



Infant formula: An overview

Key points

For infants who are not breastfed, or receiving breastmilk, first infant formula should be used as the sole source of nutrition (or to supplement breastmilk) up to 6 months of age and then, alongside complementary foods, up to 12 months of age.

Infant formula based on modified cows' milk is the most commonly marketed infant formula.

Infant formula can be made from cows' milk, goats' milk, soya or hydrolysed proteins.

Infant formula made from soya protein is not recommended for use in the first 6 months of life without supervision.

Infant formula made from hydrolysed proteins does not protect infants from allergy development and babies do not need hydrolysed proteins to help them digest infant formula more easily.

The nutrient content of infant milks sold in the UK is generally very similar as they are all formulated to meet the same compositional regulations. Any differences between infant formula brands are therefore primarily due to the nutrient sources used and the addition of some non-mandatory ingredients.

There are specific regulations around the labelling and marketing of infant formula in the UK.

Infant formula (often called first infant formula and given the number 1 on packaging) is suitable from birth and designed to meet the nutritional requirements of healthy term infants as the sole source of nutrition in the first six months of life. This is also the only infant formula needed alongside complementary foods in the second 6 months of life.

Infant formula compositional regulations are designed to ensure that the product has a similar nutritional composition to breastmilk, but it is important to remember that many of the unique ingredients in breastmilk, which is a living fluid, cannot be reproduced. Some nutrients have to be added in higher quantities in infant formula than are found in breastmilk because they are less well absorbed. For more information on the composition of breastmilk see the resource *Breastmilk and Breastfeeding* at <https://www.firststepsnutrition.org/eating-well-infants-new-mums>.

Infant formula can be made from cows' milk, goats' milk, soya bean or hydrolysed proteins. Infant formula made from goats' milk has to have the same amino-acid composition as infant formula



made from cows' milk and there is considered to be no difference between first infant formula made from cows' milk protein or goats' milk protein in terms of their allergenicity or their digestibility (EFSA, 2012). It is important that health professionals are aware that goats' milk-based infant formula are unsuitable for infants with cows' milk protein allergy.

Whey:casein ratios

Whey and casein are the two major proteins of human milk. Whey and casein are also present in cows' milk and goats' milk but in different proportions to those found in human milk. Whey is the predominant protein source in human milk whilst cows' milk and goats' milk are casein dominant with typical whey:casein ratios of 20:80. First infant formula milk based on cows' milk generally has an altered whey:casein ratio (60:40) to bring it closer to that found in breastmilk but some products now have 50:50 ratios. Hungry baby infant formula typically has a whey:casein ratio similar to cows' milk (20:80).

Infant formula based on goats' milk are not always altered to achieve whey dominance. Some goats' milk infant formula have a whey:casein ratio closer to 20:80 which reflects the use of whole goats' milk as the main source of protein.

Nutritional composition of infant formula

There is little meaningful variation in the nutrient content of different brands of infant formula because they must all conform to the same compositional requirements. You can find out more about current compositional regulations for infant formula and other infant milk products by following the links on the website to regulations.

There is some variation in the ingredients used to achieve the mandatory nutrient content in infant formula and some non-mandatory ingredients can be added. You can see the mandatory and non-mandatory additions to products on the individual product information sheets on this website.

Cost of infant formula

Whilst all infant milks available on the UK market comply with the UK regulations, they vary widely in price. A higher price generally reflects the addition of non-essential ingredients and a higher spend on brand promotion. For information on current prices of infant formula follow the website link to costs.

It is important to remember that all infant formula marketed in the UK are suitable as breastmilk substitutes for infants who are not exclusively breastfed, or receiving breastmilk.



Regulations governing the composition and marketing of infant milks changed on the 22nd February 2020. Milks manufactured from this date must comply with the new regulations. Infant milks based on hydrolysed protein have until the 22nd February 2022 to comply with the new regulations.