Evidence has been accumulating for 20 years showing that women who exercise have a significantly lower risk of developing breast cancer. In the past 10 years, researchers, including Melinda L. Irwin, PhD, MPH, Associate Professor of Chronic Disease Epidemiology at Yale School of Public Health and Co-Leader of the Cancer Prevention and Control Research Program at Yale Cancer Center, have considerably expanded that evidence, repeatedly showing that even after women have been diagnosed with breast cancer, they can substantially lower the risk of both recurrence and mortality by exercising and losing weight.

More recently, Dr. Irwin has found that this holds true even for women who don’t become physically active until after their diagnosis. The difference is stark: women who exercise after diagnosis reduce their risk of death from breast cancer by 30 to 50 percent. Nor is it necessary to run marathons to gain these benefits. Dr. Irwin’s observational studies show that moderate exercise, such as briskly walking for 30 minutes five days a week, can lower the risk of death from breast cancer by about 50 percent. More vigorous activity for 75 minutes a week, such as jogging or gym workouts, has a similar effect.

But the reverse is true as well, adds Dr. Irwin. Being overweight or obese increases the risk of developing breast cancer and dying from it. Similarly, women who gain weight after their diagnosis—and most do—put themselves at higher risk of recurrence and mortality. The difference, again, is stark: Dr. Irwin has shown that women who don’t exercise after a diagnosis are more likely to die of the disease than women who initiate an exercise program after diagnosis.

Yet more than 65 percent of breast cancer survivors are overweight and don’t exercise, despite the lethal consequences. So why isn’t every breast cancer survivor pacing around her neighborhood or joining a gym? Dr. Irwin lists several reasons, each of which she is working to change.

First, clinicians remain skeptical. “Critics say the studies are observational,” Dr. Irwin explained, “not randomized controlled clinical trials.” Such critics suggest that exercise and weight loss are merely proxies for other unknown factors. For instance, active women who maintain a healthy weight may simply be more self-disciplined than other patients, and hence more likely to adhere to their treatment regimens, and hence more likely to survive. Or maybe active women tend to be nonsmokers or have more education, which can lead to better outcomes. Dr. Irwin notes that even if these explanations are true, they still underline the importance of physical activity and weight management in survivorship.

But she doubts the proxy theory, and points to one of her recent studies to illustrate why. About 70 percent of breast cancer patients take an aromatase inhibitor (AI) that impedes the production of estrogen, a known factor in breast cancer. AI therapy is effective, but about half of patients stop taking it because it gives them joint pain. Dr. Irwin just completed a study to see if this side effect could be modified by exercise—and patients reported diminished joint pain. Physical activity could help patients stick with AI therapy, and Dr. Irwin hopes to test that assumption soon.

Skeptics also want clear proof that exercise and weight loss affect biological markers associated with cancer. Such evidence is growing. The newest suspect is insulin: high levels of it have been implicated as a strong risk factor for developing and dying from breast can-
A large clinical trial is studying whether the drug metformin, originally developed to cut the risk of diabetes by lowering insulin levels, can improve the rates of recurrence and mortality among breast cancer patients. Metformin can lower insulin by more than 20 percent.

This is an exciting possibility, yet Dr. Irwin notes that she and others have previously shown that exercise and weight loss can lower insulin by similar amounts. In fact, exercise and weight loss can also decrease levels of several other inflammatory biomarkers associated with cancer, including C-reactive protein (CRP).

That’s what Dr. Irwin found in a recently completed study named LEAN (Lifestyle, Exercise, and Nutrition). She recruited 100 overweight breast cancer survivors who, over the course of six months, were given 11 half-hour counseling sessions, in person or by phone, on exercise and weight loss. Dr. Irwin found that patients who lost just five percent of body weight decreased their CRP by 30 percent—which means that a 200-pound breast cancer survivor who loses 10 pounds can significantly improve her prognosis.

“We need data like that to convince the clinicians,” she said, “because they’re the gatekeepers and the ones patients listen to. If they say, you really need to start an exercise and weight management program and here’s one that’s free and evidence-based, the patients are far more likely to take action.”

Beth Perkins said the LEAN study changed her life. She was overweight, didn’t exercise, and paid little attention to her diet. She was unaware of the links between weight, inactivity, and breast cancer. Because of the counseling by LEAN’s project director, Maura Harrigan, MS, RD, CSO, a research associate at Yale School of Public Health and a certified specialist in oncology nutrition, Ms. Perkins began reading labels, eliminating pizza and Chinese take-out, and eating more fish, chicken, and fresh vegetables. She also began exercising, at first with difficulty, but was soon walking up to five miles per day. She lost 25 pounds. The study ended in 2013 but she still does CrossFit training three times a week and has lost another 15 pounds. These lifestyle changes transformed her. “I have much more energy,” Ms. Perkins explained, “and an all-around better feeling about myself—more of a drive to move forward instead of falling backwards.” Best of all, she remains cancer-free.

Right now clinicians are more apt to prescribe a pill or therapy covered by insurance. But Dr. Irwin believes that once physicians accept that exercise and weight loss can help their cancer patients live longer, they will insist that patients get counseling about these behaviors. And once that happens, insurance companies will start covering the costs as they do for other conditions, such as giving diet counseling to diabetes patients and cardiac rehab to heart disease patients.

That’s why, in addition to her observational and etiological studies, Dr. Irwin is devoting time to disseminating information. She and Ms. Harrigan have developed a book about weight loss counseling that they hope to distribute nationally through cancer hospitals and foundations. “Many breast cancer survivors do want to exercise and lose weight but don’t know how to go about it,” said Dr. Irwin.

As an example she points to a study she recently completed on women with ovarian cancer. No screening test exists for this difficult cancer, so it’s usually diagnosed at a late stage, and patients tend to need chemotherapy for the rest of their lives. The diagnosis and treatment often lead to anxiety, depression, and cancer-related fatigue. Dr. Irwin did a trial similar to the LEAN study in which ovarian cancer patients received weekly telephone calls for six months to get counseling about lifestyle changes and exercise.

“We are analyzing the results right now,” Dr. Irwin explained, “but I can tell you anecdotally that we’ve seen strong effects on quality of life—on lowering depression and cancer-related fatigue.”

What’s needed next, she added, are large-scale randomized clinical trials. Those are expensive, so the government is hesitant to fund them. Drug companies aren’t interested because there’s no potential profit. In the meantime, Dr. Irwin and other researchers will continue to demonstrate that women who exercise and control their weight have a better chance of avoiding breast cancer, escaping its recurrence, and living longer.