Cows’ and goats’ milk protein-based infant formula

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 but goats’ milk protein is a suitable alternative.

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 primarily due to the nutrient sources used and the addition of some non-mandatory ingredients.

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 can be made from cows’ milk or goats’ milk protein and the proteins have to be modified in both to meet the protein content and the amino-acid requirements in the regulations.

Whey and casein are present in cows’ milk and goats’ milk in different proportions to those found in breastmilk, with casein the predominant protein source (whey:casein ratio typically 20:80). First cows’ milk based infant formula generally has an altered whey:casein ratio (60:40) to bring it closer to that found in breastmilk which is whey-dominant. Some infant formula based on goats’ milk have whey:casein ratios closer to that found in animal milk.

Goats’ milk based infant milks were excluded from the European Commission Directive on Infant Formulae and Follow-on Formulae in 2006, on the basis of original recommendations made by the European Food Safety Authority (EFSA, 2006).

In 2012, EFSA revised their conclusion on the suitability of goats’ milk as a protein source for infant and follow-on formula milks. Their revision was based on evidence from a new randomised control trial in 200 Australian infants. The new trial included a breastfed reference group and results from biochemical analysis of blood samples. EFSA concluded that there were no relevant statistical or clinical differences in babies fed formula made with either goats’ or cows’ milk protein, provided it was adapted to meet current compositional regulations. In this study infants were fed the formulas exclusively for 4 months and no differences were found by formula type in terms of adequate
weight, length and head circumference. Infants fed on both formula types differed from the WHO growth standards, which are based on breastfed babies, particularly for weight-for-length which is usually higher in formula fed babies.

EFSA concluded that protein from goats’ milk can be suitable as a protein source for infant and follow-on formula provided the final product complies with the compositional criteria laid down in recommendations (EFSA, 2012). Details of how the formula made from the goats’ milk protein used in the trial assessed by EFSA was made and differences between goats’ and cows’ milk in terms of protein composition are provided in that paper (EFSA, 2012).

EFSA based this conclusion solely on the fact that the composition of formula and follow-on formula made from either goats’ milk or cows’ milk could be adequately adapted to meet the current compositional recommendations. They clearly state that there is no evidence of any difference in ‘digestibility’ between infant formula made from goat’s milk or cows’ milk protein, and that insufficient data to support the belief that the incidence of allergic reactions is lower when feeding goats’ milk based infant formula compared with cows’ milk based infant formula.

The protein in goats’ milk is very similar to that found in cows’ milk and most babies who react to cows’ milk protein will also react to goats’ milk protein. The Department of Health recommends that infants with proven cows’ milk protein allergy who require infant formula should be prescribed an extensively hydrolysed infant formula. Goats’ milk based infant formula is also unsuitable for babies who are lactose-intolerant, as it contains similar levels of lactose to cows’ milk based infant formulas (Department of Health, 2007).


References

