

# Imagine it— a world without cancer.

By Kim Irwin

That hope is a primary focus of the Cancer Prevention and Control Research Division at UCLA's Jonsson Comprehensive Cancer Center.

Of the 1.4 million cases of cancer that will be diagnosed this year, about half could be prevented if people would quit smoking, cut down on alcohol consumption, increase their physical activity and eat a low-fat diet. Cancer could be prevented if people underwent routine screening tests such as Pap smears and colonoscopies, which detect lesions and polyps before they become cancerous.

Dr. Patricia Ganz, director of Cancer Prevention and Control, and researchers in her division are working diligently to spread that message.

"We're making headway in preventing cancer, but we can do better," said Ganz, a professor of hematology/oncology and public health and health services. "Anti-smoking efforts in California have been successful. We've seen a substantial decline in smoking, which translates into lower cancer rates. The trend in cancer prevention is heading in the right direction."

The division's mission goes beyond just preventing cancer. Ganz and her team of researchers are creating scientifically based community interventions to increase screening and promote early detection, evaluating genetic risks for cancer and how environmental exposures might impact those risks and studying the quality of care patients receive. They also are examining quality of life in cancer survivors and helping those survivors live better lives after beating cancer, preparing them to deal with any physical and emotional

problems they may suffer because of the treatments they underwent.

"Our program brings together a broad spectrum of research projects that span the full cancer prevention and control continuum," Ganz said. "It would be wonderful if we could prevent all cancers, but right now we can't. So we also have to address what kind of care patients are getting, what their quality of life is after treatment ends and what their needs are as long-term survivors of cancer."

Cancer Prevention and Control has three focuses:

**HEALTHY AND AT-RISK POPULATIONS**— This program studies healthy and at-risk populations to determine who is likely to get certain cancers. It provides scientifically based intervention programs on cancer prevention and screening to underserved, low-income populations with inadequate access to healthcare. It creates programs to help people quit smoking and educates others to prevent them from starting to smoke. It also offers strategies to improve diet and exercise. (*See related story on page 9*)

**PATIENTS AND SURVIVORS**— This program studies quality of life outcomes in cancer survivors—children, young adults, adults and the elderly—to document physical and psychological problems they may experience because of the treatments they received. It also measures and evaluates the quality of care patients are receiving.

**MOLECULAR EPIDEMIOLOGY**— This new program studies genetic susceptibility to cancer and what role environmental exposures play in cancer development and progression. Researchers are developing biologic markers to help determine cancer risk and aid in early detection of cancer, and creating blood and tissue-based markers for predicting how patients will do once they get the disease.

## SURVIVORSHIP

**G**anz and her research team have always been concerned with survivorship and how patients do in the long term. Two new programs have been created to study survivors of childhood and adult cancers.

The Life After Cancer Clinic at UCLA helps survivors of childhood cancers deal with the late effects of their treatment. As many as two-thirds of these survivors are likely to experience at least one late effect, with about one-fourth experiencing a severe or life-threatening complication.

The most common late effects include cardiac problems, learning disabilities, growth and fertility issues, psychological dysfunction and second cancers. Late effects can show up as many as 20 to 30 years after treatment, said Dr. Jackie Casillas, a pediatric oncologist and director of the clinic.

“It’s vital that these survivors and the doctors caring for them are aware of the late effects of cancer treatment,” Casillas said. “There are serious late effects that can occur and survivors need to be monitored closely.”

The clinic follows pediatric and adult cancer survivors treated at UCLA as well as those referred by community physicians. Run by a team that includes an oncologist, a family nurse practitioner, clinical social workers and a school/vocational reintegration specialist, the clinic provides a comprehensive health evaluation, a psychosocial assessment and sub-specialty referrals. Survivors receive a thorough summary of all previous therapies they received and information on their risks for developing one or more late effects.

Casillas has seen about 600 childhood cancer survivors aged 2½ to 42 years old in the clinic since it opened four years ago. Patients now will be transferred to a program for older survivors once they become adults.

Daniel Bral, an 18-year-old from Beverly Hills, sees Casillas in the Life After Cancer Clinic. Diagnosed with non-Hodgkin’s lymphoma in January of 2001, Bral wants to make sure he does everything he needs to do to remain healthy.

He worries most about a cancer

recurrence and a recent bout with severe bronchitis gave him a scare. He thought his cancer had come back.

“I’m still freaked out about it,” Bral told Casillas during a clinic visit in July.

Casillas ordered a PET-CT scan to make sure Bral’s cancer had not recurred and an EKG and echocardiogram to check heart function. The chemotherapy given to Bral can cause cardiac damage so he must be monitored for heart problems.

The results of a recent study at the Hospital for Sick Children in Toronto showed that the majority of survivors of childhood cancer do not receive specialized long-term medical care, making the efforts of Casillas and her colleagues even more important.

Adult cancer survivors are seen in the Vital Information and Tailored Assessment (VITA) Program of the UCLA-LIVE-

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**STRONG** Survivorship Center of Excellence. The center is funded through a grant from the Lance Armstrong Foundation. The Life After Cancer Clinic is administered under the umbrella of the **LIVESTRONG** survivorship center, one of only seven of its kind nationwide. The center has seen 135 adult cancer survivors since its launch in December 2006.

The VITA program is one of the first clinical programs in the nation designed to meet the special health needs of survivors.

Adult cancer survivors can experience late effects such as fatigue, insomnia, memory loss, anxiety, depression, sexual dysfunction and pain. These issues often are overlooked in traditional, routine cancer follow-up, said Ganz, who serves as director of the UCLA-LIVESTRONG survivorship center.



### VITA Program

The Vital Information and Tailored Assessment program is part of the UCLA-LIVESTRONG Survivorship Center of Excellence. VITA provides a survivorship road map to get people through their life after cancer.

For more information, or to make an appointment, call **(310) 825-9781** or email [survivorship@ucla.edu](mailto:survivorship@ucla.edu). You can also visit [www.vita.mednet.ucla.edu](http://www.vita.mednet.ucla.edu).

Profile:

## Dr. Patricia Ganz

“There are 10.5 million cancer survivors in the U.S. That’s the size of Los Angeles County. That’s 3.5 percent of the country’s population,” Ganz said. “Many of them don’t know what treatments they had, and they don’t know the health risks they face due to those treatments. We need to make sure these survivors are as well cared for now as they were when they were patients.”

Survivors receive a clinical consultation with a multidisciplinary team of physicians, nurse practitioners, social workers and other specialists who provide an individualized assessment and survivorship care plan, a sort of tailored roadmap for future care. It includes information on the survivor’s specific cancer history, what treatments they received, a schedule of

treatments can cause, known as late effects. Researchers in her division continue to conduct state-of-the-art studies in this area.

Examples of on-going studies focus on such diverse issues as quality of life in prostate cancer patients, the mental foggi-ness known as “chemo brain” in breast cancer survivors, the long-term survivorship concerns of lung cancer patients, the quality of care provided to elderly breast cancer patients and the development of quality of care indicators for patients who undergo surgery for colorectal cancer.

Two researchers on Ganz’s team are studying mind-body techniques to address the insomnia and fatigue suffered by breast cancer survivors.

Dr. Michael Irwin, a professor of

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screenings, tests and examinations they should have to monitor for late effects and tailored wellness-enhancing strategies. Care with the survivor’s primary physician is coordinated to maximize a survivor’s well-being.

The VITA program also offers survivors the chance to enroll in innovative research on survivorship, studies that advance understanding of the late effects of cancer treatment. The **LIVESTRONG** Center also holds an annual survivors conference, which this year drew more than 150 people.

“We see this as an opportunity to educate patients and survivors so they know what to expect,” Ganz said. “So many survivors are unaware of the late effects.”

### QUALITY OF LIFE

For years, Ganz has conducted leading-edge quality of life research that has re-shaped how medical science perceives the physical and psychological problems that cancer

psychiatry and biobehavioral sciences, studies insomnia, a common treatment side effect that can be incredibly debilitating. He’s testing mind-body interventions that may help ameliorate the problem, but he also wants to know what the cancer treatment does to the patient that later manifests itself as insomnia. If he can uncover that, interventions might be developed that could be given during treatment to prevent the insomnia.

Patients may also be genetically vulnerable to developing insomnia, and something in the cancer treatment amplifies that propensity. If Irwin could understand that mechanism, strategies could be developed to interrupt it, again preventing insomnia.

“We need to find out what is driving and perpetuating insomnia, what the consequences of it are and what we can do to treat it,” he said.

Research scientist Julienne Bower, an assistant professor of psychology, has identified one *continued on page 8*

For two decades, Dr. Patricia Ganz has conducted ground-breaking research that has changed the face of cancer survivorship. A founding member of the National Coalition of Cancer Survivors, Ganz is considered the top national expert on quality of life after breast cancer, and her leading-edge studies have changed the way the medical field views the post treatment health problems faced by millions of former patients nationwide.

In October, Ganz will receive the American Cancer Society’s Distinguished Service Award, an honor that recognizes outstanding contributions in the field of cancer.

And to think that it all might have never happened. After completing medical school, Ganz had her mind set on becoming a cardiologist.

Call it destiny or fate, but a rotation through medical oncology changed everything. It was 1973, two years after President Richard Nixon declared a War on Cancer. Cisplatin was saving the lives of young men who had been dying of testicular cancer. Oncology, Ganz though presciently, was a field in which she could make a real difference.

“I had the naïve hope that we were on the road to a cure for cancer,” said Ganz, director of the division of cancer prevention and control research at UCLA’s Jonsson Comprehensive Cancer Center. “For me, there was so much more hope in cancer care. And it was much more challenging in terms of prevention.”

Ganz grew up in Beverly Hills, the daughter of a physician and a homemaker who later ran a family business. The oldest of two children, Ganz attended Harvard and majored in biology, hoping to become a researcher. She spent her summers working in UCLA laboratories. In her third year of college, Ganz decided to attend medical school. She was one of only three women in a class of 120 UCLA medical students.

Once Ganz decided on oncology,

she focused on quality of life in cancer patients and survivors, something no one else was doing. In 1978, after she completed her residency, Ganz chose to work at the Sepulveda VA Medical Center, where she opened a hospice center to provide palliative care to patients from diagnosis until death. Instead of focusing on the last few weeks of life, Ganz and her team provided multidisciplinary, symptom-focused care from diagnosis on.

Ganz realized at this early point in her career that doctors shouldn't wait until the end of life to manage pain, address fatigue or help patients with psychological distress.

"We needed to do that while they were still in treatment," she said.

Her work focused not only on their physical symptoms, but also on their emotional, nutritional and psychological needs. She launched support groups to help patients cope with their disease.

"I recognized that we had to take care of all of a patient's needs, not just their medical treatment," she said.

Ganz teamed up with a psychiatrist and a psychologist and, using grant money, they launched a program to determine the needs of cancer patients during and after treatment.

"If we wanted to understand how patients cope, we had to understand what they were coping with," she said. "We had to understand the day-to-day problems they faced."

That work led to other grants and more research in this emerging specialty. Eventually, Ganz focused on breast cancer patients.

By the mid-1980s and early 1990s, treatments for breast cancer were improving, as was the understanding of the biology of breast cancer. Women were living longer after treatment. Though they beat their cancer, they often suffered from fatigue, fertility issues, mental foggy and cardiac problems.

"The treatment regimen choice," Ganz realized, "made a difference."

Knowing the late effects of cancer therapies can help doctors and patients make informed treatment decisions from



the outset, especially for those with early stage cancer who will live for a long time after treatment ends.

In 1986, Ganz was among a small group of physicians and scientists who founded the National Coalition for Cancer Survivorship, the first national organization launched for survivors.

"It grew out of our interest in treating the whole person," said Ganz, the mother of a physician and a law school student. "We shouldn't be waiting until the end of a patient's life to manage their pain, address their fatigue or help them with psychological distress. We need to do this while they're still in treatment."

**R**esearch runs in the family. Ganz's husband, Tomas, also is a UCLA faculty member and a scientist at the cancer center. He's been a great supporter of what was then viewed as his wife's "unconventional" research focus.

Ganz was still working and doing research at the VA when she had what she calls a "midlife crisis." In addition to her VA workload, she was treating patients at the county's Olive View Medical Center, doing research and putting in a half-day at a clinic at UCLA. She felt stretched thin.

In 1992, she applied for and landed a position at UCLA that straddled health services and cancer control. She obtained grants and launched revolutionary new programs, such as the High Risk Program

to help those at risk for developing breast cancer. She played an integral role in the national Breast Cancer Prevention Trial, launched in the early 1990s to determine if Tamoxifen could prevent breast cancer. She was tagged to lead the quality of life portion of the large study.

"I thought, 'Wouldn't it be nice not to have to tell people they had cancer,'" Ganz said.

In 1997, after the BRCA1 and BRCA2 breast cancer genes were cloned, Ganz launched the UCLA Family Cancer Registry and Genetic Evaluation Program for those with a personal or family history of cancer. Today, the registry has more than 1000 people on its rolls.

And in 2006, Ganz was selected to head up a new center for cancer survivors, funded with a grant from the poster boy for surviving cancer, seven-time Tour de France winner Lance Armstrong. Ganz serves as director of the UCLA **LIVESTRONG** Survivorship Center of Excellence, which addresses the needs of the ever-increasing number of cancer survivors in the United States.

Whether it was fate or destiny, Ganz's choice of oncology has made a difference, as she had hoped all those years ago.

"You never know when you treat a patient whether they will be a survivor or not," Ganz said. "And when you are successful, it's magic. I feel really lucky to have had the experience I've had." ★

*continued from page 6* potential cause of fatigue in cancer—a patient’s immune system, in full gear to battle the cancer, doesn’t shut off after treatment. Inflammatory responses are chronically elevated, which sends a message to the brain that disrupts energy as well as sleep, mood and cognitive function. A similar process may be at work with insomnia.

“We have every reason to believe we’ll find a similar relationship between immune response and insomnia,” Irwin said. “Many

not only treat their behavioral symptoms but also alter the course of their disease.”

Having uncovered the biological basis of fatigue, Bower now is devising novel strategies to address it.

Almost all cancer patients report fatigue during treatment, and more than 30 percent of cancer survivors continue to experience fatigue as long as five to 10 years after their diagnosis. As survival times for women with early stage breast cancer lengthen, understanding the long-term effects of cancer and its treatment on functioning and quality of life is increasingly important, Bower said.

To date, her studies in breast cancer survivors have documented alterations in immune and endocrine function, including elevated inflammation and changes in stress response systems. Bower now is looking at risk factors for chronic inflammation and fatigue, focusing on genetic factors that may make some survivors more at risk for developing it.

“You may just be someone who, because of your genetic make-up, has a body that produces an overactive inflammatory response, leading to fatigue,” Bower said. “If we can identify those most at risk, we can target interventions for them, including both pharmaceutical and mind-body approaches.”

Bower currently is recruiting volunteers for two studies that will test mind-body approaches to fight post-treatment fatigue in breast cancer survivors. Funded by the National Institutes of Health, the studies will compare yoga and health education in two groups of women of different age ranges.

“Sometimes people don’t want to take any more medication than they’re already taking, so we’re testing other things, such as yoga, to see if that approach will be effective in reducing fatigue and improving immune function,” she said.

Like Irwin, Bower wants to know what happens during treatment that results in fatigue so doctors can perhaps prevent it from happening.

“We know what happens after, but we don’t know how it develops during the acute period, when they’re getting treated,” Bower said. “That’s what I hope to find out.” ★

“There is a tremendous opportunity now to link psychiatry with cancer research. We may be able to not only treat their behavioral symptoms but also alter the course of their disease.”

—DR. MICHAEL IRWIN

## Surviving Cancer

- ★ It is estimated there are 10.5 million cancer survivors in the United States, representing about 3.5 percent of the population.
- ★ About 14 percent of the 10.5 million cancer survivors were diagnosed more than 20 years ago.
- ★ Three out of every four American families will have at least one family member diagnosed with cancer.
- ★ Today, 65 percent of adults diagnosed with cancer will be alive in five years. Among children, 75 percent of childhood cancer survivors will be alive in 10 years.

survivors suffer from both fatigue and insomnia, and that probably is not a coincidence.”

Irwin currently is seeking breast cancer survivors for a study to evaluate Tai Chi as compared to lifestyle skills training to help fight insomnia. The five-year study, funded by the National Cancer Institute, will compare two groups of survivors, one doing Tai Chi classes while the other learns lifestyle skills that may impact sleep patterns.

“Difficulty sleeping is common in breast cancer survivors,” he said. “These women can’t concentrate, they have no energy, they’re depressed. Not getting adequate sleep can make a person cranky and irritable, and it can impact their relationships.”

About 65 percent of cancer survivors complain of insomnia and 20 percent have medically diagnosable insomnia, Irwin said. That insomnia may be preventing them from healing fully, or may even be linked to cancer recurrence.

“There is a tremendous opportunity now to link psychiatry with cancer research,” said Irwin, whose research was launched in 2002 with an interdisciplinary grant from the Jonsson Cancer Center. “We may be able to