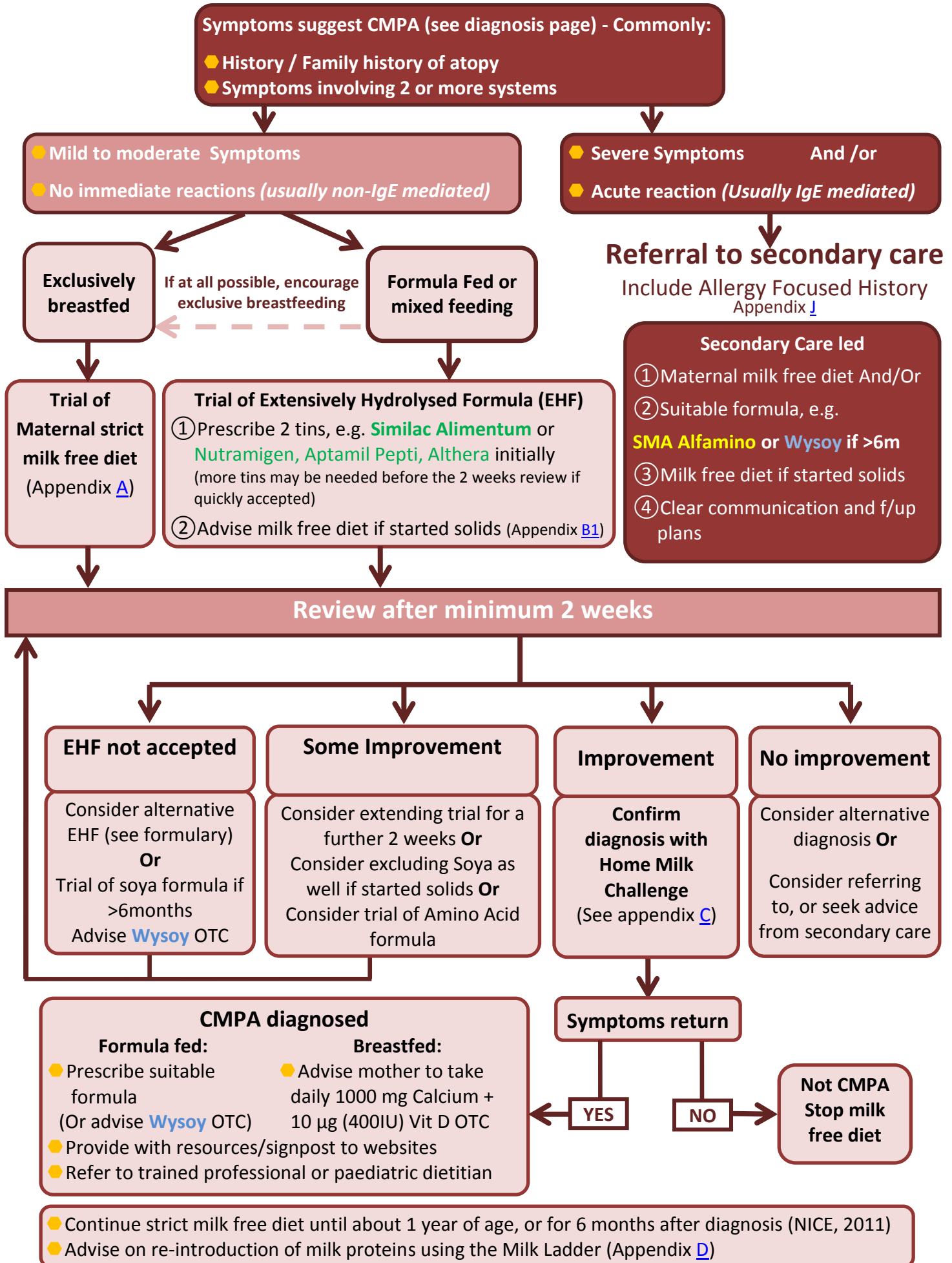


Flowchart for managing Cow's Milk Protein Allergy (CMPA)



Diagnosing CMPA (from [NICE Guideline 116](#), [iMAP](#) and [BSACI](#))

Cow's Milk Protein Allergy (CMPA or CMA) is the most clinically complex individual food allergy and therefore causes significant challenges in both recognising the many different clinical presentation and also the varying approaches to management, both at primary care and specialist level.

Allergy-focused clinical history (adapted from Skypala et al. 2015) – See form in [Appendix J](#)

- Personal/family history of atopic disease (asthma/atopic dermatitis/allergic rhinitis) & food allergy
- Presenting symptoms and other symptoms that may be associated with CMPA (see below)
 - Age at first onset and speed of onset
 - Duration, severity and frequency
 - Setting of reaction (home, outside...)
 - Reproducibility of symptoms on repeated exposure
- Feeding history
 - Breast fed/formula fed (if breastfed, consider mother's diet)
 - Age of introduction to solids
 - If relevant, details of any foods avoided and why
- Details of previous treatment, including medication for presenting symptoms and response to this
- Any response to the elimination and reintroduction of foods

Acute symptoms (minutes)

→ Refer to secondary care

- Abdominal pain / Colic / excessive crying
- Vomiting (repeated or profuse)
- Diarrhoea (Rarely a severe presentation)

- Urticaria
- Acute pruritus
- Angioedema
- Erythema
- Acute 'flaring of atopic dermatitis'

- Red/itchy eyes
- Blocked/runny nose, sneezing
- Cough, wheeze, breathlessness

- Drowsiness, dizziness, pallor, collapse
- Anaphylaxis

Gut
(Range of symptoms & severity)

Skin
(Range of symptoms & severity)

Respiratory
(Usually with other symptoms)

Systemic

Delayed symptoms (2-72hrs)

→ Refer to secondary care only if symptoms severe

- 'Colic' / excessive crying
- 'Reflux' - GORD
- Blood in stool and/or mucus in otherwise well child
- Vomiting in irritable child with back arching & screaming
- Feed refusal or aversion
- Diarrhoea: often protracted + propensity to faltering growth
- Constipation: straining with defecation but producing soft stools, irregular or uncomfortable stools +/- faltering growth
- Unwell child: delayed onset protracted D&V

Wide range of severity, from well child with bloody stool to shocked child after profuse D&V ([FPIES](#))

- Significant to severe atopic dermatitis +/- faltering growth

- 'Catarrhal' airway symptoms (Usually in combination with 1 or more other symptoms)

Red Flags (urgent referral to secondary care):

- 🚫 Faltering growth
- 🚫 Severe atopic dermatitis
- 🚫 [FPIES](#), Anaphylaxis, collapse

Cow's Milk Protein Allergy additional notes

Breastfeeding is the optimal way to feed a baby with CMPA, with, if required, individualised maternal elimination of all cow's milk protein foods (+ Calcium and vitamin D supplementation).

For more detailed directions to diagnose and manage CMA, use the 'Managing Allergy in Primary care' ([MAP](#)) guidelines (An interactive website developed by a team of specialists in the field of paediatric milk allergy but published by Nutricia).

- CMPA commonly appear when a formula is introduced in a usually breastfed baby. Therefore returning to exclusive breastfeeding should be discussed and encouraged at the earliest opportunity.
- Only about 10% of babies with CMPA will require an AAF (Murano et al., 2014). The remainder should tolerate an EHF.
- 10-14% of infant with CMPA will also react to soya proteins (and up to 50% of those with non-IgE mediated CMPA). But because of better palatability soya formula is worth considering in babies >6 months.

Hypoallergenic Infant Formulae (Prices correct as of MIMS Feb 2018)

Extensively Hydrolysed Formulae (EHF) Indication: Mild to moderate symptoms/reactions (IgE or non IgE mediated allergies)

	Product	Calcium RNI (525mg/d) met in:	Lactose	Tin size	Cost per tin	Cost per 100Kcal	Average requirement / 28d**	
							0-6months	6-12months
1 st line	Similac Alimentum [®]	740mls	no	400g	£9.10	£0.43	7-12 tins (800g: 6 tins)	7-12 tins (800g: 6 tins)
	SMA Althéra [®]	800mls	yes	450g	£10.68	£0.47		
	Aptamil Pepti 1 [®]	1120mls	yes	400g 800g	£9.87 £19.73	£0.50 £0.50		
	Nutramigen LGG 1 [®]	680mls	no	400g	£11.21	£0.56	7-12 tins (800g: 6 tins)	
	Aptamil Pepti 2 [®]	830mls	yes	400g 800g	£9.41 £18.82	£0.50 £0.50		
	Nutramigen LGG 2 [®]	600mls	no	400g	£11.21	£0.58		

NB: Instruction for making up Nutramigen LGG includes the use of cold water, which goes against current DoH guidelines.

Amino Acid formulae (AAF) Indication: Severe symptoms / reactions to breastmilk (IgE or non IgE mediated allergies) and if EHF tried initially but still experiencing symptoms

2 nd Line	Alfamino [®]	920mls	no	400g	£23.81	£1.18	7-12 tins	7-12 tins
	Nutramigen Puramino [®]	820mls	no	400g	£27.63	£1.38		
	Neocate LCP [®] or Syneo	800mls	no	400g	£29.56	£1.56		

NB: Instruction for making up Neocate Syneo includes the use of cold water, which goes against current DoH guidelines.

Neocate Spoon[®] is a weaning convenience product usually for children with severe multiple allergies

Neocate Junior[®] is not suitable for the under 1 and will not automatically be needed.

These should only be prescribed under the supervision of a Paediatric Dietitian or Paediatrician with a clear rationale.

Soy formula Indication: CMPA in infants over 6 months of age, not reacting to soya

OTC	Wysoy [®]	780mls	no	860g	£10.54	£0.24	Not for ≤6months	Not for prescribing
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** Based on meeting Calcium requirement. However, there is a **considerable variation** of intake between individuals and wastage can be significant

Top Tips

- **EHF and AA have an unpleasant taste and smell**, which is better tolerated by younger babies. Unless there is anaphylaxis, advise to introduce the new formula **gradually** by mixing with the usual formula in increasing quantities until the transition is complete. Serving in a closed cup or bottle or with a straw (depending on age) may improve tolerance.
- **Warn parents** that it is quite common for babies to develop green stools on these formulae.
- **Prescribe only 2 tins initially** until compliance/tolerance is established. Only then give additional prescription.

Review and discontinuation of treatment (and challenge with cow's milk)

60-75% of children outgrow CMPA by 2 years of age, rising to 85-90% of children at 3 years of age (EuroPrevall study, 2012).

- **Trial of reintroduction of cow's milk** – Use the Milk Ladder (see appendix [D](#)). This should be supervised by a suitably trained health professional if symptoms are severe.
- **Review prescriptions regularly** to check that the formula is appropriate for the child's age.
- **Quantities of formula** required will change with age – see guide to quantities required. Refer to the most recent correspondence from the Paediatric Dietitian, or contact your local paediatric dietetic department for clarification.
- **Prescriptions can be stopped** when the child has outgrown the allergy, or on advice of the Dietitian/Paediatrician.
- **Review the need for the prescription if:**
 - The patient is over 2 years of age
 - The formula been prescribed for more than 1 year
 - The patient is prescribed more than the suggested formula quantities according to their age/weight
 - The patient is able to drink cow's milk or eats yoghurts/cheese
- **Children with multiple and/or severe allergies or faltering growth may require prescriptions beyond 2 years.** This should always be on the advice of the Paediatric Dietitian.

Useful resources for parents and health professionals

● **Breastfeeding**

For breast feeding and bottle feeding advice, visit the UNICEF baby friendly pages:

www.unicef.org.uk/BabyFriendly/

[NHS health for life](#)

[First Step Nutrition \(also has useful unbiased resource on infant formula\)](#)

● **Local Breastfeeding support services**

www.southernhealth.nhs.uk/services/childrens-services/breastfeeding-service/

● **Cow's milk protein allergy**

CMPA Support (www.cmpasupport.org.uk)

● **For Health professionals**

Luyt et al. British Society for Allergy and Clinical Immunology (BSCACI) guideline for the diagnosis and management of cow's milk allergy, July 2014 www.bsaci.org

NICE Clinical Guideline 116 Food Allergy in Children and Young People. 2011 www.nice.org.uk