



Peter Yates for The New York Times

Exercise and Preventing Cancer

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Bernyce Edwards's daughter was 42 in 1997 when she died of **breast cancer**. It was just 69 days from diagnosis to death. And through her shock and grief, Ms. Edwards had a terrible worry: what if she got breast cancer, too?

"That's my biggest fear," she said.

So, to protect herself, she has taken up exercise.

And not just any exercise. This 73-year-old woman has turned into an exercise zealot.

She walks, she runs, she leaves her house in Bellingham, Wash., as early as 5 a.m. and spends an hour every day, rain or shine, putting in the miles on the trails and around a lake.

But will her efforts help? Medical researchers agree that, at the very least, regular exercise can make people feel better and feel better about themselves.

There is less agreement on whether it can also prevent **cancer**. But for two types, the evidence is promising: breast cancer and cancer of the colon. Other cancers have not been studied, or the studies that have been done have yielded little evidence that exercise can help.

Even for breast and colon cancer, further confirmation is needed.

Researchers who are enthusiastic about a cancer-exercise connection also caution against too much enthusiasm.

Exercise is like a seat belt, says Dr. Anne McTiernan of the Fred Hutchinson Cancer Research Center in Seattle, a co-author of "Breast Fitness: An Optimal Exercise and Health Plan for Reducing Your Risk of Breast Cancer."

"It's not a guarantee, but it can reduce your risk," Dr. McTiernan said. "The negative side is when a person says, 'The reason I got cancer is that I didn't exercise.' That's the problem."

Dr. Brian Henderson, dean of the University of Southern California's Keck School of Medicine, knows just where the idea that exercise might prevent breast cancer came from. It was an extrapolation from an observation, and from the start it was filled with untested assumptions. He knows this, Dr. Henderson said, because it included work that originated with his research group.

He began with the observation that exercise could affect when girls started to menstruate. For menstruation to begin, girls must be eating more calories than they burn, Dr. Henderson said. Adolescent girls who exercise strenuously often do not eat enough to make up for the extra calories they are using, and as a result, they may start menstruating later than more sedentary girls.

Researchers also knew that the older a girl was when she started to menstruate, the lower her risk of eventually developing

breast cancer, Dr. Henderson said, and "that's where the idea came from that exercise might affect risk for breast cancer."

The question was whether they could document it. Dr. Henderson knew the problems with such studies.

"It's hard to measure exercise," he said.

Researchers can ask people to recall how much they exercised, but their answers may not be accurate.

And it is almost impossible to account for incidental activities, like walking up a flight of stairs, that can cause one person to get more total daily exercise than another.

"We all go around in circles: isn't there a better way to measure this?" Dr. Henderson said.

Another problem for researchers is the timing of exercise. Is it important throughout life? Only in young adulthood? Or is it as effective to start to exercise in middle age, when breast cancer risk rises?

The best test of the exercise hypothesis would be to assign thousands of people randomly either to exercise or not exercise and then follow them for years, keeping track of cancer diagnoses as they occur.

But, researchers say, not only would such a study be expensive - the exercise groups would need constant support, and researchers would have to monitor how much they were exercising - but volunteers would be unlikely to comply with their assigned regimens. Telling someone to exercise or to remain sedentary for years is not like telling her to take a pill.

The alternative is to look at populations of people who did or did not exercise and try to correct for factors that might be linked to exercise and to cancer. Exercisers might be thinner, for example, and if they had a lower incidence of breast cancer it might be body weight, not exercise, that was responsible.

Study after study was conducted: some found small protective effects of exercise on breast cancer; others found none.

Now, in Dr. Henderson's opinion, there is no point in continuing to ask the same question in the same ways.