

## CONTENTS

# Good Behavior

BY KATY HUMAN

*Survivors get motivated to change lifestyle, and reap the benefits.*

Anne Smithson was active growing up, but when the North Carolina resident had children, her workouts became less frequent and then dropped off almost entirely.

“I had oh 10, maybe 15 sedentary years,” Smithson says ruefully.

Breast cancer struck in December 2006, when she was 46. “There’s so much that’s out of our hands,” Smithson says. “I don’t know why I got it, or if it’ll come back, but I decided I can take care of my body.” She dropped most red meat and alcohol from her diet last year, and she’s now “hooked” on daily morning workouts to keep her energy level high.

Most cancer survivors know they should be doing what Smithson is—eating better, exercising more, and, if they smoke, quitting. Some, like Smithson, describe cancer as a powerful “teachable moment” that inspires major lifestyle change, including a renewal of attention to spirituality and friendships.

Many survivors, however, fall back into old patterns after treatment. With accumulating studies showing that exercise and diet can affect cancer recovery and recurrence, many researchers are now trying to figure out what kinds of programs or educational materials can help cancer survivors make—and sustain—healthy lifestyle changes.

Tim Byers, MD, deputy director of the University of Colorado Cancer Center, says he imagines a future in which cancer survivors are actively engaged in physical therapy and rehabilitation during and after treatment, as has become standard with heart disease patients following decades of research on the effects of exercise and diet on heart health.

“We need a norm in oncology like we have in cardiovascular disease, with rehabilitation after a heart attack,” Dr. Byers says. Many heart attack survivors make substantial, sustainable lifestyle changes, researchers have found.

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—Anne Smithson

In a handful of sites around the country, cancer rehabilitation programs are beginning, Dr. Byers says—recognition of the accumulating research on the importance of lifestyle changes for survivors. (Read about cancer exercise programs in [“Forward Motion”](#).)

## Studying Survivors

Smithson says it was pure hard work to make the changes. There were months, she says, when it took her husband or a friend to pry her out for a walk. Studies confirm that difficulty: Of lung cancer survivors who smoked, about 13 percent keep smoking, according to one study. In another, 80 percent of cancer survivors said they were interested in health promotion programs, but more than half didn't eat the recommended daily servings of fruit and vegetables.

“The reality is that cancer survivors are remarkably similar to the general population in terms of physical activity, smoking rates, and other lifestyle measures,” says Keith Bellizzi, PhD, a scientist at the National Cancer Institute. “Old habits really die hard, and leading a healthy lifestyle is difficult.”

One exception, he and others have found, is that cancer survivors are more likely than others to follow up with recommended cancer screenings, especially mammograms, Pap tests, and prostate-specific antigen tests.

The uncomfortable truth is that there's more at stake for cancer survivors, however, than for the general population, Bellizzi says. Chemotherapy or radiation may cause health problems, from heart disease and osteoporosis to secondary cancers and poor quality of life induced by long-term effects of lifesaving treatments.

“We have only begun to look at these late medical and emotional effects of cancer, because [many] people diagnosed 20 years ago didn't survive,” Bellizzi says.

## Theories of Change

Many behavioral researchers use psychological models to describe lifestyle changes. The models describe the stages survivors may move through in, say, going from a sedentary lifestyle to exercising regularly. The Health Belief Model, for example, posits that a person is more likely to take healthy actions when he believes his health is in danger, with potentially serious lifestyle consequences—and when the cost of taking action seems less than the risk of not taking it.

According to the Theory of Planned Behavior, an individual may start with “pre-contemplation, when individuals may be unaware of the consequences of their behavior or that they perceive too many barriers at the moment,” Bellizzi says. “Then there’s the assessment phase, where someone is when contemplating the costs and benefits of change, and the action stage of overtly changing one’s behavior.”

Increasingly, studies show people’s belief systems and their environments—from socioeconomic status to the availability of diverse fruit and vegetables—play a role in who makes the progression from pre-contemplation of lifestyle changes to action, and why.

Antronette Yancey, MD, a professor at the University of California Los Angeles School of Public Health, believes environmental changes are more effective than comprehensive educational programs at getting people to exercise and eat better.

In one of her studies involving African-American women in a fitness-based cancer prevention program, Dr. Yancey compared the diet and fitness changes made by women in an intervention group and a control group. Women in the intervention group lost more weight immediately than those in the control group, but more significant than the educational intervention was the free gym membership offered to women in both groups, which served as an economic environmental intervention, Dr. Yancey and her colleagues found.

Now, Dr. Yancey says, she’s focused on “captive audiences” for interventions—engaging people in their workplaces, schools, churches, or other settings where they spend a lot of time. She gave an example of a man, interviewed by another researcher, who wasn’t terribly interested in losing weight. He accepted the offer of a cheap parking spot a 10-minute walk from work, and that made a difference for him, she says.

“By intervening with captive audiences, we’re not getting everyone, but we’re getting a lot of people who would not go out of their way to engage,” Dr. Yancey says, pointing out another of her studies that found participating in brief structured group exercise breaks, lasting only 10 minutes each day, led to improvements in weight, waist circumference, blood pressure, mood, and physical activity participation outside of work.

Beliefs clearly matter, too. Those who believe there is a strong link between, for example, exercise and cancer recurrence, are more likely to progress into an active exercise program. Those who believe they are personally at risk for cancer or recurrence are more likely to plan and make changes. And people who participate in worksite wellness programs, with the social support of colleagues, were more likely to eat better and exercise more.

## Practicing Change

Trauma may also play a role in motivating some people. “What I, as well as others, have found is that individuals who report positive change in the aftermath of cancer report the experience as being a life event that shakes them to their core,” says Bellizzi, who was diagnosed 13 years ago with stage 3 testicular cancer. He was 24, and three months after his first diagnosis, doctors found a second,

independent cancer—renal cell carcinoma, a type of kidney cancer.

“I remember one afternoon, lying in the hospital looking at my family, my doctors, my wife, who was then my girlfriend, and I said, ‘If I survive this dreadful disease I’m going to quit my job and dedicate my life to cancer.’ ”

Now, he has two masters’ degrees and a PhD (a wife and three girls, too) and is a researcher at the NCI, no longer a business consultant.

Smithson, now 47, also found her diagnosis shocking. Her annual mammogram revealed a lump that didn’t worry her doctors. “They said, ‘Let’s just take it out anyway.’ ” When the initial pathology report came back normal, friends and family sent Smithson congratulatory cards and e-mails.

“Two days later I got an unexpected phone call and was told on further review it was malignant,” Smithson says. “I had been prepared for bad news earlier—not then.”

Smithson had radiation following surgery and hormonal therapy with tamoxifen, but she chose against chemotherapy. She’s a family practice doctor at Meredith College in Raleigh, and she pored through the studies before making the decision. For her invasive ductal carcinoma, Smithson says, chemotherapy might have given her a slight increase in risk reduction over hormonal therapy alone, with additional side effects and possible complications.

““ People can get fatalistic about this ... but people don't really need to make big changes. ””

—Keith Bellizzi, PhD

“I said, ‘OK, if I’m not going to do chemo, I have got to do every single thing I can to try to decrease my chances of this thing coming back,’ ” she says. Today, Smithson exercises about 90 minutes a day. She’s also very strict about her diet, focusing on fruits and vegetables and minimizing processed food.

## Sustaining Change

Diana Ryall, a 37-year-old breast cancer survivor in Spruce Grove, Alberta, in Canada still smokes. Ryall says she cut her fat consumption and eats more salads since her diagnosis in 2006, and she has lost nearly 20 pounds of the extra 80 she put on because of cancer and treatment.

Smoking, though, has proved harder. Ryall wants to quit, and is working with her family doctor to identify patterns in her smoking—when she’s picking up a cigarette because of her addiction, and when it’s merely out of habit, for example. When she’s down to just a few cigarettes a day, then she’ll try quitting. “It is a lot less stressful to cut out a cigarette each day or two than it is cutting them out all together,” Ryall says.

Small steps are the key to sustainability, many experts have found, and there's evidence that very small changes, such as walking at a slow pace for three to five hours a week, can decrease a person's cancer recurrence and mortality risk, according to research published in the *Journal of the American Medical Association*.

In Dr. Yancey's study of African-American women in a fitness-based cancer prevention program, women in the control group made the most lasting changes in waist circumference and exercise. "The changes occurred more incrementally and were likely better integrated into their existing lifestyles because they had to figure it out for themselves, both associated with greater sustainability," Dr. Yancey says.

Comprehensive lifestyle changes, such as suddenly being asked to meet public health recommendations for exercise and nutrition, would simply overwhelm many people, Bellizzi says. "People have a tendency to avoid or ignore important information that's not within their beliefs or perceived capabilities," he says, and the University of Colorado's Dr. Byers agrees.

"People can get fatalistic about this, because they can't make major changes, but people don't really need to make big changes," Dr. Byers says. "If you're 60 pounds overweight, you don't need to lose 60 pounds—losing 10 or 20 helps."



After more than a decade of little exercise, breast cancer survivor Anne Smithson now works out every day. Photo by Robin Lin

Smithson made her changes slowly. She first did short workouts two or three times a week. In September 2007, after she'd fully recovered from surgery and radiation, she hired a personal trainer at a customized studio near her home. Now, Smithson and her family work out at a big gym, where her high school son can play basketball, her husband can take spinning classes, and Smithson can rotate between strength training, elliptical trainers, treadmills, and an exercise bike.

Most fun for her, Smithson says, was a fitness assessment—pulse rates, flexibility, and body fat—she took every month or two when she was regaining her feet. "For pushups, I went from well below average for my age to well above," Smithson says, joyfully. "In three months, I went from zero to 28—and these are

man pushups, not girl pushups.”