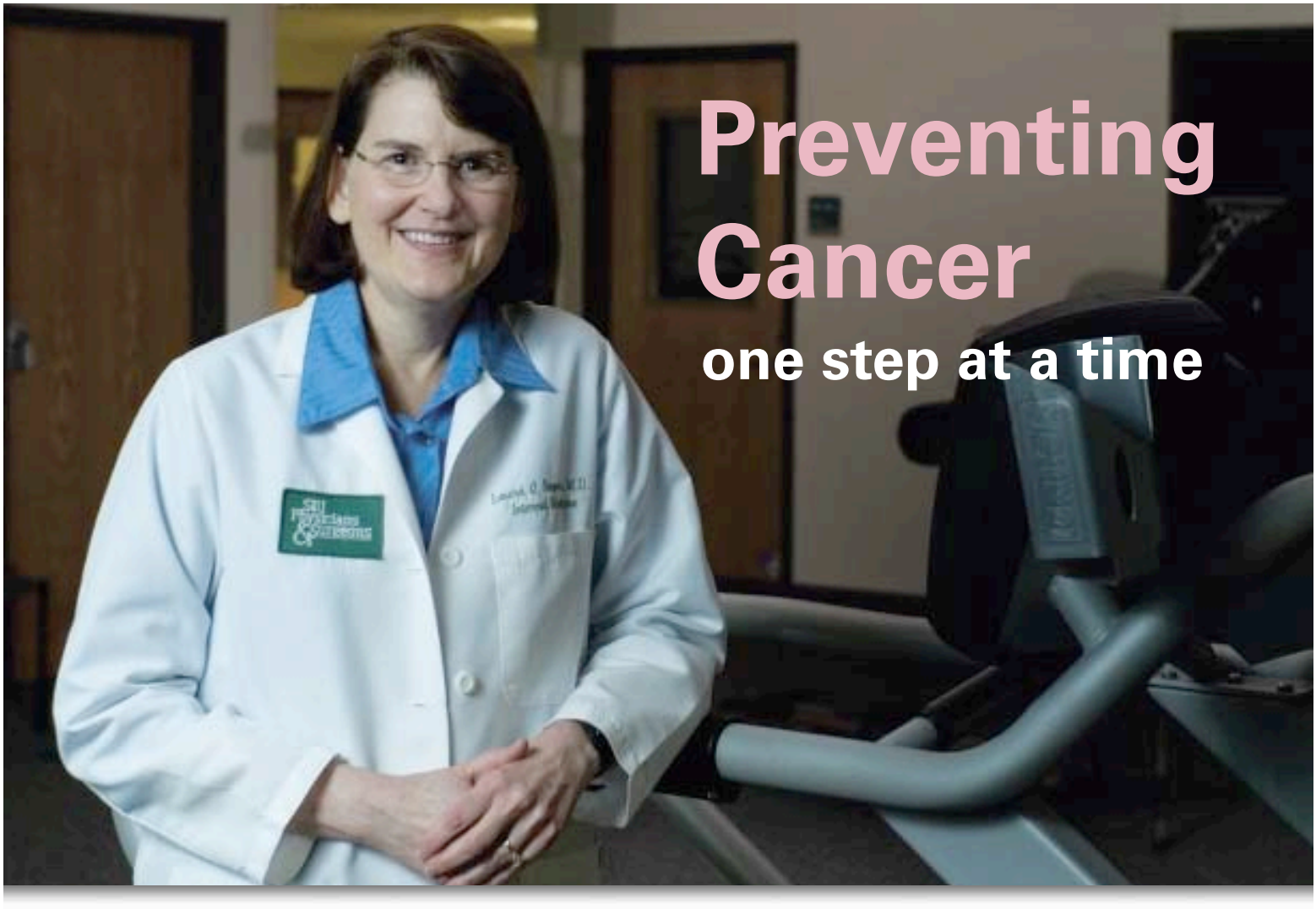
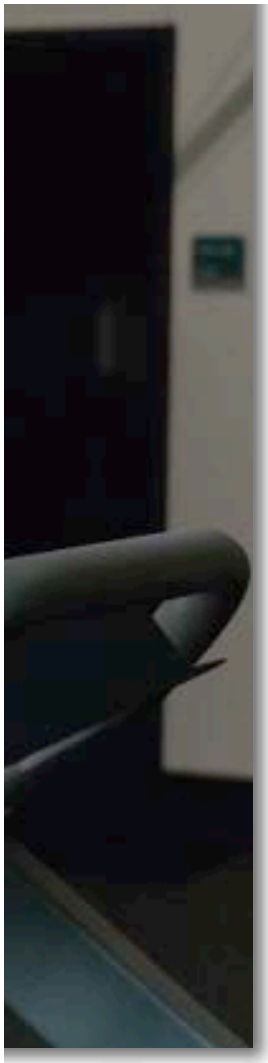


Preventing Cancer

one step at a time

everyone knows exercise is good for you, with a multitude of physical, mental and emotional benefits. SIU researchers believe exercise can do all that — and perhaps prevent cancer as well.

Written by Karen Carlson ● Photography by James Hawker



Gallup's annual poll on exercise habits shows that only about 50 percent of Americans regularly engage in the recommended amount of physical activity. This concerns Laura Rogers, M.D., M.P.H., associate professor of clinical medicine, who notes that "Most breast cancer survivors don't exercise regularly." After hearing the results of her research studies, they might just start. "Exercise can improve body composition, quality of life, muscle strength, fatigue, sleep quality, and joint dysfunction," she says. "It can reduce the risk of developing colon, prostate, lung cancers and breast cancer. It also may reduce the recurrence of breast cancer."

Dr. Rogers has been working for five years to design a way to help breast cancer survivors exercise more regularly and prove exercise benefits for patients after a breast cancer diagnosis. Her series of studies are underscoring the positive health outcomes of cardiovascular exercise. Her work is moving forward since she recently received a $3.5 million federal grant from the National Cancer Institute, a division of the National Institutes of Health, for a five-year clinical study called "Enhancing physical activity after a breast cancer diagnosis."

Dr. Rogers had been studying exercise and arthritis, but discovered a viable new area of research with the initiation of the SimmonsCooper Cancer Institute at SIU. Now she is motivating breast cancer survivors to begin and maintain exercise programs.

Exercise and cancer is a relatively new field of research, first studied primarily by exercise physiologists and physical therapists as an intervention to improve patient quality of life after diagnosis. With survivor rates increasing, improving quality of life for cancer patients is becoming more of a focus for oncologists, says Robert S. Mocharnuk, M.D., associate professor of hematology/oncology and a member of the SimmonsCooper Cancer Institute at SIU. He is a co-investigator on the project. "Ten years ago, oncologists were simply trying to get patients through cancer treatments. Today there's been a huge shift to improve quality of life. This study is so important to help us deal with long-term side effects of treatments such as nausea and fatigue. We are interested in how we can help people live better." As more oncologists are looking at researchers' findings that exercise can reduce recurrence and mortality, more are becoming interested in the field. "Exercise may also help patients tolerate cancer treatments," Dr. Rogers says. Cancer patients need additional oversight to ensure they exercise safely.

Her previous studies have found that breast cancer survivors counseled to engage in exercise significantly improved their physical activity and health outcomes after the intervention. After one intervention, 60 percent of previously sedentary breast cancer survivors were still exercising 150 minutes a week.

The current study builds on Dr. Rogers' previous studies with intervention sites in Springfield and Champaign. The team is recruiting more than 250 patients who will be individually trained to engage in and maintain an exercise program.

The project team includes Philip Anton, Ph.D., assistant professor in exercise science from SIU Carbondale and Edward McAuley, Ph.D., professor of kinesiology and psychology at the University of Illinois at Urbana-Champaign, as well as four from SIU School of Medicine faculty: Patricia-Hopkins Price, Ph.D., research assistant professor of internal medicine, Robert Mocharnuk, M.D., associate professor of hematology/oncology, Steven Verhulst, Ph.D., professor of statistics and research consulting and Sandra Vicari, Ph.D. associate professor of psychiatry. Kerry Courneya, Ph.D., at the University of Alberta in Edmonton, and Dr. Karen Hoelzer, an oncologist in Springfield are consulting on the project.

Women who have been diagnosed with Stage 1, 2 or 3a breast cancer at any time who are not currently exercising are eligible for the study. The 12-week program encourages women to walk at a healthy pace, beginning with 12 minutes a day a couple times a week, working their way up to the recommended time of 150 minutes a week. During the first two weeks, volunteers receive coaching from an exercise specialist and learn how to use a heart monitor. During the last weeks of the program, volunteers are re-

"I don't get as winded when I walk places," says Connie Wanless, a breast cancer survivor who participated in a similar exercise study this summer. "The program is great. Why *wouldn't* you do it?"

sponsible for maintaining their own exercise regimen at home. An exercise specialist is available for support.

"We will compare the short- and long-term effects of this intervention to the usual care, which doesn't offer exercise counseling," Dr. Rogers explains. She will follow up with women who participate in the study three, six and twelve months after enrolling in the study. "Our vision is to create educational training materials that can then be taken to other cancer centers to train their staff to do these interventions."

When Connie Wanless, 61, was diagnosed with breast cancer last year, exercise was the furthest thing from her mind. After great care from the SIU Breast Center, she was finishing up radiation treatments when SIU's internal medicine department approached her about participating in Dr. Rogers' study. "I knew I should be exercising, but the treatments made me tired," Wanless says.

Chemotherapy and radiation treatments, while wiping out cancer cells, bring more waste products into the body and create toxicities, possibly interrupting the way tissues operate. Red blood cells carrying oxygen in bone marrow are also affected by chemotherapy, causing fatigue. Dr. Anton says the fatigue may make cancer patients feel like giving up daily activities. "But the sedentary lifestyle actually exacerbates the side effects of treatments."

Just a small amount of low- to moderate-intensity exercise can interrupt the pattern, he says. "If patients can exercise at least 15 to 30 minutes a day, they're doing something for their cardiovascular system to help move a lot of the harmful materials in chemotherapy out of their bodies."

Exercise increases the body's blood flow, bringing oxygen and nutrients to the body and flushing out waste products. "By helping red blood cells function, exercise helps ward off fatigue and improves quality of life," Dr. Anton explains. Clinical studies demonstrate that active women tolerate cancer treatments better than sedentary women.

Dr. Rogers' study gives participants individual, supervised exercise sessions to give survivors confidence that a simple walking program is a feasible change to their lifestyle. "Prioritizing and planning ahead helps women squeeze in the recommended 150 minutes a week," she says.

Exercise can also be a good defense against other side effects of cancer treatments: weight gain, muscle tone loss and a loss of mental acuity, Dr. Mocharnuk says. Data suggests that weight gain increases the chances of a recurrence of breast cancer. "Exercise lowers inflammation that occurs when you're overweight," says Dr. Rogers. "There are also hormonal factors and other things that play a role. We're still trying to understand these mechanisms."

Nancy Wilkinson, an eight-year cancer survivor, volunteered for the program in August. Four

weeks into the program, she already could tell a difference. "I'm more flexible, have more endurance, and my balance is better," she says during her 24-minute walk on the treadmill, supervised by Cancer Exercise Specialist Sara Mansfield, M.S.

Anyone who's ever basked in the beads of sweat on the forehead or displayed tattered sneakers like a trophy can tell you that exercise benefits aren't just a trim waistline and low blood pressure, but lower stress levels, sharper mental acuity, and improved self-esteem. "Clinical patient studies show exercise releases endorphins that produce medical benefits including feelings of well-being," says Dr. Mocharnuk. He recommends exercise to his cancer patients but says it's difficult to track their follow-through with any accuracy.

For cancer patients, the psychological benefits of exercise are especially beneficial. Dealing with treatments, surgeries, and schedules, patients can feel like they lose control of their lives, says Dr. Anton. "The exercise program is something they can do for themselves and gives them their control back and goes a long way toward improving their quality of life." Dr. Mocharnuk recalls one despondent cancer patient who became a new person both physically and emotionally after engaging in regular yoga classes.

The SIU School of Medicine study addresses these benefits and helps patients realize the mental and emotional benefits of exercise in addition to improving and maintaining physical activity. Group counseling discusses how to overcome barriers and improve attitudes toward exercise. "We talk with the women about time management, stress management, setting up schedules, and breaking established habits," Dr. Rogers says. The group dynamic, she adds, helps participants build a social support network.

Wanless says the group counseling was a great part of the program. "Our group was very easy to talk with. We gave each other advice about cancer-related stuff, but also about problems in our lives. Dr. Vicari reminded us that the program was about us and our health. They also told us about the consequences of not exercising."

The structured program persuaded Wanless to get moving for better health after her cancer treatments. "I decided that if I was under a controlled program, I would exercise. If I agree to do something, I do it."

She says exercise was tough to do at first, but got easier as the program progressed. "I can go down stairs better than I could before program, and I don't get as winded when I walk places. I know exercise is good for me, and I know I need to do this to keep going." Her family's support has been a great motivator, too. "Sometimes my grandchildren will watch me walk on the treadmill. I say, 'Isn't there something more exciting to do?' And they say, 'No, 'Amma. Exercise is good for you. We want to watch.'" She continues to walk at least three times a week.

Sara Mansfield, cancer exercise specialist, trains cancer survivor Nancy Wilkinson.

Can exercising 150 minutes a week really prevent cancer? Dr. Anton says yes. "There's enough evidence that exercise does have a preventive effect, particularly for colon cancer. It may be effective in breast and prostate cancer, too. Exercise as part of a healthy lifestyle can certainly reduce your risk of cancer."

The American Institute for Cancer Research (AICR) estimates that healthy lifestyle choices such as a healthy diet and regular physical activity can reduce the breast cancer rate by 40 percent — that's 70,000 women.

Dr. Mocharnuk encourages patients to speak with their doctor before beginning any exercise program. "This study could prove to be a wake up call for physicians to give explicit instructions to their cancer patients."

Giving women a prescription for exercise, Dr. Rogers says, helps them take an active role in their post-cancer diagnosis, rebounding stronger, happier, and healthier. "We're here to help patients make a new start, physically and emotionally, to improve their quality of life for the years ahead."

Learn more about Dr. Rogers' study

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