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PCBs sour some on mother's milk

LANSING, MICH.—Growing concern that America's littlest inhabitants may be bearing the biggest burden of environmental contamination is leading health authorities to reluctantly reweigh the risks and benefits of breastfeeding.

In the wake of a University of Michigan report demonstrating that contamination with the industrial pollutant polychloride biphenyl (PCB) is ubiquitous and nursing mothers may be endowing their infants with heavy doses of the lipophilic chemical—mobilized from what toxicologists call "the vast sink of body fat"—the state health department here convened a select panel on PCBs. The experts concluded that "the vast majority" of Michigan mothers needn't worry, but a few may have to reduce or even stop suckling.

"We support as much breastfeeding as possible," says Dr. Laurence Finberg, a pediatrics professor at Albert Einstein College of Medicine in New York City. "But we're also concerned about toxins that would contraindicate it." Dr. Finberg, chairman of the American Academy of Pediatrics' environmental-hazards committee, was one of those called here by Dr. John L. Isbister, head of environmental epidemiology in Michigan.

This select group decided only women with PCB levels over 10 parts per million should discontinue breastfeeding. It advised those having between 5 and 10 ppm to discuss with their physicians the possibility of decreasing the fre-

quency or duration of nursing sessions, which normally are nutritionally and immunologically superior to bottle feeds.

Such women are few, said the panel's report, and their "unusual exposure" is likely to have come about through occupational contact with PCBs, as in the manufacture and servicing of oil-filled power transformers. High levels may also be found among women exposed to accidental releases of the chemical or those who regularly eat fish from the Great Lakes and other heavily contaminated waters. But most women don't need to have their breast milk tested, panelists stressed; the state makes no provision for such screening anyway.

Michigan wants no PCB stigma. An episode of human and livestock poisoning here in the early 1970s was traced to animal feed tainted with the PCBs' next of chemical kin, polybrominated biphenyls (PBBs). "But PCBs aren't unique to Michigan," Dr. Isbister told MWN. "They're widespread."

Very likely, though Ann Arbor researchers detected them in all 1,067 samples of breast milk submitted by women in this state for PCB and PBB testing. In February's *American Journal of Public Health*, the team reported most of the mothers had PCB levels of 1 to 2 ppm, though the range ran up to 5.1 ppm. The study's median of 1.35 ppm means that half the study population had "a level nearly equal to or above the present FDA tolerance limit for PCBs in cow's



milk." It also means 35% of their infants would have a body burden of 1 ppm or more at nine months.

But no one knows whether such concentrations are harmful. The investigators consider a maternal load of 2.3 ppm—a full standard deviation above their mean—"elevated" and the signal for decreased breastfeeding.

Just over a year ago, Wisconsin health officials asked physicians to send in milk samples from lactating women who may have been exposed to such PCB levels. But a sharp rejoinder in the journal *Pediatrics* reminded those doctors

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that the benefits of breastfeeding are well established while the hazards of PCB ingestion are not, and so far they've submitted barely a dozen specimens.

"Pediatricians claim there have been no case reports of frank illness (from PCBs) in the U.S.," notes Thomas M. Wickizer, a research associate at the University of Washington School of Public Health in Seattle and a former research assistant at Ann Arbor. "But I worry about subtle effects on the nervous system and secondary problems from liver toxicity. Moreover, we don't know the interactive effects of the chemicals." He further warns that the level of biphenyls in breast milk is only half the hazard, the other half being its fat content. PCBs, like DDT and other biologically persistent organochloride compounds, are excreted in the fat component of milk, and this varies among women and according to the time of day. "A mother with twice as much milk fat transmits twice as much chemical contamination," Wickizer points out.

Also often ignored is the fact that infants aren't PCB virgins at birth. "Transplacental transmission isn't generally appreciated,"

observes pediatrician Mason Barr, teratology director at the University of Michigan. "The deposition of PCBs in certain fetal tissues is an area of concern." In 1976 and 1977, he and his colleagues found PCB-related PBBs in the brains of still-born infants, a finding "we haven't pursued," he told *MWN*.

But other researchers are pursuing suspicions that breast-milk PCBs may be affecting the behavior and health of normal-appearing babies. Further, recent studies suggest that some PCB isomers more toxic than others may preferentially accumulate in breast tissue.

The only known episode of human PCB intoxication occurred in 1968 in Japan. Surviving children born to women who'd ingested heavily contaminated rice oil there were found to be neurologically and developmentally impaired nine years after the poisoning.

Only recently have physicians begun to measure the health effects of low-level chronic PCB exposure from breast milk. In North Carolina (*MWN*, Feb. 5, '79, p. 72) and Wisconsin, doctors are monitoring the development of matched sets of breast- and bottle-fed infants, but their results are at least a couple of years off. How-

ever, University of Wisconsin researchers have noted growth lags and learning deficits among rhesus monkeys born to mothers who consumed 2.5 to 5 ppm during pregnancy and lactation.

Dr. David P. Rall, director of the National Institute of Environmental Health Sciences, told *MWN* that in one study not as yet replicated, children with large amounts of PCB-related PBBs in body fat did not perform as well as those with lower levels. In his own studies of rats, he added, moderate doses of PBBs have decreased neurobehavioral responses.

And at the environmental-sciences laboratory headed by Dr. Irving J. Selikoff at Mount Sinai Medical Center in New York, physicians have long been keeping tabs on PBB levels among Michigan residents. "All people there have measurable amounts in their tissue," Dr. Selikoff told *MWN*. "And it's likely PBBs will appear in breast milk." The danger? He said his team has evidence that "resistance to infection is decreased, and possibly resistance to cancer."

Still, pediatrician Finburg of New York City observes, "There are lots of unknowns and the issue remains open."

Companies find HMOs don't cut costs

MENLO PARK, CALIF.—Companies that have added an HMO option to their workers' benefit programs are finding that the dual-choice approach isn't cutting their health-care costs—and in some cases may be boosting them.

Fully 63% of senior executives of firms offering employees either HMO coverage or standard health insurance feel giving this alternative has had no effect—up or down—on expenses, according to a survey by Louis Harris and Asso-

ciates. Though 13% of the remaining officials say costs have been lowered, 14% believe HMO coverage has led to higher costs.

The survey, done for the Henry J. Kaiser Family Foundation here, is based on interviews with 964 officials, roughly half in charge of benefits and half chief executives, in 634 small to medium-sized companies across the nation. About two thirds of the companies have experience with HMOs. The Kaiser family, of course, set up what is

today the largest HMO, Kaiser-Permanente.

Harris concedes the survey shows little conviction among employers that the HMO option lowers health-benefit costs, even though HMOs are widely touted as cheaper than traditional coverage. But Harris terms "positive" the finding that at least employers already offering the HMO option generally don't view it as an added expense; he reasons this should allay the fear of companies not

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