

SCIENCE NEWS of the week

Family Ties and Risk of Breast Cancer

For women worried about their risk of breast cancer, a new study offers some reassuring news: In most cases, a family history of breast cancer is associated with a smaller risk than previous studies have indicated.

A second study by the same research team weighs in on the question of diet. The good news here is that a diet rich in vitamin A appears to help protect women against breast cancer.

Both reports, published this week in separate journals, stem from data gathered in the Nurses' Health Study, a long-term effort to assess the risk factors for breast cancer and other diseases.

Previous studies indicated that women with a family history of breast cancer faced a heightened risk of developing the disease. However, researchers weren't sure about the magnitude of that threat. Graham A. Colditz of the Harvard School of Public Health in Boston and his colleagues decided to take a closer look at family ties and breast cancer risk.

The Harvard researchers began by analyzing data culled from 117,988 women who participated in the Nurses' Health Study. The researchers kept track of women who developed breast cancer during a 12-year period and identified 2,389 cases from 1976 through 1988. Yet, only a fraction of those could be chalked up to family history, says epidemiologist David J. Hunter, also at the Harvard School of Public Health.

The team found that women with a maternal history of breast cancer are 1.8 times more likely to develop breast cancer than women who report no such history. According to results from past studies, such women would have two to four times the risk of developing the disease.

Women who reported both a mother and a sister with breast cancer face 2.5 times the risk of developing the disease, the new study shows. That risk too is less than has been reported in the past. Colditz and his colleagues report their results in the July 21 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

The Harvard investigators discovered that maternal age makes a difference in a daughter's risk profile. They estimate the probability of a 40-year-old woman finding a malignant breast lump by age 70 at about 12 percent if her mother was diagnosed with breast cancer before age 50.

By contrast, women whose mothers get the disease later in life appear at slightly less risk. That same 40-year-old has about a 10 percent chance of developing breast cancer if her mother received the bad news at or after age 60.

Even if a woman has no family history

of breast cancer, she still has about a 7 percent chance of developing this disease by the time she reaches her 70th birthday, Hunter points out. The Harvard team urges women to put their risk in perspective.

"For women who have a single affected sister or mother, their risk is elevated, but they need not feel they will inevitably develop breast cancer," Colditz says. Such women probably need to follow the standard guidelines on mammography and breast self-examination, Hunter advises.

At the same time, women who notice that breast cancer riddles their family tree should talk to their doctor, says Clark W. Heath Jr., vice president for epidemiology and statistics at the American Cancer Society in Atlanta.

A small subset of women do inherit a tendency to develop an aggressive type of breast cancer, generally before the age of 40, Hunter says. A gene that puts a woman at very high risk of breast cancer can typically be traced throughout a family, striking women in more than one generation, he says.

Women can't do anything to alter their pedigree. Yet, findings from a second study suggest a dietary approach may help prevent breast cancer.

Hunter, Colditz, and their colleagues decided to focus on the intake of certain vitamins and the risk of developing breast cancer. Their report appears in the

July 22 *NEW ENGLAND JOURNAL OF MEDICINE*.

This time, the researchers studied 89,494 women who participated in the Nurses' Health Study from 1980 to 1988. The team calculated vitamin A intake by asking detailed questions about diet and the use of vitamin supplements. The investigators discovered that women who consumed the greatest amounts of vitamin A proved to have a 20 percent lower risk of breast cancer than women who took in the smallest amounts of this vitamin.

Women who took multivitamin supplements, which contain vitamin A, gained an edge against breast cancer only if their diet didn't already provide enough of this nutrient, Hunter says.

Another study coauthor, Walter C. Willett, also at Harvard, points out that vitamin A can be toxic in large doses. Thus, the Harvard team suggests that most women should focus on their diet instead of popping vitamin pills. Spinach, carrots, and yellow squash are all rich in vitamin A.

Most public health experts now agree that a diverse diet — one low in fat and rich in fruits and vegetables — can protect against a variety of diseases, not just breast cancer. "This study adds substantially to a growing body of evidence that eating more vegetables should be a part of a healthy lifestyle," says Hunter.

— K.A. Fackelmann

All awhirl about a nearby spiral galaxy

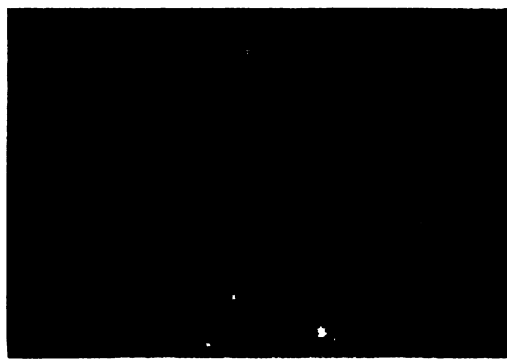
Its starlit arms forming a giant pinwheel in space, M51 stands out as one of the most striking spiral galaxies ever observed. But despite the fame of this nearby swirl of stars, aptly nicknamed the Whirlpool, its center has remained a mystery, hidden behind a shroud of dust. Viewing M51 in the near-infrared, however, a trio of astronomers has attained the first unadulterated peek at the galaxy's core.

In the July 22 *NATURE*, the team reports that M51's spiral arms wrap around the galaxy nearly three times — twice as far as observed in visible light in any spiral galaxy — and reach closer to the galactic center than theory had suggested. The researchers also find that M51 has a bar-shaped structure at its core, a feature that visible-light images only hinted at.

The infrared portraits are more than just pretty pictures. They "pose a strong challenge to our theoretical understand-

ing of . . . spiral structure in galaxies," writes Jeffrey Kenney of Yale University in a commentary accompanying the report.

Dennis Zaritsky of the Carnegie Observatories in Pasadena, Calif., and his colleagues observed M51 in the near-



False-color, near-infrared view of M51 shows spiral arms wrapping three times around the galaxy, reaching close to the core. M51 lies 30 million light-years from Earth.

Zaritsky, Rix, Rieke