Infant Formulas for Healthy Term Infants
COMPENDIUM

For Professional Reference Only

This document was prepared with the full recognition that breastmilk is the normal and unequalled food for infants. Breastfeeding is a global priority in accordance with the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF). (1) The information in this document is intended for professional reference only when advising those who cannot or have chosen not to breastfeed or to partially breastfeed.

This document is considered current as of the date below. If you question the appropriateness of a product, contact your local Registered Dietitian.

Updated by Nutrition Services, Alberta Health Services
Product information for all infant formulas for healthy term infants available in Alberta is current as of November 20, 2014.

Product information was obtained through store visits in various communities in Alberta. Information was obtained from nutrition labels and from manufacturer websites.

These materials are intended for professional reference only and are provided on an "as is", "where is" basis. Although reasonable efforts were made to confirm the accuracy of the information, Alberta Health Services does not make any representation or warranty, express, implied or statutory, as to the accuracy, reliability, completeness, applicability or fitness for a particular purpose of such information. These materials are not a substitute for the advice of a qualified health professional. Alberta Health Services expressly disclaims all liability for the use of these materials, and for any claims, actions, demands or suits arising from such use.
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OVERALL RECOMMENDATIONS

This document was prepared with the full recognition that breastmilk is the normal and unequalled food for infants. The information in this document is intended for professional reference only when advising those who cannot or have chosen not to breastfeed or to partially breastfeed.

When reconstituted, the nutritional content of powder, liquid concentrate or ready-to-feed infant formulas is very similar. Powdered infant formula is not sterile. Caregivers should be advised to follow AHS guidelines for preparing infant formula and to follow the manufacturer’s instructions (on the formula can label) for the amount of infant formula and water to use. For more information refer to the Nutrition Guideline: 3.3 Safe Preparation and Handling of Infant Formula.

A daily 400 International Unit (IU) vitamin D supplement is recommended for all healthy term infants. This applies to exclusively breastfed, partially breastfed and formula fed infants. For more information refer to the Nutrition Guideline: 5.2 Vitamin D.

Comments on Infant Formula Composition

Allergy Prevention
Breastfeeding is the preferred method of infant feeding for infants at high risk of allergy. (2-4) There is no evidence to support giving hydrolyzed infant formula over exclusive breastmilk to prevent allergies. (2) For infants who are not breastfed or are partially breastfed and are at high risk of allergy (at least one first-degree relative with a diagnosed atopic disease such as atopic dermatitis, asthma, allergic rhinitis, or food allergy), some research shows an extensively hydrolyzed casein infant formula or a partially hydrolyzed 100% whey infant formula may reduce the risk of allergy (2,3,5-8), if used for the first 6 months of life. (4,9-11) More research is needed to conclude how these types of infant formulas compare to each other in terms of allergy prevention. (2,6,11,12) Evidence does not support using either an extensively or partially hydrolyzed protein infant formula after 6 months for allergy prevention. (4,9,10) For more information refer to the Nutrition Guideline: 9.1 Allergy Prevention.

Allergy Treatment
For an infant with a diagnosed allergy to cow’s milk protein, a breastfeeding mother should be encouraged and supported to continue breastfeeding; she may need to avoid all sources of cow’s milk protein in her diet. If this is the case, nutrition counselling by a dietitian is recommended. (13)

For non-brestfed or partially breastfed babies, extensively hydrolyzed casein infant formulas are the first choice in the treatment of cow’s milk protein allergy. (14) (See Extensively Hydrolyzed Casein Formulas, page 9 for more information).
Some infants with a cow’s milk protein allergy may not tolerate an extensively hydrolyzed casein formula and may require an amino acid-based formula. (13) (See Amino Acid-based Formulas, page 10 for more information)

Soy infant formula may be a second option for infants older than 6 months provided a tolerance to soy has been established. (13) (See Soy Formula, page 7 for more information).

**DHA and ARA**

DHA (docosahexanoic acid) and ARA (arachidonic acid) are long-chain polyunsaturated fatty acids (LCPUFA) that have a role in brain and retina development. (15) DHA and ARA and their precursors are found naturally in breastmilk. (16)

All infant formulas contain alpha-linolenic acid and linoleic acid, essential fatty acids that are precursors to DHA and ARA. (14) Some infant formulas add DHA and ARA directly, typically labeled as ‘omega 3 and omega 6’ on formula packaging. The addition of DHA and ARA is not currently mandatory in Canada. (14) There are currently no Canadian federal guidelines that specify levels of DHA and ARA to be added. (17) Infant formulas on the market which are labeled as having DHA and ARA added may not have enough to confer benefits. (18) Infant formulas with DHA and ARA added currently have a higher cost than the same infant formula without added DHA & ARA.

For term infants, the supplementation of infant formulas with LCPUFAs may provide possible benefits for visual and neurodevelopmental outcomes, but results are inconsistent. (18) It should be noted that there are no studies which report negative side effects to consuming an infant formula with DHA and ARA. Based on the fact that there are potential benefits, and no known adverse effects, parents may choose to provide a formula with DHA and ARA added based on selections available and their financial means. However, at this time the evidence is not strong or consistent enough to make a public health recommendation for all infants to require formulas with added DHA and ARA. (19)

The preferred source of nutrition for infants is breastmilk, and the availability of infant formulas containing DHA and ARA does not change this recommendation. (18)

For preterm infants who are not breastfed or require supplementation of breastmilk and are not discharged home on PDPF, a term infant formula with iron and DHA/ARA is recommended. (20) For more information refer to the Nutrition Guideline: 3.2 Post-discharge Preterm Formula (PDPF).

**Iron Fortification**

Commercial infant formulas currently on the market contain levels of iron of 4 to 13 mg/L and are acceptable for most healthy term infants. (14) For most healthy term infants there is no need to choose an infant formula with iron at the higher end of the range. (21,22)

It is prudent to recommend that infants at risk of iron deficiency consume infant formula with iron levels at the higher end of the range. Infants at risk of iron deficiency include infants with a birth weight of less than 3000 grams; those born to iron deficient mothers, mothers with...
diabetes, or mothers who consumed excess alcohol during pregnancy; or infants not fed according to current recommendations (e.g. Infants started on complementary foods prior to 6 months, infants whose first foods were not iron rich). (14)

Organic Infant Formulas

Infant formulas certified as organic in this document have received organic certification from a certification body that has been accredited by the Canadian Food Inspection Agency (CFIA). (23) The organic certification does not represent specific claims about the health, safety and nutrition of the organic product. (24) While organic infant formulas are safe and acceptable choices, current evidence does not identify any health advantages to choosing organic food products over non-organic food products. (25) Caregivers may choose an organic infant formula based on the selections available to them and their preference for this food production method.

Nucleotides

Nucleotides play key roles in many biological processes. Although our bodies are able to produce nucleotides, dietary sources of nucleotides may be important during periods of rapid growth or illness. (26) Currently, nucleotides may be added to commercially available infant formulas, but their addition is not mandatory. Some studies have shown that nucleotide supplementation to infant formulas may have potential health benefits for an infant’s immune and gastrointestinal systems, such as improved maturation of the immune system and a decreased incidence of diarrhea. (27) However, the majority of supplemented infant formulas do not contain the supplementation levels most research studies have associated with potential health benefits. (27) More research is still needed to show that supplementing infant formulas with nucleotides consistently leads to health benefits, and to identify the optimal level of supplementation. Because of possible benefits and lack of adverse effects of nucleotide supplementation, parents may choose infant formulas with added nucleotides based on the selections available to them.

Standard Cow’s Milk Infant Formulas

Commercial cow’s milk-based infant formulas are the standard choice for healthy term infants who are not exclusively breastfed. (14,22) Standard cow’s milk infant formulas are not suitable for use for cow’s milk protein allergy, galactosemia, or for those who cannot consume dairy-base products for cultural or religious reasons. (14)

Partially Hydrolyzed Protein Infant Formulas

There are two different types of partially hydrolyzed protein infant formulas, and the indications for use differ between the two.

• Partially Hydrolyzed Protein, Lactose-Reduced Infant Formulas

These infant formulas have reduced lactose levels and contain whey and casein proteins, both partially hydrolyzed, (28,29) These infant formulas are marketed for infants with fussiness and gas. (28,29) There is insufficient evidence for a need for these infant formulas in
reducing colic. (30) In addition, evidence does not support using a partially hydrolyzed infant formula, containing both casein and whey proteins, for allergy prevention. (31) Partially hydrolyzed protein, lactose-reduced infant formulas are considered safe and acceptable choices; however, based on current evidence, there is no clear indication for the use of these infant formulas for most healthy term infants. (32) The only time lactose reduced infant formulas may be justified is for situations of severe dehydration, malnourishment, severe enteropathy, or when lactose-containing formula worsens the condition, such as with confirmed lactase deficiency. (30) Current lactose reduced formulas contain only 20-25% of the lactose of the standard cow’s milk based formulas. (29,33) Families considering use of lactose-reduced or lactose-free formulas for their infant should first follow up with their physician.

- **Partially Hydrolyzed 100% Whey Infant Formulas**
  These infant formulas contain only whey protein which has been partially hydrolyzed. There is some evidence that for infants at high risk of allergy (at least one first-degree relative with confirmed allergic disease), who are not exclusively breastfed, using a partially hydrolyzed 100% whey infant formula instead of a standard cow’s milk infant formula in the first 6 months of life may reduce the risk of developing an allergy. (2,7,8) See Allergy Prevention, page 3 for more information.

**Infant Formulas with Prebiotics (Cow’s Milk)**
Prebiotics are nondigestible food components that beneficially affect the host by selectively stimulating growth and/or activity of one or a limited number of bacterial species in the colon, and thereby improving host health. (34) Galacto-oligosaccharides (GOS) and polydextrose (PDX) are 2 prebiotics that are added to infant formulas in Canada.

Prebiotics studied for use in infant formula include GOS, PDX, fructooligosaccharides (FOS), lactulose, inulin, as well as various combinations of these products. (35) Further research is needed before it can be recommended that prebiotics are needed in infant formula. More research is needed to determine the optimal dose and duration of supplementation. Parents and caregivers may choose an infant formula with prebiotics based on the selections available to them.

**Infant Formulas with Probiotics (Cow’s Milk)**
Probiotics are live microorganisms which, when consumed in adequate amounts, confer a health benefit on the host. (36) Probiotics can have potential health benefits (37) for infants, (38,39) if specific strains are consumed at proper doses. (37) More research is needed to determine the best dose, strain and duration for a specified use or disease. (40) *Bifidobacterium animalis* subspecies *lactis* (also known as *B. lactis*(41)) is currently the only probiotic bacterium available in infant formula in Canada. (42) Although current infant formula supplemented with probiotics is safe for healthy term infants, (38,43) further studies are required to confirm any specific health benefits of infant formula with *B. lactis* before it can be recommended that probiotic cultures (including *B. lactis*) are needed in infant formula. Caregivers may choose an infant formula with probiotics based on the selections available to them. More research regarding the safety of probiotics in vulnerable groups such as premature and low birth weight infants still need to be undertaken. (44)
Follow-Up Infant Formulas (Cow’s Milk)

Cow’s milk follow-up infant formulas are not suitable for infants younger than 6 months (45), or for infants with a cow’s milk allergy, lactose intolerance or galactosemia.

Follow-up or second-stage infant formulas, which are designed for infants 6 months of age and older who are consuming complementary foods may be used for infants older than 6 months, (46) but no superiority to starter infant formulas has been established. (46,47) These follow-up infant formulas contain higher amounts of calcium and phosphorus than starter infant formulas because the requirements for calcium increase for the second 6 months of life. (47,48) However, infants should begin to consume solid foods at 6 months and therefore additional calcium and phosphorus requirements should be met without difficulty from standard (starter) infant formulas and food sources. (47) Pasteurized whole milk (3.25%) may be introduced to infants 9-12 months of age who are consuming iron-rich foods at most meals, and continued throughout the second year of life. (46)

Toddler liquid supplements (e.g. Enfagrow®) are not included in this document. They are not the same as follow-up or second stage infant formulas, and are inappropriate for infants under 12 months of age. (49) They are marketed as an alternative or complement to cow’s milk for children older than 12 months of age. These toddler liquid supplements or “growing up” milks are not necessary for healthy toddlers. After 9 to 12 months, a child can transition directly to whole milk. (46) If parents and caregivers offer toddler milks instead of whole milk, advise them to ensure the product contains key nutrients, such as calcium, vitamin D, vitamin A, protein, and fat, in comparable amounts to whole milk. If parents provide these toddler liquid supplements due to a nutrition concern, they should be referred to a Registered Dietitian.

Infant Formulas for Special Conditions

Caregivers of infants who continue on an infant formula for a special condition past one year of age should be encouraged to provide calcium-rich foods to their child as many of these infant formulas contain less calcium than whole milk. (50) Health professionals should refer clients to a Registered Dietitian for related resources and further information.

Soy Infant Formulas

Soy infant formulas have been shown to support normal growth and development in term infants. (51-53) No overt harm has been proven with the use of currently available soy-based infant formulas as the sole source of nutrition for infants with the exception of preterm infants, infants with congenital hypothyroidism (51) and infants with renal failure. (54) Caregivers of infants who require a soy infant formula should offer a soy follow-up infant formula by 12 months of age to help meet the child’s calcium needs.

Indications for the use of soy infant formula should be limited to:
(a) infants with galactosemia. (51,52)
(b) infants who cannot consume dairy-based products for cultural, ethical or religious reasons, such as vegetarian lifestyle. (51,52)
Note: The vitamin D in soy infant formula is from an animal source. This information is important to share with vegan families. (55)

Soy infant formula is not suitable for:
(a) Soy protein allergy
(b) Prevention of allergy in healthy term infants at high risk of allergy. Based on available evidence soy formulas cannot be recommended for the prevention of allergic disease. (56)
(c) Preterm infants. Soy infant formulas have high aluminum content and aluminum toxicity may develop in preterm infants due to their reduced renal function. (54) As aluminum competes with calcium for absorption, this may result in reduced skeletal mineralization (osteopenia). (54) The serum phosphorus concentrations are lower, and alkaline phosphatase concentrations are higher in preterm infants and infants with intrauterine growth restriction (IUGR) fed soy infant formula, compared to preterm infants fed cow’s milk infant formula. Therefore, the degree of osteopenia is increased in infants with low birth weight receiving soy infant formulas. (52)

Soy infant formula is not indicated for:
(a) Colic. Soy infant formula has no proven value in the prevention or management of infantile colic. (52)
(b) Congenital hypothyroidism. Infants with congenital hypothyroidism fed soy infant formula have been reported to have abnormal thyroid function and need close monitoring. This does not appear to be a concern in infants with healthy thyroid function. (57)

If a cow’s milk protein allergy (CMPA) is suspected, physician diagnosis and direction is required. The use of soy infant formulas is contraindicated for non-IgE-mediated CMPA due to the high rate of coincident soy allergies. (51,55) If a non-IgE mediated CMPA can be satisfactorily ruled out, then the use of soy infant formula is not contraindicated and is an acceptable alternative as the coincident soy allergy for IgE mediated CMPA is much less frequent; about 10-14%. (55) Because it is often not possible or practical to distinguish IgE- from non-IgE-mediated allergy, it is safer and more appropriate to recommend an extensively hydrolyzed casein infant formula to treat infants with cow’s milk protein allergy (51,55) especially in infants younger than 6 months of age. (51,58) Soy infant formulas may be considered for therapeutic use after 6 months of age (51,57-59); however, tolerance to soy protein should first be established by a clinical challenge under physician guidance. (57) Infants with documented cow’s milk protein-induced enteropathy or enterocolitis are often sensitive to soy protein and should not be given soy infant formulas. (52)

Soy infant formulas contain phytoestrogens called isoﬂavones. (51) Isoﬂavones are non-steroidal chemicals that are structurally similar to estrogens. (60) Some studies found that most of the phytoestrogens present in the plasma of soy infant formula are in a conjugated form and therefore are unable to exert hormonal effects. (54) A lack of sufﬁcient evidence is available to suggest that soy infant formulas adversely affect endocrine function, development or reproduction in infants. (51,52) However, further research is warranted and indications for use of soy infant formulas should be limited at this time to infants with galactosemia or congenital lactase deﬁciency and infants who cannot consume dairy-based products for cultural, ethical or religious reasons, such as vegetarian lifestyle.
Follow-Up Infant Formulas (Soy)

Follow-up or second-stage infant formulas are intended for infants 6 months of age and older who are consuming complementary foods. (46) Caregivers of infants who require a soy infant formula should offer a soy follow-up infant formula by 12 months of age to help meet the child’s calcium needs. Infants who require soy infant formula should remain on a soy follow-up infant formula until 2 years of age when they can then transition to a fortified plant-based beverage, such as a soy beverage. Follow-up soy infant formulas, if consumed in recommended amounts (500 mL per day), (61) may not contribute enough calcium to meet the calcium requirements of a 1-year old. (48) Therefore, other calcium-rich foods will also need to be emphasized and consultation with a Registered Dietitian may be beneficial. See Infant Formulas for Special Conditions, page 7 for more information.

Lactose-Free Infant Formulas (Cow’s Milk)

Lactose-free infant formulas are not suitable for infants with congenital lactase deficiency, a rare disorder, or galactosemia as these infant formulas may contain residual galactose. (46) Lactose free infant formulas are also not suitable for infants with cow’s milk protein allergy and are ineffective in the dietary management of infant colic. (46)

Lactose-free infant formula has previously been recommended for infants with diarrhea and gastroenteritis because of the possibility of small intestinal injury during such illness. Breastfeeding during acute diarrhea is still recommended and is well tolerated in spite of its higher lactose content compared to most cow’s milk infant formulas. Breastmilk is often provided as smaller, more frequent feedings than infant formula and this may decrease the lactose load delivered per feed, resulting in enhanced absorption. (62) The routine use of lactose free infant formula during acute diarrhea is not justified in most cases. (63) Enough lactose digestion and absorption are typically preserved in acute gastroenteritis that low lactose and lactose-free infant formulas do not have clinical advantages over lactose-containing infant formulas. (46,62) If mild to moderate dehydration is present or if dehydration has been treated lactose-free infant formulas are not indicated. (63) If severe dehydration, malnourishment, or severe enteropathy exist, or when a lactose-containing infant formula worsens the condition (confirmed lactase deficiency) then the use of a lactose-free or low lactose infant formula by formula fed infants may be justified. (63) Further research is needed to observe the long term effects of lactose free formulas on infant bone health.

Extensively Hydrolyzed Casein Infant Formulas

Extensively hydrolyzed casein infant formulas are intended for infants who have diagnosed food allergies (14,64,65) including cow’s milk (65) or soy protein, or for specific malabsorption problems. (14)

For infants who are not breastfed or are partially breastfed and are at high risk of allergy (at least one first-degree relative with a confirmed allergy diagnosed atopic disease such as atopic dermatitis, asthma, allergic rhinitis, or food allergy), some research shows an extensively hydrolyzed casein infant formula may reduce the risk of developing an allergy (compared to a standard cow’s milk formula) if used for the first 6 months of life. (2,8-10) See Allergy Prevention, page 3 for more information.
Amino Acid-Based Infant Formulas
Amino acid-based infant formulas are designed to provide complete nutritional support for infants with a cow’s milk allergy and multiple food protein intolerances who cannot tolerate extensively hydrolyzed casein infant formulas. (66,67) Amino acid-based infant formulas should be used under medical direction. Amino acid-based infant formulas have not been used for allergy prevention (10); they have higher cost, poor palatability and limited availability.

Infant Formulas that Become Thickened
Spitting up is normal in infancy and only rarely leads to health problems such as failure to thrive. Further assessment is warranted if spitting up persists or increases in severity. (14) Formula that thickens in an infant’s stomach is intended for infants with mild gastroesophageal reflux, and should be used only upon recommendation by a physician. Thickened infant formula does not measurably decrease symptom frequency among infants with severe reflux. This infant formula is not intended for infants who require specialized thickened formula due to swallowing difficulties. It is not recommended to thicken infant formula with the addition of infant cereals. (14)

Post-Discharge Infant Formulas for Preterm Infants
Post-discharge infant formulas for preterm infants have been specifically designed to meet the needs of preterm and low-birth weight infants after discharge from a hospital and should only be used with the advice of a physician or dietitian. For more information on these infant formulas refer to the Nutrition Guideline: 3.2 Post-discharge Preterm Formula.

Other Milks

Cow’s Milk

Whole Cow’s Milk (3.25%)
Whole cow’s milk is not recommended for infants before 9-12 months of age because it increases the risk of iron-deficiency anemia (due to low iron content, displacement of iron rich foods, and inhibition of iron absorption) (46) and has smaller amounts of essential fatty acids and other essential nutrients than breastmilk. (46,68) Cow’s milk contains higher levels of protein and some minerals than breastmilk or infant formula resulting in a higher renal solute load. (46) For a healthy infant a higher renal solute load does not usually cause adverse effects, however for an infant who is ill, cow’s milk may not provide enough free water to prevent dehydration. (69) Cow’s milk may cause intestinal blood loss in infants less than 6 months of age. (69)

Whole cow’s milk is an appropriate alternative for infants after 9-12 months of age who are consuming iron-rich complementary foods at most meals, and continues to be recommended for the second year of life. (46)
Partly Skimmed (2%, 1%) and Skim Cow’s Milk
Lower fat milks are not appropriate milk sources before 2 years of age because they provide inadequate energy and essential fatty acids. (46) They should only be used for children under 2 years of age, under the supervision of a physician or dietitian.

Goat’s Milk (Whole)
As with whole cow’s milk, whole goat’s milk is not recommended for infants before 9-12 months of age because of the low iron and essential fatty acid content, and high renal solute load. (46)

Whole goat’s milk that is fortified with folic acid and vitamin D may be used as an alternative to cow’s milk for infants 9-12 months of age who are consuming iron-rich complementary foods at most meals, and continues to be recommended for the second year of life. (46,70) Pasteurized, whole goat’s milk is available at grocery stores in Alberta, however it is difficult to find goat’s milk that is also fortified. Writers were unable to find fortified whole goat’s milk for sale in grocery stores when this document was developed. Parents who offer non-fortified whole goat’s milk should be advised that their child may not meet their daily vitamin D requirements. Parents offering non-fortified goat’s milk should consult with their child’s doctor or Registered Dietitian to see if additional vitamin D supplementation is recommended. Goat’s milk protein is similar to that of cow’s milk, and therefore, if a child is allergic to cow’s milk, he or she will have the same potential to be allergic to goat’s milk. (46,70,71)

Soy and Other Plant-Based Beverages
Plant-based beverages are not appropriate alternatives to breastmilk, whole milk, or commercial infant formula in the first 2 years of life as they are generally lower in protein, fat, calories and iron. (46,72) For children 2 years of age and older not consuming breastmilk, whole milk, or commercial infant formula, Eating Well with Canada’s Food Guide recommends a fortified soy beverage. (73) If parents choose another plant-based beverage as the main milk source for their child, they should look for a product that:
  o is labelled as fortified; and
  o provides at least 6 g of protein per 250 mL (1 cup).
Since plant-based beverages (other than soy) are generally low in protein, children drinking a plant-based beverage as their main milk source should be offered a variety of lean meats, poultry, fish, beans and lentils, eggs, tofu, and nuts to ensure adequate intake of protein. A referral to a dietitian may also be considered. For more information refer to the Nutrition Guideline: 6.3 Plant-Based Beverages.
INFANT FORMULAS – PRODUCT LISTING

This information has been prepared for professional reference only. The information on the type of protein, fat and carbohydrate is based on powder format unless otherwise specified. It is current as of November 20, 2014. Alberta Health Services does not endorse or recommend any specific commercial formula products.

Standard Cow’s Milk Infant Formulas

<table>
<thead>
<tr>
<th>Cow’s Milk Starter Infant Formulas</th>
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<tbody>
<tr>
<td><strong>Standard Starter Infant Formulas</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Product (Manufacturer)</strong></td>
<td><strong>Protein</strong></td>
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<tr>
<td>Enfamil A+ with DHA and ARA (Mead Johnson)</td>
<td>Modified milk ingredients, Whey:Casein ratio = 60:40</td>
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<td>Enfamil Lower Iron (Mead Johnson)</td>
<td>Modified milk ingredients, Non-fat milk, Whey:Casein ratio = 60:40</td>
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<td>Skim milk powder, Whey protein concentrate, Whey:Casein ratio = 60:40</td>
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<tr>
<td>Life Iron Fortified Infant Formula</td>
<td>Skim milk powder</td>
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# Cow’s Milk Starter Infant Formulas

## Standard Starter Infant Formulas

<table>
<thead>
<tr>
<th>Product (Manufacturer)</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
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</thead>
</table>
| (Perrigo Nutritionals) | ● Whey protein concentrate  
● Whey:Casein ratio = 60:40 | (safflower or sunflower) oil  
Coconut oil  
Soybean oil | | | ● Nucleotides: 24 mg/L  
● Vitamin D3 from sheep’s wool lanolin | ● Halal |
| Life Lower Iron Infant Formula (Perrigo Nutritionals) | ● Skim milk powder  
● Whey protein concentrate  
● Whey:Casein ratio = 60:40 | Palm olein  
High oleic (safflower or sunflower) oil  
Coconut oil  
Soybean oil  
Monoglycerides  
DHA & ARA | Lactose | Powder | ● Iron: 4 mg/L  
● Nucleotides: 24 mg/L  
● Vitamin D3 from sheep’s wool lanolin | 0-12 months  
Kosher  
Halal |
| Life Omega 3 & 6 Infant Formula (Perrigo Nutritionals) | ● Skim milk powder  
● Whey protein concentrate  
● Whey:Casein ratio = 60:40 | Palm olein  
High oleic (safflower or sunflower) oil  
Coconut oil  
Soybean oil  
Monoglycerides  
DHA & ARA | Lactose | Powder | ● Iron: 12 mg/L  
● Nucleotides: 24 mg/L  
● Vitamin D3 from sheep’s wool lanolin | 0-12 months  
Kosher  
Halal |
| Mom to Mom Sharing Wisdom (with omega 3 and 6) (Perrigo Nutritionals) | ● Skim milk powder  
● Whey protein concentrate  
● Whey:Casein ratio = 60:40 | Palm oil or palm olein  
High oleic (safflower or sunflower) oil  
Coconut oil  
Soybean oil  
DHA & ARA | Lactose | Powder | ● Iron-fortified: 12 mg/L  
● Nucleotides: 24 mg/L  
● Vitamin D3 source unspecified | 0-12 months  
Kosher  
Halal |
| Parent’s Choice Lower Iron Milk-Based (Perrigo Nutritionals) | ● Skim milk  
● Whey protein concentrate  
● Whey:Casein ratio = 60:40 | Palm olein  
High oleic (safflower or sunflower) oil  
Coconut oil  
Soybean oil | Lactose | Powder  
Concentrate | ● Low iron content: 4 mg/L  
● Nucleotides: 24 mg/L  
● Vitamin D3 from sheep’s wool lanolin | 0-12 months  
Kosher  
Halal |
| Parent’s Choice Organic (with | ● Organic skim milk  
● Organic palm oil or palm olein | | Organic lactose | Powder | ● Iron: 12 mg/L | 0-12 months  
Kosher |
### Cow’s Milk Starter Infant Formulas

#### Standard Starter Infant Formulas

<table>
<thead>
<tr>
<th>Product (Manufacturer)</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omega 3 &amp; 6) (Perrigo Nutritionals)</td>
<td>● Organic reduced minerals whey Whey:Casein ratio = 60:40</td>
<td>● Organic high oleic (safflower or sunflower) oil ● Organic coconut oil ● Organic soybean oil ● DHA &amp; ARA</td>
<td>Lactose</td>
<td>Powder</td>
<td>● Nucleotides: 24 mg/L ● Vitamin D3 from sheep’s wool lanolin</td>
<td>Halal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Concentrate</td>
<td></td>
<td>Certified Organic by Quality Assurance International</td>
</tr>
<tr>
<td>Parent’s Choice with Iron Milk-Based (Perrigo Nutritionals)</td>
<td>● Skim milk powder Whey protein concentrate Whey:Casein ratio = 60:40</td>
<td>● Palm olein ● High oleic (safflower or sunflower) oil ● Coconut oil ● Soybean oil</td>
<td>Lactose</td>
<td>Powder</td>
<td>● Iron: 12 mg/L ● Nucleotides: 24 mg/L ● Vitamin D3 from sheep’s wool lanolin</td>
<td>0-12 months</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>Concentrate</td>
<td></td>
<td>Kosher</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Halal</td>
</tr>
<tr>
<td>Parent’s Choice with Omega 3 &amp; 6 (Perrigo Nutritionals)</td>
<td>● Skim milk powder Whey protein concentrate Whey:Casein ratio = 60:40</td>
<td>● Palm oil or palm olein ● High oleic (safflower or sunflower) oil ● Coconut oil ● Soybean oil ● Monoglycerides ● DHA &amp; ARA</td>
<td>Lactose</td>
<td>Powder</td>
<td>● Iron: 12 mg/L ● Nucleotides: 24 mg/L ● Vitamin D3 from sheep’s wool lanolin</td>
<td>0-12 months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Concentrate</td>
<td></td>
<td>Kosher</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Halal</td>
</tr>
<tr>
<td>Parent’s Choice Probiotic (with bifidobacterium Lactis) (Perrigo Nutritionals)</td>
<td>● Skim milk powder Whey protein concentrate</td>
<td>● Palm olein ● Coconut oil ● Soybean oil ● High oleic (safflower or sunflower) oil ● Monoglycerides ● DHA &amp; ARA</td>
<td>Lactose</td>
<td>Powder</td>
<td>● Iron 12mg/L ● B. lactis cultures 130 million per 3 oz (100mL)</td>
<td>0-12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Maltodextrin</td>
<td></td>
<td>Months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Kosher</td>
</tr>
<tr>
<td>President’s Choice Infant Formula</td>
<td>● Skim milk powder</td>
<td>● Palm oil or palm olein</td>
<td>Lactose</td>
<td>Powder</td>
<td>● Low iron-content: 4 mg/L</td>
<td>0-12 months</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Concentrate</td>
<td></td>
<td>Kosher</td>
</tr>
</tbody>
</table>
## Cow’s Milk Starter Infant Formulas

### Standard Starter Infant Formulas

<table>
<thead>
<tr>
<th>Product (Manufacturer)</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Perrigo Nutritionals)</td>
<td>Whey protein concentrate</td>
<td>High oleic (safflower or sunflower) oil</td>
<td>Lactose</td>
<td>Powder</td>
<td>Nucleotides: 24 mg/L</td>
<td>Halal</td>
</tr>
<tr>
<td>President’s Choice Infant Formula with Iron (Perrigo Nutritionals)</td>
<td>Skim milk powder</td>
<td>Palm oil or palm olein</td>
<td>Lactose</td>
<td>Powder</td>
<td>Iron: 12 mg/L</td>
<td>0-12 months</td>
</tr>
<tr>
<td>President’s Choice Organics with Iron Plus Omega 3 &amp; 6 Step 1 (Perrigo Nutritionals)</td>
<td>Organic reduced minerals whey</td>
<td>Organic palm oil or palm olein</td>
<td>Organic lactose</td>
<td>Powder</td>
<td>Iron: 12 mg/L</td>
<td>0-12 months</td>
</tr>
<tr>
<td>President’s Choice with Iron Plus Omega 3 &amp; Omega 6 (Perrigo Nutritionals)</td>
<td>Skim milk powder</td>
<td>Palm oil or palm olein</td>
<td>Lactose</td>
<td>Powder</td>
<td>Iron: 12 mg/L</td>
<td>0-12 months</td>
</tr>
<tr>
<td>President’s Choice with B. lactis probiotic and Iron</td>
<td>Skim milk powder</td>
<td>Palm oil or palm olein</td>
<td>Lactose</td>
<td>Powder</td>
<td>Iron: 12 mg/L</td>
<td>0-12 months</td>
</tr>
</tbody>
</table>
# Cow’s Milk Starter Infant Formulas

## Standard Starter Infant Formulas

<table>
<thead>
<tr>
<th>Product (Manufacturer)</th>
<th>Protein</th>
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<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Plus Omega 3 & Omega 6 (Perrigo Nutritionals) | concentrate  
- Whey:Casein ratio = 60:40 | (safflower or sunflower) oil  
- Coconut oil  
- Soybean oil  
- Monoglycerides  
- DHA & ARA |  |  | 24 mg/L  
- Vitamin D3 from sheep’s wool lanolin  
- *B. lactis* cultures  
130 million per 3 oz (100mL) |  |
| Similac Advance Step 1 with Omega - 3 and Omega-6 and lutein (Abbott) |  
- Dry skim milk  
- Whey protein concentrate and hydrolysate  
- Whey:Casein ratio = 48:52 |  
- High oleic (sunflower or safflower) oil  
- Coconut oil  
- Soy oil  
- DHA & ARA |  
- Lactose  
- GOS |  
- Powder  
- Concentrate  
- Ready to use  
- Nursettes |  
- Iron: 12 mg/L  
- Nucleotides: 72 mg/L  
- Vitamin D₃ source unspecified  
- GOS 4.0 g/ L | 0-12 months  
- Kosher  
- Halal  
- Gluten free |
| Similac Iron Fortified Step 1 Regular (Abbott) |  
- Skim milk  
- Whey protein concentrate and hydrolysate  
- Whey:Casein ratio = 48:52 |  
- High oleic sunflower oil  
- Coconut oil  
- Soy oil |  
- Lactose |  
- Powder  
- Concentrate |  
- Iron: 12 mg/L  
- Nucleotides: 72 mg/L  
- Vitamin D₃ source unspecified | 0-12 months  
- Kosher  
- Halal  
- Gluten free |
| Similac Lower Iron Step 1 (Abbott) |  
- Skim milk  
- Whey protein hydrolysate and concentrate  
- Whey:Casein ratio = 48:52 |  
- High oleic sunflower oil  
- Coconut oil  
- Soy oil |  
- Lactose |  
- Powder  
- Concentrate |  
- Iron: 7.0 mg/L  
- Nucleotides: 72 mg/L  
- Vitamin D₃ source unspecified | 0-12 months  
- Kosher  
- Halal  
- Gluten free |
# Cow’s Milk Starter Infant Formulas

## Partially Hydrolyzed Protein Starter Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Partially Hydrolyzed Protein Lactose Reduced Formulas</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enfamil Gentlease A+(Mead Johnson)</td>
<td>Partially hydrolyzed modified milk ingredients  &lt;br&gt; Whey protein concentrate  &lt;br&gt; Whey:Casein ratio = 60:40</td>
<td>Palm olein oil  &lt;br&gt; Soy oil  &lt;br&gt; Coconut oil  &lt;br&gt; High oleic sunflower oil  &lt;br&gt; DHA &amp; ARA</td>
<td>Corn syrup solids (~80%)  &lt;br&gt; Lactose (~20%)</td>
<td>Powder</td>
<td>Iron: 12.2 mg/mL  &lt;br&gt; Lactose-reduced  &lt;br&gt; Vitamin D₃ from sheep’s wool lanolin</td>
<td>0-12 months  &lt;br&gt; Kosher  &lt;br&gt; Not recommended for allergy prevention</td>
</tr>
<tr>
<td>Parent’s Choice Gentle with Omega 3 &amp; 6 (Perrigo Nutritionals)</td>
<td>Skim milk powder  &lt;br&gt; Whey protein hydrolysate  &lt;br&gt; Whey:Casein ratio = 60:40</td>
<td>Palm olein  &lt;br&gt; Coconut oil  &lt;br&gt; Soybean oil  &lt;br&gt; High oleic (safflower or sunflower) oil  &lt;br&gt; Monoglycerides  &lt;br&gt; DHA &amp; ARA</td>
<td>Corn syrup solids (~75%)  &lt;br&gt; Lactose (~25%)</td>
<td>Powder</td>
<td>Iron: 12 mg/L  &lt;br&gt; Lactose-reduced  &lt;br&gt; Vitamin D₃ from sheep’s wool lanolin</td>
<td>0-12 months  &lt;br&gt; Kosher  &lt;br&gt; Halal  &lt;br&gt; Not recommended for allergy prevention</td>
</tr>
</tbody>
</table>

## Partially Hydrolyzed 100% Whey Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Start (Nestlé)</td>
<td>Partially hydrolyzed reduced minerals whey protein concentrate  &lt;br&gt; Whey:Casein ratio = 100:0</td>
<td>Palm olein oil  &lt;br&gt; Soybean oil  &lt;br&gt; Coconut oil  &lt;br&gt; High oleic (safflower or sunflower) oil</td>
<td>Lactose  &lt;br&gt; Corn maltodextrin</td>
<td>Powder  &lt;br&gt; Concentrate  &lt;br&gt; Ready-to-feed</td>
<td>Iron: 10 mg/L  &lt;br&gt; Nucleotides: 26 mg/L  &lt;br&gt; Vitamin D₃ from sheep’s wool lanolin</td>
<td>0-12 months  &lt;br&gt; For infants at high risk of allergy, may reduce risk if used for the first 6 months</td>
</tr>
<tr>
<td>Good Start Probiotic (Nestlé)</td>
<td>Partially hydrolyzed reduced minerals whey protein</td>
<td>Palm olein oil  &lt;br&gt; Soybean oil  &lt;br&gt; Coconut oil  &lt;br&gt; High oleic (safflower or sunflower) oil</td>
<td>Lactose  &lt;br&gt; Corn maltodextrin</td>
<td>Powder</td>
<td>Iron: 10 mg/L  &lt;br&gt; Nucleotides: 26 mg/L  &lt;br&gt; 130 million <em>B. lactis</em> cultures per 3 oz</td>
<td>0-12 months  &lt;br&gt; For infants at high risk of allergy, may reduce risk if</td>
</tr>
</tbody>
</table>
### Cow’s Milk Starter Infant Formulas

#### Partially Hydrolyzed Protein Starter Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>concentrate</td>
<td>sunflower) oil</td>
<td>DHA &amp; ARA</td>
<td>(100 mL) bottle</td>
<td>Vitamin D3 from sheep’s wool lanolin</td>
<td>used for the first 6 months; To preserve the probiotic cultures, follow the instructions on the label carefully. Instructions may differ from other powdered infant formulas.</td>
</tr>
<tr>
<td>Good Start with Omega-3 &amp; Omega-6 and GOS (Nestlé)</td>
<td>Partially hydrolyzed whey protein concentrate</td>
<td>Palm olein oil</td>
<td>Soybean oil</td>
<td>Lactose</td>
<td>Powder</td>
<td>Iron: 10 mg/L; Nucleotides: 73 mg/L; Vitamin D3 from sheep’s wool lanolin</td>
</tr>
<tr>
<td>Similac Partially Broken Down Protein with Omega 3 and 6</td>
<td>Whey protein hydrolysate</td>
<td>High oleic safflower oil</td>
<td>Soy oil</td>
<td>Corn maltodextrin</td>
<td>Powder</td>
<td>Iron: 10.1 mg/L; Nucleotides: 73 mg/L; Vitamin D3 from sheep’s wool lanolin</td>
</tr>
</tbody>
</table>

### Cow’s Milk Follow-up Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfamil 2 (was Enfapro) (Mead Johnson)</td>
<td>Milk ingredients</td>
<td>Palm olein oil</td>
<td>Corn syrup solids</td>
<td>Powder</td>
<td>Iron: 12.0 mg/L; Vitamin D3 from sheep’s wool lanolin</td>
<td>6+ months; Kosher</td>
</tr>
</tbody>
</table>

*Developed by Registered Dietitians, Nutrition Services – November 2014*
## Cow’s Milk Follow-up Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **Enfamil 2 A+** *(was Enfapro A+)* *(Mead Johnson)* | Milk ingredients  
Whey:Casein ratio = 20:80 | High oleic sunflower oil  
Palm olein oil  
Soy oil  
Coconut oil  
High oleic sunflower oil  
DHA & ARA | Corn syrup  
Lactose  
GOS  
Polydextrose  
Glucose | Powder | Iron: 10.1 mg/L  
GOS 2.0 g/L  
Polydextrose 2.0 g/L  
Vitamin D₃ from lanolin | 6+ months  
Kosher |
| **Follow-Up Transition (with Iron and Calcium)** *(Nestlé)* | Skim milk powder  
Whey:Casein ratio = 18:82 | Palm olein oil  
Soybean oil  
Coconut oil  
High oleic (safflower or sunflower oil) | Lactose  
Corn syrup  
Corn maltodextrin | Powder  
Concentrate  
Ready-to-feed | Iron: 12 mg/L  
Vitamin D₃ from sheep’s wool lanolin | 6+ months  
Kosher |
| **Good Start 2** *(Nestlé)* | Partially hydrolyzed whey protein concentrate  
Whey:Casein ratio = 100:0 | Palm olein oil  
Soybean oil  
Coconut oil  
High oleic (safflower or sunflower oil) | Lactose  
Corn maltodextrin | Powder  
Concentrate | Iron: 13 mg/L  
Calcium enriched  
Vitamin D₃ from sheep’s wool lanolin | 6+ months |
| **Good Start 2 Probiotic** *(Nestlé)* | Partially hydrolyzed whey protein concentrate  
Whey:Casein ratio = 100:0 | Palm olein oil  
Soybean oil  
Coconut oil  
High oleic (safflower or sunflower) oil  
DHA & ARA | Lactose  
Corn maltodextrin | Powder | Iron: 13 mg/L  
Calcium-enriched  
Vitamin D₃ from sheep’s wool lanolin  
130 million *B. lactis* cultures per 3 oz (100 mL) bottle | 6+ months  
To preserve the probiotic cultures, follow the instructions on the label carefully. Instructions may differ from other powdered infant formulas. |
| **Good Start 2 with Omega-3 & Omega-6** *(Nestlé)* | Partially hydrolyzed reduced mineral whey protein | Palm olein oil  
Soybean oil  
Coconut oil  
High oleic (safflower or sunflower) oil  
DHA & ARA | Lactose  
Corn maltodextrin  
GOS (3.4g/L) | Powder  
Concentrate | Iron: 13 mg/L  
Calcium enriched  
Vitamin D₃ from sheep’s wool lanolin | 6+ months |
# Cow’s Milk Follow-up Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
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<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent's Choice 2 for Older Infants (with Omega-3 &amp; 6) (Perrigo Nutritionals)</td>
<td>Skim milk powder</td>
<td>Palm olein</td>
<td>Lactose</td>
<td>Powder</td>
<td>Iron: 12 mg/L</td>
<td>6+ months</td>
</tr>
<tr>
<td></td>
<td>Whey protein concentrate</td>
<td>Coconut oil</td>
<td>Corn syrup solids</td>
<td></td>
<td>Vitamin D3 from sheep’s wool lanolin</td>
<td>Kosher, Halal</td>
</tr>
<tr>
<td></td>
<td>Whey:Casein ratio = 60:40</td>
<td>High oleic (safflower or sunflower) oil</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soybean oil</td>
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<tr>
<td></td>
<td></td>
<td>Monoglycerides</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>DHA &amp; ARA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>President’s Choice with Iron &amp; Added Calcium Plus Omega 3 &amp; 6 (Perrigo Nutritionals)</td>
<td>Skim milk powder</td>
<td>Palm olein</td>
<td>Lactose</td>
<td>Powder</td>
<td>Iron: 12 mg/L</td>
<td>6+ months</td>
</tr>
<tr>
<td></td>
<td>Whey protein concentrate</td>
<td>Coconut oil</td>
<td>Corn syrup solids</td>
<td></td>
<td>Vitamin D3 from sheep’s wool lanolin</td>
<td>Kosher, Halal</td>
</tr>
<tr>
<td></td>
<td>Whey:Casein ratio = 60:40</td>
<td>High oleic (safflower or sunflower) oil</td>
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<tr>
<td></td>
<td></td>
<td>Soybean oil</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Monoglycerides</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>DHA &amp; ARA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Similac Go &amp; Grow Step 2 (Abbott)</td>
<td>Skim milk</td>
<td>High oleic sunflower oil</td>
<td>Lactose</td>
<td>Powder</td>
<td>Iron: 12 mg/L</td>
<td>6+ months</td>
</tr>
<tr>
<td></td>
<td>Whey protein concentrate and hydrolysate</td>
<td>Coconut oil</td>
<td></td>
<td>Concentrate</td>
<td>Nucleotides: 72 mg/L</td>
<td>Kosher</td>
</tr>
<tr>
<td></td>
<td>Whey:Casein ratio = 48:52</td>
<td>Soy oil</td>
<td></td>
<td></td>
<td>Vitamin D₃: source unspecified</td>
<td></td>
</tr>
<tr>
<td>Similac Go &amp; Grow Step 2 with Omega-3 and Omega-6 and GOS (Abbott)</td>
<td>Skim milk</td>
<td>High oleic (safflower or sunflower) oil</td>
<td>Lactose</td>
<td>Powder</td>
<td>Iron: 12 mg/L</td>
<td>6+ months</td>
</tr>
<tr>
<td></td>
<td>Whey protein concentrate and hydrolysate</td>
<td>Coconut oil</td>
<td></td>
<td>Concentrate</td>
<td>Nucleotides: 72 mg/L</td>
<td>Kosher</td>
</tr>
<tr>
<td></td>
<td>Whey:Casein ratio=48:52</td>
<td>Soy oil</td>
<td>GOS</td>
<td></td>
<td>Vitamin D₃: source unspecified</td>
<td></td>
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<tr>
<td></td>
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<td>DHA &amp; ARA</td>
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Alberta Health Services

Developed by Registered Dietitians, Nutrition Services – November 2014
## Infant Formulas for Special Conditions

### Soy Starter Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
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<tbody>
<tr>
<td><strong>Enfamil Soy A+</strong> (Mead Johnson)</td>
<td>Soy protein isolate</td>
<td>Palm olein oil, Soy oil, Coconut oil, High oleic sunflower oil, DHA &amp; ARA</td>
<td>Corn syrup solids</td>
<td>Powder, Concentrate</td>
<td>Iron: 12.2 mg/L, Lactose-free, Vitamin D₃ from sheep’s wool lanolin</td>
<td>0-12 months, Kosher</td>
</tr>
<tr>
<td><strong>Good Start Alsoy with Omega-3 &amp; Omega-6</strong> (Nestlé)</td>
<td>Soy protein isolate</td>
<td>Palm olein oil, Soybean oil, Coconut oil, High oleic (safflower or sunflower) oil, DHA &amp; ARA</td>
<td>Corn maltodextrin, Sucrose</td>
<td>Powder, Nurser (hospital only)</td>
<td>Iron: 12 mg/L, Lactose-free, Vitamin D₃ from sheep’s wool lanolin</td>
<td>0-12 months, Kosher, Halal, Vegetarian</td>
</tr>
<tr>
<td><strong>President’s Choice Organics Soy Plus Omega 3 &amp; 6 Step 1</strong> (Perrigo Nutritionals)</td>
<td>Organic soy protein</td>
<td>Organic palm oil or palm olein, Organic coconut oil, Organic high oleic (safflower or sunflower) oil, Organic soybean oil, DHA &amp; ARA</td>
<td>Organic corn syrup solids</td>
<td>Powder</td>
<td>Iron: 12 mg/L, Lactose-free, Vitamin D₃ from sheep’s wool lanolin</td>
<td>0-12 months, Kosher, Halal, Organic</td>
</tr>
<tr>
<td><strong>Similac Isomil (Abbott)</strong></td>
<td>Soy protein isolate</td>
<td>High oleic (sunflower or safflower) oil, Soy oil, Coconut oil</td>
<td>Corn syrup, Sucrose</td>
<td>Powder, Concentrate</td>
<td>Iron: 12 mg/L, Lactose-free, Vitamin D₃ source unspecified</td>
<td>0-12 months, Kosher, Halal, Vegetarian</td>
</tr>
<tr>
<td><strong>Similac Isomil with Omega-3 and Omega-6 (Abbott)</strong></td>
<td>Soy protein isolate</td>
<td>High oleic (sunflower or safflower) oil, Coconut oil</td>
<td>Corn syrup, Sucrose</td>
<td>Powder, Concentrate, Ready-to-feed</td>
<td>Iron: 12 mg/L, Lactose-free, Vitamin D₃ source unspecified</td>
<td>0-12 months, Kosher, Halal, Gluten free</td>
</tr>
</tbody>
</table>
### Soy Starter Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Soy oil</td>
<td></td>
<td>DHA &amp; ARA</td>
<td></td>
<td></td>
<td>Vegetarian</td>
</tr>
</tbody>
</table>

### Soy Follow-up Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Start Alsoy 2 with Omega-3 &amp; Omega-6 (Nestlé)</td>
<td>Soy protein isolate</td>
<td>Palm olein oil, Soybean oil, coconut oil, High oleic (safflower or sunflower) oil, DHA &amp; ARA</td>
<td>Corn maltodextrin, Sucrose</td>
<td>Powder</td>
<td>Iron: 13 mg/L, Calcium-enriched, Lactose-free, Vitamin D₃ from sheep’s wool lanolin</td>
<td>6+ months, Kosher, Vegetarian</td>
</tr>
<tr>
<td>Similac Isomil Step 2 (Abbott)</td>
<td>Soy protein isolate</td>
<td>High oleic (sunflower or safflower) oil, Coconut oil, Soy oil</td>
<td>Corn syrup solids, Sucrose</td>
<td>Powder</td>
<td>Iron: 12 mg/L, Lactose-free, Vitamin D₃ source unspecified</td>
<td>6+ months, Kosher, Halal, Vegetarian</td>
</tr>
</tbody>
</table>

### Lactose-Free Infant Formulas (Cow’s Milk)

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfamil Lactose Free A+ (Mead Johnson)</td>
<td>Milk protein isolate, Whey:Casein ratio = 20:80</td>
<td>Palm olein oil, Soy oil, Coconut oil, High oleic sunflower oil, DHA &amp; ARA</td>
<td>Corn syrup solids, Maltodextrin</td>
<td>Powder, Concentrate</td>
<td>Iron: 12.2 mg/L, Nucleotides: 28 mg/L, Lactose-free, Vitamin D₃ from sheep’s wool lanolin</td>
<td>0-12 months, Kosher, For infants with lactose intolerance, Not for galactosemia</td>
</tr>
<tr>
<td>Kirkland Sensitive to Lactose (Perrigo Nutritionals)</td>
<td>Milk protein isolate, Whey protein concentrate</td>
<td>Palm olein oil, Soy oil, Coconut oil, High oleic</td>
<td>Corn syrup solids</td>
<td>Powder</td>
<td>Iron: 12 mg/L, Nucleotides: 24 mg/L, 95% reduced</td>
<td>0-12 months, Kosher, For infants with lactose</td>
</tr>
</tbody>
</table>
### Lactose-Free Infant Formulas (Cow’s Milk)

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Parent’s Choice Sensitive to Lactose (Perrigo Nutritionals) | - Whey protein concentrate  
- Milk protein isolate | - Palm olein  
- Coconut oil  
- Soybean oil  
- High oleic (safflower or sunflower) oil  
- DHA & ARA | - Corn syrup solids | - Powder | - Iron 12mg/L  
- 95% reduced lactose  
- Vitamin D₃ source unspecified | - 0-12 months  
- Kosher  
- Halal  
- For infants with lactose intolerance  
- Not for galactosemia |
| Similac Sensitive Lactose-Free (Abbott) | - Milk protein isolate  
- Whey:Casein ratio = 18:82 | - High oleic (safflower or sunflower) oil  
- Coconut oil  
- Soy oil | - Corn syrup  
- Sucrose | - Powder  
- Concentrate  
- Ready-to-feed | - Iron: 12 mg/L  
- Nucleotides: 72 mg/L  
- Lactose-free  
- Vitamin D₃ source unspecified | - 0-12 months  
- Kosher  
- For infants with lactose intolerance  
- Not for galactosemia |

### Extensively Hydrolyzed Casein Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Alimentum (Abbott) | - Casein hydrolysate  
- Free amino acids  
- Small peptides  
- Whey:Casein ratio = 0:100 | - Safflower oil (39%)  
- MCT oil (33%) (modified coconut oil or palm kernel oil)  
- Soy oil (28%) | - Sucrose (70%)  
- Modified tapioca starch (30%) | - Ready-to-feed | - Iron: 12 mg/L  
- Hypoallergenic  
- Lactose-free  
- Corn-free  
- MCTs (medium chain triglycerides) are shortened fatty acids for better fat absorption or utilization  
- Vitamin D₃ source unspecified | - 0 + months  
- Use under medical supervision for infants with diagnosed allergies, including cow’s milk or soy protein and/or fat malabsorption.  
- For infants at high risk of allergy, may reduce risk if used for the first 6 months  
- Gluten free |
### Extensively Hydrolyzed Casein Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Nutramigen A+ (Mead Johnson) | • Hydrolyzed casein  
• Amino acids  
• Whey:Casein ratio = 0:100 | • Palm olein oil  
• Soy oil  
• Coconut oil  
• High oleic sunflower oil  
• DHA & ARA | • Corn syrup solids  
• Modified corn starch | Powder  
Readymix | • Iron: 12.2 mg/L  
• Hypoallergenic  
• Lactose-free  
• DHA & ARA | • 0 – 6 months  
• Use under medical supervision for infants with a diagnosed cow’s milk protein allergy  
• For infants at high risk of allergy, may reduce risk if used for the first 6 months |
| Pregestimil A+ (Mead Johnson) | • Hydrolyzed casein  
• Amino acids  
• Whey:Casein ratio = 0:100 | • MCT oil: 55% (fractionated coconut oil)  
• Soy oil  
• Corn oil  
• High oleic vegetable (safflower &/or sunflower) oil  
• DHA & ARA | • Corn syrup solids  
• Modified corn starch | Powder | • Iron: 12.2 mg/L  
• Hypoallergenic  
• Lactose-free  
• DHA & ARA | • 0 – 6 months  
• Use under medical supervision for infants with a fat malabsorption and/or a diagnosed cow’s milk protein allergy  
• Available in pharmacies behind the counter. |

### Amino Acid-based Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Neocate Infant DHA/ARA (Nutricia) | • 100% free amino acids  
• Whey:Casein ratio = N/A | Refined vegetable oil (MCT, high oleic sunflower oil, sunflower oil, canola oil)  
• DHA & ARA | • Corn syrup solids | Powder | • Iron: 10 mg/L  
• Hypoallergenic  
• Lactose-free  
• Milk protein-free  
• Vitamin D₃ from sheep’s wool lanolin | • Prescribed formula; only under direction of physician and/or dietitian  
• For cow’s milk allergy and multiple food protein intolerance. Suitable for infants unable to tolerate soy or hydrolysate based formulas or other conditions where an |
### Amino Acid-based Infant Formulas

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puramino A+ (Formerly Nutramigen AA)</td>
<td>100% free amino acids</td>
<td>Palm olein oil</td>
<td>Corn syrup solids: 90%</td>
<td>Powder</td>
<td>Iron: 12.2 mg/L, Hypoallergenic, Lactose-free, Vitamin D₃ from sheep’s wool lanolin</td>
<td>0-24 months, Use under medical supervision, For infants with severe cow’s milk protein allergy or multiple food allergies, Order through pharmacist</td>
</tr>
<tr>
<td>(Mead Johnson)</td>
<td>Whey:Casein ratio = N/A</td>
<td>Soy oil</td>
<td>Tapioca starch: 10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coconut oil</td>
<td>High oleic sunflower oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MCT:2.8%</td>
<td>LCT:97%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DHA &amp; ARA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Infant Formulas That Become Thickened

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfamil Thickened A+</td>
<td>Milk ingredients, Whey:Casein ratio = 20:80</td>
<td>Palm olein oil</td>
<td>Rice starch</td>
<td>Powder</td>
<td>Iron: 12.2 mg/L, Formula thickens in stomach due to the substitution of rice starch for a portion of the carbohydrate content, Vitamin D₃ from sheep’s wool lanolin</td>
<td>0-12 months, Kosher, Use under physician guidance for mild gastroesophageal reflux</td>
</tr>
<tr>
<td>(Mead Johnson)</td>
<td></td>
<td>Soy oil</td>
<td>Lactose</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Coconut oil</td>
<td>High oleic sunflower oil</td>
<td>Maltodextrin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DHA &amp; ARA</td>
<td>Corn syrup solids</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Post-Discharge Infant Formulas for Premature Infants

<table>
<thead>
<tr>
<th>Product Manufacturer</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfamil Enfamil A+ (Mead Johnson)</td>
<td>Whey protein concentrate</td>
<td>High oleic vegetable oil</td>
<td>Corn syrup solids</td>
<td>Powder</td>
<td>Iron: 13.3 mg/L</td>
<td>Kosher</td>
</tr>
<tr>
<td></td>
<td>Non-fat milk</td>
<td>Soy oil</td>
<td>Lactose</td>
<td>Ready-to-feed nursette bottles</td>
<td>Nucleotides: 31 mg/L</td>
<td>Post-discharge formula for premature or low birth weight infants</td>
</tr>
<tr>
<td></td>
<td>Whey:Casein ratio = 60:40</td>
<td>MCT oil (fractionated coconut oil)</td>
<td>DHA &amp; ARA</td>
<td></td>
<td>Higher levels of protein, calcium, phosphorus and other vitamins and minerals per 100 kcal than standard term formulas</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>DHA &amp; ARA</td>
<td></td>
<td></td>
<td>22 kcal/30 mL</td>
<td>Use only under the supervision of a physician or dietitian</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DHA &amp; ARA</td>
<td></td>
<td></td>
<td>Vitamin D₃ from sheep’s wool lanolin</td>
<td>Use until recommended by physician or dietitian</td>
</tr>
<tr>
<td>Similac Neosure Omega-3 &amp; Omega-6 (Abbott)</td>
<td>Non-fat milk</td>
<td>Soy oil</td>
<td>Corn syrup solids</td>
<td>Powder</td>
<td>Iron: 14 mg/L</td>
<td>Kosher</td>
</tr>
<tr>
<td></td>
<td>Whey protein concentrate</td>
<td>High oleic safflower oil</td>
<td>Lactose</td>
<td></td>
<td>Nucleotides: 72 mg/L</td>
<td>Halal</td>
</tr>
<tr>
<td></td>
<td>Whey:Casein ratio = 50:50</td>
<td>MCT oil (fractionated coconut or palm kernel oil)</td>
<td>DHA &amp; ARA</td>
<td></td>
<td>Higher levels of protein, calcium, phosphorus and other vitamins and minerals per 100 kcal than standard term formula</td>
<td>Post-discharge formula for premature infants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coconut oil</td>
<td></td>
<td></td>
<td>22.5 kcal/30 mL</td>
<td>Use only under the supervision of a physician or dietitian</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DHA &amp; ARA</td>
<td></td>
<td></td>
<td>Vitamin D₃ source unspecified</td>
<td>Use until recommended by physician or dietitian</td>
</tr>
</tbody>
</table>
## Human Milk

<table>
<thead>
<tr>
<th>Product</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human milk</td>
<td>- Whey:Casein ratio = 60:40</td>
<td>- Human milk fat</td>
<td>- Lactose</td>
<td>- Amounts of DHA and ARA vary depending on maternal diet</td>
<td>- Exclusive breastfeeding for the first six months is accepted as the nutrition standard for infants and is promoted by WHO as a global public health recommendation. (46)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Oleic acid</td>
<td></td>
<td>- Nutritional composition changes with time as the infant’s needs change</td>
<td>- Breastfeeding remains an important source of nutrition for infants as complementary foods are introduced.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Linoleic acid</td>
<td></td>
<td>- As milk composition relies primarily on the mother’s nutrient stores, she should consume more nutrients to conserve her stores. Most often, her nutritional needs can be met with a balanced diet following Eating Well with Canada’s Food Guide that recommends 2-3 additional food guide servings each day. (46)</td>
<td>- Breastfeeding for up to two years and beyond should be supported.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Palmitoleic acid</td>
<td></td>
<td></td>
<td>- Breastfeeding is rarely contraindicated. Situations where a mother should not breastfeed include infant galactosemia or maternal:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Linolenic acid</td>
<td></td>
<td></td>
<td>- HIV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Arachidonic acid</td>
<td></td>
<td></td>
<td>- Herpes lesion on both breasts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Docosahexanoc acid</td>
<td></td>
<td></td>
<td>- Untreated, infectious tuberculosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Severe illness that prevents her from caring for her infant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Use of certain drugs/treatments</td>
</tr>
</tbody>
</table>

Developed by Registered Dietitians, Nutrition Services – November 2014
## Other Milks

### Cow’s, Goat’s and Soy Milks

<table>
<thead>
<tr>
<th>Product</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Available format(s)</th>
<th>Nutritional Considerations</th>
<th>Comments</th>
</tr>
</thead>
</table>
| Whole Cow’s Milk (3.25 %) | Whey:Casein ratio= 20:80 8g/250mL | Cow’s milk fat 8g/250mL | Lactose      | Powder Evaporated (concentrate) Ready-to-drink | Low iron content | Not recommended before 9-12 months of age  
|                        |                               |                  |              |                    |                           | Is an appropriate alternative for infants after 9-12 months of age who are consuming a variety of iron rich solid foods |
| Partly Skimmed (2%, 1%) Cow’s Milk | Whey:Casein ratio= 20:80 9g/250mL | Cow’s milk fat 2% - 5g/250mL 1% - 3g/250mL | Lactose      | Powder Evaporated (concentrate) Ready-to-drink | Lower in calories than whole cow’s milk Low in total and essential fatty acids Low iron content | Not recommended before 2 years of age  
|                        |                               |                  |              |                    |                           | Under 2 years, use only under the supervision of a physician or dietitian. |
| Skim Cow’s Milk        | Whey:Casein ratio= 20:80 9g/250mL | Cow’s milk fat 0.2g/250 mL | Lactose      | Powder Evaporated (concentrate) Ready-to-drink | Lower in calories than whole cow’s milk Low in total and essential fatty acids Low iron content | Do not use before 2 years of age due to inadequate energy and essential fats. |
| Whole Goat’s Milk      | Whey:Casein ratio= 14:86 9g/250mL | Goat’s milk fat 11g/250mL | Lactose      | Powder Evaporated (concentrate) Fluid | Low in essential fatty acids, iron, and folic acid May not be fortified with vitamin D. | Not recommended before 9-12 months of age or infants with cow’s milk allergy.  
|                        |                               |                  |              |                    |                           | Appropriate (if fortified with folic acid and vitamin D) for infants 9-12 months who are consuming a variety of iron rich solids |
| Soy and Other Plant Based Beverages | Soy 6-8g/250mL Rice 0-2g/250mL Almond 1-2g/250mL Hemp 2-5g/250mL | Soy 0-4g/250mL Rice 1-3g/250mL Almond 2-5g/250mL Hemp 4-7g/250mL | Unsweetened: Soy ~4g/250mL Rice 1-3g/250mL Almond 2-5g/250mL Hemp 4-7g/250mL | Examples: Soy beverage Rice Potato Oat Hemp Coconut Cashew | Nutritional content varies between product brands Plant based beverages are usually lower in protein, fat, calories, and iron compared to soy formula. (72) | Not appropriate alternatives to breastmilk, commercial infant formula or pasteurized whole milk in the first 2 years of life. (46) Infants requiring soy formula should be offered soy follow-up formula as the main milk until 2 years of age. |
GLOSSARY

Allergy: An allergy is an inappropriate or exaggerated reaction of the immune system to substances that, in the majority of people, cause no symptoms. It is applied to all types of immunologically-mediated hypersensitivity reactions. (74)

B. lactis: *Bifidobacterium animalis* subsp. *lactis* (also known as *B. lactis* (41)) is currently the only probiotic bacterium available in infant formula in Canada. (42)

Casein: Casein is the main protein in milk. (75) Milk protein fractions are subdivided into casein and whey proteins. The caseins constitute ~76–86% of the protein in cow’s milk. (76)

Certified organic: Infant formulas certified as organic in this document have received organic certification from a certification body that has been accredited by the Canadian Food Inspection Agency (CFIA) to certify organic products; or that is recognized under an organic trade arrangement with a foreign competent authority under the *Organic Products Regulations, 2009*. (23) The organic certification does not represent specific claims about the health, safety and nutrition of the organic product. (24)

Congenital lactase deficiency: Inborn error of metabolism in which the lactase enzyme is absent or severely reduced at birth. It is an extremely rare disorder. (77)

Docosahexanoic Acid (DHA) and Arachidonic Acid (ARA): These are long-chain polyunsaturated fatty acids that have a role in brain and retina development. (14) DHA is an omega 3 fatty acid. ARA is an omega 6 fatty acid.

Extensively hydrolyzed protein formula: is a formula where the proteins have been hydrolyzed (“digested”) by enzymatic activity to yield single amino acids and small peptides to achieve a product that has few proteins capable of initiating an immunological response. (78)

Follow-up formulas: Follow-up or second-stage infant formulas are formulas intended for infants 6 months of age or older who are consuming solid foods. (44-46)

Galactosemia: Lactose in food is broken down by the body into glucose and galactose. Galactosemia is a rare genetic condition of carbohydrate metabolism in which a blocked or inactive enzyme does not allow breakdown of galactose, causing serious illness in infancy. (79)

Gastroesophageal reflux: is the passage of gastric contents into the esophagus. It is relatively common in healthy term infants with regurgitation (“spitting up”) occurring daily in approximately 50% of infants zero to three months of age. (80)

GOS (galactooligosaccharide): A non-digestible dietary fibre; a prebiotic that selectively stimulates the growth and/or activity of one or more bacteria in the colon and thus improves host health. (81)
Halal: Halal is an Arabic term meaning “permitted, allowed, lawful, or licit” when used in relationship to food or drink means permissible for consumption by a Muslim. (82) Food is determined to be Halal based on how it is obtained, processed and other factors. (82)

High allergy risk: at least one first-degree relative (parent or sibling) with a diagnosed allergy.

Hypoallergenic: means "less allergenic." Some experts consider an infant formula hypoallergenic if it can be tolerated by 90% of the individuals allergic to the parent protein (e.g. cow’s milk or soy protein). (83)

Kosher: In Hebrew, kosher means “fit” or “proper”. Food is Kosher or acceptable to eat, when prepared in accordance with the conditions set by Judaic law. (82)

Lactose intolerance: the inability to digest lactose into the monosaccharides glucose and galactose for absorption due to low levels of lactase enzyme in the brush border of the duodenum. There are three types of lactase deficiency: congenital, primary, and secondary. (84)

MCTs: Medium chain triglycerides are shortened fatty acids that are effectively absorbed by babies with fat malabsorption. (85)

Nucleotides: Nucleotides are molecules that, when joined together, make up the structural units of ribonucleic acid (RNA) and deoxyribonucleic acid (DNA). (86) Nucleotides play key roles in many biological processes and are suggested to be conditionally essential nutrients in infancy. (26)

Partially hydrolyzed protein formula: infant formula which has a portion of the cow’s milk protein partially broken down.

Phytoestrogens: non-steroidal chemicals which are structurally similar to estrogens. (60)

Prebiotics: Prebiotics are nondigestible food components that beneficially affect the host by selectively stimulating the growth and/or activity of one or a limited number of bacteria in the colon and thereby improving host health. (87)

Probiotics: Probiotics are live microorganisms which, when administered in adequate amounts, confer a health benefit on the host. (36) Probiotics can have potential health benefits (37) for infants (38,39) if specific strains are consumed at proper doses. (37)

Whey to casein ratio: Whey and casein are two milk proteins. The whey to casein ratio represents the relative amounts of these two milk proteins in each type of infant formula.
References


Cow's Milk Allergy: Where have we come from and where are we going? Endocrine, Metabolic & Immune Disorders - Drug Targets, 2014;14: 2-8


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