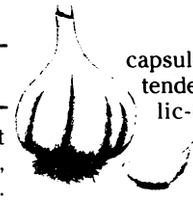
# Nursing babes savor garlic, shun spirits



Nursing moms with a yen for garlic can relax. A new study suggests that nurslings drink more of mother's milk when it's flavored with the savory seasoning. But a second study by the same researchers shows that babies drink *less* breast milk when it's got a touch of alcohol.

The new work reflects a growing interest in whether flavors affect a baby's behavior during the nursing phase and perhaps later in life. Some scientists think moms who eat spicy foods during pregnancy may pass that penchant along to their infants. Does that mean babies fed monotonous formulas may shun Szechuan restaurants as adults?

No one knows, but Julie A. Mennella and Gary K. Beauchamp of the Monell Chemical Senses Center in Philadelphia have embarked on investigations that may one day help answer that question.

Many new moms are advised to drink a glass of beer or wine just before nursing to boost their milk production, yet the evidence linking alcohol to increased lactation remains problematic, Mennella notes. In the Oct. 3 NEW ENGLAND JOURNAL OF MEDICINE, she and Beauchamp examine the issue from a new angle.

To get an idea of how babies react to a nip of alcohol in mother's milk, the team studied 12 nursing mothers and their infants. Alcohol consumption reported by the mothers during lactation ranged from one-half drink to 20 drinks a month.

Mennella and Beauchamp began their experiment by collecting a sample of breast milk from each volunteer. Then they gave six of the women a glass of pure orange juice, and six a glass of orange juice spiked with grain alcohol. During the next three hours, the babies nursed on demand and the researchers collected additional milk samples at various intervals. A week later, the researchers repeated the experiment but switched the groups so that women who had received straight juice got the alcoholic version and vice versa.

To evaluate the milk's odor — a key component in flavor — the team recruited 17 adults with a normal sense of smell. This "sniffing panel" readily detected a change in breast milk odor after the mothers drank the spiked juice.

Babies seemed to notice the change as well. In the testing sessions when their mothers received alcohol-spiked juice, infants drank "significantly" less milk, Mennella and Beauchamp report. They suggest three possible factors: Babies may simply dislike the flavor of alcohol; alcohol may impair their sucking ability; or alcohol may temporarily decrease maternal milk production.

While alcohol seems to dampen nursing behavior, a hint of garlic may help whet a baby's appetite. In a study described in the October PEDIATRICS, Mennella and Beauchamp recruited eight nursing mothers and their infants. Again, they collected a baseline sample of milk. Half the women then took a garlic capsule; the rest got a placebo capsule. This time, the researchers observed the women and their infants for four hours, collecting milk samples at regular intervals.

The sniffing panel noticed a strong odor in milk from the mothers who ingested garlic capsules. But the babies seemed to prefer the garlicky milk, remaining attached to the breast for longer periods after their mothers took the capsules. In addition, infants tended to consume more garlic-flavored than "plain" milk, the team reports. Studies such as these may help nursing mothers select foods that will entice finicky babies, says James B. Snow Jr., director of the National Institute on Deafness and Other Communication Disorders, which helped fund the studies. He adds that while the findings suggest that nurslings like certain flavors and dislike others, the research doesn't rule out the possibility that certain ingredients in garlic or alcohol may increase or decrease a mother's milk production.

*— K.A. Fackelmann*

# Gene therapy for rare cholesterol disorder

A proposal to use gene therapy to treat a rare, inherited form of high blood cholesterol won approval this week from an advisory committee convened by the National Institutes of Health.

The proposed trial is the fifth gene therapy experiment to gain the NIH committee's blessing. It holds out hope for the roughly 100 people in the United States with familial hypercholesterolemia, which often causes a fatal heart attack before adulthood.

A team led by James M. Wilson at the University of Michigan Medical Center in Ann Arbor received the nod from the NIH Recombinant DNA Advisory Committee to administer genetically engineered liver cells to three patients with familial hypercholesterolemia. The cells, taken from the patients' own livers, would contain an added gene that directs production of cellular receptors that sop up low-density lipoprotein (LDL) cholesterol — the "bad" cholesterol — from the bloodstream.

Patients with the most severe form of familial hypercholesterolemia are born lacking both of the usual two copies of the LDL receptor gene. As a result, their blood contains astronomically high cholesterol concentrations — roughly four to five times the levels found in healthy individuals. Because of their cholesterol load, most of these patients suffer several heart attacks before they enter junior high school. They also develop thick, yellow flaps of fatty skin, called xanthomas, around their elbows and knees.

People born with one copy of the LDL receptor gene have abnormally high blood cholesterol but sometimes live into their 30s or 40s. Researchers estimate that roughly 5 percent of heart-attack patients under age 45 have this less severe form of familial hypercholesterolemia.

The standard treatments for both forms of the disorder are cholesterol-lowering drugs and plasmapheresis, in which a machine filters excess cholesterol from the patient's blood. But the drugs do not work well on patients who lack both copies of the LDL receptor gene, and plasmapheresis is only a temporary solution. Most patients end up having coronary bypass surgery.

"There really is no treatment of choice," says Wilson. "We hope to diminish the [cholesterol counts] of the gene therapy patients, so they might respond better to standard therapies."

He and his colleagues plan to surgically remove a slice representing 15 percent of each patient's liver, isolate liver cells called hepatocytes, and culture them in the laboratory. After using a crippled retrovirus to insert a gene for the LDL receptor into the hepatocytes, the researchers will reinject the engineered cells into the major blood vessel supplying the patient's liver. They hope some of the LDL-receptor-bearing cells will take up residence in the liver and reduce the patient's cholesterol level.

Wilson's group demonstrated last year that the gene therapy strategy works in Watanabe rabbits, which also accumulate cholesterol. Genetically engineered liver cells reduced the rabbits' blood cholesterol levels by an average of 30 percent (SN: 11/10/90, p.294). A separate team in Houston, led by Fred D. Ledley at Baylor College of Medicine, is using a marker gene to test whether transplanted hepatocytes reestablish themselves in the human liver (SN: 4/13/91, p.228).

"This is a well-thought-out proposal based on solid preclinical data," says NIH committee member Roy H. Doi of the University of California, Davis. Henry I. Miller, head of the Food and Drug Administration's biotechnology office, says the experimental treatment "should reasonably be expected to have a clinical benefit in these patients."

Wilson's team plans to begin treating the three patients as soon as the experimental protocol is evaluated by the FDA and signed by the NIH director. *— C. Ezzell*