

S P R I N G
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ROUNDS

HARTFORD HOSPITAL'S WELLNESS MAGAZINE



Motorcycle MADNESS



The data are clear and convincing. Motorcycle helmets help save lives. A recent federally funded study found helmets to be 29 percent effective in preventing motorcycle fatalities and about 67 percent effective in preventing brain injuries.

Head trauma is a leading cause of death in motorcycle crashes. Emergency room doctors see firsthand the destructive power of motorcycles—torn genitals, brain damage and paralysis, among other injuries. Trauma physicians like Brett Frey, M.D., of Hartford Hospital's Emergency Department urge legislators to bring back mandatory helmet laws.

Prior to 1975 most states required all motorcyclists to wear helmets, though many have repealed their lifesaving laws on the grounds that they infringe on personal freedom. Today, fewer than half of the states mandate universal helmet use.

An unhelmeted rider is 40 percent more likely to suffer a fatal head injury than a helmeted rider, according to the National Highway Traffic Safety Administration (NHTSA).

Death rates from head injuries have been shown to be twice as high among motorcyclists in states with no helmet laws or laws that apply only to young riders, compared with states where laws apply to all riders. Connecticut requires motorcyclists and passengers 17 and younger to wear helmets.

According to NHTSA, helmet use saved \$13.2 billion in economic costs from 1984 to 1999. An additional \$11 billion would have been saved if all motorcyclists had worn helmets.

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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.

S A F E T Y T I P S

Cycle Sense

When warm weather arrives, motorcyclists take to the road. Per mile traveled, the number of deaths on motorcycles is 16 times higher than in cars. Though motorcycles are more likely than cars to be involved in crashes, riders can help protect themselves from devastating injury with these lifesaving tactics:

- Always wear a helmet (*see above*).
- Wear leathers (20 times more protective on asphalt than jeans).
- Never ride when temperature is above 90° F.
- Wear gloves for warmth and protection.
- Avoid excessive front tire wear.
- Maintain proper tire pressure (stamped on outside of tire).
- Use waterproof sunblock. (Wipe off before putting on a visored helmet.)
- Never drink and ride (40% of deaths in single-vehicle crashes involve drivers with blood alcohol levels over the legal limit).

For more motorcycle safety tips, go to www.msgroup.org.

PHYSICIAN PROFILE

Linda Taylor, M.D.

Linda Taylor, M.D., is a Board-certified obstetrician-gynecologist with Gynecology and Obstetrics, Physicians for Women's Health. She graduated from Kalamazoo College and University of Michigan School of Medicine, where she also did her residency in Obstetrics and Gynecology. Linda Taylor was among the "Top Docs" in Connecticut Magazine's listing of "Best Doctors in America." She enjoys traveling, especially to Asia, and has visited Thailand, Nepal, China, Bali, and other islands in Indonesia, as well as Vietnam and the Philippines. Other hobbies include cross-country skiing (especially at a cabin in the woods of Northern Ontario that she and her husband Tom built from standing timber with college friends), gardening in the summer, and sitting by the shores of Lake Michigan with a good book. When she retires, she plans to donate her time and medical expertise to Third World countries.



COLLECTING
UMBILICAL CORD
BLOOD CELLS
SAVES LIVES

Lifeline



After a baby is born, another push expels the placenta, a flat, pancake-shaped organ that has nourished the fetus through the umbilical cord for nine months. Weighing about a pound, the afterbirth and cord used to be tossed away. No one realized the value of the three or so ounces of blood contained in the cord and placenta.

In the last decade, however, hundreds of lives have been saved with transplants from donated cord blood. Today it is known that cord blood is a plentiful source of "stem cells," the precursors of all the blood in the body, from infection-fighting white cells to oxygen-carrying red cells to platelets that allow clotting. The stem cells from a single placenta are enough to rebuild the blood and immune system of someone with leukemia whose own stem cells have been destroyed by chemotherapy.

Thanks to the invaluable assistance of the Labor & Delivery nurses at Hartford Hospital, new mothers can donate to the American Red Cross Cord Blood Donor Bank. After the baby is born, stem cells harvested from the now "useless" umbilical cord, can be collected and stored until needed. Cord blood transplants can be "typed" and entered into a searchable database similar to the one used to match organ donors.

Every year, about 9,000 patients are diagnosed with diseases that could be treated by transplantation of stem cells. Only a quarter of them will find a match in bone marrow registries, and as many as 6,000 Americans die each year while awaiting a bone marrow transplant.

African Americans, Hispanics, Native Americans and other ethnic minorities often have difficulty finding a proper match because of the relative scarcity of donors.

Although 60 percent of white Americans now find a bone marrow match, only 20 to 50 percent of minorities do so. More than 70,000 Americans, most of African descent, suffer from a blood disorder called sickle-cell anemia that could potentially be cured with a stem cell transplant.

"We are very interested in recruiting minorities as cord blood donors for patients with cancer or blood disorders," says Jack Greene, M.D., Assistant Director of Women's Health, who supervises the cord blood collection.

"Cord blood is more likely than bone marrow to work when the donor and recipient are unrelated," adds Marie Gannon, site coordinator for the Red Cross. "You're also more apt to obtain a match within your own ethnic group."

"Although a bone marrow transplant has a slight advantage over transplanted cord stem cells, cord blood does not need to be as closely matched as bone marrow," explains Linda Taylor, M.D., an obstetrician-gynecologist at Hartford Hospital. Since cord cells are immunologically naive, they are less likely to trigger graft-versus-host disease, a potentially deadly complication.

Until recently, stem cells from cord blood were only used for children. Researchers thought at first that cord blood contained too few cells to reconstruct the blood and immune system of an adult. New research has shown that umbilical cord cells proliferate so rapidly that they can rebuild the immune system of an adult.

"Pregnant women who wish to donate lifesaving cord blood to the Red Cross should talk to their obstetricians at about week 28 to 30," says Dr. Taylor. "You just need to complete a medical history and consent to screening for HIV, hepatitis and other infections."

Rays Of Hope: Linear Accelerator



Dr. Andrew Salner and the Cancer Center's new linear accelerator.

The powerful new linear accelerator at the Helen & Harry Gray Cancer Center harnesses the elemental forces of nature, delivering high doses of radiation to tumors while sparing surrounding tissue. Intensity-modulated radiation therapy (IMRT) integrates state-of-the-art imaging software with the most sophisticated radiation design and delivery system available to make treatments safer and more effective.

Using IMRT, radiation oncologists can “shape” a precisely calculated dose of radiation, tailored to match the contour and depth of each specific tumor. IMRT even allows physicians to wrap radiation around a patient’s spine to avoid potentially paralyzing damage to the spinal cord. This technique relies on highly accurate imaging information, such as that provided by the hospital’s new PET/CT scanner, as well as a unique planning computer system that calculates these very complex dynamic radiation treatment plans.

It is, they say, like being able to write your name with a radiation pen.

“We can fashion the shape of the radiation dose while shielding areas like the spinal cord or other normal structures,” says Andrew L. Salner, M.D., director of Hartford Hospital’s Cancer Program. “The new technology gives us significantly greater ability to focus radiation while protecting healthy tissue. As a result, we can use higher doses to treat tumors that we couldn’t treat well before.”

State-of-the-art equipment delivers precisely targeted doses of radiation by means of computer-controlled mechanical device called a “multileaf collimator.” The collimator has adjustable tungsten “leaves” that shape the radiation beam to conform to a tumor. The collimator can be adjusted on the fly during treatment to modulate the intensity of the beam, taking what was once a single beam and creating hundreds of “beamlets” from each angle of dose delivery.

“We can fine-tune the edges of the radiation field into curves instead of a square,” says Robert Lindeyer, the hospital clinical engineer responsible for assuring the equipment’s pinpoint accuracy. “We can even monitor a patient’s breathing pattern and calculate the period between breaths so we can deliver radiation while the patient’s chest isn’t moving.”

“Each time a patient breathes, it causes organs to move,” explains Dr. Salner. “We are researching ‘respiratory gating’ in a pilot study to learn how best to treat patients with lung and upper abdominal cancers. Our aim is to deliver radiation midway through the respiratory cycle when the patient’s organs are in a predictable position.” Such research demands the expertise of the Radiation Oncology Department’s team of physicians, physicists, dosimetrists, engineers, and technologists.

“A significantly large number of patients will ultimately benefit from the new technology,” says Dr. Salner, who says IMRT may be used for selected gynecological cancers, as well as tumors of the prostate, breast, lung, pancreas, head and neck.

What’s going around...News & Breakthroughs

Stroke-Stopping Vampires?

An ischemic stroke occurs when a clot or narrowed blood vessel keeps blood from reaching the brain. Vampire bat saliva, potentially safer than clot-busting drugs, may someday be used to stop a stroke in progress, says the American Heart Association. Vampire bats secrete a potent clot-dissolving substance to keep blood flowing while they feed.

Asthma Drug Hip Risk

Inhaled steroids cause bone loss and may raise the risk of hip fracture by nearly 30 percent in elderly patients, warns the *American Journal of Respiratory and Critical Care Medicine*. Inhaled corticosteroids like Azmacort and Flovent—among the most effective drug treatments for persistent asthma—raise the risk of osteoporosis and bone fractures.

Beta-Amyloid and Alzheimer’s

Lowering blood levels of beta-amyloid protein may offer a potential approach to treating Alzheimer’s disease, according to a study funded by the National Institutes of Health and the Alzheimer’s Association. Amyloid plaques accumulate in the brains of people with the disease, possibly contributing to the degeneration and dementia of Alzheimer’s.

Hereditary Heartbeat

A gene mutation has been linked to a type of heart-beat irregularity called atrial fibrillation, reports *Science*. Researchers studied four generations of a Chinese family with a history of the disorder, which reduces the pumping efficiency of the heart, causing blood clots and heart failure. Atrial fibrillation afflicts more than 5 percent of people over 65.

Dual PET/CT for Early Diagnosis

Hartford Hospital is the first medical facility in New England to offer the revolutionary diagnostic capabilities of a combined PET/CT scanner, which blends two highly sophisticated digital technologies to detect cancer earlier and more accurately.

The innovative PET/CT imaging system manufactured by GE captures the digital data necessary to use images captured by two types of radiology procedures—Positron Emission Tomography (PET) and Computed Tomography (CT), or “cat” scan.

According to Ronald J. Rosenberg, M.D., director of Clinical Nuclear Medicine, the PET/CT creates vivid, three-dimensional images that reveal exactly where tumors are located and how far the cancer has spread. The color PET scan can be superimposed over the black-and-white CT scan to pinpoint the exact location of the cancer. “In the past, we had a PET scan in one hand and a CT in the other,” says Dr. Rosenberg.

“For example, PET/CT allows accurate staging (identifying the advancement) of lung cancer and tells us which lymph nodes to remove,” says Dr. Rosenberg. “We can see whether chemotherapy is working or whether we should switch to another drug that might be more effective.”

When a tiny amount of radioactive material is injected into the blood, the PET scanner displays cancer cells as a colorful glowing spectrum. In one continuous full-body scan, which usually takes about a half hour, PET can detect microscopic changes in the body’s metabolism caused by the growth of abnormal cells. The CT scan pairs X-ray beams with digital processing to produce cross-sectional image

“slices” that map the exact shape, size and location of a tumor.

With the dual PET/CT scanner’s ability to detect malignant cells anywhere in the body, doctors can determine whether cancer has metastasized or recurred. PET/CT helps reduce unnecessary tests and biopsies, and helps determine how well patients are responding to chemotherapy or other treatment regimens. The combined technology is also faster than conventional PET scans, in addition to being more accurate.

The outpatient PET/CT procedure is used predominantly for lung cancer, esophageal cancer, lymphoma, colon carcinoma and rectal cancer, breast cancer, melanoma and head and neck cancer. In the future, PET/CT will probably also be used to characterize heart disease and to diagnose early Alzheimer’s disease.



Dr. Ronald Rosenberg uses the PET/CT system for more accurate cancer diagnoses.

Extinguish Teen Smoking

The smoking rate among New Hampshire middle school students dropped by half after cigarette makers raised prices to more than \$3 per pack, according to the Centers for Disease Control and Prevention. Anti-smoking advocates said the research findings support their claim that increasing cigarette prices helps stop youngsters from smoking.

Viagra Peril

Platelet clumping may be the cause of heart attack and stroke in some men who take Viagra, say researchers at the University of Illinois at Chicago College of Medicine. The impotence drug can lead to clotting that in rare cases causes heart attack and stroke, according to the *Journal of the American Medical Association*.

Dump the Gas Mask

Connecticut’s Department of Public Health strongly discourages individuals from purchasing gas masks for protection against biological warfare agents. To be effective, masks must be worn at all times—obviously impractical and even dangerous. Improper use or poor fit can cause serious injury or accidental suffocation, especially among heart or lung disease patients.

Anthrax Action

According to the *Proceedings of the National Academy of Sciences*, a genetically engineered form of anthrax may soon target and kill cancer cells with fewer side effects than conventional chemotherapy. Though anthrax is best known as a toxin with bioterrorist potential, an engineered form of the protein effectively zapped tumors in mice without damaging surrounding tissue.

Migraine Mysteries



Though everyone occasionally has a headache, migraines are excruciating and disabling. If you're blinded by throbbing, pounding, pulsating pain lasting from hours to three days, along with nausea or vomiting, it's probably a migraine.

Your eyes may play tricks on you. You may become sensitive to light or noise. About 15 percent of patients see twinkling lights or experience tunnel vision, numbness, tingling or weakness—the telltale “aura” just before a headache's onset.

More than 28 million Americans suffer from migraines. About three times more women than men have migraines, which often arrive at puberty and improve after menopause. Women may find their symptoms worsen if they take birth control pills or hormone replacement therapy. Up to 80 percent of sufferers have a family history of the malady.

“I often see patients whose migraines have been misdiagnosed,” says Tanya R. Bilchik, M.D., a neurologist who recently established the Headache Clinic at the Hartford Medical Group's West Hartford/Elmwood office. “They're told they have sinus headaches—when they have no fever or nasal discharge! Overtreating with barbiturates or medications like Excedrin can cause a ‘rebound’ effect that makes migraines worse.”

Newer medications work better than standard analgesics such as aspirin, ibuprofen or Tylenol. About 70 percent of people find relief with one of the triptans (Imitrex, Zomig, Maxalt, Axert, Frova, Amerge), which also help the nausea and vomiting that can accompany a migraine.

“New ‘designer drugs’ are changing the way we treat headaches,” says Dr. Bilchik. “Migraines used to be explained as neurovascular episodes caused by dilated blood vessels, but now we know it's more complex.”

In the not too distant past, migraine sufferers lay in darkened rooms for days waiting for an intractable

headache to pass. “Today there are preventative medications and lifestyle changes that can stave off headaches,” says Dr. Bilchik. Don't skip meals, get enough sleep, exercise regularly and avoid ‘trigger’ foods, including cheese, chocolate, red wine, hot dogs, preservatives, MSG and Nutrasweet.

“Antidepressants help some patients whose migraines are related to anxiety or depression,” says Dr. Bilchik. “Anti-seizure medications, anti-hypertensives and newer anti-inflammatory drugs like Celebrex, Bextra and Vioxx are also being tried with promising results.”

One of the newest treatments for migraine prevention is Botox, the deadly neurotoxin *Clostridium botulinum*, which in purified form is used to treat muscle spasms, certain movement disorders called dystonias and to smooth forehead wrinkles. Although still considered experimental by the Food and Drug Administration, the American Headache Society is reviewing the results of clinical trials. Dr. Bilchik does Botox injections for severely afflicted headache sufferers who have not responded to other medications.

The Headache Clinic offers a healing combination of a neurologist, chiropractor, physiatrist, massage therapy and musculoskeletal rehabilitation in a multidisciplinary practice. Call Dr. Bilchik's office at (860) 522-4429 to set up a headache consultation, with your primary care physician's referral.

w a r n i n g s i g n s

ULCERS

Ulcers are often caused by bacteria, *Helicobacter pylori*, which damage the lining of the stomach or small intestine. Anti-inflammatory medicines such as aspirin, ibuprofen (Motrin), naproxen (Aleve) and some prescription arthritis drugs may also contribute to an ulcer.

You may have an ulcer if you have a dull, gnawing ache in your stomach that is relieved by food or antacids. Typically the pain comes and goes, occurring a few hours after a meal or in the middle of the night when your stomach is empty. Medications can be used to control symptoms.

Ulcers can lead to problems like bleeding, perforation (the ulcer eats through the wall of the digestive tract) or obstruction (the digestive tract is blocked and food can't leave the stomach).

See your health care provider immediately if you experience:

- ongoing nausea or repeated vomiting
- bloody vomit
- sharp, sudden, persistent stomach pain
- bloody or tar-like black stools
- continued weight loss
- pain that reaches to your back

IMAGES OF SCHIZOPHRENIA



BRAIN SCANS COULD SIGNAL EARLY ACTION

Schizophrenia typically strikes young adults, plummeting sufferers into an abyss of tormenting voices, disordered thinking and all too real hallucinations. Although schizophrenia afflicts both men and women in equal numbers, the disabling mental illness usually hits men in their late teens and women in their mid to late twenties. For many victims of this chronic disorder, life can become a bewildering blur of delusions and dark confusion.

Schizophrenia is surprisingly common, afflicting one in every hundred people; more than two million Americans have the disease. Hormonal factors may explain why

women tend to have a milder form of the disease and respond better to medication. As many as 10 percent of sufferers, usually younger adult males, commit suicide, most often in the first year after diagnosis. Schizophrenia is found everywhere in the world and often runs in families.

There is clearly a genetic component to the disease, but environmental factors also play a significant role in those already at risk, explains Godfrey Pearlson, M.D., director of the Olin Neuropsychiatry Research Center at The Institute of Living. If you have a sibling with schizophrenia, it raises your risk to 15 percent. If your identical twin has the disease, you only have a 50 percent chance of getting schizophrenia even though the two of you are exactly the same genetically.

Many researchers now believe that multiple abnormal genes may predispose individuals to the disorder. Patients with schizophrenia often have relatives with mild, subclinical forms of the disease, explains Dr. Pearlson. Socially isolated, odd or eccentric family members are often found among individuals with schizophrenia. Viral infections, prenatal complications, a difficult birth requiring forceps all may potentially trigger the disorder, but only in those already genetically susceptible. Researchers are curious about whether teenagers who are genetically at risk but asymptomatic should be treated with antipsychotic drugs in an attempt to stave off the disease.

Using an imaging technique called functional magnetic resonance imaging (fMRI), researchers at The Institute of Living are visualizing previously uncharted regions of the brain, using scanning technology originally developed to study cognitive function. "We plan to detect very subtle functional changes before the onset of psychosis," says Dr. Pearlson. "Our hope is to identify patterns in the brains of people with the earliest manifestations of schizophrenia so we can offer earlier and more effective treatment."

Dedicated solely to researching neuropsychiatric disorders, the fMRI laboratory integrates monitoring systems, including a state-of-the-art fMRI scanner, the first of its kind in Connecticut, and electrophysiology recording equipment. The collaborative research team, which includes Yale University and University of Connecticut research partners, is housed in a sunlit, 16,000 square-foot suite of offices and clinical research space in the newly renovated White Hall Building on The Institute of Living campus.

Mustard-Grilled Chicken and Spinach Salad

Serves 6

4 skinless boneless chicken breasts, cut into strips
 1/2 cup balsamic vinegar
 1/2 cup olive oil
 2 Tbs. Dijon mustard
 2 cloves garlic, minced
 black pepper
 6 cups spinach, torn
 1 cup mushrooms, sliced
 1/4 cup green onions, chopped
 2 hard cooked eggs, chopped



Pasta/salad bowl and Parmesan cheese shaker courtesy of the Hartford Hospital Auxiliary Gift Shop.

Charlotte Meucci, D.T.R., a registered dietetic technician, works in the Outpatient Congestive Heart Disease Center. She provides education and follow-up about low-salt diets, as well as lecturing on nutrition and hosting an annual low-sodium luncheon. Patients are referred by their doctors to the nurse practitioner-run program, which provides education about healthy diet, exercise and medication, with regular phone calls for symptom monitoring. The goal of the center is to help patients and their physicians to manage their congestive heart disease while improving their quality of life.

Place balsamic vinegar, olive oil and mustard in mixing bowl. Whisk together until emulsified and mustard is evenly distributed. Add garlic and black pepper.

Lay chicken in bottom of shallow baking dish and coat with marinade. Cover and refrigerate at least one hour, then flip chicken, recoat and refrigerate at least one more hour (or longer). Grill chicken until done.

In large salad bowl toss together grilled chicken, spinach, mushrooms, onion, and egg. Toss with balsamic vinegar and olive oil, or make a fresh batch of mustard mixture to use as dressing. DO NOT use leftover from marinated chicken.

*Calories: 329
 Protein: 29 g
 Carbohydrates: 14.5 g
 Fiber: 4.5 g
 Total Fat: 23 g (> 70% is monounsaturated)
 Cholesterol: 135 mg*

*Sodium: 233 mg
 Vitamin A: 1,518 RE or 217% DRI*
 Vitamin C: 196 mg or 262% DRI
 Iron: 3.5 mg or 19% DRI
 Folate: 252 mcg or 63% DRI*

**Dietary Reference Intake based on RDA for a female aged 19-50*

This recipe is an excellent source of Vitamins A and C, and folate. It is a good source of fiber and iron, as well as relatively low in sodium and cholesterol and a good source of heart-healthy monounsaturated fat.

Recipe analyzed by Brunella Ibarrola, MS, RD, CD-N.