



# Complex Child E-Magazine

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## Formulas Part I: Commonly Used Formulas

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*This article is the first part of a two-part series that discusses formula options for children with special healthcare needs. Part II will appear in July and will focus on specialized formulas for less common conditions.*

Children of all ages who are tube-fed or who have any variety of conditions, including feeding problems, food allergies/sensitivities, or failure to thrive, often require the use of formula as part or all of their diets. This article will provide an overview of some of the most commonly used formulas currently on the market.

### **Children under 1 year old**

Babies who are under a year of age should receive breastmilk if at all possible. Even tube-fed children can receive breastmilk through their tubes. If breastmilk, which averages approximately 20 calories per ounce, does not have enough calories for a specific child, it can be fortified with human milk fortifier, infant cereal, formula powder, a sugar additive like duocal, or a fat additive like MCT oil. Breastmilk is typically the best tolerated of all formulas, and even children with significant food allergies can use it if their mothers are able to remove the offending foods from their diets.

If breastmilk is not an option, there are many commercial formulas available. Standard milk-based infant formulas included Enfamil, Similac, Nestle Good Start, and a wide variety of other brands, including generic and store brands. Most formulas are available both as ready-to-feed (20 calories per ounce) and as powders that need to be mixed. Some are also available in concentrates.

Babies who are sensitive to milk may do better on a soy formula. These, once again, are widely available and include Isomil, Prosoabee, Bright Beginnings Soy, and many store and generic brands. They also come in ready-to-feed, powdered, and concentrated varieties. Enfamil is also available in a lactose-free version.

Children who cannot tolerate a standard formula may do better with hypoallergenic products such as the semi-elemental formulas Enfamil Gentlease or Similac Sensitive. For more severe allergies or digestion problems, an elemental and hypoallergenic formula like Nutramigen or Alimentum may be a good choice. Most of these are available at the grocery store without a prescription in ready-to-feed, powdered, and concentrated varieties. If even these formulas are not tolerated due to severe food allergies or

intolerances, Elecare or Neocate Infant may be helpful, and for babies with absorption issues Pregestimil may be a good choice. These come only in powder form and are typically ordered through a home health company or pharmacy, but can be purchased without a prescription.

<b>Formulas for Infants Under a Year of Age</b>					
<b>Formula</b>	<b>Calories per oz</b>	<b>Style</b>	<b>Flavored</b>	<b>Protein Source</b>	<b>Notes</b>
Breastmilk	Approx. 20	RTF	natural	Human milk	Best tolerated
Dairy Formulas such as Enfamil and Similac	20	RTF, Conc., powder	No	Milk protein	
Soy Formulas such as Isomil and Prosobee	20	RTF, Conc., powder	No	Soy protein	
Gentlease or Sensitive	20	Gentlease : powder only Sensitive: RTF, Conc., powder	No	Milk protein	
LactoFree	20	RTF, Conc., powder	No	Milk protein	Lactose free
Pregestimil	20 or more	powder, bottles	No	Hydrolyzed Milk	MCT oil as fat
Alimentum	20 or more	RTF, powder	No	Hydrolyzed Milk	
Nutramigen	20 or more	RTF, powder	No	Hydrolyzed Milk	
Neocate Infant	20 or more	powder	No	Elemental	
Elecare	20 or more	powder	No	Elemental	

Key: RTF = Ready-to-feed Conc. = concentrate

**Children 1-10 years old**

Children who are between one year and 10 years old typically use pediatric formulas. These are designed to taste better for oral feeding and often come in many flavors. Those that are ready-to-feed are typically 30 calories per ounce, though formula powders can be mixed to any concentration. Some children, especially smaller ones, continue on infant formulas or breastmilk until the age of two, but most children begin the transition process from infant to pediatric formula sometime after their first birthdays. While there are some “next-step” formulas available for children approximately 9-18 months, these are not used widely in children who are expected to be on formula long term.

The most commonly available formulas include Pediasure, Kindercal, and store brand equivalents. These typically come ready-to-feed, but powder forms are becoming more widely available, and have a wide variety of flavors including vanilla, chocolate, and strawberry. They can be purchased at the grocery store or ordered through a pharmacy or home health agency. Nutren Junior is a similar formula that is typically tolerated a little bit better by most children because it is whey-based. While Nutren is typically not available at the store, it can be purchased online without a prescription or ordered through home health or a pharmacy. Nutren Junior is ready-to-feed and vanilla flavored, but other flavor packets are available. Resource Just for Kids is another good choice for oral feeding, since its three flavors come in juice boxes.

Children who are allergic to milk can use Bright Beginnings Soy Pediatric, a vanilla-flavored ready-to-feed soy-based formula.

Children who are unable to tolerate these formulas may use Peptamen Junior, an elemental formula that is whey-based, Vital Jr, another semi-elemental whey formula, or the even more elemental and hypoallergenic formulas Elecare, Vivonex Pediatric, Neocate Junior, Neocate 1+, or E028 Splash. Peptamen, Vital Jr., and E028 Splash are designed to be consumed orally, with Peptamen coming in vanilla, chocolate, and strawberry, Vital Jr. in vanilla and strawberry, and E028 in several kinds of fruit-flavored juice boxes. They may also be used for tube-feeding. Regular Elecare, Vivonex, and Neocate 1+ are unflavored and do not taste very good, but work very well for children on tube feedings. Flavor packets are available for Vivonex and Neocate to make them more palatable, and Neocate Junior now comes in two flavors and Elecare in one. Elecare, Vivonex, and Neocate only come in powder forms, while Peptamen is ready-to-feed or powdered, and E028 is only ready-to-feed.

Children who require a greater calorie concentration may do well with Resource for Kids 1.5, which contains 45 calories per ounce, and comes in ready-to-feed vanilla, chocolate, and strawberry flavors or Nutren 1.5, a 45 calorie per ounce version of Nutren.

Another option is to use a blended diet made of real foods or a combination of formula and real foods. Many children tolerate blended diets better due to their thicker texture and use of real foods. One blended diet formula, Compleat Pediatric, is available in a ready-to-feed form. It is also possible to make your own blended diet. A handbook on blended diets was recently written by Marsha Dunn Klein and Suzanne Evans Morris and

is extremely helpful for guiding a family through this process. Most dietitians are also beginning to learn the value of blended diets and can help you find an appropriate recipe for a blended diet.

There are many different specialized formulas available for children with more specific needs, such as low-carbohydrate, low-fat, or protein only. These will be featured in Part II of this series.

### **Children over the age of 10 years old**

Children over the age of 10 usually transition to adult formulas. Many pediatric formulas, such as Vivonex, Resource, Nutren, and Peptamen have adult versions of their formulas. These range from 30 calories/ounce versions to 45 calories/ounce or even 60 calories/ounce. Many other formulas, such as Boost, Ensure, or store brands, are widely available. Neocate and Elecare may be used with older children and mixed to whatever concentration is most appropriate.

<b>Formulas for Children 1-10</b>					
<b>Formula</b>	<b>Calories per oz</b>	<b>Style</b>	<b>Flavored</b>	<b>Protein Source</b>	<b>Notes</b>
Pediasure, Kindercal, etc.	30	RTF, some powder	Yes	Milk protein	
Nutren Jr.	30	RTF	Yes + flavor packets	Whey (Milk) Protein	Also comes in 45 cal/oz and 60 cal/oz
Resource Just for Kids	30	RTF	Yes	Milk protein	Juice boxes Also comes in 45 cal/oz
Bright Beginnings Soy Pediatric	30	RTF	Yes	Soy protein	
Peptamen Junior	30	RTF, powder	Yes	Hypoallergenic, Whey	Available with a prebiotic
Vital Jr.	30	RTF	Yes	Semi-elemental, Whey	Contains a prebiotic
Elecare	30 or more	powder	Available	Elemental	
Vivonex Pediatric	30 or more	powder packets	Flavor packets available	Elemental	
Neocate Junior	30 or more	powder	Available	Elemental	
Neocate 1+	30 or more	powder	Flavor packets available	Elemental	
E028 Splash	30	RTF	Yes	Elemental	Juice boxes
Compleat Pediatric	30	RTF	No	Milk, Chicken, Pea	Blended Diet
Blended Diet	Varies	Home made	Varies	Varies	