



# Specialist formula milks

## Supporting infants with unique dietary needs

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This article provides an overview of infantile conditions where specific formula milks, in conjunction with breastfeeding, can play an important role in supporting vulnerable infants to attain the essential nutrients required and the invaluable role healthcare professionals play in the prescribing and management of these conditions.

It is well established that breastfeeding is the best way to feed a baby, being important for both the mother and baby. The World Health Organisation (WHO) recommends that babies are exclusively fed with breastmilk until six months of age, thereafter, appropriate complementary foods should be given whilst continuing to breastfeed up to the age of two or beyond.<sup>1</sup>

Healthcare professionals (HCPs) play a vital role in supporting, educating and guiding families sensitively through the sometimes challenging and often unknown realities of breastfeeding. When a child is sick or experiencing health complications, the desire and importance for a mother to breastfeed, or provide breast milk, should not be overlooked. While it may prove more challenging, especially when under stress and/or in a hospital setting, support must be provided, where possible (and wanted), for the continuation of breastfeeding or provision of breast milk. When this is not an option, and for specific health conditions present, specialist formula milks may be used. These have been specifically developed to meet an infant's nutritional requirements.<sup>2</sup> They are safe, rigorously monitored and tightly regulated.<sup>3</sup>

### Why a specialist formula may be needed

The right nutrition plays an essential role in growth, health and development.<sup>4</sup> When not supported adequately, an underlying illness or condition can lead to malnutrition, with nutritional deficiencies, stunting and/or wasting presenting. This can lead to long-lasting health implications.<sup>1</sup>

We know that, for babies who are born prematurely, or with a medical condition, or who develop a disease,

disorder or medical condition, providing breast milk is extremely important and needs to be fully supported. For some infants, however, due to factors including diagnosis, clinical condition, or parent/carer choice, a specialist milk may be required. These products are highly regulated medical formulations intended for the exclusive or partial feeding of infants and young children, and should always be used under the advice and monitoring of a HCP.<sup>5</sup> Where a specialist milk is required, every effort should still be made to encourage the combining with breast milk, where appropriate.

### Conditions where specialist formula milks may be required

There is a diverse range of specialist formula milks available to address a number of conditions which babies can experience; it is essential that infants receive the appropriate formula for their individual requirements so that they are able to receive nutrition that meets their specific needs. The conditions for which a specialist formula milk may be used can vary greatly in terms of their permanence, severity and impact on day-to-day life. The age at which they should be introduced also varies, with some medical conditions being detected at birth by newborn screening, e.g. phenylketonuria (PKU), and others having a delayed diagnosis, such as cow's milk protein allergy (CMPA).

### Preterm infants

Babies born very prematurely or critically ill may not be able to initially feed directly from the breast or bottle and may need to be fed via a nasogastric tube or even an intravenous line (IV). They often have additional nutritional needs, with growth and development of the gastrointestinal tract and neuromotor systems being a priority.<sup>6, 7</sup> The preterm infant's diet may incorporate fortified human milk from the infant's own mother, which can help reduce the incidence of morbidities such as necrotising enterocolitis and sepsis.<sup>8</sup> However, if breast milk (either mother's own milk or donor breast milk) is insufficient or unavailable, a formula designed specifically for premature infants should be used and is a good nutritional option due to its higher caloric density and protein content, when compared with standard infant formula.<sup>9</sup> The benefit of Human Milk Oligosaccharides (HMOs) in preterm infants is receiving increasing attention and their use alongside a premature baby's feeding regime could also be considered.<sup>10</sup> Neonatal dietitians have a critical role to play in making sure that the diet of these infants is effectively managed.

### Gastro-oesophageal reflux (GOR) and Gastro-oesophageal reflux disease (GORD)

Gastro-oesophageal reflux (GOR) is a common medical condition affecting at least 40% of infants.<sup>11</sup> It typically occurs during or immediately after feeding, with the noticeable regurgitation of feeds. For breastfed infants, this need not adversely affect breastfeeding and is likely to improve with age.<sup>11</sup> A breastfeeding assessment should be carried out by a suitably trained expert. When reflux is significant and additional symptoms such as excessive crying, pain/discomfort and poor growth are observed, this may be diagnosed as gastro-oesophageal reflux disease (GORD) and can be a serious medical concern. NICE guideline [NG1] provides guidance on when anti-reflux formula should be trialled.<sup>11</sup> For formula fed babies, an anti-reflux formula, which is pre-thickened or thickens in the stomach, or a feed thickener added to expressed breast milk or standard formula, may be required to manage this condition (for example, containing a starch thickener, locust bean gum or carob bean gum). In up to half of cases, GORD is associated with cows' milk allergy (CMPA), with some comparable symptoms observed.<sup>12</sup>

### Cow's Milk Protein Allergy (CMPA)

Prevalence of CMPA varies in the literature, this could be partially due to differences in study designs and methodology of reporting CMPA. However, it is thought CMPA is one of the most common food allergies seen in young children, with it affecting between 1.8–7.5% of infants during the first year of life.<sup>13</sup> It is an allergic reaction to one or both of the proteins, casein and whey, found in milk. CMPA can be categorised as immediate (IgE-mediated) or delayed (non-IgE-mediated).<sup>14</sup> Symptoms are wide ranging and can include skin reactions such as red itchy rashes and swelling of the lips, face and eye area, eczema and hives, respiratory symptoms and gastro-intestinal issues. In rare cases, consumption of products containing cow's milk can cause anaphylaxis, leading to fatalities. It is important that those affected by CMPA are diagnosed and managed appropriately by a HCP.<sup>14, 17</sup>

Breastfeeding in babies with CMPA should be encouraged and adequate support from HCPs to continue the breastfeeding journey is important, especially in those mothers that need to follow a CMP free diet. In formula fed infants, a specific specialist formula milk can be prescribed such as an extensively hydrolysed formula (eHF).<sup>15</sup> These are tolerated by the majority of infants with CMPA. However, for those who cannot tolerate an eHF, or for those with severe symptoms, an amino-acid based formula (AAF), which is made-up of free amino acids, should be prescribed,<sup>15</sup> as stated by NICE and MAP guidelines.<sup>7, 16</sup> In mild to moderate IgE mediated CMPA an infant soya formula may be used over 6 months of age, if not sensitised on IgE testing.<sup>17</sup>

### Lactose Intolerance

Lactose intolerance is commonly confused with CMPA as many symptoms overlap such as diarrhoea, vomiting, pain and wind. The difference is the underlying cause; where CMPA is an allergy to a protein in cow's milk, lactose intolerance is the inability to digest the carbohydrate lactose due to the lack of or absence of the enzyme lactase, needed to breakdown the sugar lactose. Mothers who breastfeed should be encouraged to continue doing so and it should be reiterated that the amount of lactose in the mother's diet will not impact the lactose content in their breastmilk. For formula fed infants, lactose free infant formulas are available.

Lactose intolerance may be temporary or permanent, depending upon the underlying cause. Secondary lactase deficiency is the most common cause of lactose intolerance in the UK, particularly in babies and young children. Common causes of secondary lactose intolerance include long courses of antibiotics, or an episode of gastroenteritis.

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## Faltering growth

Faltering growth refers to less than expected growth over time. The causes of faltering growth may likely be due to ineffective establishment of feeding, although an acute or chronic underlying disorder, such as cystic fibrosis, inflammatory bowel disease or undiagnosed diabetes mellitus shouldn't be ruled out.<sup>18</sup> Breastfeeding should still be encouraged but managed alongside a specialist high energy formula (in accordance with NICE QS197),<sup>18</sup> which provides more calories and protein than a standard infant formula, to help achieve appropriate catch-up growth.

## The role of the HCP

If an infant shows signs or symptoms which indicate that a specialist product may be required, it is essential that the infant is diagnosed and managed appropriately. Paediatric dietitians have the specialist expertise to collaborate with a GP to diagnose, advise and prescribe the appropriate product for an infant, ensuring that sufficient nutrients are provided to safeguard growth and development. As infants have relatively high nutritional needs and growth trajectories, their nutritional support should be constantly monitored by an HCP. One size does not fit all; as children grow and develop, their nutritional needs change, therefore, they may need different nutritional inputs at different stages.

Not only is a medical condition stressful for the infant, but it can also be very upsetting for parents or carers.<sup>19</sup> Any concerned parent should be encouraged to see their GP and subsequently referred to a paediatric dietitian to ensure the correct nutritional support is provided. This eliminates the risk of the parent/guardian receiving inappropriate advice about the dietary

management of their child, which could put the health of the infant at risk.

The role of a paediatric dietitian in diagnosis, treatment and review is fundamental. HCPs involved in this area should be aware of the appropriate specialist formula milk for optimal nourishment of infants with a disease, disorder or medical condition.

## Prescriptions of specialist formula milks

All specialist formula milks available on prescription go through a strict application process, which the Advisory Committee on Borderline Substances (ACBS) - the committee responsible for advising the prescribing of foodstuffs - assesses and approves. The ACBS takes into consideration the formulation, efficacy and cost of all these specialist formula milks for the dietary management of clinical conditions.

## Putting nutrition at the heart of patient care

BSNA supports the following:

- The continuation, encouragement and support of breastfeeding, or provision of breast milk, when a child is sick.
- Specialist formula milks to be recognised as an integral part of the management of diseases, disorders and medical conditions which require nutritional support.
- Specialist formula milks to be accessible to all patients who need them. All care pathways should clearly identify how and when a specialist formula milk should be used to help manage a patient's condition.
- Specialist formula milks to be prescribed and used appropriately when needed, and for patients to be regularly reviewed and monitored by a healthcare professional.



### About the British Specialist Nutrition Association

BSNA is the trade association representing the manufacturers of products designed to meet the particular nutritional needs of individuals; these include specialist products for infants and young children (including infant formula, follow-on formula, young child formula and complementary weaning foods), medical nutrition products for diseases, disorders and medical conditions, including oral nutritional supplements, enteral tube feeding and parenteral nutrition, as well as companies who aseptically compound chemotherapy, parenteral nutrition and CIVAS.

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