

## Nursing protects moms from breast cancer

What's good for baby may be good for mom as well. Mother's milk is known to provide newborns with crucial immunity to disease-causing microbes. Now, a pair of studies suggests that mothers who choose to breast-feed their infants may gain an important edge against breast cancer that strikes before menopause.

Previous research had shown no consistent link between nursing and a woman's chance of developing breast cancer. Some studies had demonstrated that women who nurse gain protection against breast cancer; others failed to show that benefit. The inconsistent results might be explained by the low statistical power of some of the studies, which included only small numbers of premenopausal women.

To clear up the confusion, Polly A. Newcomb of the University of Wisconsin Comprehensive Cancer Center in Madison and her colleagues decided to conduct a large-scale study of breast-feeding and breast cancer risk. Twenty-five percent of the women studied by Newcomb's group were premenopausal.

The multicenter team first searched tumor registries in Wisconsin, Massachusetts, Maine, and New Hampshire for women age 74 or younger who had been diagnosed with breast cancer. The researchers then recruited women in the same age range who had never suffered from the disease. After excluding women who had never had a child, the team focused on 5,878 women with breast cancer and 8,216 controls.

Interviewers then asked participants a series of questions about their reproductive history.

A statistical analysis of the data revealed that women who had nursed their infants had, on average, a 20 percent lower risk of getting breast cancer before menopause than mothers who had not nursed. That reduction held true even when the team adjusted for other factors linked to breast cancer, such as a family history of the disease.

A 20 percent risk reduction may appear modest, but it could contribute significantly to the fight against premenopausal breast cancer, which accounts for slightly less than one-quarter of all U.S. breast cancer cases.

"Any reduction in risk could be important," Newcomb says. Knowing that breast-feeding offers some security against breast cancer might make a big difference to young women, who currently have very few options for preventing or reducing their risk of dying from breast cancer, adds coauthor Walter C. Willett of the Harvard School of Public Health in Boston.

The study finds that very young women gain the most protection from breast-feeding a child. A woman age 19 or younger who nursed her infant for a

period of six months had about a 50 percent reduction in premenopausal breast cancer risk. The researchers describe their findings in the Jan. 13 *NEW ENGLAND JOURNAL OF MEDICINE* (NEJM).

For women, such as working mothers, who can't breast-feed for extended periods, the study offers some reassuring news. Even women who nursed for a relatively short period (from four to six months) had a "substantial" reduction in their breast cancer risk, Newcomb says.

A second study, this one by Richard P. Gallagher of Canada's British Columbia Cancer Agency in Vancouver and his co-workers, indicates that women who breast-feed for two months or longer are shielded from premenopausal breast cancer. Gallagher's team interviewed 1,018 women with breast cancer and 1,025 controls; over 30 percent of the women were premenopausal. They present their findings in the just-released Dec. 15 *AMERICAN JOURNAL OF EPIDEMIOLOGY*.

Data from both studies fit a controversial theory that nursing may guard against breast cancer by interrupting ovulation, a process marked by the release of powerful hormones (SN: 10/31/92, p.298). Or, milk production may cause physiological changes that leave breast tissue resistant to carcinogens, speculates Esther M. John, an epidemiologist at Stanford University School of Medicine. John, along with Stanford's Jennifer L. Kelsey, wrote an editorial that accompanies the NEJM report.

Breast-feeding appears to protect women only against breast cancer that strikes before menopause. Both studies report no link between nursing and the risk of postmenopausal breast cancer. Thus, it is important for women age 50 and older to get regular mammograms, which can reduce their risk of dying from breast cancer, Newcomb points out.

Why would breast-feeding protect against premenopausal breast cancer and not against breast cancer that hits a woman after menopause? Unfortunately, no one knows the answer to that question, Newcomb says. —K.A. Fackelmann

## Savannas leave signs of slow takeover

A piecemeal transition to widespread savannas in eastern Africa began more than 15 million years ago, with savanna grasses and plants achieving dominance around 7 million years ago, according to a new study. Similarly, botanical building blocks of savannas emerged in central Asia by 14 million years ago and gained prominence about 9.4 million years ago, report Michèle E. Morgan, an anthropologist at Harvard University, and her colleagues.

Their findings challenge the theory, presented last year, that savanna environments rapidly took hold and expanded in regions throughout the world between 7 million and 5 million years ago. A relatively sudden drop in atmospheric carbon dioxide — which favored plants that use carbon dioxide efficiently during energy production — sparked the spread of savannas, argued Thure E. Cerling, a geologist at the University of Utah in Salt Lake City, and his co-workers.

"We agree that significant environmental changes occurred around 7 million years ago, near the time when the first hominids [members of the human evolutionary family] appeared," Morgan contends. "But the grasses and plants that make up savannas had already existed for millions of years in much more variable environments."

Morgan's team analyzed deposits of two forms of carbon in the fossil teeth of plant-eating animals, including giraffes, pigs, and elephants. The fossils had been unearthed previously at two sites, one in western Kenya and the other in

northern Pakistan. A distinctive carbon ratio in tooth enamel signifies the presence of savanna grasses and plants in an animal's diet.

Animals living 15.3 million years ago at the Kenya site ate warm-season grasses and plants typical of savannas, as well as plants from wooded areas that leave a different carbon signature on tooth enamel, Morgan and her associates assert in the Jan. 13 *NATURE*. Sole reliance on savanna-based vegetation developed from 7 million to 6 million years ago in Kenya, they argue.

In Pakistan, savanna grasses became an important part of the grazing and browsing diet by 9.5 million years ago, the researchers maintain. Consumption of this vegetation grew over the next 4.5 million years, they say.

Cerling's group based their contrasting argument, published in the Jan. 28, 1993 *NATURE*, on a carbon analysis of ancient soil and animal teeth from the same site in Pakistan. They also studied fossil teeth of North American horses.

Reasons for the disagreement on the estimated arrival time of savannas remain unclear, Morgan holds. Soil may offer a less complete view of regional plants than animal teeth, she suggests.

Whatever the case, a global drop in carbon dioxide did not occur in a vacuum, the Harvard scientist asserts. Water availability, temperature changes, and other factors probably influenced fluctuations in savanna vegetation for millions of years before the proper conditions allowed these plants to take firm root, Morgan contends. —B. Bower