Managing Cow's Milk Protein Allergy (CMPA) Pathway

Symptoms suggest CMPA (Diagnosing CMPA) – Commonly:
- History/family history of atopy
- Symptoms involving 2 or more systems

Red flags
Faltering growth
Severe atopic dermatitis
FPIES; anaphylaxis, collapse

DELAYED non-IgE mediated CMPA
Mild to moderate symptoms

Exclusively Breastfed (BF)

- Encourage exclusive BF
- Trial of maternal milk/dairy free diet + 1000mg calcium + 10µg (400 IU) Vit D (OTC)
- If started solids: Milk/dairy free diet

Formula Fed or Mixed Feeding

Trial of **Extensively Hydrolysed Formula (EHF)**
- Prescribe 2 tins to check tolerance eg. Alimentum, Althera or Aptamil Pepti Prescribing Guidance below
- If started solids: Milk/dairy free diet
- If mixed feeding: maternal milk/dairy free diet + calcium + vit D

ACUTE/Immediate IgE mediated and/or Severe symptoms

Urgent Referral to Secondary Care

- Take Allergy Focused History
- Maternal milk/dairy free diet and/or
- Suitable **Amino acid formula** (AAF): SMA Alfamino, Neocate LCP
or Neocate Syneo (if atopic)
or Wysoy (OTC) if >6m and not allergic to soya. Prescribing Guidance below
- If started solids: Milk/dairy free diet
- Clear communication and follow up

Review after 4 weeks

EHF NOT Accepted

Consider alternative EHF **(see Formulary)**
or
Trial of soya formula if >6 months and tolerates soya.
Advise Wysoy OTC

SOME improvement

Consider following
- Extending trial of EHF for further 2 weeks
- Trial of alternative EHF or AAF: SMA Alfamino
- **If BF**, consider excluding other maternal foods eg milk and soya free diet

IMPROVEMENT

CONFIRM diagnosis with **Home Milk Challenge**

Symptoms return

YES

NO

NO Improvement

Seek advice from Secondary Care

CMPA Diagnosed

Breastfed
Maternal milk/dairy free diet
+ 1000mg calcium + 10µg Vit D

Formula Fed
Prescribe tolerated formula or if tolerates soya OTC Wysoy (>6 months) or Alpro Soya Growing Up Drink if >1 year

- Provide safety netting advice
- Refer to Paediatric Dietitian if needing more support

Not CMPA

Stop milk/dairy free diet

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 of milk proteins using the Milk Ladder
Moderate-severe eczema or IgE immediate allergy: Refer to paediatric allergy clinic for reintroduction stage

This guidance was written in collaboration with healthcare professionals in Wessex, Frimley and Wexham. April 2021 Review Sept 2025

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Diagnosing CMPA (see NICE [CG116], iMAP and BSACI)

Cow's Milk Protein Allergy (CMPA) 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.

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 ➔Refer to secondary care only if symptoms severe		Acute symptoms (minutes) ➔Refer to secondary care
• '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)*	**GUT** Range of symptoms & severity	• Abdominal pain / Colic / excessive crying • Vomiting (repeated or profuse) • Diarrhoea (Rarely a severe presentation)
• Significant to severe atopic dermatitis+/- faltering growth	**SKIN** Range of symptoms & severity	• Urticaria • Acute pruritus • Angioedema • Erythema • Acute 'flaring of atopic
• 'Catarrhal' airway symptoms (Usually in combination with 1 or more other symptoms)	**RESPIRATORY** Usually with other symptoms	• Red/itchy eyes • Blocked/runny nose, sneezing • Cough, wheeze,
	SYSTEMIC	• Drowsiness, dizziness, pallor, collapse • Anaphylaxis

Managing Cow's Milk Protein Allergy (CMPA) Pathway

Prescribing Guidance for CMPA

Condition & Feed type	Formulary Status	Formula	Age range*	Key Points
CMPA **Extensively Hydrolysed Formula** (EHF)	**Green 1st choice**	**Alimentum®**	0-12 months	• **Take an allergy focused clinical history** **EHF:** Indicated if Mild to moderate non-IgE mediated CMPA Mild-moderate IgE mediated CMPA **DELAYED Non-IgE mediated symptoms** • **Confirm diagnosis** with home milk challenge 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
	Green	**Althera®** (Kosher & Halal)	0-12 months	
	Green *Use if mild-moderate eczema or atopic family*	**Aptamil Pepti 1®**	0-6 months	
		Aptamil Pepti 2®	6-12 months	
	Amber	**Nutramigen 1 with LGG®**	0-6 months	
	Amber	**Nutramigen 2 with LGG®**	6-12 months	
CMPA **Amino Acid Formula** (AAF)	**Green 1st choice**	**Elecare®**	0-12 months	• **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 allergy clinic for review and advice on reintroduction
	Green	**SMA® Alfamino** *or* **Nutramigen Puramino®** *or* **Neocate LCP®**		
	Amber	**Neocate Syneo®**		
CMPA **Soya Formula**	OTC	**SMA® Wysoy®**	6-12 months	• If infant **>6 months only** and if refuses EHF and has no allergy to soya
	OTC	**e.g. Alpro Soya Growing Up Drink®**	12+ months	• If infant **> 1 year** and tolerates soya (can be used in food from 6 months but not as main drink until 1 year)

KEY: Prescribe First Line	Prescribe if 1st choice not an option or not working	Prescribe at recommendation of Specialist/Dietitian	OTC over the counter product

Note:

* Age range refers to CCG policy. Individual products may have a broader licence.

** Emphasise the need to strictly follow manufacturer's instructions when making up formula. Instructions for making up Nutramigen LGG® and Neocate Syneo® are different to standard formula.

- Althera is the only EHF that has kosher and halal certification. All AAF have kosher and halal certification.
- See Quantities of Formula to prescribe.

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Quantities of Formula to Prescribe

Age Category	Feeding Guidance per day		Suggested total volume per day	Quantity of powder per day	Number of tins per 28 days
Up to 2 weeks	**7-8 feeds** *60-70mls/feed*	150ml/kg	420 -560mls	70-90g	5 -6 x 400g
2 weeks - 2 months	**6-7 feeds** *75-105mls/feed*	150ml/kg	450 -735mls	70-110g	5 -8 x 400g
2 -3 months	**5-6 feeds** *105-180mls/feed*	150ml/kg	525 -1080mls	80-160g	6 -12 x 400g
3 -5 months	**5 feeds** *180-210mls/feed*	150ml/kg	900 -1050mls	140-160g	10 -12 x 400g
About 6 months	**4 feeds** *210-240mls/feed*	120ml/kg	840 -960mls	130-150g	9 -11 x 400g
General guidance on feeding after 6 months, for average weight, well children *If a child is under the paediatric dietitian, they will advise on an appropriate monthly prescription*					
7 -12 months	**3 -4 feeds** 150mls/feed		About 600mls	90g	7 x 400g
1 -2 years	**3 feeds**		About 350-400mls of whole cow's milk or other suitable milk drink	70g	5 x 400g

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

- Always be guided by the babies' appetite and feed responsively
- 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® includes the use of cooled boiled water, which goes against current DoH guidelines.

- Only prescribe 2 tins initially until compliance/tolerance is established.

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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 refer to the 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 2 years 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.

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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.

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