



Dartmouth's Gil Welch collaborated with two Norwegian researchers on a paper about breast-cancer remission.

Study reveals surprising cancer remission rate

When cancer suddenly disappears, people may call it a miracle. But a recent study by three physician-researchers from DMS and Norway found that spontaneous remission of breast cancer is actually quite common. More than one in five invasive cancers detected in the study by mammography vanished without ever being treated.

Findings: Spontaneous remission of breast cancers “has been a taboo concept,” says DMS’s H. Gilbert Welch, M.D., M.P.H. He helped write up the findings, which were published in the *Archives of Internal Medicine*. But the project was initiated by Per-Henrik Zahl, M.D., Ph.D., a senior statistician at the Norwegian Institute of Public Health, and Jan Mæhlen, M.D., Ph.D., a pathologist at Ullevål University Hospital in Oslo. Zahl and Mæhlen contacted Welch in 2005 after they had difficulty getting their results published, despite a robust study design.

The study compared the number of invasive breast cancers in two nearly identical groups—each with about 100,000 Norwegian women aged 50 to 64. The first group was followed from 1992 to 1997; the second from

1996 to 2001. The key difference between the two periods is that before 1996, Norway had no national breast-cancer screening program, while after 1996, all women aged 50 to 69 were offered a mammogram every two years. So the women in the first group had only one mammogram, at the end of that six-year span. But the women in the second group (the screened group) had three mammograms during that six-year span.

Given the conventional thinking about invasive breast cancer—that it always progresses—one would expect that the total number of cancers detected in each group at the end of six years would be about the same. It wasn’t. The incidence of invasive breast cancer was 22% higher in the screened group.

Paper: In the paper, the researchers stop short of questioning the benefits of mammography and instead focus on what the results show about the natural course of invasive breast cancers. Welch insisted on this approach to give the paper a better chance of

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being published. “We would have never had it published, if not for Welch,” says Zahl.

“I didn’t want to take on too many things at once,” says Welch. “I knew we were going to have a hard enough time with . . . the idea that breast cancers may regress.”

Welch’s caution seems to have been warranted. In a *New York Times* article about the study, a representative of the American Cancer Society said, “Their simplification of a complicated issue is both overreaching and alarming.”

Editorial: The journal that published the study also seems to have anticipated skepticism. It published a lengthy editorial in support of the study by Robert Kaplan, Ph.D., chair of health services at the University of California at Los Angeles, and Franz Porzolt, M.D., Ph.D., a German oncologist. “The design of the study has many imperfections,” they wrote, “but we should not overlook its strengths. It was population based, it had very high participation, and the outcomes were well documented. . . . The findings should not be dismissed.”

Critics may soon have another study to examine. Zahl recently analyzed breast-cancer data from Sweden, before and after that country instituted a national screening program, and found similar results.

Welch has no plans to collaborate again with the Norwegian team, but he welcomed the opportunity to contribute to the scientific debate about screening. Currently on sabbatical, he is writing a book about the dangers of overdiagnosis—the risks of getting treated for a disease picked up by screening that otherwise wouldn’t have caused problems.

As a result of this study, Welch and Zahl believe that a large proportion of breast cancers detected by mammography fall into the overdiagnosis category. The problem is that no one currently knows how to predict which will cause problems and which won’t.

“Things are not black and white in screening,” says Welch. “Early detection will help some, and it will hurt others. It can do both things at the same time.” JENNIFER DURGIN