

Cow's milk allergy management in primary care

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Aim

These Guidelines aim to promote the timely and effective diagnosis and management of Cow's milk allergy (CMA), in primary care and the appropriate escalation to community and secondary care.

The milk allergy management pathway is summarised in a [shortened flow chart](#) for rapid access in clinic. Below details the evidence base and practice involved.

Scope and purpose of guidelines

This document is intended to guide the management and diagnosis of CMA also referred to interchangeably as Cow's milk Protein allergy in the literature (CMPA).

All healthcare professionals working within Cambridgeshire and Peterborough that recommend, prescribe, supply or administer infant formula for the treatment of CMA should be familiar with these guidelines: including but not limited to GP's, health visitors, dietitians, Doctors, practice and children's community Nurses.

The guidelines advise on:

- Identifying symptoms and type of CMA
- Referral to specialist services
- Supporting breastfeeding
- Initiating appropriate CMA formula where breastfeeding is not possible
- Reviewing and discontinuing infant formula

The CMA formula described in this document represent the best value options for management of CMA. If the indication for prescription is Cow's milk protein allergy the first line products should be considered or trialled by all recommending clinicians.

However, **dependent on the clinical need of the patient**, if the first line products are not appropriate, the clinical reasoning and justification for the recommendation of alternative formula will be provided by the recommending clinician, and the products will be reviewed regularly by appropriate specialists.

Executive summary

- Though there is a recognised rise in paediatric allergies worldwide, due to the lack of clinical testing for non-IgE mediated allergies and the common nature of reported symptoms in well infants, there is a risk of overdiagnosis of CMPA.
- Controlled removal and reintroduction of cow's milk protein is the only way to confirm non-IgE allergies. **The need for confirmation of allergy and reintroduction should be explained to parents at initiation of CMPA free diet.**
- Breastfeeding should be encouraged and [supported](#) as best practice for children with CMPA with maternal exclusion of CMPA products- dietitian referral will be required.
- 1st line Extensively hydrolysed formula (EHF) in CPCCG is SMA Althera, studies show 90% of CMPA can be managed using an EHF formula or Breastfeeding with maternal exclusion of cow's milk products.
- 1st line Amino acid formula in CPCCG is SMA Alfamino Current prescription rate of AAF is 40% rather than the 10% expected across the system.
- Reintroduction of CMPA where clinically appropriate at around 1 year should be managed under dietetic supervision.
- The majority of infants will no longer require a prescribed product after 1 year of age as they can be transitioned onto readily available plant-based alternatives with dietetic supervision.

Epidemiology of Cow's milk allergy

The rise of paediatric allergies has been well documented across the literature, and though there is believed to be an impact of better recognition and diagnosis, there is thought to be an absolute increase with a methodology which has not yet been fully explained, but is observed worldwide.

In the use of cow's milk protein allergy (CMA/CMPA) formulas, it is critical to remember that milk allergy affects less than 2% of UK infants (1). It is one of the most common food allergies in early life (1) with an estimated prevalence in developed countries around 0.5-3% (2) Diagnosis is a particular challenge as most of the typical symptoms are very common in well babies – in fact, most babies will suffer from these symptoms from time to time and of course, the overwhelming majority do not have a milk allergy and do not need further assessment for this. However, in infants where these symptoms are multiple, significant, persistent as well resistant to medical treatment, it is important to consider this diagnosis.

Additionally, it is important to consider breastfeeding as a potent prevention mechanism for the development of CMPA. The incidence of Cow's milk allergy in purely breast fed infants is low at under 0.5% (3) and many infants will be able to continue breast feeding if the parent excludes Dairy protein from their diet under dietetic supervision to ensure adequate calcium, iodine and vitamin D replacement.

In order to support the BFI initiative and clinical best practice for the resolution of CMPA, **breastfeeding is heavily featured in the new guidelines and should be considered first line treatment where possible**. For those infants who are able to tolerate maternal milk (parent following dairy exclusion diet), breast feeding is the best option for most infants and evidence suggests can result in earlier resolution of CMPA symptoms, as well as optimal growth. (1)

Breastfeeding in Cow's milk allergy

Breastmilk remains the best source of nutrition for infants, including those with cow's milk allergy and parents should be supported to continue breastfeeding in the management of CMA. Breastfeeding contributes to the health of both the parent and infant in the short and longer term.

If the parent is able to provide a mixed feeding pattern this should also be actively encouraged, and the child should be topped up with an appropriate CMPA free formula.

Extensively hydrolyzed (EHF) and Amino acid formulas (AAF)

EHF and AAF formulas are both used in the management of cow's milk protein allergy, they are derived from cow's milk as are standard infant formulas, the EHF formula breaks down the cow's milk protein into smaller peptides whilst the AAF formula's break the proteins down into constituent amino acids.

Studies show that 90% of children with confirmed CMPA can be managed using an Extensively hydrolysed formula rather than an amino acid formula. (4)

EHF formula should be first line treatment as they confer additional benefits to cost effectiveness, such as more rapid tolerance of cow's milk protein into the diet, and better long term nutritional profiles (12) irrespective of the additional factors marketed by each brand. (5,6)

Cow's milk Allergy management pathway

The milk allergy pathway is summarised in a [shortened flow chart](#) for ease in clinic. Below details the evidence base and practice involved.

[Step 1 : identify symptoms and type of CMA](#)

[Step 2: confirm diagnosis for mild- moderate non IGE mediated allergy](#)

[Step 3: Treatment and referral](#)

[Step 4: milk prescription volume](#)

[Step 5: When to stop Allergy formula prescription](#)

Step 1: identify symptoms and type of CMA

Many symptoms of CMA are very common in otherwise well infants. It is important to consider treatment/causes of isolated symptoms (such as rashes/ constipation/ eczema/ reflux etc) before considering any unnecessary exclusion diets can result in poor growth and nutritional deficiencies⁴. **A trial exclusion diet should only be undertaken if Clinical history and presentation strongly suggest CMA, especially in breastfed infants where measures to [support breastfeeding](#) should be undertaken.**

Clinicians should consider using the [iMAP Allergy focused history](#) to explore the symptoms reported by parents and carers.

The iMAP Allergy-focused Clinical History for Suspected Cow's Milk Allergy in Infancy 'The Cornerstone of the Diagnosis'

- A family history of atopic disease (atopic dermatitis, asthma, allergic rhinitis or food allergy) in parents or siblings
 - a reported history along with symptoms of suspected cow's milk allergy makes the diagnosis more likely; this applies to both IgE-mediated and non-IgE-mediated
- Sources of cow's milk protein and how much is being or was ingested:
 - Exclusive breast feeding**
 - when cow's milk protein from maternal diet comes through in the breast milk (low risk of clinical allergy)
 - Mixed feeding**
 - when cow's milk protein is given to the breast feeding infant e.g. top-up formulas, on weaning with solids
 - Formula-feeding infant**
 - the commonest presentation, particularly in countries where there is poor adherence with the WHO guidance of exclusive breastfeeding for 6 months
- Presenting symptoms, to include:
 - if more than one symptom, the sequence of clinical presentation of each one
 - age of first onset
 - timing of onset following ingestion (atopic dermatitis - such 'timing' can be very variable) IgE-mediated - usually within minutes, but can be up to 2 hours

 - Non-IgE-mediated - usually after ≥ 2 hours or even days
 - duration, severity and frequency
 - reproducibility on repeated exposure
 - amount and form of milk protein that may be causing symptoms
- Details of any concern with feeding difficulties and/or poor growth
- Details of any changes in diet and any apparent response to such changes
- Details of any other previous management, including medication, for the presenting symptoms and any apparent response to this

Non-IgE and IgE mediated allergies.

Food allergies may be broadly classified as IgE or non-IgE mediated allergies.

Non- IgE mediated allergies are caused by reactions involving other components of the immune system apart from IgE antibodies. The reactions generally have a delayed presentation mostly 2-72 hours post ingestion.

There are no skin or blood tests for delayed onset cow's milk allergy (Non-IgE allergy). The only reliable test is to take all the cow's milk protein out of the diet of the exclusively breast-feeding parent or out of the diet of the bottle fed infant and then to later reintroduce it in a planned way.

IgE-mediated allergies result in more rapid reactions and can be immediate or up to 2 hours post ingestion of cow's milk protein.

These can be tested through skin prick tests and allergen specific IgE testing, however this will be done in secondary care if required.

Non-IgE mediated		IgE mediated	
Mild- moderate	Severe Symptoms	Mild- moderate	Severe Symptoms
<p>These symptoms will persist despite first line measures. Usually several of:</p> <p>Gastrointestinal: Persistent irritability - Colic - Vomiting /Reflux/GORD -Food refusal /aversion - Loose or frequent stools - Constipation Abdominal discomfort - Blood &/or mucus in stools in an otherwise well infant</p> <p>Skin: Pruritus / Erythema - Moderate persistent atopic dermatitis</p>	<p>One or more of following Severe, persisting, treatment resistant symptoms:</p> <p>Gastrointestinal: - Vomiting - Diarrhoea - Abdominal pain - Food refusal or food aversion - Significant blood &/or mucus in stools - Irregular or uncomfortable stools</p> <p>Skin: Severe atopic dermatitis +/- faltering growth:</p>	<p>One or more of:</p> <p>Respiratory- (rarely isolated) Acute rhinitis and/or conjunctivitis</p> <p>Gastrointestinal: Vomiting – Diarrhoea -Abdo pain/ colic</p> <p>Skin: (one or more usually present) Acute pruritus - Erythema/ Urticaria- Angioedema - Acute 'flaring' of atopic dermatitis</p>	<p style="text-align: center;">ANAPHALAXIS</p> <p>Immediate reaction with severe respiratory and/or CVS signs and symptoms; (rarely a severe GI presentation)</p>

Step 2: confirm diagnosis for mild- moderate non IGE mediated allergy

All children with suspected CMPA should be referred to the paediatric dietitians, In mild to moderate non-IgE mediated allergy, which are the most commonly seen patients, **it should be emphasised to parents that reintroduction of cow's milk products will be required to confirm the diagnosis.**

- Unnecessary restriction of a child's diet can result in poor growth and nutritional deficiencies so CMPA must be confirmed. (7, 8)
- As no test can conclusively prove a non-IGE mediated allergy, the only reliable way to confirm CMPA is to take all the cow's milk protein out of the diet and then to later reintroduce it in a planned way.

Where a mild- moderate non-IgE mediated allergy is suspected, a patient should be given Trial exclusion of Cow's milk protein for 2-4 weeks from diet ([iMAP Factsheet for Parents](#)):

In Breast fed infants;

- strict maternal dairy free diet

In formula/mixed fed infants;

- trial 2-4-week first line EHF

- If there is clear improvement in symptoms with the dietary exclusion, CMA is not diagnosed until it has been confirmed by **HOME MILK CHALLENGE**

- If there is no return of previously described symptoms; then the child does not have a Cow's milk allergy- return to normal diet

Children with mild- moderate symptoms should be encouraged to reintroduce cow milk protein after 2-4 weeks, using the [home milk challenge](#) to confirm the allergy, however it is not mandatory that this is completed prior to dietitian referral or appointment.

Step 3: Treatment and referral

All patients with suspected cow's milk allergy should be referred to the community dietitians for growth monitoring as appropriate and dietary advice for both parent and child if breast feeding.

In some cases where there is a suspected severe or multiple allerg (y/ies) , referral to paediatricians or secondary care may be necessary for skin prick testing.

The majority of infants will be able to be managed in the community with dietitian and GP support.

Type of CMA	Mild to moderate non – IgE mediated	Severe non- IgE mediated	Mild- Moderate IgE mediated	Severe IgE mediated
Treatment if breastfed	Breastfeeding should be considered first line treatment Strict maternal cow's milk protein free diet; maternal supplementation of calcium and vitamin D recommended.			
Treatment if mixed/ formula fed	Support breastfeeding (with strict CMP free diet) or, if not possible, Prescribe 1 st line formulary extensively hydrolysed formula (EHF) 1st line EHF in CPCCG is SMA Althera; Offer 2 tin sample before starting prescription to ensure tolerance/ acceptance of product. (If infant is asymptomatic on breastfeeding alone, do not restrict maternal diet). EHF milks can treat symptoms in 90% of children with confirmed CMA		1 st line CPCCG AAF is SMA Alfamino. AAF should only be continued with specialist advice. A month's trial can be issued whilst awaiting dietetic input. AAF required in 10%	
If introducing solids (not before 17 weeks old)	Follow strict cow's milk free diet for child whether breastfeeding or formula-fed DO NOT ROUTINELY advise avoiding other potential allergenic foods in weaning such as wheat / egg/ peanuts/ fish <i>unless advised by specialist team or there is a proven allergy (9)</i>			
REFERRALS	Paediatric Dietitian	Paediatric dietitian	Paediatric dietitian	URGENT Paediatrician

The first line choice for EHF in Cambridgeshire and Peterborough is SMA Althera, this product is approved for halal, Kosher and vegetarian diets. The lactose content of the formula may help to transition across to the formulas which are much less unpalatable to infants than standard infant formula or breast milk.

If a child shows improvement of symptoms when using an EHF formula after the home challenge, but does not achieve complete resolution of gut symptoms, prescribers may consider the use of a non-lactose containing milk- the CCG 2nd line EHF Nutramigen LGG.

AAF formula use should be on the recommendation of specialists and initiation in the by prescribers should be kept to a minimum. All patients using an AAF formula should be known to dietitians to ensure long term nutritional adequacy and safety in dairy reintroduction.

As noted in the above table, it is important to remind parents that they should not be proactively avoiding allergenic foods such as peanuts, gluten or egg etc when weaning their child onto solid foods unless they have been advised to do so by their dietitian or allergy consultant. (9)

Multiple studies have reported benefits of early introduction of allergenic foods in the prevention of atopic march. However early introduction of solids before 17 weeks has been shown to increase the risk of food allergies, (10) department of health guidelines recommend introducing solid foods around 6 months but liaise with the child’s dietitian for individualised advice.

Parents should be advised to introduce higher allergenic potential foods one at a time, in small quantities to monitor for reactions, the child’s dietitian will provide further guidance on this.

Step 4: Formula prescription volume

Prescription volume is largely dependent on the clinical need of the child, if the child has been faltering growth or has the potential for catch up growth a larger volume of prescription may be required.

The prescription needs will vary month to month for each child as the child increases in age and will require more formula to support adequate growth and development.

After around 9 month the amount of prescription items should reduce as the infant becomes more and more dependent on solid foods to support their nutritional needs.

For simplicity and to ensure a change of prescription amount is not required monthly; the recommendation for 10 tins per month for children under 6 months will provide more than is required for the first 3 months of the infant’s life, but the parent should be advised to only request a repeat prescription when coming to the end of their supply (2-3 tins left) rather than monthly.

Age of child	Suggested feeding pattern	Department of health recommendations	Per month prescription volume
Under 6 months	1000mls	<i>Responsive feeding pattern 150mls/kg/day*</i>	10x (400g/ 450g) Tins
6-9 months	800mls	<i>Reducing need for formula with increase in solid intake</i>	8x (400g/ 450g) Tins
9-12 months	600mls		6x (400g/ 450g) Tins
Over 12months	600mls	<i>600mls/ day of milk or milk substitute</i>	6x (400g/ 450g) Tins

The feeding recommendations are based on averages from the department of health recommendations and are for indicative purposes. If there is a clinical need for higher prescription amount this should be detailed by the recommending clinician, with a clear explanation of the prescription amount they feel is appropriate and a planned review date.

*Responsive feeding should be encouraged with all infants unless there is a clinical indication for alternative practice. Though bottle feeding cannot be considered truly 'responsive', best practice can be encouraged using the [WHO BFI resources](#).

Step 5: When to stop Allergy formula prescription

Though not directly relevant to these guidelines, which relate to Cow's milk allergy, it is worth noting that some conditions; such as short bowel, IBD and complex malabsorption syndromes will also use amino acid and extensively hydrolysed formulas.

In such instances it is not appropriate to expect the change of formula to be managed in the same way as CMPA and these infants will likely require longer term prescription. However, these will be managed by their specialist teams and the patients will be transitioned onto age/ weight appropriate products as required.

Many children will outgrow their cow's milk protein allergy, with up to 50% no longer symptomatic by the age of 1 and 75% no longer symptomatic by the age of 3 and over 90% at 6 years. (2).

As such it is part of standard management to reintroduce cow's milk protein in the diet using the milk ladder under dietetic supervision around the age of one year, or earlier if clinically appropriate.

For children without CMPA there is a decreasing nutritional dependence on breast milk or formula for most infants over 1 year, at which point cow's milk can be introduced as a main drink.

It is similarly expected that there will be a reduction in the dependence on CMPA formula as the child ages and plant drink alternatives to cow's milk should be introduced as the main drink if the child is not yet able to tolerate cow's milk.

Plant alternatives are available at a similar cost to cow's milks and are not available on prescription. For parents from low income families consider if they are eligible for the [healthy start voucher scheme](#) which can be used to purchase milk alternatives and fruits/ vegetables.

- As a result of decreasing dependence on infant formula as the child ages, the need for prescription CMPA free formula should decrease with time and many children, even those who do not outgrow their allergy can have a nutritionally adequate diet without using a formula.
- It is appropriate to consider stopping a CMPA free formula milk for children over the age of two, though where the child has a dietitian they should be consulted.
- In children with CMPA and complex needs or multiple allergies, the longer-term use of an infant formula to provide them with appropriate vitamins and minerals may be needed. E.g. In the case of faltering growth with CMPA there are often very limited products available to support weight gain and appropriate growth.

- These children will remain under the care of a specialist team and their prescription will be reviewed regularly to provide them with the most appropriate treatment.

Plant milk recommendations over 6 months and over:

Breast milk or prescribed CMPA formulas are likely to be required from 6 months to one year to provide nutritional adequacy and support good growth and development.

Where parents are keen soy-based infant formula's (e.g SMA Wysoy) can be introduced from 6 months onwards. Soy based infant formulas should not be used for children under 6 months as per FSA guidelines due to the phytoestrogen content (11).

- SMA Wysoy is available over the counter at a similar cost to standard infant formula and should not be provided on prescription.

Dependent on dietitian advice, and each infant's known allergies it may be appropriate from 6 months to introduce milk alternatives in cooking, but not as the infant's main drink.

Soya, nut, oat, coconut, hemp or pea milk alternatives can be used in cooking for infants from 6 months of age.

Always check that any milk alternative used is enriched with calcium. Avoid using sweetened milk alternatives. **Milk alternatives are not suitable as the main milk drink in the first year of life.**

Rice milk is not appropriate in under 5's, even in cooking due to the trace content of arsenic.

Plant milk recommendations over 1 year

- From one year as the dependence on breast milk or formula reduces, it is appropriate to introduce a plant alternative to cow's milk as a main drink.
- Children over 1 year are recommended to consume no more than 600mls of milk or milk alternative per day as it is likely to displace other foods.

There are an increasing number of plant based milk alternatives available, however not all are equivalent and not all will provide the same nutritional content as cow's milk, 2 options are provided in the guidelines as examples but these are not the only options available. Oat and Soya alternatives are the recommended milk alternatives in CMPA as they are often a more cost-effective option for families and have similar energy/ protein content to cow's milk. (see table 1)

Coconut, Hemp and almond milks should not be advised as main drink milk alternatives to children under 5 due to their low protein content.

ALL PLANT BASED ALTERNATIVES SHOULD IDEALLY BE UN-SWEETENED, CALCIUM AND IODINE FORTIFIED.

In instances where children are allergic to soya or oats as well as dairy, it is likely that they will need to continue with a prescribed CMPA formula over 1 year.

Rice milks are not recommended for children under 5 years, as they have been shown to contain traces of arsenic. Drinking rice milk alternative may mean that very young children exceed safe levels.

Table 1: Nutritional content of Plant based milk alternatives

Per 100ml	Whole cows' milk ¹	Unsweetened fortified oat milk alternative ²	Unsweetened fortified soya milk alternative ³	Unsweetened fortified hemp milk alternative ⁴	Unsweetened fortified coconut milk alternative ⁵	Unsweetened fortified almond milk alternative ⁶
Energy kcal	63	46	33	26	20	13
Protein g	3.4	1.0	3.3	0.3	0.1	0.4
Carbohydrate g	4.6	6.7	1.0	0.1	2.7	Nil
Fat g	3.6	1.5	1.8	2.7	0.9	1.1
Vitamin D micrograms	Trace	1.5	0.8	Not added	0.75	0.75
Riboflavin mg	0.23	0.21	0.2	Not added	Not added	0.21
Vitamin B12 micrograms	0.9	0.38	0.4	Not added	0.38	0.38
Calcium mg	120	120	120	Not added	120	120
Iodine ⁷ micrograms	31	8	13	16	8	6
Salt g	0.1	0.1	0.1	Trace	0.13	0.13
Price* per 100ml	7p	15p	10p	25p	18p	18p

* These prices are based on fresh milks where available. UHT milks are often cheaper.

1 Tesco whole cows' milk 2 pint (1.13l), Tesco 2019, 71p/litre

2 Oatly oat milk original (longlife), Tesco 2019, £1.50/litre

3 Tesco own brand fresh unsweetened soya milk alternative, Tesco 2019, 95p/litre

4 Good Hemp creamy seed milk, Holland & Barrett 2019, £2.49/litre

5 Alpro unsweetened fresh coconut milk alternative, Tesco 2019, £1.80/litre

6 Alpro unsweetened fresh roasted almond milk alternative, Tesco 2019, £1.80/litre

7 Based on data from: Bath et al, 2016. Iodine concentration of milk-alternative drinks available in the UK. *Proceedings of the Nutrition Society*; 75 (OCE3), E119.

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Cow's Milk Allergy (CMA) Pathway: Management in primary Care

- Cow's milk allergy is an immune mediated response to protein in Cow's milk which can either be IgE or Non-IgE mediated and have varying degrees of severity.
- Less than 2% of infants in the UK have confirmed CMA¹ and there is a risk of over diagnosis if mild / temporary symptoms are over interpreted, especially if the diagnosis is not confirmed with a reintroduction of cow's milk as per NICE guidelines²
- Breastfeeding is the best way to feed an infant; there is a lower incidence of CMA in the breast fed population (0.5%)³ and mothers should be encouraged and supported to continue breastfeeding even if CMA is suspected by excluding [Cow's milk from their own diet](#).

Step 1: identify symptoms and type of CMA:

Take [allergy Focused history](#) including atopic presentations, symptom onset timing and main symptoms causing concerns.

Many symptoms of CMA are very common in otherwise well infants. It is important to consider treatment/causes of isolated symptoms (such as [rashes/ constipation/ eczema/ reflux](#) etc) unnecessary exclusion diets can result in poor growth and nutritional deficiencies⁴. A trial exclusion diet should only be undertaken if Clinical history and presentation strongly suggest CMA, especially in breastfed infants where measures to [support breastfeeding](#) should be undertaken.

Delayed onset of symptoms Mostly 2-72hr post ingestion of Cow's milk protein (CMP)		Acute onset of symptoms: Immediate, but up to 2 hours post ingestion of CMP	
Non-IgE mediated		IgE-Mediated	
Mild- moderate	Severe Symptoms	Mild- moderate	Severe Symptoms
These symptoms will persist despite first line measures. Usually <u>several</u> of: Gastrointestinal: Persistent irritability - Colic - Vomiting /Reflux/GORD -Food refusal /aversion - Loose or frequent stools - Constipation Abdominal discomfort - Blood &/or mucus in stools in an otherwise well infant Skin: Pruritus / Erythema - Moderate persistent atopic dermatitis	One or more of following Severe, persisting, treatment resistant symptoms: Gastrointestinal: - Vomiting - Diarrhoea - Abdominal pain - Food refusal or food aversion - Significant blood &/or mucus in stools - Irregular or uncomfortable stools Skin: Severe atopic dermatitis +/- faltering growth:	One or more of: Respiratory- (rarely isolated) Acute rhinitis and/or conjunctivitis Gastrointestinal: Vomiting – Diarrhoea - Abdo pain/ colic Skin: (one or more usually present) Acute pruritus - Erythema/ Urticaria- Angioedema - Acute 'flaring' of atopic dermatitis	ANAPHALAXIS Immediate reaction with severe respiratory and/or CVS signs and symptoms; (rarely a severe GI presentation)
INITIAL TREATMENT AND MANAGEMENT			
Follow step 2	Follow step 3	Follow step 3	Emergency Treatment and Admission

Step 2: Confirm diagnosis for **Mild – moderate non IgE mediated ONLY**

Trial exclusion of Cow's milk protein for 2-4 weeks from diet ([iMAP Factsheet for Parents](#)):

- In Breast fed infants; strict maternal dairy free diet
- in formula/mixed fed; trial 2-4-week first line EHF
- If there is clear improvement in symptoms with the dietary exclusion, CMA is not diagnosed until it has been confirmed by [HOME MILK CHALLENGE](#)
- If there is no return of previously described symptoms; NOT CMA- return to normal diet

Children with mild- moderate symptoms should be encouraged to reintroduce cow milk protein, using the [home milk challenge](#) to confirm the allergy, however this does not need to be completed prior to dietitian referral.

Step 3: Treatment and referral

Type of CMA	Mild to moderate non – IgE mediated	Severe non- IgE mediated	Mild- Moderate IgE mediated	Severe IgE mediated
Treatment if breastfed	Strict maternal cow's milk protein free diet ; maternal supplementation of calcium and vitamin D recommended.			
Treatment if mixed/ formula fed	<p>Support breastfeeding (with strict CMP free diet) or, if not possible, Prescribe 1st line formulary extensively hydrolysed formula (EHF)</p> <p>1st line EHF in CPCCG is SMA Althera; Offer 2 tin sample before starting prescription to ensure tolerance/ acceptance of product. (If infant is asymptomatic on breastfeeding alone, do not restrict maternal diet).</p> <p>2nd Line EHF is Nutramigen LGG; If symptoms do not settle within 6 weeks, consider change.</p> <p>EHF milks can treat symptoms in 90% of children with confirmed CMA</p>			<p>1st line CPCCG AAF is SMA Alfamino.</p> <p>AAF should only be initiated by specialist advice. A month's trial can be issued whilst awaiting dietetic input.</p> <p>AAF required in 10%</p>
If introducing solids (not before 17 weeks old)	<p>Follow strict cow's milk free diet for child whether breastfeeding or formula-fed</p> <p>DO NOT ROUTINELY avoid other potential allergenic foods in weaning such as wheat / egg/ peanuts/ fish <i>unless advised by specialist team or there is a proven allergy</i> ³</p>			
REFERRALS	Paediatric Dietitian	Paediatric dietitian	Paediatric dietitian	URGENT Dietitian

Step 4: Milk prescription volume

Note: Some infants and babies may require more tins (e.g. in faltering growth) –follow specialist advice

Age of child	Suggested feeding pattern	Department of health recommendations	Per month prescription volume
Under 6 months	1000mls	<i>Responsive feeding pattern 150mls/kg/day</i>	10x (400g/ 450g) Tins
6-9 months	800mls	<i>Reducing need for formula with increase in solid intake</i>	8x (400g/ 450g) Tins
9-12 months	600mls		6x (400g/ 450g) Tins
Over 12months	600mls	<i>600mls/ day of milk or milk substitute</i>	6x (400g/ 450g) Tins

Step 5: When to stop EHF or AAF:

- Soy based formula should not be considered for children under 6 months⁶. For infants over 6 months Parents should be advised to purchase this OTC as cost is similar to standard formula.
- Lactose-free and other animal formula (e.g. Goat) are not appropriate for CMA.
- At 12 months, reintroduction of cow's milk as per dietitian/allergy clinic advice
- At 12 months if avoidance of cow's milk is still required advise parents to trial a fortified Oat or Soya milk (e.g. Alpro Growing Up Drink, Oatly Whole Drink).
- Consider stopping formula at 2 years old, or sooner if they have out-grown allergy (up to 50 % no longer symptomatic by age 1⁷.)

Reintroduction of Cow's milk protein for IgE and non-IgE mediated allergies should be done under dietetic supervision.

Children with complex needs or multiple allergies may require longer term prescription of specialist formula BUT will remain under the supervision of the specialist team, who will review their prescription regularly.

NOTE: Annual monitoring of micronutrients will be required in long term AAF patients⁸.

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7. Koletzko et al *JPGN* 2012; 55: 221-229
8. [BAPEN enteral feeding monitoring \(2016\)](#)

Prescribing notes

In the case of multiple complex allergies, or restrictive/aversive feeding patterns, where the dependence on prescribed formula is higher than would be expected of a similar aged child without CMPA, it is appropriate and important to continue the prescription as recommended by the specialist team/clinician involved.

For infants or children who do not show improvement on first line EHF, a trial alternative EHF can be considered if palatability is the reason for poor tolerance, or there is reasonable clinical belief that an alternative EHF will achieve tolerance. However, all EHF In addition to appropriate preclinical testing, therapeutic formulae must demonstrate in clinical studies that with 95% confidence they do not provoke allergic reactions in 90% of infants or children with confirmed cow's-milk protein allergy (12) The additional effectiveness of factors including prebiotics, probiotics and human oligosaccharides of brands were considered in the selection of the first line products and should not be the reason for the recommendation of alternative products.

Special Considerations

As mentioned Previously in the document, not all infants prescribed Amino acid or extensively hydrolysed formulas will be using them for the management of Cow's milk protein allergy.

It is appropriate that EHF and AAF are used in the management of multiple other conditions and are listed in the ACBS prescribing remit for each individual brand.

This document will not exhaustively list the alternative uses for AAF or EHF formulas as each brand is approved separately for each condition, but some examples of ACBS approved indications include;

- Multiple food allergies
- Elemental diet requirement
- Gastro-intestinal disorders
- Short bowel syndrome

In the case where a child is prescribed an AAF or EHF formula for a reason other than cow's milk allergy, these **products should not be stopped** at 2 years as per the CMPA pathway.

The use of the CCG first line products may not always be clinically appropriate for children who are using AAF/EHF for indications other than CMPA. However, as these first line products represent the best value AAF/EHF for the Cambridgeshire and Peterborough CCG we expect clinicians to consider their use and provide the clinical reasoning and justification for the recommendation of alternative products.

In any child using long term amino acid formula, regular monitoring and review by specialist teams including dietitians will be required to ensure they achieve adequate nutrition for their specific needs. In addition to standard nutritional monitoring, children who are using AAF as their sole source of nutrition or have multiple complex diagnosis will require annual monitoring of micronutrients (12) a result of unexpected and widespread hypophosphatemia cases (13). This may be carried out in secondary care or may be requested from general practice.

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These guidelines will be reviewed in October 2023, or sooner if clinical development necessitates.