Peer Reviewed

Fellow's Column: Food Insecurity: Does Infant Formula Shortage Count?

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Abstract:

This article briefly discusses the food insecurity issue created by the recent recall of infant formulas. The reasons for the problem and solutions are provided with the CDC reference.

"Food insecurity (FI) in infancy sounds like a problem of the developing world, but recently a relatively large community of parents encountered food insecurity after the formula recall. Abbott Nutrition recalled various brands and lot codes of powdered infant formula because of possible Cronobacter sakazakii contamination."

Food insecurity (FI) in infancy sounds like a problem of the developing world, but recently a relatively large community of parents encountered food insecurity after the formula recall. Abbott Nutrition recalled various brands and lot codes of powdered infant formula because of possible *Cronobacter sakazakii* contamination. This recall has created a "food insecurity" for certain families, as they cannot access the formula due to the disruption of the supply. Food insecurity affects an estimated 15 million Americans, with high rates among children aged 0-17 years living in a food-insecure household. (1) The problem is further aggravated by low breastfeeding rates (BF). Although BF rates in the United States have increased from 1973 to 2015, social and racial disparity still exists. (2) In developing countries, the rate is relatively higher, but it has been shown that mothers from food-insecure homes were less likely to breastfeed exclusively than mothers from food-secure households. (3) Therefore, the reliance on infant formula is high, creating food insecurity with any break in the supply chain.

What about promoting BF? This is not simple. The global infant and young child feeding practices (IYCFP) showed a 42-49% initiation rate in BF, but only 37% of children younger than six months were exclusively breastfed. (4) The other issue is with the marketing and trade policies. Salmon (5) pointed out the conflicting policy between promoting and protecting the BF. She highlighted the role of the trade environment that facilitates the marketing and consumption of breast milk substitutes.

Alternatives/advice for the families (see Appendix- Formula Guide for Parents):

The CDC provides useful information on the infant formula use (https://www.cdc.gov/cronobacter/infection-and-infants.html and https://www.cdc.gov/cronobacter/outbreaks/infant-formula.html)

1. Use another brand. The US Food and Drug Administration (FDA) regulates all commercial infant formula brands to ensure they meet the minimum nutritional and safety requirements. You may use another brand but make sure that the ingredient requirements match with the recalled formula. Special formulas have special formula alternatives. Refer to your pediatrician.
2. Homemade Infant Formula: The FDA and the American Academy of Pediatrics (AAP) discourage and warn against using different recipes to make homemade infant formula. In a recent study, DiMaggio et al. (6) found that out of 2,315 respondents, 14% of the respondents used European infant formula, 5% used toddler formula, and 2% made homemade infant formula.
3. Imported Infant Formulas: The FDA does not review these formulas. These illegal formulas may not have been shipped and stored per regulations. AAP warns against using these illegally imported formulas. So, the risks associated with these formulas are even much higher.
4. Talk to the local community health worker, public health officer, and social worker. They could be a good resource.
5. The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) office could provide help. Call your local WIC office and ask for help.
6. Consider shopping for the alternative formulas in different retail stores or even in different neighborhoods. Unfortunately, many parents have to drive many miles to get the right formula for their infants. Do not shop from an online marketplace or third-party distributors.

While families still struggle with the business side of acquiring the required infant formula, and we hope that this will resolve soon, the whole scenario provides pediatricians an opportunity to further encourage the families to follow the AAP guidelines, which state:

" The AAP reaffirms its recommendation of exclusive breastfeeding for about six months, followed by continued breastfeeding as complementary foods are introduced, continuing breastfeeding for one year or longer as mutually desired by mother and infant." (7)

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Formula Guide for Parents

Categories	Indications	Commonly Used	Alternatives
Term Formulas			
Milk-Based - 20 kcal/oz - Carbohydrate source: lactose - Protein Source: Cow's milk protein	- Standard term infant formula	**Similac Advance/ProAdvance***  **Similac 360 Total Care*** [Launched 11/2021] - The first and only infant formula containing a blend of five different human milk oligosaccharides (HMOs) closely resembling the prebiotic blend found in breastmilk. 	- Enfamil Infant/neuropro* - Enfamil Enspire - Gerber Good Start - Parent Choice Advantage/Infant - Up & up Advantage - Member's Mark Infant - Kirkland Infant/ Procare - Earth's Organic Infant 
Milk-Based Caloric Density - 24 kcal/oz - Carbohydrate source: lactose - Protein Source: Cow's milk protein - Only available in liquid concentrate form	- Infants with higher energy requirements and fluid restriction - Failure to Thrive, Low Birth Weight, Heart Disease	- Similac with Iron 24 * 	- Enfamil 24 
Milk-Based Reduced Lactose - 20kcal/oz - Carbohydrate source: reduced lactose ~ 5% - Protein source: Milk protein isolate	- Fussiness, excess flatulence and mild spitting up - Due to lactose insensitivity	Similac Sensitive  Similac 360 Total Comfort Sensitive 	-Enfamil Sensitive - Gerber Good Start GentlePro - Parent Choice Sensitivity - Kirkland Sensitive - Member's Mark Sensitivity - Up & Up Sensitivity - Earth's Organic Sensitive 

Soy-Based - 20 kcal/oz - Carbohydrate source: fiber oligosaccharides, glucose polymers from corn syrup, and sucrose. Lactose-Free - Protein source: Soy protein	- Infants with an inability to breakdown lactose - Lactose intolerance (primary or secondary), Galactosemia, vegetarian/vegan families	Similac Soy Isomil 	- Enfamil ProSobee - Enfamil Simply Plant-Based - Gerber Good Start Gentle Soy - Parent Choice Soy - Up & Up Soy - Earth's Organic Soy 
Partially Hydrolyzed/Reduced Lactose - 20 kcal/oz - Carbohydrate source: Sucrose, Galactooligosaccharides, reduced lactose - Protein source: partially hydrolyzed whey protein - NO casein	Infants that experience colic, fussiness, flatulence, and/or other digestive symptoms - Due to milk intolerance - Usually next step if Sensitive formulas are not tolerated well	Similac Total Comfort 	- Enfamil Gentlease - Gerber Good Start SoothePro - Parent Choice Gentle - Member's Mark Gentle - Up & Up Gentle - Earth's Organic Gentle 
Prethickened - 20 kcal/oz - Milk-Based - Mixed with pregelatinized waxy rice starch	- Spitting up due to GERD	Similac Spit-Up 	Enfamil A-R 

Categories	Indications	Commonly Used	Alternatives
Preterm Formula			
Standard - Only while in NiCU - 20 kcal/oz or 24 kcal/oz - Carbohydrate source: lactose - Protein source: cow's milk protein	- Prematurity, Weight <1,800g, or poor growth	Similac Special Care 20 Similac Special Care 24 HP 	Enfamil Premature 20 Enfamil Premature 24 HP 
Premature High Calorie - Only while in NICU - 30 kcal/oz - Carbohydrate source: lactose - Protein source: cow's milk protein -	- High-calorie needs or fluid restriction in prematurity - VLBW (<1,500 g) and ELBW (<1,000g) [receive parenteral nutrition with glucose, protein, and electrolytes +/- trophic feeds] - Failure to Thrive, Low Birth Weight, Heart Disease	Similac Special Care 30 	Enfamil Premature 30 
Premature Transitional - Prior to discharge from NICU - 22 kcal/oz - Carbohydrate course: lactose - Protein source: Cow's Milk protein	- Weight >1800g or 24 weeks gestation	Similac Special Care Neosure 22 	Enfamil  Enfacare
Soy formula is nutritionally <u>inappropriate</u> for preterm infants because of the associated risk of osteopenia, rickets, aluminum toxicity, and prevention of adequate absorption of zinc, phosphorus, and iron.			

Categories	Indications	Commonly used	Alternatives
Specialized Infant Formulas			
Extensively Hydrolyzed - 20kcal or 24 kcal/oz - Carbohydrate source: Lactose free - Protein source: peptide-based; containing hydrolysates of casein or whey. extensively hydrolyzed cow's milk protein - Component of medium-chain triglycerides (MCT 30-35%) - Partially true hypoallergenic	- First-line management of cow's milk protein allergy - Fat malabsorption - Resolution within months is common.	Similac Alimentum* 	- Pregestimil* - Pregestimil 24*(liquid only) - Enfamil Nutramigen - Parent Choice Hypoallergenic - Up &Up Hypoallergenic 
Free Amino Acid - 20kcal/oz - Non-allergenic amino acids - Lactose-free - Contain medium-chain fatty acids (MCT) - True hypoallergenic	- Severe cow's milk protein allergy - multiple food allergies (including eosinophilic esophagitis) - Short bowel syndrome if human milk is not available (these infants are prone to food allergies)	Elecare Infant 	- Puramino - Extensive HA Gerber - Neocate 
Fat-Modified - 30 kcal/oz - balances high levels of medium-chain triglycerides (MCT) oil for easier absorption (up to 85% of MCT) - Easy to digest 60:40 whey-casein ratio - Suitable from birth to one year as a sole source of nutrition - Suitable for use as a supplementary feed in children >1 year of age and adults	- Fat malabsorption (LCHAD deficiency) - Chylothorax	-Enfaport Lipid 	-Monogen 
Renal - Standard infant formula used with phosphate binders - Reduced mineral/electrolytes - Mineral levels closely resemble human milk - Calcium-to phosphorus ratio and content	- Serum calcium disorders—both hypercalcemia and hypocalcemia due to hyperphosphatemia - Additional iron should be supplied from other sources - Supply LBW infants weighing less than 1500 g at birth with additional calcium, phosphorus, and sodium during periods of rapid growth	Similac PM 60/40 - 	RenaStart 
Monitor closely if on Neocate, associated with hypophosphatemia and rickets.			

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Funding/Support: No funding was secured for this report.

Conflicts of Interest: The authors have no conflicts of interest relevant to this article to disclose.

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Fellow's Column is published monthly.

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