

Powdered Infant Formula-How Safe is It ?

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IBFAN - the International Baby Food Action Network -consists of more than 200 public interest groups working around the world to promote the health and well-being of infants, young children and their mothers through the protection, promotion and support of optimal infant and young child feeding practices. IBFAN works to eliminate the irresponsible marketing of breast milk substitutes and feeding bottles through full and universal implementation of the International Code of Marketing of Breast milk Substitutes and subsequent, relevant World Health Assembly Resolutions. In 1998, IBFAN was a recipient of the Right Livelihood Award.

Breast feeding is a rule rather than exception in most parts of India. It is now established that examining not only if an infant was breast fed but also how (in terms of duration and exclusivity) is essential to our understanding of the impact of breast feeding on human health⁽¹⁾. Infants partially breast fed (breast milk along with animal milk or infant formula) or not breast fed have a significantly higher risk of hospitalization and death as compared to infants predominantly breast fed (breast milk and water) or exclusively breast fed⁽²⁾.

Data from India states that only 55% of children less than 4 months of age are exclusively breast fed, 23% predominantly breast fed and 20% receive supplements along with breast milk. Powdered milk is given infrequently to young children at any age, but other milk (such as cow's / buffalo's milk) is given more often. Around 10% of breast fed infants less than 6 months receive powdered milk. This figure increases considerably with increasing age and also among non breast feeding children⁽³⁾.

Enterobacter sakazakii in powdered infant formula has been implicated in outbreaks causing sepsis, meningitis or necrotizing enterocolitis⁽⁴⁻⁶⁾. While the organism has been detected in different types of food, only powdered infant formula has been linked to outbreaks of diseases⁽⁷⁾. Based on the available information, in 50-80% of cases, powdered infant formula is both the source and vehicle of *E. sakazakii* induced illness, and in 20-50% of the cases, the formula was the vehicle but poor hygiene during reconstitution and handling was the source⁽⁸⁾. Powdered milk has also been shown to cause infections by *Clostridium botulinum*, *S.aureus* and *Salmonella*^(8,9).

E.sakazakii is a gram negative rod within the family Enterobacteriaceae. It has a propensity to infect the central nervous system to cause meningitis, cysts or brain abscess. Subsequent development delay and hydrocephalus is a well

recognized sequel. Although exact virulence mechanisms are unknown, it is known that a small percentage of *E.sakazakii* cells can survive for extended periods in dehydrated powdered infant formula. Reported recovery of members of Enterobacteriaceae from more than 50% of 141 products obtained from 35 countries and *E.sakazakii* from 14% of the samples reiterates this fact. All were in compliance with Codex Alimentarius since the concentration of the organism did not exceed 1 colony forming unit / gram dry powder⁽¹⁰⁾.

Information regarding *E.sakazakii* is limited to a relatively small number of case reports of sporadic cases and outbreaks. The risk of potentially fatal infections appears to be highest for low birth weight infants, immunocompromised infants at any age and term infants hospitalized in level 2 and level 3 neonatal intensive care units. There is probably a low, but as yet unquantified risk in healthy term infants, which cannot be described with data available at this time⁽¹¹⁾.

Considering the limitations of current surveillance systems in most countries and the fact that infant formula is widely used, the presence of *E.sakazakii* in infant formula and its potential effects in infants could well be a significant public health problem. There is a pressing need to obtain additional information on what public health impact *E.sakazakii* has in developing countries.

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