



COWS' MILK ALLERGY SPECIALIST FORMULAE: APPROPRIATE PRESCRIBING. WHAT DO WE NEED TO KNOW?



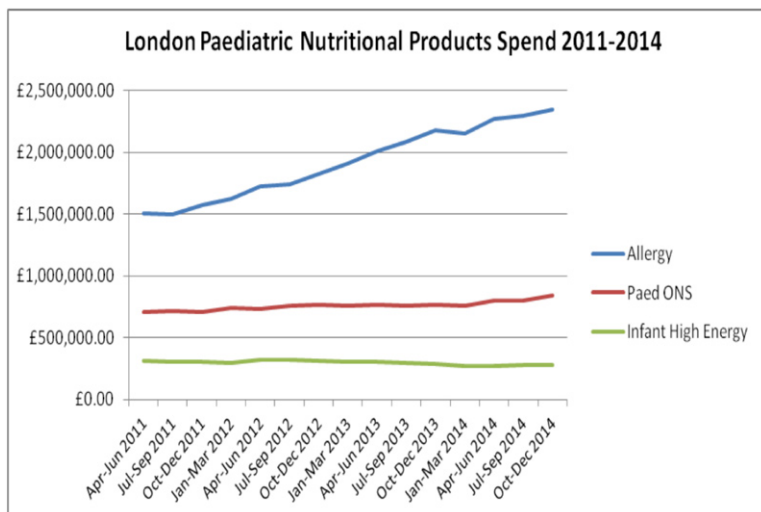
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Food allergy is a recognised healthcare problem, with cows' milk protein being the most common food causing allergy symptoms in infants and young children (1). It is established that the management of cows' milk protein allergy (CMPA) following the diagnosis is complete or individualised avoidance of cows' milk protein alongside the usage of suitable substitute milks.

Breast milk is suitable for the majority of infants suffering from CMPA, and mothers normally do not need dietary restrictions unless their infant presents symptoms whilst being breastfed (2). However, when breast milk is not available, advice on a suitable milk alternative is needed.

Cows' milk allergy specialist formulae spend has been increasing significantly in the past years (3). It has been reported that the NHS spends £23.6 million per year on paediatric cows' milk protein allergy management (4). It is estimated that the NHS cost of managing

Figure 1



Juliana is a Registered Dietitian for over 10 years and has experience mainly in paediatric dietetics in Brazil and in the UK. Her interests are in food allergies, nutrition products and appropriate prescribing.



The express route
to the end of cow's milk allergy



Cows' milk allergy specialist formulae expenditure is progressively increasing in London over the years . . .

an infant suffering from CMPA with extensively hydrolysed formula (EHF) over a period of one year would be £1,853 and with amino acid formula (AAF) this would be £3,161 (5). Considering the NHS current financial situation, inappropriate spending has to be avoided (6).

Adding to future savings, the NHS aims to improve the quality of patients' care (6), and it is known that appropriate prescribing can improve patient outcomes and safety (7). Therefore, it is essential to ensure that cows' milk allergy specialist formulae are correctly and timely prescribed and reviewed.

REASONS THE SPEND ON COWS' MILK ALLERGY FORMULAE IS RISING

Cows' milk allergy specialist formulae expenditure is progressively increasing in London over the years and is significantly higher compared with other specialist paediatric nutritional products. The following factors are believed to have been contributing to this (7):

- increasing research in allergy, which leads to increased awareness of CMPA;
- rising cost of products;
- AAF being used inappropriately as first line, by some;
- inappropriate initiation and/or prolonged usage of products caused by:
 - disparity in HCP knowledge about CMPA management and products;
 - poor communication to GPs, e.g. incomplete correspondence from HCPs recommending cow's milk allergy specialist formulae in regards indicators for changing/stopping/reducing formula; + volume of prescriptions (number of tins per month);
 - GPs not acting as correspondence's advice from specialists;

- patients not reviewed by a paediatric dietitian as inequality in paediatric dietetic service provision.

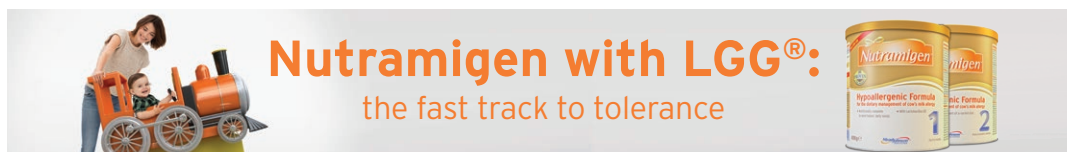
CHOOSING AN APPROPRIATE COWS' MILK PROTEIN ALTERNATIVE MILK

The NICE guideline (8) recommends that a HCP with the appropriate competencies takes an allergy-focus clinical history in order to find/exclude a food allergy diagnose, which may lead to a formula initiation. This guideline also advises that a dietitian should be involved in the care of children suffering from food allergies and, therefore, in monitoring/advising the type, quantity and length of cows' milk allergy specialist formula usage in combination with breast milk or as a replacement when breast milk is not available, as well as an appropriate diet. The following cows' milk allergy specialist formulae options are currently available in the UK (9):

Extensively Hydrolysed formulae (EHF) (Table 1)
About 90 percent of children suffering from IgE mediated CMPA (10) and 70 percent presenting non-IgE mediated CMPA (11) will achieve symptoms resolution with an EHF. Although the majority of infants will tolerate all EHF types, it is important to note that some with more severe presentations of CMPA may not and therefore need an AAF. Also the presence of lactose will improve the palatability of the EHF (2).

Amino Acid formulae (AAF) (Table 2)

Option for severe CMPA allergic symptoms when exclusively breastfed, severe forms of non-IgE-mediated CMPA (e.g. eosinophilic esophagitis), CMPA combined with faltering growth, reacting to EHF (2). Choosing an AAF when not indicated increases the cost burden on managing CMPA and may affect development of tolerance (albeit the data is very preliminary at this time) (13). ▶



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†Studied before the addition of LGG®. Calculated using data on allergic reactions after oral food challenge with an eHF from table 3 of Dupont C et al. 2012, as judged by the Committee on Nutrition of the French Society of Paediatrics. ‡vs an eHF based on casein, rice hydrolysate, soy and amino acid formulas. CMA, cow's milk allergy; eHF, extensively hydrolysed formula; LGG®, *Lactobacillus rhamnosus* GG. **References:** 1. Dupont C et al. *Br J Nutr* 2012;107:325-338. 2. Nermes M et al. *Clin Exp Allergy* 2010;41:370-377. 3. Baldassarre ME et al. *J Pediatr* 2010;156:397-401. 4. Canani RB et al. *J Pediatr* 2013;163:771-777. 5. Data on file, 2014.

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Table 1: EHF options available in the UK

EHF	Manufacturer	Suitable ages	Average cost per unit	Cost per 100kcal	Protein source (2)	Lactose content
Similac Alimentum (400g)	Abbott	From birth	£9.10	£0.43	Hydrolysed casein 95% peptides <1,000 Da	Lactose free
Nutramigen 1 with LGG® (previously Nutramigen LIPIL 1) 400g	Mead Johnson	Birth to 6 months	£10.87	£0.54	Hydrolysed casein 95% peptides <1,000 Da	Lactose free
Nutramigen 2 with LGG® (previously Nutramigen LIPIL 2) 400g	Mead Johnson	From 6 months	£10.87	£0.58		
Althera (450g)	SMA	From birth to 3years	£10.68	£0.47	Hydrolysed whey 99.3% peptides<1,000 Da	Contains lactose
Aptamil Pepti 1 (400g/800g)	Milupa	birth to 6 months	£9.54/ £19.08	£0.49	Hydrolysed whey 73% peptides <1,000 Da	Contain lactose
Aptamil Pepti 2 (400g/800g)	Milupa	From 6 months	£9.10/ £18.20	£0.47/ £0.43		
Cow & Gate Pepti-Junior (450g)	Cow & Gate	From birth	£12.58	£0.56	Hydrolysed whey 57% peptides <1,000 Da	Contains residual lactose
Pregestimil Lipil (400g)	Mead Johnson	From birth	£12.06	£0.60	Hydrolysed casein 95% peptides <1,000 Da	Lactose free
Infatrini Peptisorb (200ml) – High energy formula	Nutricia	From birth to 18 months or 9.0kg weight	£3.41	£1.71	Hydrolysed whey 73% peptides <1,000 Da	Contains residual lactose

Table 2: AAF options available in the UK

AAF	Manufacturer	Suitable ages	Average cost per unit	Cost per 100kcal	Protein source (2)
Alfamino (400g)	SMA	From birth	£23.00	£1.14	Amino Acids
Nutramigen Puramino (400g)	Mead Johnson	From birth	£26.80	£1.34	
Neocate LCP (400g)	Nutricia	From birth	£28.30	£1.46	
Neocate Active (15x63g sachet)	Nutricia	From 1 year	£66.60	£1.48	
Neocate Advance (15x50g & 10x100g sachet)	Nutricia	From 1 year	£46.35/15x50g £58.60/10x100g	£1.55 £1.47	
Neocate Spoon (15x 37g sachet)	Nutricia	From 6 months	£39.30	£1.45	

Neocate Active/Advance are high energy formulae and **should NOT automatically replace Neocate LCP**. **Neocate Spoon** is a weaning food that may be used in some cases of multiple food allergies combined with faltering growth under a paediatric dietitian's close supervision.

Table 3: SF options available in the UK

SF	Manufacturer	Suitable ages	Average cost per unit	Cost per 100kcal	Protein source (2)
Wysoy (430g/860g)	SMA	From 6 months	£5.65 £11.00	£0.26 £0.25	Whole soya

Please note: Infasoy (Cow & Gate) has been discontinued since April 2015.

Table 4: Suggested formulae quantities to be prescribed

Age	Approximate number of tins per 28 days		
	400g tin	450g tin	800g tin
Less than 6 months	10-13	9-12	5-7
6-12 months	7-10	6-9	3-5
Greater than 12 months	7	7	3-4

Restricting initial prescriptions for new patients to 1-2 tins will reduce wastage should the baby refuse to take the feed. Alternatively consider referral to a paediatric dietitian for assessment prior to prescribing or setting a repeat prescription

Table 5

Cows' milk allergy specialist formula prescription template request	
Product name	
Manufacturer	
Unit size	
Dose per day	
Quantity per 28 days (no. of tins/bottles)	
Goal of nutrition prescription	
Prescription review plan	This patient will be reviewed in << >> months by the Community Dietetic Team.

Ensure GPs are informed when the prescriptions should be changed/reduced/stopped, as well as when the prescriptions should be reviewed by them, in case patients are discharged on prescriptions from your caseload.

Soya formulae (SF) (Table 3)

Not suitable for infants <6 months of age due to phytoestrogens and should be used with caution in CMPA as risk of combined soya allergy (2). Can be purchased by patients over the counter.

Lactose free and Anti-Reflux formulae

Not suitable to be used in CMPA as they contain the whole cows' milk protein. Can be purchased by patients over the counter.

Partially hydrolysed formulae

Not suitable for CMPA treatment (2).

Over the counter milk alternatives

such as soya, oats, coconut or other milk alternative enriched with calcium. May be used for children over one year of age reviewed closely by a paediatric dietitian if dietary intake and

growth are adequate. Please note that rice milk is not suitable for children under 4.5 years of age due to its arsenic content (2).

SUGGESTIONS TO IMPROVE APPROPRIATE PRESCRIBING PRACTICE

Understand local spend data and then create initiatives to target local issues.

With local acute and community agreement produce local guidelines on infant formula prescribing aiming to educate local GPs and other HCPs on the appropriate options to prescribe, as well as the appropriate quantities and length of usage, as well as when and where to refer for specialist review.

Increase awareness of cows' milk allergy specialist formulae range and prices in HCPs that may be ►

Advising the right product for the right patient for the right length of time will not only save money, but can enhance patients' clinical outcomes and safety.

initiating a prescription; updates can be accessed on the London Procurement Partnership (LPP) website (www.lpp.nhs.uk).

Improve your own prescribing practice:

- **Ensure best practice** based on CMPA current guidelines to prevent CMPA misdiagnosis and, therefore, inappropriate usage of the specialist formulae, e.g. encourage regular formula re-introduction after period of cows' milk protein exclusion to confirm diagnosis of CMPA (8).
- **Review prescriptions needs** - review patients regularly advising on the most appropriate options. Consider over-the-counter milk alternatives enriched with calcium for patients over one year of age when under the close guidance of a dietitian as deficit in energy, protein, riboflavin, vitamin A and D and fatty acids are likely without adequate dietary sources (2).
- **Good communication** - ensure correspondences to GPs are complete and clear in re-

gards the formula prescription request to prevent unnecessary prolonged/excessive usage. Inform GPs that soya formula can be purchased by patients.

- **Be aware of the MAP and BSACI guidelines providing clear information on the diagnosis and management of CMPA.**

COWS' MILK ALLERGY SPECIALIST FORMULAE APPROPRIATE PRESCRIBING IN A NUTSHELL

The cost of cows' milk allergy specialist formulae to the NHS is progressively increasing, and considering the NHS current financial situation, appropriate prescribing of these is paramount. Advising the right product for the right patient for the right length of time will not only save money, but can enhance patients' clinical outcomes and safety. Dietitians having the expertise in this area can make a big difference by adopting initiatives to ensure cow's milk allergy specialist formulae appropriate prescribing.

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Questions relating to: *Cows' milk allergy specialist formulae: appropriate prescribing. What do we need to know?*
Type your answers below and then **print for your records** or print and complete answers by hand.

Q.1 What is the established management of cows' milk protein allergy (CMPA) following diagnosis in an infant?

A

Q.2 Explain why appropriate prescribing of cows' milk allergy (CMA) specialist formulae is so essential.

A

Q.3 What is the reported NHS annual spend on paediatric CMPA management and outline the reasons for the increased expenditure of CMA formulae in the UK.

A

Q.4 What is the NICE guideline advice to UK dietitians on 'Food Allergy in Children and the Young'?

A

Q.5 State three extensively hydrolysed formulas (EHF) suitable for infants from birth to six months old, the protein source, cost per 100kcal and criteria why an EHF might be prescribed.

A

Q.6 State three amino acid formulas (AAF) suitable for an infant aged over one year old, the cost per 1000kcal and the rationale for prescribing AAF rather than EHF.

A

Q.7 What formulas are not suitable for CMPA and why?

A

Q.8 Give three suggestions on how to improve appropriate prescribing practice for CMPA.

A

Q.9 How can you improve your own prescribing practice?

A

Please type additional notes here . . .