



## International Lactation Consultant Association

# Position on Breastfeeding, Breast Milk, and Environmental Contaminants

Concern continues to be appropriate regarding environmental contaminants that find their way into the breast milk of lactating mothers. Dioxins produced during industrial processes and persistent organic pollutants (POPs), such as organochlorine pesticides and polychlorinated biphenyls (PCBs), are of great concern due to their long half-lives in the body and their contribution to the body burden of contaminants in mothers and babies. Such substances are toxic to the nervous and immune system of the developing fetus. The number of environmental chemicals is in the thousands, with many new ones being added each year. Exposure may be geographical, occupational, or accidental.

Researchers and health authorities may use breast milk sampling as a measure of community-wide contamination because it is a rapid, sensitive, and less invasive method than drawing blood or obtaining a fat biopsy. Some environmentalists and researchers believe that a breast milk surveillance system should be established to monitor the extent of population body burdens of chemical pollutants and as a means to identify important emerging pollutants (1). Their interest in establishing such a system is not based on concerns about health threats per se to breastfed infants, but either on their desire to publicize the need to clean up our environment or to provide a simple, low cost means of tracking persistent organic pollutants. PCB analysis of breast milk is not done clinically because there are no established standards for acceptable levels of pollutants and therefore no way to use the data to predict health risks. Unfortunately, it is possible that the concerns expressed by environmental groups may be sensationalized or misinterpreted by the media and cause undue concern among breastfeeding mothers. Lactation professionals must be prepared to respond to questions regarding this issue.

Research shows that:

- transplacental exposure to PCBs and dioxin has adversely affected neurological and cognitive development of children up to 10 years of age, and growth up to 14 years.<sup>2</sup>
- it appears that the greatest risk period for adverse effects from environmental exposures is prenatally.<sup>3</sup>
- fetal PCB exposure can result in hypotonia at birth.
- incremental body burdens of lipophilic chemicals in infants increase rapidly at the start of lactation but may decrease after approximately six months; chemical contaminants in breast milk increase the amount of these chemicals stored in the bodies of breastfed children (body burden) but by two years of age incremental body burdens decrease substantially.<sup>4</sup>
- there appears to be a decrease in the levels of organochlorine chemicals in breast milk over the first year of lactation.<sup>5</sup>
- rapid growth of infants in the first year of life may result in growth-related dilution of some chemicals in the body.<sup>6</sup>
- breastfed children however, still show higher levels of POPs than formula-fed children up through ages 10-12.<sup>7</sup>
- postnatal exposure to PCBs and dioxins through breast milk has not been shown to affect neurological or cognitive development of infants and children<sup>8-9</sup>; even with similar prenatal exposure, formula-fed babies have demonstrated adverse neurological outcomes while those fed breast milk have not, despite higher POPs intake from breast milk; breastfeeding and breast milk work to counteract the adverse developmental, neurological, and cognitive effects of POPs exposure in utero.<sup>10</sup>
- high levels of estrogenically active chemicals such as dichloro chlorophenyl ethylene (DDE ) and PCBs may contribute to diminished milk supply and milk fat content.<sup>10</sup>
- high concentrations of contaminants in breast milk, beyond typical background levels, can reduce some of the benefits of breastfeeding, such as the enhanced resistance to infection commonly seen in breastfed infants.<sup>11</sup>
- when lives saved by breastfeeding in the postnatal period are compared to the estimated excess cancer deaths attributable to the contaminants in breast milk, only extreme levels of contaminants in breast milk represent more of a hazard than failure to breastfeed.<sup>12-13</sup>

How should lactation professionals address mothers' concerns?

- Continue to promote, protect, and support breastfeeding as the normal and desirable way to feed infants and young children.
- Reassure mothers that with the exception of maternal chemical poisoning, breast milk remains a safe, life-enhancing method to feed and nurture infants and young children.
- Remain aware of environmental advisories issued by governmental agencies, and understand how regional levels of pollutants may affect their clients' risk.
- Encourage mothers to reduce their own exposure to known chemical contaminants for their own health and to decrease future fetal exposures.
- Provide mothers with factual and understandable materials and information so that sensational headlines in the media regarding breast milk "contamination" need not sway them to avoid or abandon breastfeeding.

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