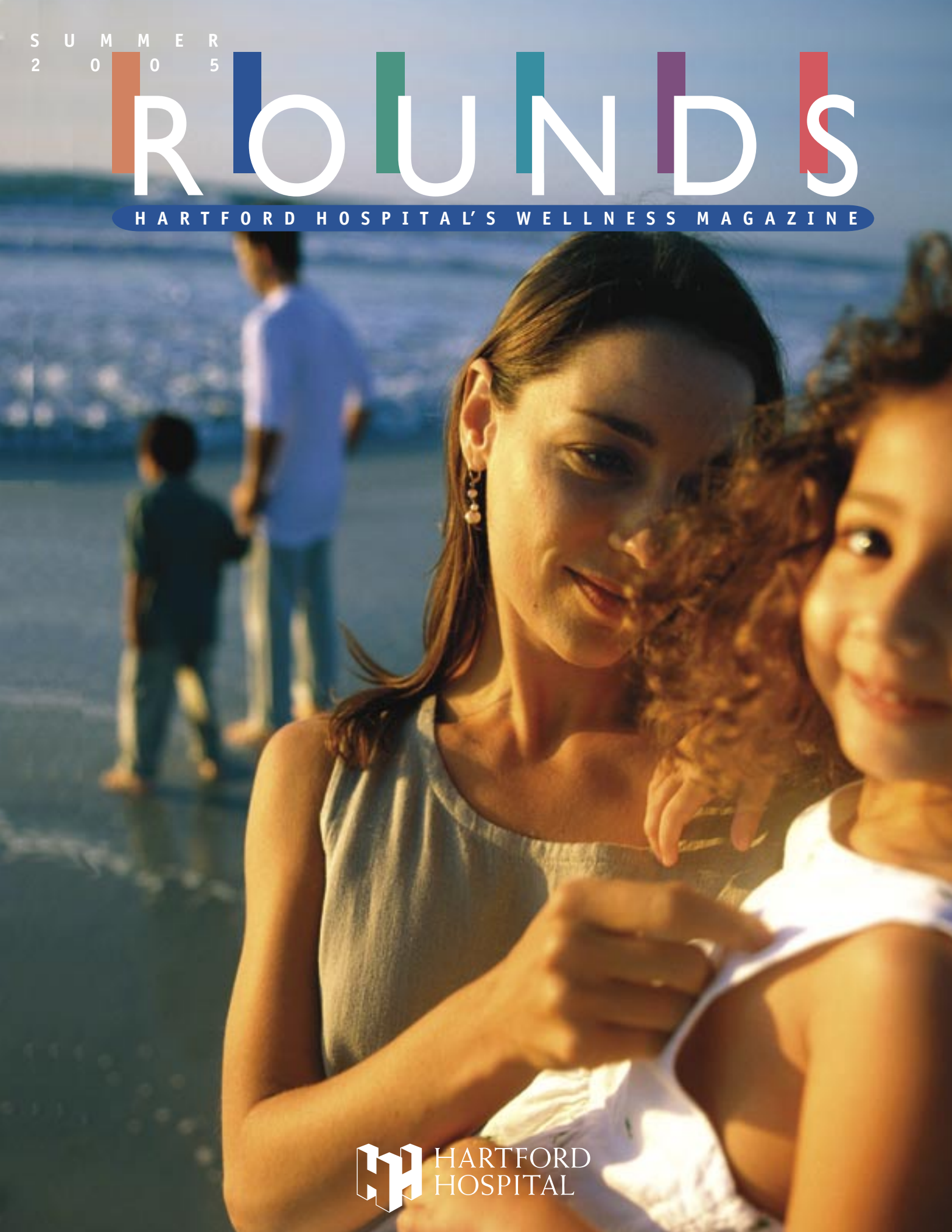
SUMMER
2005

ROUNDS

HARTFORD HOSPITAL'S WELLNESS MAGAZINE



HARTFORD HOSPITAL

MRI Goes to the Movies

The noninvasive imaging capability and versatility of MRI have revolutionized early detection and treatment of disease and injury. Despite MRI's advanced technology, patients often find the narrow, noisy machine confining and frightening.

To help patients relax during testing, Hartford Hospital recently became the first hospital in New England to purchase a Resonance Technology CinemaVision headset, a lightweight audio/video system that fits comfortably over the patient's forehead, eyes and ears. The Hospital Auxiliary donated $38,000 for the purchase of the equipment.

Virtual reality goggles distract and entertain patients by allowing them to watch TV, DVDs or videos while remaining in constant two-way communication with the MRI technologist. The image produced on the head-mounted display gives patients the feeling they're watching a 62-inch screen about five feet away. The goggles can be fitted with prescription lenses to compensate for visual defects in people who normally wear glasses.

"Some patients get very claustrophobic in the MR scanner," says Allison Calvello BA, RTR, Hartford Hospital's MRI team leader. "The CinemaVision reduces by 90 percent the number of patients who leave the MRI before scanning is completed. The virtual environment improves the scanning experience and reduces the need for sedation, which can affect results and requires someone to drive the patient home. Patients cancel less frequently and get their results more quickly since they don't need to reschedule."

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Hartford Hospital's Wellness Magazine

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ROUNDS is a quarterly publication of Hartford Hospital. It is not intended to provide medical advice on individual health matters. Please consult your physician for any health concerns.

HEALTH TIPS

Summer Survival

A first-aid kit can be a lifesaver. Keep one in your home and another in your car, and be sure to take a first-aid kit on family vacations.

Lightweight plastic tackle boxes can hold lots of emergency supplies. Make sure to stock your first-aid kit with sterile gauze, adhesive tape, bandages and antiseptic wipes. You'll also need antibiotic cream, acetaminophen and ibuprofen, disposable instant cold packs and hand cleaner. Don't forget a flashlight and extra batteries for nighttime emergencies.

Summer brings sunburn woes, bug bites and poison ivy, so be sure to pack hydrocortisone cream and calamine lotion. This year, the Centers for Disease Control is recommending two new mosquito repellents that don't contain the chemical DEET, which many consumers have rejected because of health concerns and its unpleasant feel and odor. Look for products containing picaridin or natural oil of lemon eucalyptus to ward off mosquitoes that carry West Nile virus.

CLINICIAN PROFILE

Karen H. Brecher, PT, MA

Director of Rehabilitative Services Karen H. Brecher, PT, MA, who holds a master's degree in gerontology, is a physical therapist who enjoys treating patients on the hospital's acute rehabilitation and orthopedics units and in the Emergency Department.

A graduate of Quinnipiac University, Karen was a member of the first physical therapy graduating class. She earned her master's degree at St. Joseph College, and has worked as a clinical instructor in the physical therapy programs at Quinnipiac University, University of Hartford and Boston University, among others.

She also works as director of the Trauma Outpatient Clinic, as administrative director of the Center for Wound Healing and Hyperbaric Medicine, and director of the Employee Fitness Center and the Electromyography Laboratory.

Karen enjoys patient care, especially working with seniors, in addition to her many jobs throughout the hospital. She and her husband, a business owner in Torrington, have two grown children. For relaxation, she works out at the fitness center, plays tennis and participates in a fundraising event as one of 22 Hartford Hospital "Hart Rhythms" rowers in the annual Dragon Boat race at Riverfront Recapture.

Hope and Help

New Q-Control Module offers help for patients with paralysis

Imagine being paralyzed from the neck down from a spinal cord injury, suddenly unable to lift a hand to call for a nurse. Even tasks as simple as flipping a light switch, pushing a call button or turning on the TV seem beyond reach. Now, thanks to funding from the Hartford Hospital Auxiliary, patients who have lost the use of their hands can regain a sense of independence with a new $15,000 digital environmental-control system.

In the hospital, acute care therapists teach people how to use the Q-Control Module, which can store up to 2,500 different commands that let patients answer the phone, adjust the TV, raise and lower the bed, push the call button or open the blinds. The computer-controlled system transmits both radio and infrared signals, sending radio waves to distant nursing stations or pointing an infrared beam across the room to turn on the TV.

About the size of a small laptop computer, the Q-Control can be hardwired onto a hospital bed or mounted to a wheelchair or armchair. For those who retain some function in their hands, the single-switch option allows them to operate the controls with only a touch. Totally immobilized patients learn to activate the system by using their lips to blow into a "sip-and-puff" device shaped like a tiny straw.

The ability to manage daily activities means freedom and autonomy for someone who has lost the ability to move their arms or legs. "For an individual who is immobilized, the Q-Control Module restores a sense of independence after a stroke or spinal cord injury," says Hartford Auxiliary Co-Chair Debbie May. "It really makes a difference in someone's life."

Anyone who has suffered a debilitating illness or injury faces enormous lifestyle changes. Electronic wheelchairs, high-tech joystick controls and programmable digital devices like the Q-Control Module can help make everyday life manageable for those who have lost mobility. Rehabilitation, which begins as soon as someone arrives in the emergency department, is critical to survival and independence. Hartford Hospital provides both inpatient and outpatient rehabilitation services through its team of physical therapists, occupational therapists, speech/language pathologists and audiologists.

Many patients go to the hospital's 10-bed rehabilitation unit for continued care, while others receive outpatient services at Eastern Rehabilitation Network (ERN) locations throughout Connecticut or at home from VNA Health Care. "The rehabilitation nurses build strong relationships with both patients and their families," says Karen Brecher, PT, MA, director of Rehabilitative Services.

"Our goal is to help people improve function and develop independence," says occupational therapist Susan Fagan, OTR-L. "Prior to discharge from the inpatient unit, we visit patients' homes, take them shopping or go with them to the bank to help them 'reintegrate' into society. We make a long-term commitment to ensure a smooth transition home from the hospital."

Giving Cancer Cells the Freeze

Cancer patients who aren't candidates for surgery or other standard treatments now have an innovative alternative. Interventional radiologists at Hartford Hospital are using a new, minimally invasive technique, called percutaneous cryoablation, to freeze and destroy cancerous tumors. Hartford Hospital is the first hospital in Connecticut to offer this safe and efficient method of treating inoperable cancerous lesions.

"Removal of the tumor, when possible, is still the 'gold standard' for cancer treatment," says John E. Foster, M.D., of Connecticut Surgical Group. "But we are pleased to have a new option for high-risk patients who can't tolerate surgery because of advanced age, poor health, or other factors."

Percutaneous cryoablation is the latest technological twist in killing tumors. Using CAT scan guidance to visualize the lesions in real-time, Hartford Hospital doctors insert a thin metal probe through the skin directly into the cancer to super-freeze the tissues and destroy the tumor. Cryoablation kills cancerous cells by enveloping them in an ice ball that ruptures their cell membranes. "Cold is a natural anesthetic," explains John Straub, M.D., an interventional radiologist with Jefferson X-Ray Group. "The goal of palliative care is to extend life and improve comfort. With cryoablation, we can treat many primary and metastatic tumors of the liver, lungs, kidney and bone."

The procedure is especially valuable for primary liver cancer, which is difficult to treat with radiation or chemotherapy. "We're seeing a substantial increase in primary liver tumors among patients with chronic hepatitis C viral infection," says Dr. Straub.

"Cryoablation can shrink these tumors and keep patients on liver transplant lists," adds Dr. Foster. "It also retards tumor growth in lung cancer patients who aren't candidates for surgery because of respiratory diseases or who have failed chemo or radiation therapy."

Even frail and elderly patients have been able to easily tolerate the outpatient procedure, performed under light sedation and local anesthetic. Since the freezing technique tends to numb surrounding tissue, patients feel little or no pain. After a few hours of observation, patients typically go home the same day with only a band-aid over the insertion site. One patient went out to play golf the same day.

Hartford Hospital was the first hospital in the state to use percutaneous radiofrequency ablation to burn away tumors, but the freezing technique offers better treatment options since up to eight probes can be used simultaneously. "We can completely ablate small tumors with an ice-ball, and even inflate tiny balloons to displace and protect sensitive structures," says Dr. Foster. "One man with metastatic bone cancer reported pain relief within five minutes of undergoing cryoablation. It's a great feeling to be able to offer immediate, easily tolerated help to cancer patients."

Drs. Straub (left) and Foster use a freezing technique to treat inoperable tumors.

WHAT'S GOING AROUND...News & Breakthroughs

Hot Dogs Under Fire

Eating lots of hot dogs and sausage containing processed meat raises an individual's risk of developing pancreatic cancer, reports the University of Hawaii's Cancer Research Center and the University of Southern California. Their study of nearly 200,000 people over seven years found that a diet rich in pork and red meat increased pancreatic cancer by 50 percent.

Grapefruit Gripe

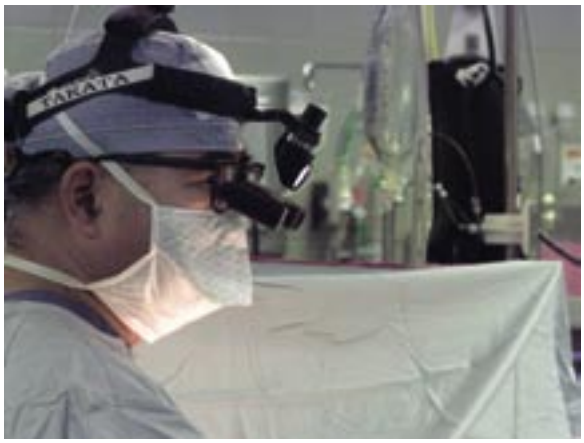
A recent survey found that physicians and pharmacists often overlook one of the most common sources of food-drug interactions. Grapefruit juice inhibits the CYP3A4 enzyme, which metabolizes certain drugs. Grapefruit enhances the effects of some common prescription medications. A database of potential grapefruit-drug interactions is available at the University of Florida's website, www.druginteractioncenter.org.

Midnight Munchies

Your genes may be to blame if late-night snacking throws off your diet, suggest Northwestern University researchers. Mice with a mutant "clock" gene tend to be active while other mice sleep, and develop metabolic irregularities linked to high cholesterol and weight gain. Scientists theorize that a brain system that controls sleep and waking cycles may also help regulate appetite and metabolism.

Zapping the Cell

A clinical trial of a promising gene therapy will soon enroll patients with advanced melanoma, a deadly form of skin cancer often resistant to treatment. Researchers at the University of South Florida have found a way to use electrical pulses to open up pores in the cell membrane to boost the immune response with snippets of tumor-fighting DNA.



Dr. Hiroyoshi Takata performs Mini-Maze surgery on an afib patient.

Heart Surgeon Beats Afib

Cardiac surgeon Hiroyoshi Takata, M.D., recently began performing a revolutionary procedure at Hartford Hospital to correct a common and potentially deadly heart disorder called atrial fibrillation ("afib"). The minimally invasive surgical technique called "Mini-Maze" can safely eliminate afib, an abnormality in the rhythm of electrical impulses in the heart.

An irregular heart rhythm interferes with the heart's ability to pump blood. Abnormal electrical impulses begin at the top of the heart and travel down the muscle, causing the atria, or upper chambers, to contract erratically. As a result, blood stagnates and pools in the poorly functioning atria, forming clots that can travel to the brain and cause stroke. Most afib patients require lifelong anticoagulant drug therapy to prevent dangerous clotting.

Approximately 2.2 million people in the United States suffer from afib, which raises the risk of stroke fivefold and contributes to the development of congestive heart disease and life-threatening arrhythmias. Each year more than 300,000 new cases of afib are diagnosed. Until now, patients have required open-heart "Maze" surgery to create new pathways for electrical impulses in the heart.

With successful Mini-Maze surgery, cardiac surgeons can permanently interrupt the abnormal electrical circuitry that causes afib. "We call it 'mini' because it's a minimally invasive version of open-heart Maze surgery," explains Dr. Takata, a cardiothoracic and vascular surgeon. "The Mini-Maze avoids potential surgical complications, and does not require a heart-lung machine. We can treat both the right and left atria with a minimum hospital stay."

The entire operation is performed through a small incision between the ribs. Guided by a fiberoptic camera, Dr. Takata destroys a small amount of tissue in the area near where the irregular impulses originate, leaving a thin ring of muscle that no longer conducts electrical activity. The technique restores normal heart rhythms by isolating the zone where the arrhythmia begins. Creating a "zone of defense" at the top of the heart helps protect the rest of the atrium from abnormal electrical impulses.

Dr. Takata is the first surgeon at Hartford Hospital to perform the procedure, which nationally boasts success rates of 80 to 90 percent within six months. Experience so far indicates that Mini-Maze surgery may be most effective in patients who suffer unexpected episodes of atrial fibrillation rather than chronic arrythmias.

"Patients can often be maintained in normal rhythms without medication, and at the same time we can remove the left atrial appendage, an outpouching of the left atrium where blood clots often form," says Dr. Takata. "We are very excited about Mini-Maze surgery because we now have a reliable procedure designed to permanently eliminate afib and significantly reduce the risk of stroke."

Parvo Peril

A pathogen called parvovirus B19 causes flu-like symptoms and a distinctive slapped-cheek rash in children. In an unborn baby, "Fifth's disease" can cause life-threatening anemia. Pregnant women who contract the virus risk miscarriage, warns the March of Dimes, which urges women to ask their doctors for a blood test and to avoid young children during pregnancy if they test negative for prior infection.

Taking Aim at Tumors

Researchers at the Institute of Cancer Research, London, say a new drug successfully targets tumors in lab mice. The "PARP inhibitor" causes flawed BRCA1 and BRCA2 genes to self-destruct by blocking a key enzyme involved in DNA repair. Women carrying the defective genes have up to an 85 percent chance of developing breast cancer by age 70.

Brain Gain

Experiments in mice both prevented and reversed the development of Alzheimer's plaque in the brain, say researchers at Chicago's Rush University Medical Center. Injecting mice brains with antibodies prevented the early onset of Alzheimer's, while more advanced cases showed up to 70 percent plaque reduction. If clinical trials are successful, the treatment could become widely available within four to five years.

Menopause Moves

German researchers urge women to experience the benefits of exercise in the first few years of menopause. A three-year study showed that women who exercised had better bone density, lower cholesterol and blood fats, stronger muscles, slimmer waists, improved endurance, less insomnia and fewer migraines or mood swings. Other research has shown that aerobic exercise may help prevent depression.

| in the DOCTOR'S OFFICE |

Pregnant Smokers: Depressed and Stressed

Why would a pregnant smoker put her unborn baby at risk? What interventions might help her quit? More than 20 percent of all pregnant women smoke, and most find it tough to quit during pregnancy. Smoking raises the risk of infant mortality, low birth weight, miscarriage, premature delivery, stillbirth and sudden infant death syndrome (SIDS). Predictors of smoking during pregnancy—major depression and exposure to a traumatic event—occurred at unusually high rates among urban, minority, low-income pregnant women in Hartford Hospital's recent study.

With funding from the Donaghue Foundation, Ellen Dornelas, Ph.D., director of behavioral health programs in preventive cardiology at Hartford Hospital, found that a single intensive 90-minute counseling session, with phone follow-up, helped pregnant women quit. Although 28 percent of women in the intervention group quit smoking while pregnant, nearly all of them returned to smoking after the birth of their baby.

"For every dollar we spend on prevention, we save six dollars in health care costs," says Dr. Dornelas. "We found that the psychotherapy intervention tripled end-of-pregnancy abstinence rates in a population of low-income, predominantly Hispanic, urban-dwelling women. We need programs that help women to stay abstinent from smoking after childbirth because high stress levels often lead to relapse. A third of the women who did not quit smoking—and 17 percent of those who did—screened positive for depression."

"Low-income pregnant smokers are at risk for major depressive disorder and are more likely to have a trauma history," adds Roxanne Stepnowski, Psy.D., who recently joined Hartford Hospital's Department of Women's Health as a clinical psychologist. Among low-income pregnant smokers recruited from the hospital's prenatal clinic for an ongoing research study, 13 percent met diagnostic criteria for a current major depressive episode and 10 percent reported a history of suicide attempts. More than half of the women reported past exposure to a traumatic event such as assault, murder, fire or accident.

"What keeps pregnant women smoking?" asks Dr. Dornelas. "It's hard to quit when you're feeling distressed. Many of the clinic patients we counseled had financial woes and marital or relationship problems, and were relatively young, poor and uneducated. Pregnant smokers with clinical depression might benefit from more intensive interventions, such as multiple counseling sessions or home visits."

"Pregnant smokers with depression or post-traumatic stress disorder may require behavioral interventions that simultaneously incorporate strategies to treat the nicotine addiction as well as the concomitant psychiatric disorder," adds Dr. Stepnowski.

"Pregnancy is a time when women make lots of changes," says Dr. Dornelas. "Quitting smoking should be at the top of the list."

If you're a pregnant smoker who wants to quit, call (860) 545-4199 for a free referral to a smoking cessation program and research studies for pregnant smokers.

Plastic Pitfalls

Especially during hot summer months, your plastic water bottle may be teeming with germs, a breeding ground for bacteria and other pathogens.

If you're one of the many who refill and reuse designer water bottles rather than recycling them, you may be at risk for unhealthy contamination. "Despite the convenience of refilling bottles with tap water, plastic water bottles aren't meant to be used again," explains Ann Zogbaum, MS, RD, CND, a clinical dietitian at Hartford Hospital's Helen and Harry Gray Cancer Center. "Many plastic bottles are not dishwasher safe, so unlike glass, they can't be washed at high enough temperatures to kill bacteria."

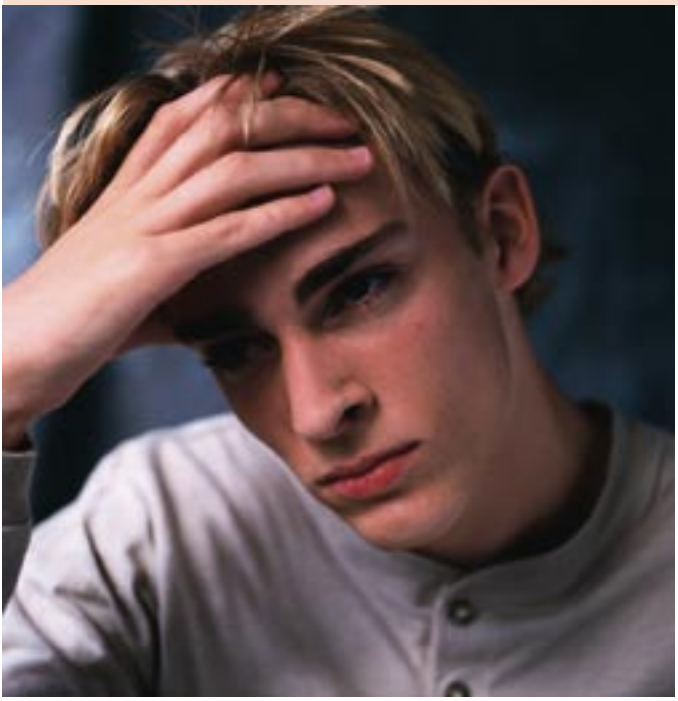
Both the International Bottled Water Association and the United States Food and Drug Administration (FDA) warn that plastic water bottles are designed and approved for one-time use only. Bottled water allows bacteria to multiply more rapidly than tap water does because it generally does not contain chlorine. Most bottled water comes in non-food grade plastic bottles that break down more readily than heavy-duty sports bottles manufactured to be reusable, especially if left out in the sun on a hot summer day. Cracks or crevices in the plastic create a perfect environment for bacteria to multiply.

"It is safer to throw a bottle away if you see scratches in the plastic," warns Zogbaum. "Cracks and scratches make bottles difficult to clean, and allow bacteria to accumulate. Plastic bottles that aren't dishwasher safe require a thorough scrubbing with hot, soapy water and a bottlebrush, and should be allowed to dry completely after each washing. It's safer to recycle."

When it's hot out, warm water and saliva, along with frequent handling of the bottle's brim, can create a noxious brew. Because bacteria tend to build up around the cap and lip of the bottle, you shouldn't share your water bottle with family members or friends. "People aren't always careful about spreading germs when they're thirsty," adds Zogbaum. "Cross-contamination occurs as the bottle is passed from person to person, increasing the chances of making someone sick."

Insights into the ADHD Brain

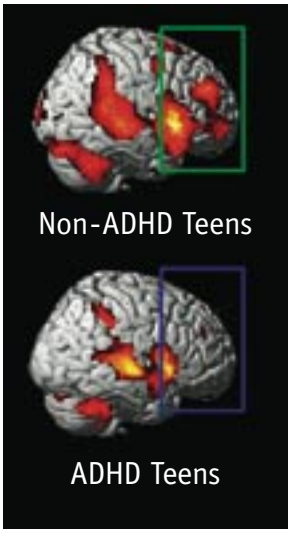
Imagine thoughts flying through your brain. You fidget and twist in your seat. You take aim, but ideas veer and soar, then drift idly away.



For teenagers with attention-deficit/hyperactivity disorder, or ADHD, school is often a bleak nightmare of boredom and distraction. What causes a short attention span and inability to concentrate? For psychiatrists, researchers and parents, the disorder remains a puzzling riddle. "More studies are published about ADHD than any other psychiatric disorder," says Michael C. Stevens, Ph.D., a senior research scientist at the Olin Neuropsychiatry Research Center at The Institute of Living and assistant clinical professor of psychiatry at Yale University. "We know a lot about it, but not enough, because what we know is still confusing and unclear. What we're learning about brain structure and neural functioning in ADHD teenagers shows that ADHD is undoubtedly real and related to how the brain works."

A growing body of evidence confirms that teens who suffer from ADHD aren't deliberately disruptive or lazy, but instead are tortured by a stunning inability to sit still or concentrate. They blurt out thoughts impulsively and appear disorganized or aloof. Complex instructions leave them bewildered. Impulsive, hyperactive and distracted, they're lost in fragmented and broken thoughts.

What if you could peer into their brains and see what they're thinking? With sophisticated noninvasive tools like functional magnetic resonance imaging (fMRI), researchers are now mapping the regions of the brain and measuring activity in the frontal cortex, the seat of many higher-order cognitive functions. Neuroimaging reveals significant anatomical and structural differences in the brains of people with ADHD.



Neuroimaging reveals significant differences in neural activity in the frontal lobe of ADHD teenagers, compared to healthy subjects during an auditory attention task.

Inside a long, tube-like MRI machine, nestled in blankets in the darkness, subjects listen and respond to random beeps. In one test, for example, called the "auditory oddball" test, a series of beeps on one note is played, followed occasionally by a beep on another, higher, note. The auditory experiment measures activity in the brain's frontal cortex. By studying brain activity in ADHD and non-ADHD subjects, it is possible to characterize exactly what is different about ADHD brain function. Researchers hope that understanding the differences will eventually lead to better diagnosis and treatment.

Building on previous research studies that have found that children with ADHD have smaller brain volumes and less white matter, Dr. Stevens is seeking subjects for fMRI, electrophysiological studies, and cognitive and genetic testing. Over the course of his five-year research funding, Dr. Stevens will compile the largest fMRI study of ADHD ever completed, creating a database of brain images that will eventually help scientists pinpoint what's going on in the brains of people with ADHD.

While some adults with ADHD find that their brain compensates over time, others spend their lives in a dreamy fog of loneliness and confusion. "A popular-culture bias is to think that medications are only a 'crutch' and that kids eventually outgrow ADHD," says Dr. Stevens. "Although it is not yet known if a structurally different brain normalizes when someone takes medication for ADHD, symptoms often lessen as people age. However, for many ADHD adults, it is best to continue to take medications if daily functioning improves. We may not completely understand why medications work, but the fMRI images convincingly show that ADHD medications change brain activity in regions known to be important to attention and behavioral control. We no longer have the option of disbelieving."

Dr. Stevens is seeking subjects for two studies, both teenagers and adults who take medications for ADHD, and healthy volunteers. For more information, call (860) 545-7545.

Cook's Circle

A Real Smoothie...

Accessories courtesy of the Hartford Hospital Auxiliary Gift Shop.

Luisa Machado, physician liaison and manager of Hartford Hospital's Health Referral Service, adapted this recipe from one she found on the back of a carton of plain yogurt. Over time, she has created the fruit smoothies that her five nephews, ranging in age from 5 to 14, love to concoct. "Kids enjoy it because they can decide what to put in," she says, "They love to make it and it's good for them."

Ingredients

½ cup fat-free plain yogurt
½ cup orange juice
1 cup fresh or frozen fruit and/or berries
1 ripe banana
1 ripe kiwi
1 cup ice
1 Tbsp. honey (optional)

(Proportions should be about one cup of ice for every cup of fruit or berries. Frozen fruit may contain more water, so adjust accordingly.)

Place all ingredients into a blender and mix on low speed for about 30 seconds. Increase speed to high for another 30 seconds. If mixture is too thick, add orange juice; if it's too thin, add yogurt. Honey can be used as a sweetener if you like. Garnish with fresh fruit. *Makes 2 servings.*

Per serving:

Calories: 150 (180 with honey)
Total fat: .5 g
Protein: 4 g
Carbohydrate: 35 g (44 g with honey)
Dietary fiber: 4 g
Potassium: 521 mg
Calcium: 106 mg
Vitamin C: 81 mg
Cholesterol: 1.3 mg
Sodium: 42 mg

Analysis by Candice N. Jones, University of Connecticut Dietetic Intern at Hartford Hospital

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