

# Case Study: Improvement of an infant with poor weight gain, gastroesophageal reflux, fussiness, and sleep disturbances after introduction of Neocate<sup>®</sup> Syneo<sup>®</sup> Infant formula

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## Patient history:

This case focuses on a healthy 6 pound, 1 ounce, baby girl born at term to a first-time mother. The baby was solely breastfed for the first month of life but was described as a 'fussy eater', pulling away from her mother, latching poorly, and spitting up a lot.

## Nutrition/Medical management:

After she did not regain her birth weight by two weeks of age, the pediatrician recommended that the mother start to supplement with an ounce of cow milk-based formula after each breastfeeding session. Although the child's weight started to increase at a faster rate, her fussiness worsened once formula was introduced. After two months of life, the mother was able to stop giving supplemental formula and she went back to exclusively breastfeeding. The baby's temperament slightly improved during this time.

The baby was exclusively breastfed until her mother went back to work at four months of life. Shortly after her first bottle of cow milk-based formula, she woke up vomiting profusely, with pallor and lethargy, which resolved after a few hours. The next day, her mother fed her an oral rehydration solution which she tolerated well. The mother then resumed solely breastfeeding due to the severity of the reaction after the first bottle. One month later, she gave the baby another bottle of cow milk-based formula. The baby again proceeded to vomit for the next four hours, after which she was again pale and lethargic. She again tolerated the breast milk and oral rehydration solution well.

The parents then brought the baby to their pediatrician who recommended a trial of an extensively-hydrolyzed formula as a supplement to breast milk because her mother was preparing to return to work full-time and she would not be able to solely breastfeed any more. For days, she refused to take these formulas. Recognizing that some infants with food allergies do not tolerate extensively-hydrolyzed formula, the healthcare team suggested an amino acid-based formula. Due to the association with dysbiosis in many infants, especially ones who have food intolerances or allergies, an amino-acid based formula with pre- and probiotics was recommended. Finally, she was given a sample of Neocate Syneo Infant formula at the pediatrician's office, and the baby took this well without any vomiting or discomfort.

A few days later the baby was seen by a pediatric gastroenterologist and a pediatric allergist. Allergy skin-prick testing was negative, and she was diagnosed with Food Protein-induced Enterocolitis Syndrome (FPIES), a gastrointestinal food hypersensitivity that manifests as profuse, repetitive vomiting, leading to dehydration and lethargy. Her mother eliminated dairy and soy from her diet and the baby continued breastfeeding, but the baby's symptoms persisted. Her gastroesophageal reflux symptoms worsened, she woke up every hour at night crying, and was fussy for most of the day. At this point, her weight was in the 3rd percentile.

When the baby was six months old, it appeared that she was having reactions to several items that the mother was consuming. Rather than have the mother follow a very severe elimination diet, she decided to do a trial of formula feeding with Neocate Syneo while she still expressed to maintain her milk supply. The baby had a dramatic improvement on Neocate Syneo and reverted to extreme fussiness when breastfeeding was attempted again. In this case, the mother made the difficult decision to discontinue breastfeeding and continue with solely Neocate Syneo rather than pursue an extreme elimination diet.



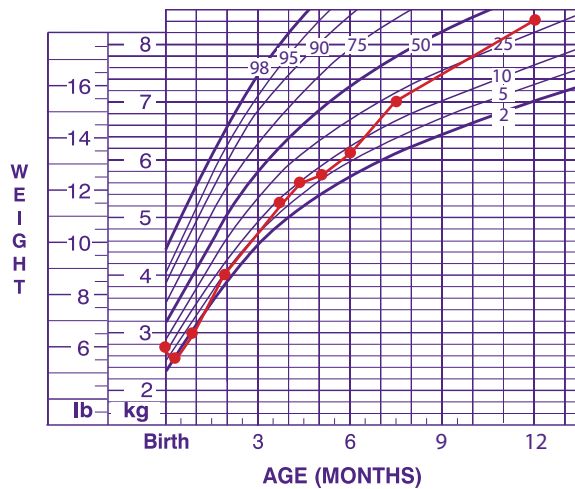
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A few days after stopping breastfeeding, she was ‘a different baby,’ smiling, sleeping, and not crying. As a trial, her mother breastfed one more time, and the baby was immediately fussy and irritable. She therefore ceased breastfeeding and the baby was given Neocate Syneo for the remainder of her first year of life.

For the next six months that the baby was fed Neocate Syneo, she thrived. Her weight increased from the 8th percentile to the 17th percentile within approximately 1.5 months, and up to the 30th percentile by the end of her first year of life (see figure 1). Soon she began sleeping through the night and had a dramatically improved mood.

Under the guidance of a pediatric allergist, her parents slowly and cautiously introduced solid foods, one at a time. Now a toddler, she tolerates all foods except for dairy and soy. She is happy, thriving, and developmentally on track.

**Figure 1:**



**Conclusion:**

Food Protein-induced Enterocolitis Syndrome (FPIES) is a non-IgE cell-mediated food allergy that primarily presents in infancy. The most common food triggers in the United States are cow milk and soy, including infant formulas. In this case study, the infant presented with severe, acute symptoms of vomiting and lethargy with ingestion of cow milk-based formula, and chronic symptoms of failure to thrive, fussiness, and reflux from low-level exposure to allergenic proteins through her mother’s breast milk. Her symptoms completely resolved after exclusive introduction of an amino acid-based hypoallergenic infant formula, Neocate Syneo. FPIES or food allergies should be considered in all children presenting with chronic fussiness, reflux, and failure to thrive. As this case illustrates, Neocate Syneo Infant can be successfully used in the workup and dietary management of FPIES.

Product usage:	Patient profile:
<ul style="list-style-type: none"> <li>✓ Supplement to breast milk</li> <li>✓ Sole source nutrition</li> </ul>	<ul style="list-style-type: none"> <li>✓ Food Protein-induced Enterocolitis Syndrome (FPIES)</li> <li>✓ Gastroesophageal Reflux (GER)</li> <li>✓ Gastrointestinal symptoms</li> <li>✓ Growth failure or faltering growth</li> <li>✓ Symptoms while breastfeeding or symptomatic on breast milk</li> <li>✓ Symptoms not resolved with extensively hydrolyzed formula (eHF)</li> </ul>

The opinions expressed are those of the author of this case study and not necessarily reflective of the views of Nutricia North America. Formula choices were made independently prior to the author’s development of this patient case report.

Nutricia North America supports the use of breast milk wherever possible. Neocate® is a family of hypoallergenic, amino acid-based medical foods. Neocate is intended for use under medical supervision. Neocate® Syneo® Infant is indicated for the dietary management of cow milk allergy, multiple food allergies and related GI and allergic conditions, including food protein-induced enterocolitis syndrome, eosinophilic esophagitis and gastroesophageal reflux.