



Neocate[®] Parent Guide



Short Bowel Syndrome



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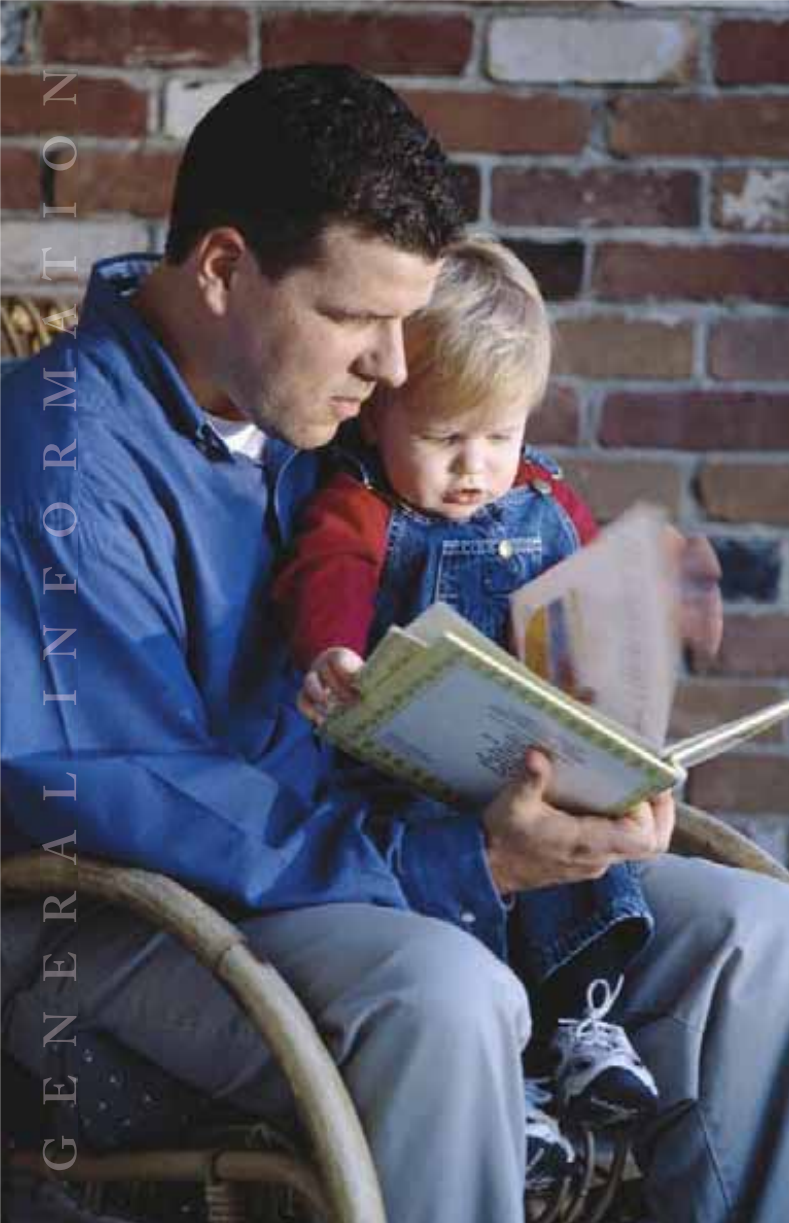
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Acknowledgement

Nutricia North America would like to thank Janelle Peterson, RD, LD, CNSD for her help and advice in the preparation of this resource guide.

Note

This book has been prepared as a resource guide for parents whose child has been recommended to use Neocate in short bowel syndrome. The dietary management of short bowel syndrome can differ between individuals. As such, it is strongly recommended that this guide be used in consultation with a healthcare professional. All information provided in this guide is reflective of the most current and relevant recommendations regarding the dietary management of short bowel syndrome with Neocate.



General Information on Short Bowel Syndrome

What is short bowel syndrome?

Short bowel syndrome (SBS) occurs when a significant portion of the small intestine is taken out. The definition of short bowel syndrome is: “inadequate length or function of the small bowel (small intestine) to support nutrition and fluid requirements needed for health and growth”. The reaction of infants and children to the loss of any section of the small bowel varies and depends on the amount of bowel lost and the part of the small bowel that is lost.

The small bowel is a very important part of the digestive process. It absorbs about 90% of the nutrients and fluids your body needs to function. Loss of any part of the small bowel reduces the area available for absorbing nutrients and fluids. When a part of the small bowel is lost the route that the nutrients take to get through the intestinal tract is disrupted. This means, it is no longer a smooth process from the stomach to the end of the intestine, which can cause problems for the infant or child.

What are the challenges of short bowel syndrome?

When greater than 50% of the small bowel is lost in infants and children, they will need special formulas, medical procedures, and medications to help their body adapt to the reduced length of the small bowel. These children may experience diarrhea, dehydration, poor growth, and may need to have nutrition given through their veins (total parenteral nutrition (TPN)).

Allergies tend to be more prevalent in infants and children with SBS. This may be due to damage to the inner lining of the intestine causing the body to react to intact protein. Such reactions are typically allergic reactions.



What causes short bowel syndrome?

In infants and children, the cause of short bowel syndrome can be one of the following:

- Necrotizing enterocolitis: an infection or inflammation of the intestinal system of premature or low birth weight infants that can result in a necrosis (dying) of the intestinal tract
- Mid-gut volvulus: twisting of the bowel upon itself
- Intestinal atresias: malformation where there is a narrowing or absence of a portion of the intestine
- Intussusception: a situation in which a part of the intestine has prolapsed into another section of the intestine, similar to the way in which parts of a collapsible telescope slide into one another
- Aganglionosis: absence of nerve cells in the colon
- Congenital anomaly: condition present at birth that could be hereditary or result from a problem during pregnancy or birth
- Hirschsprungs: absence or marked decrease in the number of nerve endings that cause the bowel to move feces

What are the goals for short bowel syndrome patients?

There are two main therapy goals:

1) To help the gut adapt to the damage that has been done

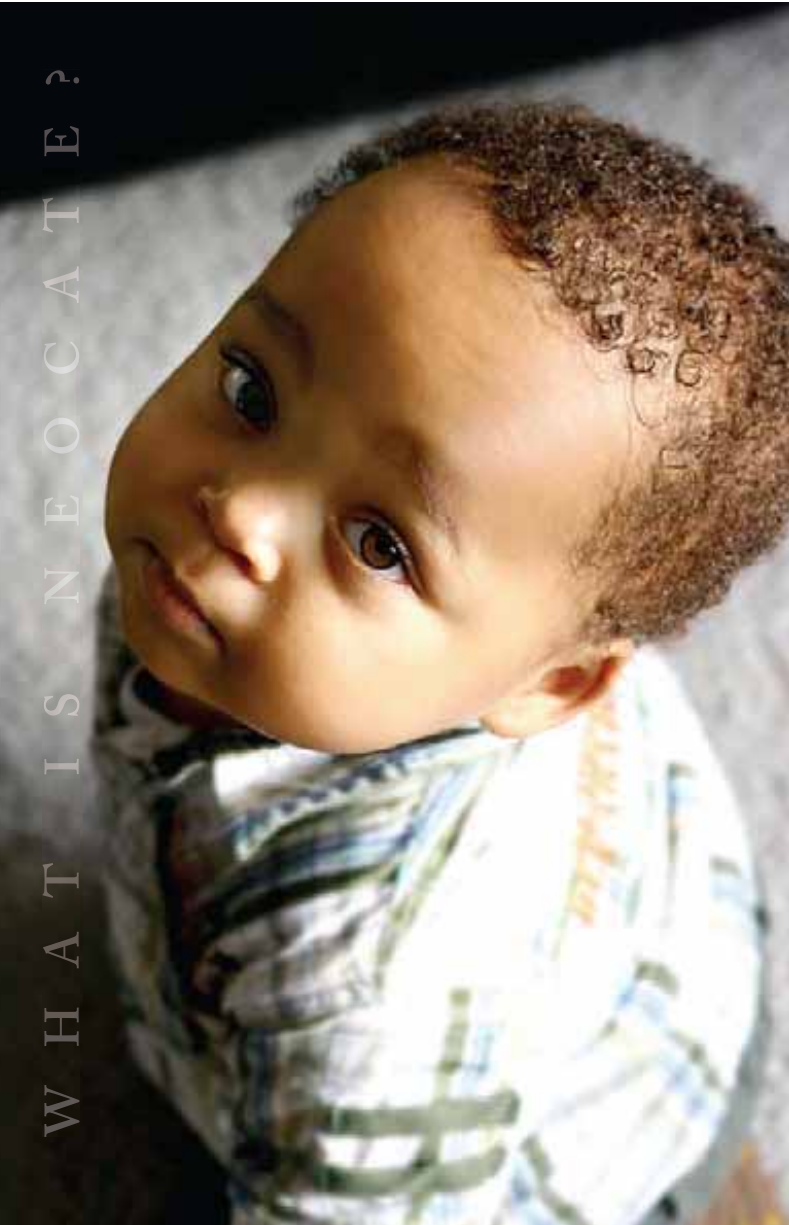
With time, the gut adapts by growing longer, increasing its ability to absorb nutrients and digest formulas and foods normally.

Through adaptation, the remaining small bowel will do the work of the lost bowel and absorb nutrients with a smaller work space. Studies have shown that enteral nutrition (tube feeding) can help the gut adapt. Special formulas, such as **Neocate** may be needed to help with the absorption of nutrients.

2) Nutritional stability

Through a diet that agrees with the child with short bowel syndrome, the body can obtain the nutrients and fluids needed for optimal growth.

The diet may consist of TPN initially and then advance to enteral (oral or tube) nutrition and use of **Neocate**. Eventually some children will be able to eat an oral diet and use **Neocate** as a supplement.



What is Neocate?

What is Neocate?

Neocate is a special formula designed for infants and young children with cow/soy milk protein allergy, multiple food protein allergies and/or gastrointestinal tract impairments, such as short bowel syndrome. **Neocate** provides all the necessary nutrients required for a child's growth and development. **Neocate** has been recommended by your doctor or dietitian because your child has difficulty in tolerating or digesting other formulas.

Neocate is:

Hypoallergenic

The formula is less likely to cause an allergic response than other infant formulas.

Amino Acid-Based

Amino acids are the non-allergenic building blocks for all protein.

Elemental

Ingredients are broken down to their simplest and purest form so they are easier for the body to process and digest.

Nutritionally Complete

All of the essential nutrients needed to grow are supplied by the formula when consumed in adequate amounts.

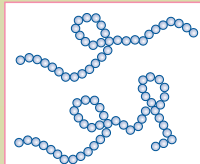


How does Neocate help with SBS?

Neocate helps in the absorption of nutrients for infants and children with short bowel syndrome. **Neocate** is an amino acid-based formula which means that the proteins are broken down to their simplest and purest form, making it easier for the body to process and digest. This gives the gut time to rest and use energy towards growth and adaptation instead of breaking down nutrients.

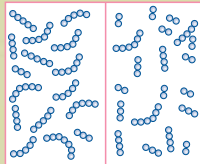
Our unique amino acid-based and milk-free formulation makes it different from other formulas. **Neocate** is truly hypoallergenic; it was designed to minimize the possibility of an allergic response and contains no potential harmful allergens, such as milk.

STANDARD FORMULAS COMPOSED OF WHOLE PROTEINS



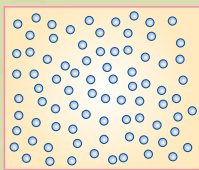
Derived from cow or soy milk protein

HYDROLYZED FORMULA



Majority derived from milk protein

AMINO ACID-BASED FORMULA



100% non-allergenic free amino acids, non-milk derived

Fat absorption may also be an issue for infants and children with short bowel syndrome. The type of fat contained in **Neocate** consists of both medium chains, that can be absorbed more readily, as well as long chains, that help the gut adapt by making it work.

Neocate Infant with DHA and ARA

Neocate Infant with DHA and ARA is the first and only amino acid-based formula with the added benefits of DHA and ARA to help your infant develop.

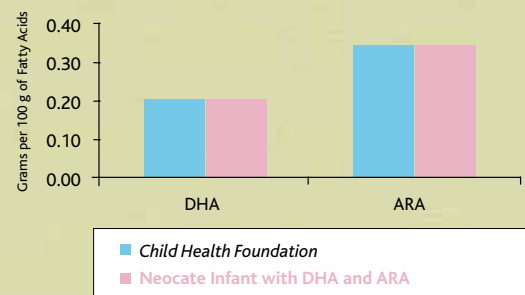
DHA and ARA are two important nutrients naturally found in breast milk. They are important for healthy infant growth and development. Studies have shown a direct consumption of these key ingredients will promote your baby's:

- Visual development
- Brain development

Like all Neocate products, **Neocate Infant with DHA and ARA** is:

- Hypoallergenic
- 100% free amino acids
- Nutritionally complete

DHA and ARA levels of **Neocate** are compliant with the Child Health Foundation recommendations, ensuring beneficial amounts of DHA and ARA for your baby.



Frequently Asked Questions

How long will my child need Neocate?

There is no standard amount of time your child will need **Neocate** as it greatly varies per individual. The length and the functionality of the remaining bowel along with how quickly the gut adapts will help the physician and/or dietitian determine the amount of time **Neocate** is needed.

Will Neocate meet all of my child's nutritional needs?

The **Neocate** range is formulated to meet the daily nutritional requirements of infants and children. If you are concerned that your child is not gaining weight or growing adequately consult your doctor and/or dietitian. They will be able to assess if nutritional needs are being met and if dietary adjustments are necessary.

Neocate tastes and appears different than other formulas. Is this normal?

Yes, this is quite normal. The protein source in **Neocate** is different than milk-based or hydrolyzed formula. The free amino acids give the formula its characteristic taste, smell and an appearance similar to breast milk. However, our exclusive infant formulation gives it superior taste, smell and texture. We also have a wide variety of flavor options for children over the age of one including: chocolate, tropical, grape, orange-pineapple and tropical fruit.

My child has had a change in stools since starting on Neocate. Is this normal?

Yes, this is perfectly normal! Stools can change in consistency and color when a child is introduced to an elemental formula such as **Neocate**. This is because **Neocate** is a low residue formula. Low residue formulas lower the number of bacteria in the gut leading to reduced breakdown of bile. More bile is present in the stool making it darker in color.



Will my insurance company cover the cost of Neocate?

Insurance coverage will depend on your policy, as well as the state in which you reside. Consult your doctor and/or insurance company to assist you with any specific questions you may have. A reimbursement guide designed to help you determine whether your child qualifies for any type of local assistance programs is available for you on www.Neocate.com. For additional suggestions and helpful documents that may assist you in obtaining coverage, please contact our Nutrition Department at 1-800-Neocate or visit our website at www.Neocate.com.

Where can I purchase Neocate?

You can order **Neocate** directly from Nutricia North America at www.OrderNeocate.com or by calling 1-800-Neocate. **Neocate** is also available to order through your local pharmacy.

Why is Neocate only available through the pharmacy and not on my grocery store shelf?

Neocate is classified as a medical food. Such formulas typically are prescribed and must be requested from a pharmacist. Medical foods are generally represented and labeled solely to provide dietary management for specific diseases or conditions and must be used under medical supervision.

Always consult your doctor or dietitian if you have questions or concerns regarding your child's health.



Neocate Preparation and Nutrient Profile

How do I prepare Neocate?

Neocate Infant may be mixed with warm or cool sterile water*. Do not boil formula or use a microwave to prepare or warm formula. For standard dilution, use enclosed scoop (4.75 g) to mix one level scoop per fluid ounce of prepared formula.

How to make a 5 fluid ounce bottle:

1. Add 5 scoops of **Neocate Infant** to a clean, sterile container.
2. Fill up to the 5 fluid ounce line with warm or cool sterile water.
3. Shake for 15-20 seconds or until the powder dissolves. Add additional water if necessary to reach 5 ounce mark and shake again.



Freshly mixed formula is best. Refrigerate pre-mixed formula immediately and use within 24 hours of mixing. Shake immediately before use. Throw away formula left in the bottle one hour after feeding. Tube feeding hang time should not exceed 4 hours.

* Boiling is the preferred method for sterilizing water, bottles, nipples, and mixing utensils.

How do I make different volumes?

Desired Volume	Amount of Neocate Powder	Water to Add
8 fl oz	8 scoops or 38 g	7 fl oz
12 fl oz	12 scoops or ½ cup or 57 g	11 fl oz
24 fl oz	24 scoops or 1 cup or 114 g	21 fl oz
48 fl oz	48 scoops or 2 cups or 228 g	42 fl oz

Use a gram scale for the most accurate results.

Household measurements

1 cup	½ cup	cup	¼ cup	1 Tbsp	1 tsp	½ tsp	¼ tsp
114 g	57 g	35 g	30 g	7 g	2 g	1 g	0.5 g

Based on standard U.S. dry household measurements. All measures are level and unpacked. Household measurements are approximations only. For accuracy use a gram scale.

How can Neocate be stored?

- Prepared formula can be stored in a refrigerator for up to 24 hours
- Once a bottle is introduced to your infant's mouth, all formula remaining in the bottle should be discarded after one hour
- Opened cans of **Neocate** with plastic lid securely fastened should be stored in a cool, dry place and used within one month
- Sealed cans of **Neocate** should be stored in a cool, dry place and used by the expiration date, which is located on the bottom of each can

What is the best way for me to warm the Neocate once it has been prepared?

As with any other infant formula, a microwave oven should not be used to reheat **Neocate**, as this can lead to "hot spots" in the formula. It is recommended to place the prepared bottle either under warm, running water, or in a container filled with warm water.

Nutrient Profile

Nutrients	Per 100 g	Per 100 kcal
Calories	421	100
Protein Equivalent, g	13	3.1
Fat, g	19.1	4.5
Carbohydrate, g	49.3	11.7
Linoleic Acid, mg	2850	677
Vitamins		
Vitamin A, IU (mcg RE)	1721 (517)	409 (123)
Vitamin D ₃ , IU (mcg)	252 (6.3)	59.9 (1.5)
Vitamin E, IU (mg α T.E.)	4.8 (3.2)	1.14 (0.76)
Vitamin K, mcg	37	8.79
Thiamine, mcg	390	92.6
Riboflavin, mcg	580	137.8
Vitamin B ₆ , mcg	520	123.5
Vitamin B ₁₂ , mcg	1.1	0.26
Niacin, mcg	6500	1544
Folic Acid, mcg	43	10.2
Pantothenic Acid, mcg	2610	620
Biotin, mcg	13	3.1
Vitamin C, mg	39	9.26
Choline, mg	55	13.1
Inositol, mg	98	23.3
Minerals		
Calcium, mg	522	124
Phosphorus, mg	392	93.1
Magnesium, mg	52	12.4
Iron, mg	7.8	1.85
Zinc, mg	7	1.66
Manganese, mcg	380	90
Copper, mcg	520	124
Iodine, mcg	65	15.4
Molybdenum, mcg	20	4.75
Chromium, mcg	15	3.56
Selenium, mcg	15.7	3.73
Sodium, mg	157	37.3
Potassium, mg	653	155.1
Chloride, mg	325	77.2
Energy Distribution		
Protein		12%
Carbohydrate		47%
Fat (MCT 5% / LCT 95%)		41%
Osmolality @ 20 kcal/oz		375 mOsm/kg



Ingredients:

Corn Syrup Solids, Refined Vegetable Oil (Soy, Coconut), High Oleic Sunflower Oil, Calcium Phosphate Dibasic, L-Arginine Aspartate, Tripotassium Citrate, L-Leucine, L-Lysine Acetate, L-Glutamine, L-Proline, L-Valine, Glycine, L-Isoleucine, CAEM (An Emulsifier), L-Threonine, L-Phenylalanine, L-Tyrosine, L-Serine, L-Histidine, L-Alanine, Sodium Chloride, L-Cystine, L-Tryptophan, L-Methionine, Magnesium Acetate, Magnesium Aspartate, Potassium Chloride, M. Alpina Oil*, Choline Bitartrate, M-Inositol, C. Cohnii Oil**, L-Ascorbic Acid, Ferrous Sulfate, Zinc Sulfate, Taurine, L-Carnitine, Niacinamide, Sunflower Oil, DL-Alpha Tocopherol Acetate, Calcium D-Pantothenate, Cupric Sulfate, Manganese Sulfate, Pyridoxine Hydrochloride, Riboflavin, Vitamin A Acetate, Thiamine Chloride Hydrochloride, Ascorbyl Palmitate, Potassium Iodide, Chromium Sulfate, DL-Alpha Tocopherol, Phylloquinone, Sodium Molybdate, Folic Acid, Sodium Hydrogen Selenite, D-Biotin, Vitamin D₃, Cyanocobalamin.

* A Source of Arachidonic Acid (ARA)

** A Source of Docosahexaenoic Acid (DHA)



The Nutricia Family of Pediatric GI/ Allergy Products

For Infants and Children (0 - 10 years of age)




The only family of nutritionally complete elemental formulas and medical foods for indications such as:

- cow and soy milk allergy
- multiple food protein intolerance
- gastrointestinal tract impairment
- short bowel syndrome
- eosinophilic esophagitis
- gastroesophageal reflux disease
- malabsorption

For product information or to place an order call:

1-800-NEOCATE or visit our website

www.Neocate.com



Neocate[®]
Parent Guide



Short Bowel Syndrome

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