

S U M M E R  
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# ROUNDS

HARTFORD HOSPITAL'S WELLNESS MAGAZINE





## SimMan Does the Circuit

*Dr. Thomas Mort and Stephen Donahue work with SimMan.*

Hartford Hospital's SimMan travels around the hospital, springing surprise scenarios on students and staff to sharpen their clinical and decision-making skills. The blond, handsome, plastic SimMan (short for *simulated man*) sometimes sports a bruised and bleeding face that makes him resemble a trauma victim. Other times he's a heart-attack victim with a difficult airway lying unconscious in the ICU or the hallway leading to the parking garage.

Powered by a laptop computer and an air compressor, the patient simulator is controlled by computer chips and an air hydraulics system. "He breathes, his chest rises and falls, his tongue swells, he clenches his jaw, he has pulses and heart sounds," says Thomas C. Mort, M.D., an anesthesiologist who heads the Human Crisis Simulation program.

"We can make him talk. Students can ask questions and he replies. We use audio messages, such as screams of agony or complaints of pain and shortness of breath, which add to the realism of the training sessions."

SimMan can become a woman, with the addition of a wig, breasts and reproductive organs. Affectionately named "Witold" after the chief of the Department of Anesthesiology, Witold Waberski, M.D., the realistic-looking simulator teaches anesthesia, medical, cardiac and intensive care teams how to collaborate in a crisis. "We can videotape the team to see how they handle a life-and-death situation," says Stephen Donahue, R.R.T., assistant director of Human Crisis Simulation and a respiratory therapist who works with SimMan at the hospital's Center for Advanced Technology.

Nurses, medical residents, doctors and trauma staff may administer medications, intubate the airway, call for crash carts, defibrillate or cardiovert any arrhythmias to resuscitate the patient as SimMan's condition rapidly worsens. "The focus of human crisis simulation is on individuals working together in a rapid, efficient and competent manner to optimize patient care," says Dr. Mort.

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Hartford Hospital's Wellness Magazine

### Hartford Hospital

80 Seymour Street  
Hartford, CT 06102-5037  
(860) 545-5000

### Health Referral Service

(860) 545-1888 or  
(800) 545-7664

[www.harthosp.org](http://www.harthosp.org)

### Rounds Medical Advisory Board:

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Writer: Jane Bradley  
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Calendar  
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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



Food  
Fright

More than one billion pounds of pesticides are sprayed in the United States each year. Though long-term health consequences of these chemicals—often used in combination—are unknown, several have been shown to disrupt the endocrine (hormonal) system. Fight back against pesticide-laden food to protect your health:

- Scrub fruits and vegetables thoroughly in running water, or diluted dishwashing liquid (rinse thoroughly to remove detergent).
- Discard the outer leaves of leafy vegetables such as lettuce and cabbage.
- Trim fat from meat (pesticide residues concentrate there).
- Remove fat and skin from poultry and fish.
- Grow your own fruits and vegetables. (Avoid edging gardens with pressure-treated wood, which contains high levels of arsenic.)
- Eat a varied diet that contains lots of organic fruits and vegetables.

Pesticides that mimic the effects of estrogens may be implicated in breast cancer. *Occupational and Environmental Medicine* reports that women with breast cancer were more than five times as likely to have traces of the pesticide DDT in their blood than women without breast cancer. Though banned in 1972, DDT can remain active in tissues for years.

## PHYSICIAN PROFILE

### Andrew J. Ricci, M.D.

Andrew J. Ricci, Jr., M.D., a senior surgical pathologist at Hartford Hospital, is Board-certified in anatomic and clinical pathology. Pathologists analyze tissue from biopsies to guide oncologists in selecting the best course of treatment, especially critical for breast cancer patients who may have a variety of tumor types. He also analyzes biopsy results from gastrointestinal, bone or soft tissue tumors.

A graduate of New York Medical College, Dr. Ricci interned at Beth Israel Hospital/Harvard, followed by a fellowship in tumor pathology at New York's Memorial Sloan Kettering Cancer Center. An assistant professor of pathology at the University of Connecticut, he is an avid road cyclist who can ride 100 miles in just over five hours. He also sings, writes songs and plays his guitar for friends.



# Targeting Tumors

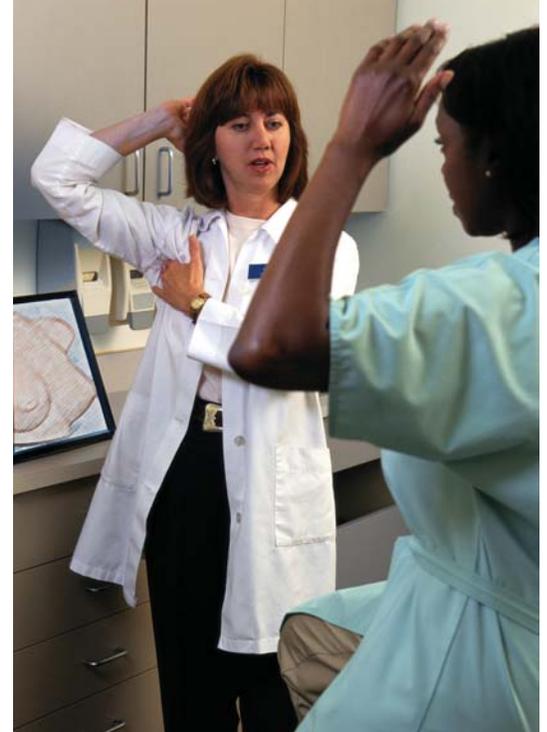
## Herceptin Blocks Breast Cancer Receptors

Every three minutes a woman is diagnosed with breast cancer and every 12 minutes another woman dies. Nationally, breast cancer will strike more than 200,000 times this year and take more than 40,000 lives. Yet less than a third of the women who develop the disease have any identifiable risk factors, and fewer than ten percent have a family history of a specific breast cancer gene such as "BRCA-1."

The decoding of the human genome is bringing new understanding of how normal genes go awry, spawning uncontrolled growth of abnormal proteins. The genome comprises about 30,000 genes that code for a million or more different proteins—the biochemical powerhouses of the body. The study of proteins, in turn, is driving revolutionary research into targeted "designer drugs" for cancer. Now in its infancy, the new science of proteomics—the study of protein within cells—is shaping the chemotherapy of the future.

The first proteomic-technology drug to be approved for clinical use in the treatment of breast cancer, the monoclonal antibody *Herceptin*, blocks the HER-2/neu protein, found in about 25-30 percent of metastatic breast cancers. Metastases, with their far-flung colonies of invading cells, kill most of their victims by unleashing proteins that destroy normal tissue as the cancer grows and spreads.

"Advances in molecular pathology are bringing new approaches to diagnosis and treatment of breast cancer," explains Andrew Ricci, Jr., M.D., a senior surgical pathologist at Hartford Hospital and a participating pathologist in the National Surgical Adjuvant Breast Project (NSABP),



a clinical trials group supported by the National Cancer Institute (NCI).

"Herceptin can be toxic to the heart," warns Gregory J. Tsongalis, Ph.D., director of Hartford Hospital's molecular pathology lab. "Metastatic breast cancer patients with strongly over-expressed growth factors—said to be HER2-positive—are the only ones who can be expected to derive benefit from Herceptin. The marker must be confirmed to assure that patients really are HER2-positive and that the potential benefit of treatment with Herceptin outweighs any risks."

"Up to one-third of the patients we see have tumors that might make them candidates for Herceptin," says Dr. Ricci, who so far has reviewed 15 HER2-positive cases for the NSABP. "We were extremely pleased and gratified that their testing center corroborated our HER2 results in every case."

Connecticut ranks first in the country in rates of breast cancer, according to the American Cancer Society, though new chemotherapy regimens and estrogen-blocking drugs like tamoxifen have saved many lives. "Herceptin is the newest of the 'biomarker' treatments," explains Dr. Tsongalis, who anticipates that the war against breast cancer will increasingly be fought on the molecular front. "More than 400 mutations have been identified so far in the known breast cancer genes, but we know other genes must also be involved."

## Hartford Hospital “Dives” into Advanced Wound Care Therapies

Hartford Hospital’s “Center for Wound Healing and Hyperbaric Medicine” will open this summer on the ground floor of the Conklin Building. The Center will bring together multidisciplinary resources to provide state-of-the-art treatments for chronic, hard-to-heal wounds, such as diabetic foot ulcers, venous leg ulcers, pressure sores and radiation-induced tissue injuries. A state-of-the-art 10-person hyperbaric oxygen chamber will be part of the new wound-healing program.

“Our patient population reflects the demographic trend towards an aging population along with increasing incidences of diabetes and obesity,” explains George Perdrizet, M.D., Ph.D., a staff surgeon with expertise in immunology who serves as the medical director for the new program. He combines his surgical background with laboratory research into cellular responses related to wound healing. “We are seeing an increasing number of people with poor blood flow with wounds that are difficult to heal.”

The centerpiece of this new hospital service will be a 10-person hyperbaric chamber that will provide hyperbaric oxygen to patients in the Wound Center. Unlike claustrophobic, single-person chambers that are found elsewhere in the state, Hartford Hospital’s room-sized multi-person chamber can seat up to 10 individuals in a comfortable open environment. Hyperbaric Oxygen Therapy aids wound

healing by increasing the content of oxygen within the wound tissue and aids in the restorative process.

Once inside the chamber, the patients breathe 100% oxygen, which has been compressed by the pressure inside the chamber to one and a half to 3 times normal pressure.

This results in tissue oxygen that is up to 300 times greater than normal. Patients remain in the chamber for a 90-minute “dive” (a term carried over from the days when hyperbaric chambers were used to treat “the bends” caused by resurfacing too fast in scuba diving accidents). The 90-minute treatment is usually repeated 20-40 times. “Over time, this therapy can create new blood vessel formation within the wound, thus improving wound healing,” explains Dr. Perdrizet.

Patients will receive a comprehensive evaluation and appropriate treatment or a combination of treatments will be prescribed. It is anticipated that

approximately 25% of patients with non-healing wounds will meet criteria for Hyperbaric Oxygen Therapy.

The chamber will operate on a 24 hour/7 days a week schedule, is part of the Divers Alert Network, and is ready to respond to diving accidents, acute traumatic injuries and carbon monoxide poisoning. “You can read a magazine or watch TV with several other patients and a trained attendant within the chamber while you are having your treatment,” says Dr. Perdrizet. “It is similar to going for a plane ride.”



Dr. George Perdrizet and (inset) Hartford Hospital’s new room-sized hyperbaric chamber.

## What’s going around...News & Breakthroughs

### Cold Comfort

A daily dose of the experimental drug pleconaril reduced colds by as much as half in healthy adults over a six-week period, according to research presented at the International Conference on Antiviral Research in Georgia. The drug, which prevents as well as treats the common cold, attacks picornaviruses believed to account for about two-thirds of all colds.

### Mighty Mouse

Researchers at Wake Forest University have created a colony of 700 cancer-resistant mice, according to the *Proceedings of the National Academy of Sciences*. One male mouse that did not develop disease despite repeated transplants of cancer cells was bred with other mice. About half the offspring inherited the cancer resistance, indicating a genetic basis for the trait.

### Parkinson’s Potential

An experimental Parkinson’s disease treatment eases tremors and helps preserve brain function, reports *Nature Medicine*. Researchers infused naturally produced growth factor (glial cell line-derived neurotrophic factor) directly into the brain. More than a million Americans suffer from the progressive disease, which results from low levels of the neurochemical dopamine.

### Super-Bug Drug

Antibiotic-resistant bacteria pose a greater public health threat than the SARS virus, warn infectious disease experts at the University of Pennsylvania Medical Center. Pneumonia, meningitis, and once easily treated bacterial diseases have grown deadly from overuse of powerful, broad-spectrum antibiotics. Researchers are seeking drugs for “super bugs” responsible for an estimated 19,000 U.S. deaths annually.

## Drug-Coated Stents Keep Arteries Open

Since 1977, interventional cardiologists have used “balloon angioplasty” to open blocked coronary arteries. Approximately one million Americans undergo angioplasty each year. A balloon-tipped catheter is inserted through the groin up to the site of the arterial blockage, and once in place, the balloon is inflated to compress fatty deposits into the artery wall and stretch the artery open to increase blood flow to the heart.

Although minimally invasive techniques to remove coronary artery blockages have revolutionized the treatment of occluded vessels, the downside has been re-narrowing, or *restenosis*, of the artery. “Although immediate results are excellent, more than 40 percent of patients experience restenosis at the site of the original blockage,” explains cardiologist Francis J. Kiernan, M.D., F.A.C.C., director of the cardiac catheterization laboratory at Hartford Hospital. “As a result, stainless steel ‘stents’ were introduced to enlarge the channel and reduce the chances of re-narrowing.”

Stents are tiny metal mesh tubes placed in the artery at the time of angioplasty to keep arteries propped open. Restenosis, however, afflicts up to 20 to 30 percent of patients within six to nine months after placement of the stent. “Scar tissue creates a different sort of blockage that may require local radiation,” says Dr. Kiernan. “Patients come back because

blockage recurs and symptoms return. Restenosis is our Achilles’s heel.”

At the annual meeting of the American College of Cardiology, physicians reported early success in keeping newly opened heart arteries from closing again with drug-coated versions of conventional stents. In the clinical trial in which Hartford Hospital participated, drug-coated stents proved especially effective in women, who tend to be vulnerable to restenosis because of their smaller vessels.

“Sirolimus and rapamycin are drugs used to prevent rejection in organ transplants, while chemotherapy drugs like Taxol are also being tested,” says Dr. Kiernan. “The drug is mixed with a polymer topcoat applied to the stent and medication leaches out of the polymer during the first few days, when scarring is most likely to occur at the site of injury.” The drug coating interrupts the normal proliferation of scar tissue cells, allowing the stent to be covered with a layer of smooth cells that normally line blood vessels.

Recently the Food and Drug Administration recommended the use of drug-coated stents. “Last year, nearly 1,400 balloon angioplasties were performed at Hartford Hospital,” says Dr. Kiernan. “We expect drug-coated stents will now be used even for diabetics or other patients at high risk for restenosis, who formerly would have had to undergo bypass surgery.”



*Dr. Fran Kiernan is using drug-coated stents to help prevent restenosis in angioplasty patients.*

### Redheads Have More...

While testing the painkiller pentazocine, researchers at Montreal’s McGill University discovered that the gene that gives women red hair and fair skin also helps boost their natural defenses against pain. The same is not true for male carrot-tops. Redheaded women tolerate pain better than both men and women of any other hair color, and respond better to painkilling drugs.

### Family Strokes

Stroke patients 65 or younger are nearly three times more likely to have a parent or sibling who had an early stroke or heart attack, reports the American Heart Association journal *Stroke*. A study at London’s St. George’s Hospital Medical School linked the genetic predisposition most often to strokes caused by blockages of carotid arteries or vessels within the brain.

### Smoke Signals

Though sudden cardiac death can be the first sign of heart disease, nearly all women who die suddenly have at least one risk factor—smoking, high blood pressure, high cholesterol, diabetes or obesity. Harvard Medical School researchers found that women who smoked 25 or more cigarettes a day had a four-fold increased risk of sudden cardiac death.

### Take Two...

Women can cut their breast cancer risk in half by regularly taking aspirin or ibuprofen at least three times a week, while acetaminophen confers no benefit, according to the federally funded Women’s Health Initiative study. Some over-the-counter pain relievers block an enzyme (COX-2), which triggers inflammation that may contribute to cancer’s growth and spread.

# Fat Chance



## Obesity Raises Cancer Risk

Not only does being overweight raise your risk of heart disease and diabetes, but it also increases your chances of dying of cancer. An estimated 90,000 Americans die each year of cancer caused primarily by excess weight.

In a widely publicized American Cancer Society study of 900,000 people over a 16-year period, deaths from almost every type of cancer were linked to obesity. "This is the first time such a large cadre of well people has been studied *prospectively* to gauge the impact of lifestyle choices on cancer risk," says Andrew Salner, M.D., director of the cancer program at Hartford Hospital. "Obesity was shown to increase the risk of dying of cancer by as much as one and a half times. The risk of cancer death was shown to rise gradually as body mass increases from ideal body weight to obesity. Changes in metabolism appear to be an independent risk factor for cancer."

The more overweight you are, the greater the risk. Maintaining body weight, exercising regularly, giving up smoking and regular cancer screening can cut your cancer chances dramatically. Since physical activity appears to be protective against cancer, especially breast and colon cancer, experts recommend at least 30 minutes or more of moderate exercise five or more days a week.

Cancer society guidelines released last year call for at least five servings a day of fruits and vegetables, which provide a rich source of antioxidants, vitamins and compounds known to be protective against cancer. Whole grains, oats, brown rice and fiber-rich foods have been shown to stave off colon cancer, while high-fat diets containing lots of red meat have been linked to cancers of the rectum, colon and prostate.

"We're not sure that it's diet—saturated fats, for example—that cause cancer," explains Dr. Salner. "It seems to be caused just by being obese. The mechanism may be abnormalities in body metabolism, insulin overproduction or growth factors that speed the growth of cancer cells."

## Pyramid Slant

Now that 60 percent of Americans are overweight, the federal government is rethinking its dietary advice in the *Food Guide Pyramid*.

The food pyramid introduced in 1992 by the United States Department of Agriculture (USDA) recommended a diet rich in complex carbohydrates, including bread, cereal, rice and pasta. The goal was to lower cholesterol levels by reducing saturated fat intake.

In an effort to avoid artery-clogging fats, many people substituted carbohydrates, which can pile on the pounds.

Carbohydrate-laden foods containing refined sugar and white flour trigger a rise in blood lipids, adding to the risk of diabetes and heart disease. Excess pounds in turn raise the risk of hypertension, stroke, arthritis, gall bladder disease and cancer.

Now it seems earlier advice was overly simplistic, since calculating the risk of coronary heart disease involves more than the sum of total serum cholesterol. Researchers have found that small amounts of certain fats actually

lower coronary risk. Blood levels of triglycerides, high-density lipoprotein ("good") cholesterol, amino acids, clotting factors, blood pressure, cardiac rhythms and blood sugar all play a role in coronary artery disease.

The diet of people living along the Mediterranean Sea has proven to be the heart-healthiest, according to a recent Harvard School of Public Health study published in the *Journal of the American Medical Association*. The diet is rich in vegetables and fruits, whole grains, nuts, unsaturated vegetable oils, and protein derived from fish, beans and chicken, not red meat.

Also to be avoided are the so-called "trans fats" that form when vegetable oils are hardened to make most margarines and the shortenings widely used in processed or fast foods. Foods labeled with the words "partially hydrogenated vegetable oil" almost always contain trans fats. Because they raise blood levels of triglycerides and harmful lipoproteins, trans fats appear to increase the risk of type 2 diabetes.



## Adult ADD?

Although impulsive boys are often labeled ADHD (for Attention Deficit Hyperactivity Disorder) when their behavior veers out of control, new diagnostic criteria have extended the reach of the disorder to adults.

Children with ADHD comprise approximately five to six percent of the school-age population. While it has long been thought that boys with the disorder outnumber girls by up to five-to-one, new research reveals that actual numbers may be nearly equal.

Adults may not suffer the hyperactivity that is the hallmark of the child's inability to sit still, but may experience relationship problems, job loss or difficulty concentrating. "We start off taking the patient's behavioral history," explains Robert A. Sahl, M.D., a child and adolescent psychiatrist at The Institute of Living. "Then we explore what other conditions—*anxiety, depression, learning issues, substance abuse, aggressive behavior*—may be present, along with past treatments."

Though behavioral rating scales for children and teens are helpful in identifying ADHD, adults may have difficulty acknowledging their inattention and impulsivity problems. "We used to think that about a third of kids outgrew the disorder as they moved into adolescence," says Dr. Sahl. "We now know that as many as one half of teens carry it into adulthood."

It is conservatively estimated that two to four percent of adults are affected by ADHD. "It becomes a chronic condition," says Dr. Sahl. "Over time, fidgety and squirming children become adults who constantly need to keep busy. They may have difficulty organizing their work or be passed over for promotion because they forget appointments."

Though subtle sorts of behavior may point to adult ADD, thinking patterns have probably persisted since childhood. "Some kids, especially girls, quietly blend into the background," he explains. "As they grow older, they are likely to be overlooked."

Though learning disabilities or dyslexia often exist concurrently with ADD, bright kids may compensate with tremendous powers of memory or the ability to hyper-focus on tasks of interest to them. At least two genetic defects have been linked to the disorder, which tends to run in families.

Stimulant medications like Ritalin or Dexedrine have long been used successfully in children, and the availability of newer long-acting forms of the drug eliminate the stigma of daily trips to the school nurse. A non-stimulating medication called Strattera, recently arrived on the market, is designed to target behaviors without affecting appetite or sleep.

Brain scans that point to dysfunction in the frontal lobes of the brain and abnormalities in the neurotransmitters dopamine and norepinephrine are driving new research. Cognitive behavioral therapy, medication and a reward-and-punishment plan can help inhibit impulsivity and allow other areas of the brain to compensate for biochemical deficits.

"The frontal and prefrontal areas of the brain regulate conduct and inhibitory responses," says Dr. Sahl. "By developing master control over the 'executive' functions of the brain, people with ADD can live more typical lives."

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

### Over-the-Counter Overdose

The Food and Drug Administration (FDA) is responding to calls for stricter warnings about the risks of common over-the-counter pain relievers. Consumers, particularly the elderly, should be aware of the possibility of stomach bleeding or kidney failure associated with non-steroidal anti-inflammatory drugs (NSAIDs) such as aspirin, ibuprofen (Motrin or Advil) and naproxen (Aleve).

**Warning signs** of excess ibuprofen or naproxen include stomach cramps, diarrhea, nausea or vomiting; headache, dizziness or drowsiness; problems with urination; and hearing, vision or cognitive impairments.

Unintentional overdose of acetaminophen (the main ingredient in Tylenol) results in 100 deaths from liver failure each year. Ask your doctor before combining over-the-counter pain relievers with any prescription drugs.

**Warning signs** of aspirin overuse include ringing in the ears or temporary deafness, headache, heartburn, excessive bruising, and internal bleeding and liver damage (especially in people who consume more than three alcoholic drinks daily). Never use aspirin for flu-like conditions or chickenpox in children or teenagers because of the risk of a fatal illness called Reye's Syndrome.

## Scallop (or Shrimp) Ceviche



Table runner and matching napkins are available in the Hartford Hospital Auxiliary Gift Shop.

**T**ry this trendy summer dish being served at restaurants around the state.

Charlotte Meucci, D.T.R., a registered dietetic technician, obtained the recipe from her neighbor at the shore and made a few changes to suit her taste. "It's easy to make before guests arrive and always makes a hit," says Ms. Meucci, who works in the Outpatient Congestive Heart Disease Center at Hartford Hospital.

Ceviche is safe to serve because the scallops are scalded by the boiling water, while the acid in the lime juice kills any bacteria. It is important to make sure all the scallops are coated and that they soak for adequate time. Lemon juice may be substituted, but lime is preferable.

This is a low-fat, low-cholesterol recipe. Substituting shrimp for the scallops raises the cholesterol slightly, though it should not be of concern. There are no saturated fats that increase blood cholesterol levels, while the Omega 3 oils are beneficial to heart health.

### Ingredients

1<sup>1</sup>/<sub>2</sub> lbs bay scallops (or shrimp)  
 1 small onion, chopped  
 1 hot pepper, diced  
 1 glove garlic, minced  
 1/4 tsp. oregano  
 1 Tbs. vinegar  
 2 Tbs. olive oil  
 2 tbs. ketchup  
 1/2 cup lime juice or lemon juice  
 1/4 cup chopped cilantro  
 salt and pepper to taste

Rinse scallops thoroughly in colander, pour boiling water over them and let them drain. While the scallops are draining, stir together onion, pepper, garlic, oregano and vinegar. Toss with scallops and let flavors blend for 30 minutes. Whisk together olive oil, ketchup, lime juice and cilantro. Pour over scallops, making sure that all are covered. Refrigerate 24 hours.

To serve, place in a glass dish inside a larger dish filled with ice. Garnish with additional cilantro and serve with crackers.

Recipe serves 6.

### Per serving

Calories: 125 calories  
 Protein: 21 g  
 Carbohydrates: 8 g  
 Dietary Fiber: 0 g  
 Total Fat: 6 g  
 Saturated Fat: 0.5 g  
 Unsaturated Fat: 1 g

Cholesterol: 8 mg  
 Vitamin A: 921 IU  
 Vitamin C: 29 mg  
 Calcium: 37 mg  
 Potassium: 459 mg  
 Sodium: 246 mg

This analysis is based on recipe without added salt.

**Recipe analyzed by Charlotte Meucci, D.T.R.**