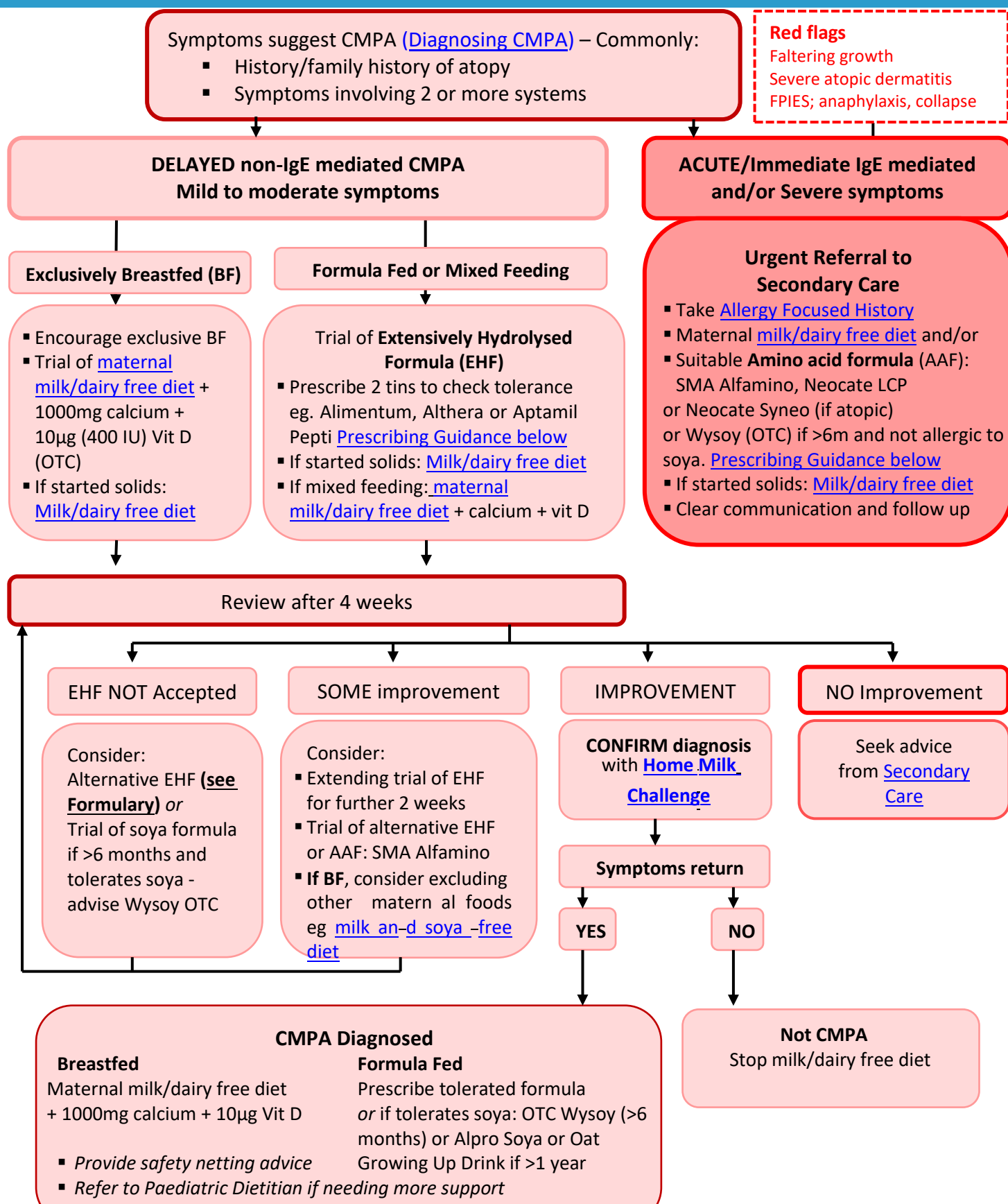


Managing Cow's Milk Protein Allergy (CMPA) Pathway



Continue milk/dairy free diet until about 9-12 months old, or for 6 months after diagnosis then if:

Mild-moderate delayed symptoms: Advise on re-introduction using the [Milk Ladder](#) Ongoing review [from age 1 year](#)

Moderate-severe eczema or IgE immediate allergy: Refer to paediatrician/allergy clinic for reintroduction stage

Diagnosing CMPA see also: [NICE Guideline 116](#) , [iMAP](#) and [BSACI](#)

Cow's milk protein allergy is the most clinically complex individual food allergy and therefore causes significant challenges in both recognising the many different clinical presentations and also the varying approaches to management, both at primary care and specialist level. *To aid diagnosis, see also [Managing Unsettled Baby Pathway](#)*

Take an Allergy-Focused Clinical History (adapted from iMAP 2019)

- 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

Delayed symptoms (2-72hrs) usually non IgE mediated Often several persisting symptoms

- '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)

Refer to secondary care only if symptoms are severe

Acute symptoms (minutes) → Refer to secondary care

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

GUT
Range of symptoms & severity

SKIN
Range of symptoms & severity

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

RESPIRATORY
Usually with other symptoms

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

SYSTEMIC

- Drowsiness, dizziness, pallor, collapse
- **Anaphylaxis**

Emphasize the need to strictly follow manufacturer's instructions when making up formula milk

Condition	Formulary Status	Formula	Age range*	Key Points
Cow's Milk Protein Allergy (CMPA) Extensively Hydrolysed Formula (EHF)	Green First Line	Althera® (Kosher & Halal)	0-12 months	<p>*Age range refers to ICB policy. Individual products may have a broader licence. See <u>Quantities to Prescribe</u>.</p> <ul style="list-style-type: none"> • Take an allergy focused clinical history EHF: Indicated if Mild to moderate non-IgE mediated CMPA Mild to moderate IgE mediated CMPA DELAYED Non-IgE mediated symptoms • Confirm diagnosis with <u>home milk challenge</u>, 4 weeks after starting feed • Maintain CMPA elimination diet until 9-12 months old, or for 6 months after diagnosis • Refer to paediatric dietitian for additional support if required ACUTE/Immediate IgE-mediated symptoms Refer to secondary care
		Aptamil Pepti 1®	0-6 months	
		Aptamil Pepti 2®	6-12 months	
	Green	Alimentum® <i>currently unavailable due to precautionary recall</i>	0-12 months	
	Green Second Line	Nutramigen 1 with LGG®	0-6 months	
Nutramigen 2 with LGG®		6-12 months		
CMPA: Amino Acid Formula (AAF)	Green First Line	SMA® Alfamino	0-12 months	<ul style="list-style-type: none"> • Take an allergy focused clinical history AAF: Indicated if anaphylactic reaction/ severe IgE or severe non-IgE mediated CMPA reactions • Refer to secondary care If IgE mediated reaction or moderate-severe eczema refer to paediatrician/allergy clinic for review & advice on reintroduction
		Nutramigen Puramino®		
CMPA: Plant based options	Amber	Neocate Syneo®		
	OTC	SMA® Wysoy®	6-12 months	• If aged over 6 months and refuses EHF and has no allergy to soya
	OTC	*Alpro Growing Up Soya Drink®	12+ months	• If aged 1+ and tolerates soya. Use in food from age 6 months but not as main drink until 1year old
Faltering growth Energy dense ready-to-use formula	OTC	*Alpro Oat Growing Up Drink® / *Oatly Oat Drink Whole® or *Barista Edition®	12+ months	• If aged 1+ and does <i>not</i> tolerate soya. Use in food from age 6 months but not as main drink until 1year old. <i>*Other dairy milk alternatives not appropriate as main milk drink until 2 years</i>
	Green First Line	SMA® High Energy	0-18 months or 8kg	<ul style="list-style-type: none"> • Ensure regular weight/length monitoring • Encourage Food First & food fortification if weaned and over 6 months (diet sheet available)
Pre-term or IUGR Post discharge from hospital	Green	Infatrini®		
	Green First Line	Nutriprem 2 Powder®	0-6 months corrected age	<ul style="list-style-type: none"> • Follow hospital discharge instruction • Use Prem feed Powder <i>not</i> ready-to-drink formula • Ensure review at 6 months corrected age
Gastro-Oesophageal Reflux (GOR)	Green	SMA® Gold Prem 2 Powder		
	OTC: Thickening formulae	SMA® Anti-reflux	0- 12 months	<ul style="list-style-type: none"> • Try non-medical intervention first, check for overfeeding • Follow feed preparation instructions carefully • Do not use in conjunction with separate thickeners, or medication such as Infant Gaviscon, antacids or PPI
	OTC: Pre-thickened formula	Aptamil Antireflux® Cow & Gate® Anti reflux HiPP® Anti-reflux		
OTC: Thickener powder	Instant Carobel®	From birth	• Use if anti-reflux formula not practical/possible (e.g. using pre-term or specialised formula)	
Secondary lactose intolerance	OTC: Lactose free formula	Aptamil LF® SMA LF®	0-12 months	<ul style="list-style-type: none"> • Use up to 8 weeks at a time • If aged 1+ use supermarket lactose free milk e.g. Alpro Soya Growing Up Drink, Arla Lactofree Whole • Wysoy only if over 6 months old and no allergy to soya
	OTC: soya formula	SMA® Wysoy®	6+ months	

Guidance on feed volumes to prescribe for infants

Always be guided by the baby's appetite and feed responsively

Age Category	Feeding guidance per day		Suggested volume per day	Equivalent in Tins per 28 days
Up to 2 weeks	7-8 feeds <i>60-70mls/feed</i>	150ml/kg	420 -560mls	5 -6 x 400g
2 weeks - 2 months	6-7 feeds <i>75-105mls/feed</i>	150ml/kg	450 -735mls	5 -8 x 400g
2-3 months	5-6 feeds <i>105-180mls/feed</i>	150ml/kg	525 -1080mls	6 -12 x 400g
3-5 months	5 feeds <i>180-210mls/feed</i>	150ml/kg	900 -1050mls	10 -12 x 400g
About 6 months	4 feeds <i>210-240mls/feed</i>	120ml/kg	840 -960mls	9 -11 x 400g
General guidance on feeding after 6 months, for average weight, well children <i>If a child is under the paediatric dietitian, they will advise on an appropriate monthly prescription</i>				
7-9 months	4 feeds 150mls/feed		About 600mls	7 x 400g
10-12 months	3 feeds e.g. 2 x 100ml + 1 x 200ml feed		About 400mls	5 x 400g
1-2 years	3 feeds e.g. 2 x 100ml + 1 x 200ml feed		About 350-400mls of whole cow's milk or other suitable milk drink	5 x 400g

Adapted from the First Steps Nutrition Trust: *A simple guide to Infant Milks. January 2021*

Notes:

- Specialist infant formulae are for age 0-12 months unless advised to continue by a paediatrician or paediatric Dietitian.
- Advise parents to follow the manufacturer's advice on safe preparation and storage once mixed or tin is opened.
Note: Instructions for making up Nutramigen LGG and Neocate Syneo are different to standard formula, advise to carefully follow instructions on the tin.
- Only prescribe 2 tins initially until compliance/tolerance is established.

Breastfeeding is the optimal way to feed a baby with CMPA, with if required, maternal elimination of all cow's milk protein foods (plus calcium and vitamin D supplementation). For more detailed directions to diagnose and manage CMA, use the 'Managing Allergy in Primary care' ([iMAP](#)) guidelines

- 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 Amino Acid Formula (AAF) (Murano et al., 2014). The remainder should tolerate an Extensively Hydrolysed Formula (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 due to better palatability soya formula is worth considering in babies >6 months.

Top Tips

- **EHF and AAF have an unpleasant taste and smell** which is better tolerated by younger babies. **Unless there is anaphylaxis** or obvious IgE mediated symptoms, 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 2 tins initially** and encourage parents to persevere, it may take several days until compliance/tolerance is established. Only then give a monthly repeat prescription. Infants who do not tolerate first line formula after perseverance, may tolerate a comparable second line formula.
- **For babies with mild to moderate delayed symptoms** (unless there is evidence of IgE mediated symptoms and signs) **confirm diagnosis** with home milk challenge. This can be initiated 2-4 weeks after starting a specialised formula.
- **For babies with severe symptoms or an acute reaction (usually IgE mediated):** refer to secondary care. Reintroducing milk protein should be supervised by a paediatric Dietitian or paediatrician.

Review and discontinuation of treatment

- 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).
- **Review prescriptions regularly** (every 6 months) to check that the quantity and type of formula is appropriate for the child's age.
- **Prescriptions can be stopped** when the child has outgrown the allergy, or on advice of the dietitian/paediatrician.
- **Trial of reintroduction of cow's milk** – Use the Milk Ladder and/or if in Berkshire, refer to the Community Dietitian-led CMPA group. The Milk Ladder should not be used in cases of IgE/immediate allergy – refer these babies to secondary care.

Review the need for the prescription if:

- The child is over 1 year of age. **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 or paediatrician.
- The formula has 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

When to refer to the paediatric dietitian:

- When the patient is diagnosed with CMPA and/or has multiple allergies and needs support with weaning. Or has non-IgE delayed CMPA and needs help re-introducing using the Milk Ladder.

DO

- ✓ Promote & encourage breastfeeding if clinically safe / mother is in agreement.
- ✓ Refer where appropriate to secondary or specialist care - see advice for each condition.
- ✓ **Seek prescribing advice if needed in primary care from the health professional involved in the child's care, or Paediatric Dietitians.**
- ✓ **Prescribe only 2 tins initially** until compliance/tolerance is established.
- ✓ Advise to follow manufacturer's advice on the safe preparation and storage once feed is mixed or tin opened.
- ✓ Review prescriptions regularly to ensure quantity of formula is still *age* and *weight* appropriate and / or refer to the most recent correspondence from the Paediatric Dietitian.
- ✓ Review prescription (and refer to Paediatric Dietitian if appropriate) where:
 - The child is >2 years old
 - The formula has been prescribed for more than 1 year
 - Greater amounts of formula are being prescribed than would be expected
 - The patient is prescribed a formula for CMPA* but able to drink cow's milk
- ✓ Refer to Dietitian if child is >1 year old and is able to take cow's milk but refuses due to fussy eating, and/or financial constraints of parents.

DON'T

- ✗ Recommend lactose free formula (Aptamil LF[®], SMA LF[®]) for infants with CMPA*.
- ✗ Recommend soya formula (SMA Wysoy[®]) for those **under 6 months** with CMPA* or secondary lactose intolerance due to high phyto-oestrogen content.
- ✗ Suggest other mammalian milks (goat's, sheep's...) for those with CMPA* or secondary lactose intolerance due to their similarity to cow's milk.
- ✗ Recommend low lactose /lactose free formula in children with secondary lactose intolerance over 1 year who previously tolerated cow's milk (they can use Arla Lactofree whole[®] or Alpro growing up soya drink[®] from supermarkets).
- ✗ Suggest rice milk for those under 5 years due to high arsenic content.
- ✗ Prescribe Infant Gaviscon[®] if the infant is taking anti-reflux- formulae or separate thickeners.
- ✗ Suggest Infant Gaviscon[®] > 6 times/24 hours or if the infant has diarrhoea/fever, (due to sodium content).
- ✗ Prescribe Nutriprem 2 Liquid[®] or SMA Gold Prem 2 Liquid[®] unless there is a clinical need, and don't prescribe after 6 months of corrected age **unless** advised by a specialist.