saving our skin and our life

Some simple steps, such as limiting sun exposure, could slow the growth of skin cancer.

By Cynthia Wolfe Boynton

She calls herself a "skin cancer factory" and accepts she may not live to see her 10- and 12-year-olds graduate from high school. If anyone can change that, it's the dermatology and cancer experts at the UConn Health Center, says 46-year-old Laura Rudolph.

"Life's too short for me to be a worrier," says the Glastonbury resident. "Instead, I try to be a cautious realist. My doctors are the same way, and I believe that's why I'm alive today. We test every skin spot – which isn't easy considering the number I have on my body. The best way to describe it: My skin looks like the starry night sky you can only see from a mountaintop."

Diagnosed with more than 36 cancerous skin lesions and tumors since 1995, Rudolph realizes she's not the typical skin cancer patient.

Having undergone almost as many surgeries as she's had tumors, she sees cancer as an unfortunate, unavoidable and unusual aspect of her life. And she hopes sharing her story will help others.

"Most people aren't going to experience skin cancer to the degree I have," Rudolph adds, "but it's still more common than it has to be, because people just don't seem to understand the dangers."

Jane Grant-Kels, M.D., chair of the Department of Dermatology at the Health Center, shares Rudolph's frustrations over the lax concern many seem to have for the disease, which affects more people in the United States than any other form of cancer.

"Like any cancer, skin cancer can grow, destroy normal tissue and ultimately cause death if not treated appropriately," says Grant-Kels.

On the Rise

More than 1.3 million new cases of skin cancer were diagnosed in the U.S. in 2007, according to the American Cancer Society. Approximately 60,000 of those cases were melanoma, the most serious form, which also accounted for 80 percent of the approximately 10,000 skin cancer deaths last year.

The most common skin cancers are basal- and squamous-cell carcinomas: generally small, slow growing and easily treated lesions, which, when properly treated, rarely lead to death.

Less common but more dangerous is melanoma, which usually appears as a single, dark, irregularly shaped spot on the skin. If left undiagnosed and untreated, it can spread throughout the body and be fatal. "Gram for gram and millimeter for millimeter, melanoma is the most virulent malignancy in humans," Grant-Kels says.

Incidents of melanoma have risen drastically over the past decade; and medical experts suspect increased, unprotected sun exposure as one of the primary causes. Combine the statistics with the fact that some fairly simple steps can help prevent the disease, and it's clear why Health Center physicians and researchers are working on treatments and strategies to prevent it.

Immunologist Bijay Mukherji, Ph.D., has devoted most of his career to studying ways to activate the body's immune system to fight melanoma.

His lab was the first to show that melanoma patients tend to carry within their bodies "killer cells" that, if stimulated, can recognize and destroy cancerous ones. He and his colleagues conducted the first clinical trial of a vaccine to stimulate this immune response. More recently, Mukherji and medical experts from the California Institute of Technology, University of California Los Angeles and University of Southern California have been collaborating to engineer melanoma-attacking body cells. He and Grant-Kels also have been involved in studying the effectiveness of a topical drug for treating atypical moles (medically called dysplastic nevi), which are markers of patients at risk for melanoma.

ABCDEs of Melanoma

A melanoma most commonly develops on the back, chest and legs. Most of the time it develops on healthy-looking skin. In about 20-25 percent of the cases, it grows out of an existing mole. The ABCDEs of melanoma that cancer experts urge people to watch for include:

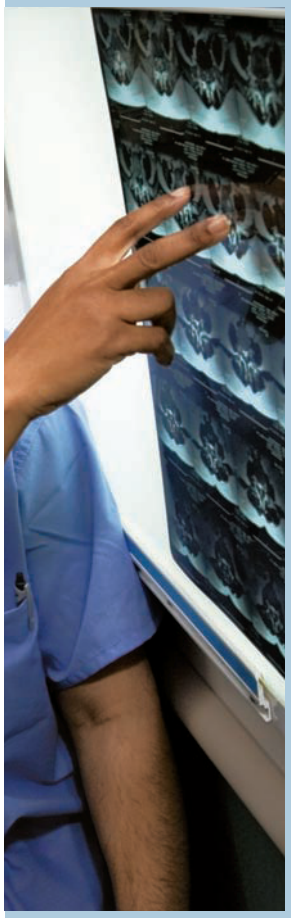
- **A** **Asymmetry.** Half of the mole or mark does not match the other.
- **B** **Border irregularity.** Edges are ragged, notched or blurred.
- **C** **Colors are different within the same mole.** Shades of brown or black may be seen, sometimes with patches of red, white or blue.
- **D** **Diameter greater than 6 millimeters.** That's roughly the size of a pencil eraser.
- **E** **Evolving.** You've noticed it's grown or changed over time.

Revving Up the Immune system

If the cream, called immiquimod, can prevent the moles from developing into melanoma, huge numbers of people could benefit. "We are trying to get the body to rev up its own immune system to fight cancer," Mukherji says. He and his colleagues are analyzing data from the multiyear study and hope to publish their results next year.

Also working on advancing melanoma care is Pramod Srivastava, Ph.D., director of the Center for Immunotherapy of Cancer and Infectious Diseases. His studies examine whether certain body proteins exposed to extreme heat – called heat shock proteins – can slow melanoma's progression and increase survival. A new study will continue this research and look at whether heat shock proteins can benefit liver cancer patients, as well.

"Having all these specialists in one place is one of the things that makes



the UConn Health Center really work for skin cancer patients," says Adrienne Berke, M.D., assistant director of the center's Dermatopathology Lab. There, biopsied skin, hair and nail samples are examined as part of the cancer diagnosis or staging process.

"When everything you need to treat skin cancer is right here, you get the best treatments faster," Berke said. "For the medical professional, that means you can knock on a door down the hall to get a second opinion. For the patient, that means not having to travel for additional tests or an exam by another specialist. We're all in the same place, working to do whatever we can to best help each patient."

That "best help" includes using several technologies considered the gold standard in skin cancer diagnosis and treatment. Among them: a handheld device called a dermatoscope, which Health Center dermatologists use to scan, map, magnify and record detailed, high-quality images of skin spots and moles. The new technology uses a computer to help the physician interpret the images captured from the dermatoscope and to pick up irregularities and problems the naked eye might not be able to see. Unique software helps physicians analyze a lesion and rate its likelihood of being skin cancer. The Health Center has a dermatoscope in every dermatology exam room.

Also available to Health Center patients is Mohs surgery – a highly specialized technique that involves removing a cancerous lesion layer by layer and immediately examining the cells under a microscope. By mapping the tissue and identifying the precise location of malignant cells, the surgeon can remove another layer only where necessary. The process continues until the skin is cancer free.

Because the procedure, which is done on an outpatient basis, focuses on removing only malignant cells, scarring is minimal and nearby healthy skin preserved. This makes it ideal for highly visible areas where appearances matter, such as the face, ears, neck and hands, says Health Center dermatologic surgeon James Whalen, M.D. It's also effective in treating cancers that are large or not clearly defined, because its layer-by-layer approach ensures all diseased tissues are removed – even those not clinically visible.

"The high cure rate Mohs offers makes it a really rewarding service to perform," says Whalen. "The fact that it can be done safely under local anesthesia also makes it convenient for the patient – the majority of whom express gratitude and satisfaction with the results," he adds. "Knowing that their tumors have been removed means they're on the road to recovery."

Opposite page, Surgeons Lori Wilson and Rajiv Chandawarkar work closely to ensure the best surgical outcome for cancer patients. This page, Pramod Srivastava in his lab.

Restoring Form and Function

Also part of the Health Center's skin cancer team is plastic surgeon Rajiv Chandawarkar, who may be called upon to rebuild part of a nose, ear, lip or other body part after either Mohs or traditional surgery, or to remove an unsightly scar. "In many instances, we can restore form and function to a patient who has had significant tissue removed during cancer surgery," says Chandawarkar. Sutures thinner than a human hair are used to stitch together thread-thin vessels that maintain the blood supply to transplanted tissue. Often a patient's own tissue is used for reconstruction, because "it looks and feels more natural," says Chandawarkar.

Preventing skin cancer through healthy lifestyle choices can in some cases mean the difference between life and death.

"We can't control some cancer risk factors, such as age and family history. But especially with skin cancer, there are many things we can control," says Grant-Kels, who preaches to her patients about the importance of using sunscreens and limiting direct exposure to the sun.

Don Looney of Southington goes as far as buying special sun-protective clothing.

Diagnosed three times with melanoma, including a malignant mass that spread to his brain, the 71-year-old also has changed his exercise and eating habits to include three mornings a week at the Southington YMCA and daily meals of fruits, vegetables, high-fiber breads and pastas, and lots of legumes.

"I stopped eating meat and any animal products, except for one egg every other day for protein. That's about it. Even though I've been in remission since 1996, I don't consider myself to be in the clear," says Looney, who provides advice to other melanoma patients and runs periodic support groups at the Health Center for survivors of melanoma.

"Because of the lifestyle changes I've made, I feel better than ever before. But I never let my defenses down. Skin cancer is cancer, and that's not something to be taken lightly."