interested in genetics but needs a plain-English explanation of the science. It also describes current research by scientists in the U-M Medical School and how what they discover in the laboratory today could change tomorrow's medicine.

—SFP

See the new Web site at [www.med.umich.edu/genetics](http://www.med.umich.edu/genetics).



# Math1 Gene Grows New Auditory Hair Cells

## REPLACING DAMAGED HAIR CELLS HOLDS PROMISE IN FIGHTING DEAFNESS AND HEARING LOSS

Department of Otolaryngology scientists in the U-M Medical School have used gene therapy to grow new auditory hair cells in adult guinea pigs – a discovery that could lead to new treatments for human deafness and age-related hearing loss.

Photo: Martin Ylocet



**Yehoash Raphael**

Healthy hair cells are vital to the ability to hear, but aging, infection, certain medications and exposure to loud noises can damage or destroy hair cells causing sensorineural hearing loss – a condition affecting over 30 million Americans. Since the discovery, in the late 1980s, that birds can spontaneously regenerate damaged hair cells, scientists have been trying to find a way to replace hair cells in mammals.

U-M scientists have now accomplished this goal by inserting a gene called Math1 into non-sensory epithelial cells lining the inner ear. Results from the study directed by Yehoash Raphael, Ph.D., an associate professor of otolaryngology, were published in the June 1 issue of the *Journal of Neuroscience*.

In a normal ear, vibrations from sound waves striking the eardrum are transferred to fluid inside

a snail-shaped bony organ called the cochlea, which is the auditory component of the inner ear. When cochlear fluid moves, it stimulates movement in thousands of tiny projections on hair cells lining the inside of the cochlea. Moving hair cells initiate electrical signals, which are picked up by auditory nerve fibers and carried to an area of the brain called the auditory cortex. If hair cells are damaged or missing, electrical signals are not generated and hearing is impaired.

“During the embryonic stage of an animal’s development, hair cells and supporting cells have a common origin. Cells that express Math1 are fated to become hair cells, while Math1 expression is inhibited in the remaining non-sensory cells,” Raphael says.

“After embryonic development, hair cell production ceases. Unlike other epithelial cells in the skin or gut, epithelia in the inner ear contain no stem cells, so there is no source for renewal. That’s the main reason why hair cell loss is permanent. When we over-expressed Math1 in non-sensory cells of the mature cochlea, however, we found that it causes them to transdifferentiate or change their personality to become hair cells.”

One of the most surprising results of the study was the discovery of long, slender nerve fibers growing toward some of the newly formed hair cells. “This suggests that these hair cells can provide signals to attract axons and that neurons can respond to these signals,” Raphael says.

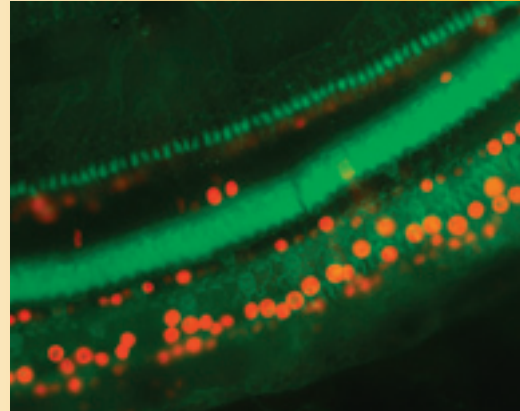
The research was funded by the National Institute on Deafness and Other Communication Disorders of the National Institutes of Health and supported by GenVec, Inc. First author on the paper was Kohei Kawamoto, Ph.D., a former U-M research fellow who is now at Kansai Medical University in Osaka, Japan. Co-authors on the paper include Douglas E. Brough, Ph.D., director of vector sciences at GenVec, Inc.; Shin-Ichi Ishimoto, Ph.D., a former U-M research fellow; and Ryosei Minoda, Ph.D., a post-doctoral fellow in the U-M Medical School.

—SFP

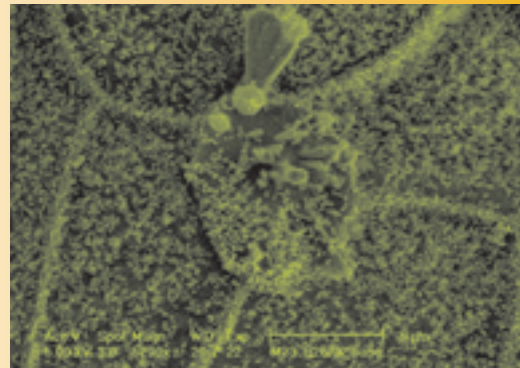
*An expanded version of the story:*  
[www.med.umich.edu/opm/newspage/2003/haircells.htm](http://www.med.umich.edu/opm/newspage/2003/haircells.htm)

*More about research in the Raphael lab:*  
[www.khri.med.umich.edu/research/raphael\\_lab/index.shtml](http://www.khri.med.umich.edu/research/raphael_lab/index.shtml)

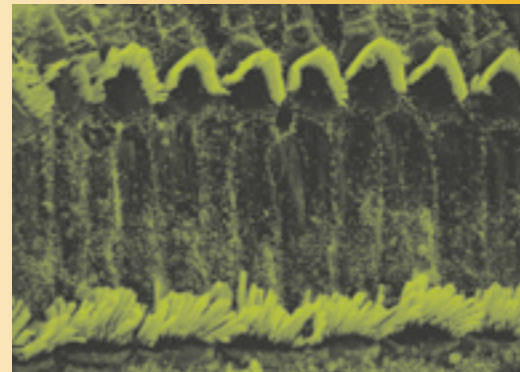
Photos courtesy of Kohei Kawamoto and Yehoash Raphael, University of Michigan Medical School



**Math1 expression (orange stain) in cells in and around the sensory epithelium of the inner ear of a guinea pig after gene therapy.**



**Scanning electron microscope image of inner ear tissue after Math1 gene transfer. A new hair cell is growing in a part of the guinea pig’s inner ear where hair cells do not normally develop.**



**A scanning electron microscope image showing normal guinea pig hair cells.**



Sharon McDowell and Asma Rafeeq consult with patient Thomas Kulback as he receives massage therapy from therapist Robert Ferguson in the inpatient physical therapy gym.

## Brain-Injured Patients Turn to Alternative Medicine

...AND THEIR PHYSICIANS OFTEN REMAIN UNAWARE

Over 80 percent of patients with traumatic brain injuries interviewed for a recent U-M study said they used complementary or alternative medicine therapies — ranging from massage to herbal treatments — to supplement conventional medical care for their injuries. Most patients did not discuss use of such therapies with their physicians.

Even though there have been few medical studies testing the effectiveness and safety of alternative therapies for traumatic brain injuries, patients in the U-M study said they believed they were working for them.

“It really underlines the high level of frustration that traumatic brain injury patients feel about the chronicity of their problems and the few proven therapies available to them,” says Sharon McDowell, M.D., a lecturer in physical medicine and rehabilitation. “There are some good complementary and alternative therapies available, such as meditation and manual muscle therapies, which we recommend. But a lot of therapies are not good for patients with this type of injury. So, it was important for us to find out what therapies patients were using, especially if they were not doctor-recommended.”

McDowell and co-investigator Asma Rafeeq, a U-M medical student, surveyed 130 patients who were randomly selected from a group of patients treated at the U-M Trauma Burn Center for a traumatic brain injury.

In a telephone interview, the patients were asked if they used complementary or alternative medicine for reasons related to their injury. More

than half of the subjects interviewed said they used at least one such therapy, and an additional one-third of study subjects used two or more. Therapies used most commonly were therapeutic massage, meditation, herbal medicine and chiropractic care. Both massage therapy and chiropractic were used to treat pain, while meditation was practiced for affective disorders and herbal medicine was taken for cognitive deficits.

While most of the patients surveyed felt that complementary and alternative therapies were effective, only half had discussed the topic with their physicians, which is a concern for McDowell.

“A lot of patients ... don’t realize that the vitamin supplements and other substances they use can affect their medical treatment.”

—Sharon McDowell

“A lot of patients are embarrassed to tell their doctors, while others don’t realize that the vitamin supplements and other substances they use can affect their medical treatment,” she says. “As a physician, this makes me more aware that I need to ask

my patients about their use of alternative therapies.”

U-M researchers presented the results of the study in April at the American Academy of Neurology’s annual meeting.

—KH

Information on the U-M Traumatic Brain Injury Program: [www.med.umich.edu/pmr/clinical.htm](http://www.med.umich.edu/pmr/clinical.htm)

## U-M: ONE OF TOP 10 U.S. HOSPITALS FOR THIRD YEAR IN A ROW

The U-M Health System placed 9th this year in the *U.S. News and World Report* rankings, published in the magazine's July 28 issue — the only hospital in Michigan to make the prestigious 2003 honor roll of the country's 17 “best hospitals.”

The annual report also assesses hospitals in various specialty areas. Again this year, the U-M was recognized in nearly all the specialties, ranking in the top 15 in 12 of the categories. Four U-M specialties were in the top 10: cancer; ear, nose and throat; geriatrics; and respiratory disorders.

## New and Unique Treatment for Psoriasis Has U-M Origins

Research conducted in the mid-1990s by Kevin C. Cooper, M.D., in the Medical School's Department of Dermatology has led to a new treatment for psoriasis, which was approved in 2003 by the U.S. Food and Drug Administration. Alefacept, a specially designed molecule, works by blocking the immune system reactions involved in psoriasis. The drug is marketed by Biogen, Inc., under the trade name Amevive®. The U-M and Biogen share the patent on the engineered molecule with Cooper, who is now chair of dermatology at Case Western Reserve University in Cleveland.

Photo: Gregory Fox



Charles Ellis

Charles Ellis (M.D. 1977, Residency 1981), an associate professor of dermatology in the Medical School, was selected to help design and lead clinical studies of the drug's safety and effectiveness, because of his long experience studying and treating the immune response in psoriasis.

The promise of a new tool against psoriasis, especially one that zeroes in on the immune response involved in the disease, is exciting, says Ellis. “This is a unique approach targeting a specific cell that drives the over-responsive immune system in psoriasis.”

—KG

Read an expanded version of the Alefacept story:  
[www.med.umich.edu/opm/newspage/2003/alefacept.htm](http://www.med.umich.edu/opm/newspage/2003/alefacept.htm)

## Simple Reminders Motivate Highest Risk Group to Seek Mammograms

More than half of all women over 65 — the age group at highest risk for breast cancer — aren't getting regular mammograms.

“Older women use their age as a reason to stop getting mammograms, but we know that their risk of breast cancer — and the effectiveness of mammography in identifying it early — rises with age,” says R. Van Harrison, Ph.D., an associate professor in the Medical School's Department of Medical Education, who directed the research. “We need interventions that will motivate women over 65 to get this important screening test.”

U-M researchers conducted a controlled study to test whether a carefully designed personalized mailing would increase mammogram use by women over age 65 who had not had a mammogram in the previous five years. Their study showed that women who received the mailing were 60 percent more likely to get a mammogram than those who did not.



Van Harrison

Awareness campaigns should try to dispel the perception that older women don't need mammograms, Harrison adds, and should emphasize the increased risk of breast cancer and the value of mammograms to older women. Specific interventions, they added, should target women whose Medicare files show no recent mammograms.

The study showed that women who received a reminder mailing were 60 percent more likely to get a mammogram than those who did not.

In addition to Harrison, authors of the study include Laurence McMahon Jr., M.D., professor of internal medicine and professor in the U-M School of Public Health; Nancy Janz, Ph.D., an associate professor in the School of Public Health; Jeffrey Stross (M.D. 1967, Residency 1973), professor of internal medicine; Michael Chernew, Ph.D., associate professor of internal medicine and an associate professor in the School of Public Health; Robert Wolfe, Ph.D., and Philip Tedeschi, Ph.D., both professors in the School of Public Health; and Xuelin Huang, Ph.D., who is now at the M.D. Anderson Cancer Center.

—KG

For an expanded version of this story:  
[www.med.umich.edu/opm/newspage/2003/mammogram.htm](http://www.med.umich.edu/opm/newspage/2003/mammogram.htm)

# Coming Home from War

## POST-WAR SYNDROMES FOUND TO BE ‘REMARKABLY SIMILAR FROM CONFLICT TO CONFLICT’

After World War I, it was shell shock. After World War II, people called it soldier's heart. The Vietnam War brought us post-traumatic stress disorder. And in the early 1990s after Desert Storm, everyone was talking about Gulf War syndrome.

The names may be different, but the phenomenon is the same: Shortly after returning from military service, war veterans begin showing up in doctors' offices with similar complaints of generalized body aches and pain, severe fatigue, memory difficulties and mood disturbances — all with no apparent cause.

“Military historians reviewed the medical records of war veterans and found that symptoms are remarkably similar from conflict to conflict,” says Daniel J. Clauw, M.D., director of the U-M's Chronic Pain and Fatigue Research

Program and a professor of internal medicine-rheumatology in the Medical School. Funded by the U.S. Department of Defense, 20 U-M faculty researchers affiliated with the program study mechanisms and effective treatments for chronic stress-related illness.

fatigue and memory or mood changes are part of the body's normal reaction to severe physical and emotional stress. Clauw and others in the U-M program have developed a public Web site, called “Gulf War Health: Coming Home From War,” to provide information for veterans, their families and health care providers on what to expect and how to manage the post-war adjustment period.

“The Web site tells veterans that it is natural to feel out of place or tired, because they have been through an incredibly stressful experience,” Clauw says. “Now they are returning to a family that is different than it was six months ago. The site describes some of the symptoms they may experience, which are entirely normal, and gives people things they can do to make it less likely these symptoms will continue.”

Photo: D.C. Goings



Daniel J. Clauw

Instead of wasting time, money and effort on what he calls the “evil toxin” theory, Clauw hopes to help veterans and physicians understand that multi-focal pain, incapacitating fatigue and memory or mood changes are part of the body's normal reaction to severe physical and emotional stress.

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“After every war, we invent a different syndrome and try to explain it in the context of that particular war,” Clauw says. “After the Vietnam War, everything that happened to some of the soldiers was blamed on exposure to Agent Orange. After Gulf War I, we spent \$220 million on research trying to link toxic emissions from burning oil wells to veterans' health problems.”

Instead of wasting time, money and effort on what he calls the “evil toxin” theory, Clauw hopes to help veterans and physicians understand that multi-focal pain, incapacitating

Too many people underestimate the damage stress can do to the human mind and body. But after 16 years of studying stress-related illnesses like fibromyalgia, chronic fatigue syndrome or irritable bowel syndrome, Clauw knows how dangerous stress can be — especially when people are exposed simultaneously to many types of acute stress, such as from physical trauma, infection, intense emotions, and exposure to drugs or chemicals.

“Current research data suggests that people returning from war with medically unexplained symptoms have the same problems physicians see commonly in the general population,” says Clauw. “Although some people with these conditions develop psychological issues, these are not primarily psychiatric illnesses. There are real abnormalities in how the brain works in people with this type of illness.”

One of the most important research discoveries about stress-related illnesses is that it is possible to prevent them from developing into a chronic condition, which is much more difficult to treat successfully. “You have a window of about three to four months where, if you can restore normalcy as much as possible, it is far less likely the symptoms will become chronic,” Clauw says.

“Our goal is to prevent future post-war illnesses by giving people simple things to do to prevent the condition from becoming chronic,” Clauw says. “It is very important that veterans resume rapidly their normal pre-deployment routines of work, sleep, exercise and leisure activity and re-connect with their families and social support network. The worst thing you can do for this spectrum of illness is tell people they are going to become chronically ill.”

—SFP

See the “Gulf War Health: Coming Home From War” Web site:  
[www.med.umich.edu/gulfwarhealth](http://www.med.umich.edu/gulfwarhealth)

More information about the U-M Chronic Pain and Fatigue Research Program:  
[www.med.umich.edu/painresearch](http://www.med.umich.edu/painresearch)