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## 1) Summary of changes to the CMA Guideline

In February 2019 the NHS Borders CMA Guideline was updated.

As part of Ready to Act (2016) 'A Transformational plan for children and young people, their parents, carers and families who require support from allied healthcare professionals (AHP's)' there has been a focus on AHP's to shift resources to support services to deliver interventions at a universal level.

A summary of the main changes to NHS Borders CMA guideline are listed below:

- The management of mild-to-moderate non-IgE mediated CMA will now be managed within universal services, led by the infant's health visitor.
    - The paediatric dietitian's have carried out direct training with all local health visitors to increase their knowledge and skills in this area
    - Paediatric dietitian's will continue to work with the health visitors collaboratively ensuring ongoing training and support is provided
    - Health visitors and other health professionals can request assistance/advice from the paediatric dietitian's using the email inbox: paediatricdietitian@borders.scot.nhs.uk (emails will be responded to within 3 working days)
    - Weaning advice for these infants will be provided by the local weaning groups within NHS Borders where possible. Community food workers have received training to support cow's milk free weaning and written information for families has been updated. Where attendance at these groups is not possible, health visitors will provide cow's milk free weaning advice
- Infants with mild-to-moderate non-IgE mediated CMA should now stop prescriptions for extensively hydrolysed formula at around 13-14 months of age. If cow's milk is unable to be included due to ongoing reactions, soya milk can be offered as a main drink (if tolerated) or an alternative cow's milk free and soya free substitute should be offered such as oat milk, almond milk, coconut milk etc.
- Breastfed infants presenting with mild-to-moderate non-IgE mediated CMA allergy requiring a top up formula should now be trialled with an extensively hydrolysed formula 1st line.
- Infants presenting with mild-to-moderate IgE mediated CMA, severe IgE mediated CMA and severe non-IgE mediated CMA should continue to be referred to paediatrician and paediatric dietitian.

## 2) Introduction

In the first year of life cow's milk allergy (CMA) is considered the most clinically complex individual food allergy and therefore causes significant challenges in both recognising the many differing clinical presentations. A UK birth cohort study found that 2-3% of 1-3 year olds had a confirmed cow's milk allergy (Venter et al., 2008), where worldwide prevalence is between 1.9-4.9% (Fiocchi 2010).

Like all food allergies CMA can be classified into non-IgE and IgE mediated reactions. IgE mediated reactions are acute and frequently have rapid onset. Non-IgE mediated reactions are generally characterised by delayed and non-acute reactions. Both types of reactions can occur in the same individual and IgE mediated allergy can develop in individuals with previous non-IgE mediated symptoms, particularly following a prolonged period of complete allergen exclusion.

Accurately diagnosing CMA can be challenging for professionals as symptoms of CMA can be similar to common infant conditions such as colic and reflux. It is important to remember that infants with CMA often present with a number of symptoms and these are often multisystem in nature.

The majority of infants with CMA will present with mild-to-moderate non-IgE mediated allergy. For the diagnosis of non-IgE mediated CMA there are no validated tests so the recommendation is to complete a planned avoidance of cow's milk and milk containing products for an exclusion period followed by re-introduction to confirm diagnosis. The re-introduction may be completed at home for mild-to-moderate non-IgE type reactions. For children who experience more severe non-IgE type reactions then a referral to secondary care may be advisable (NICE 2011).

For infants that present with an IgE mediated CMA, the infant should switch to a cow's milk free diet and a referral to the secondary care should be completed. Within secondary care allergy testing will be carried out to confirm or exclude a diagnosis of IgE mediated CMA before any advice on re-introductions are made.

This guideline has been developed based on the iMAP guidelines for the management of cow's milk allergy and other agreed UK based guidelines.

## 3) Aim of this guideline

This guideline has been developed to support health professionals with the recommended management of CMA in primary care providing information on the following:

1) When to consider CMA

2) Distinguishing between non-IgE mediated and IgE mediated presentations of CMA

3) The initial management of breastfed and formula fed infants suspected of having CMA including choice of infant formula based on the current international guidelines (NICE 2011, ESPGHAN, 2012) and local preferred choices

4) To provide guidance on providing a re-challenge in primary care in those infants with suspected mild-to-moderate non-IgE mediated CMA

5) To provide guidance regarding the ongoing management in primary care in infants who have a confirmed diagnosis of mild to moderate non-IgE mediated CMA including accessing weaning advice

6) To provide guidance on those infants who require a referral to secondary care

## 4) When to consider CMA

NICE clinical guideline 116 **'Food allergy in children and young people'** covers the diagnosis and assessment of food allergy in children and young people in primary care and community settings.

NICE emphasises that food allergies should be particularly considered in infants:

**1)** Where there is a family history of allergic disease (but the absence of a family history of allergy does not exclude the possibility of becoming allergic),

**2)** Where symptoms are persistent and affecting different organ systems such as the skin, gastrointestinal system or respiratory system.

**3)** Who have been treated for moderate to severe atopic eczema, gastro-oesophageal reflux disease (GORD) or other persisting gastrointestinal symptoms (including 'colic', loose stools, constipation), but have not responded to the usual initial therapeutic interventions.

Taking an **allergy focused history** forms the cornerstone of the diagnosis of food allergies including CMA and NICE recommends that questions should be asked regarding:

**1)** Individual/ family history of atopic disease in parents or siblings

**2)** Age/situation at onset of symptoms e.g. consider when symptoms start in relation to diet e.g. change from breast milk to infant formula

**3)** The infant's feeding history

**4)** Presenting symptoms and signs that may be indicating possible CMA

**5)** Details of previous management, including any medication and the perceived response to any management e.g. response to anti-reflux medications, laxatives or topical treatment for eczema

**6)** Was there any attempt to change diet and what were the outcomes/suspected food?

The following pathways (pathway 1 and 2) detail the initial and ongoing management of infants suspected of having CMA including;

- The symptoms associated with mild-moderate and severe IgE and non-IgE mediated CMA
- Re-introducing cow's milk to confirm diagnosis in those infants with a suspected mild-moderate non-IgE CMA
- When to refer on to paediatrician and paediatric dietitian

Pathway 3 is a flow chart focusing of the management of mild-moderate non-IgE mediated CMA within NHS Borders where the management will be kept within primary care with no referral to specialist services indicated.

Additional appendices follow including:

- Advice for breastfeeding mothers during a dairy & soya exclusion
- Specialist infant formula for CMA and guide to prescription volumes
- Re-challenge at 4 weeks to confirm an initial diagnosis of CMA

# Pathway 1: NHS Borders Adaptation of the iMAP Guideline for Primary Care and 'Secondary Care for Suspected Cow's Milk Allergy (CMA) in the 1st Year of Life (use chart below after completion of an allergy focused history)

## Mild-to-Moderate Non- IgE mediated CMA 'Delayed' onset of symptoms

Mostly 2-72hours after ingestion of CMP
Can occur in formula fed, exclusively breastfed or at onset of mixed feeding

**Usually *several* of these symptoms will be present**
Treatment resistance e.g. atopic dermatitis or reflux, increase likelihood of allergy

**Gastointestinal**
Irritability – 'Colic'
Vomiting – gastro-oesophageal reflux /reflux disease
Food refusal or aversion
Diarrhoea-like stools
- loose and/or frequent stools

Constipation – especially soft stools with excessive straining
Abdominal discomfort, painful flatus
Blood and/or mucus in stools in an otherwise well infant
**Skin**
Pruritis (itching), Erythema (flushing)
Non-specific rashes
Moderate persistent atopic dermatitis

**Trial of Cow's Milk Free Diet**
Primary Care Management
(Health Visitor Led)
**Pathway 2**

## Severe Non-IgE mediated CMA 'Delayed' onset of symptoms

Mostly 2-72hours after ingestion of CMP
Can occur in formula fed, exclusively breastfed or at onset of mixed feeding

**One of more of these *Severe* and *Persisting* symptoms:**

**Gastrointestinal**
Diarrhoea, vomiting, abdominal pain, food refusal or aversion, significant blood and /or mucous in stools, irregular or uncomfortable stools
+/- Faltering growth
**Skin**
Severe atopic eczema +/-Faltering growth

**Cow's Milk Free Diet**
**NO RE-CHALLENGE**

**Refer to Paediatrician & Paediatric Dietitian**

## Severe IgE CMA

**Anaphylaxis**
Immediate reaction with severe respiratory and/or CVS signs and symptoms.
(Rarely a severe gastrointestinal presentation)

**Emergency Treatment and admission to BGH**

## Mild-to-moderate IgE mediated CMA 'Acute' onset of symptoms

Mostly within minutes of ingestion of CMP (may be up to 2 hours).
Mostly occurs in formula fed or at onset of mixed feeding

**One of more of these symptoms:**
**Skin – one or more usually present**
Acute Pruritis, Erythema, Urticaria, Angioedema.
Acute 'flaring' of persisting atopic dermatitis.
**Gastrointestinal**
Vomiting, diarrhoea, abdominal pain/ colic
**Respiratory**
Acute rhinitis and/or conjunctivitis

**Cow's Milk Free Diet**
**NO RE-CHALLENGE**

**Refer to Paediatrician & Paediatric Dietitian.**

**For IgE testing (skin prick testing) prior to any re-challenge**
**Pathway 3**

# Pathway 2: Primary Care Management of Mild to Moderate Non-IgE CMA

## Exclusively Breast-Fed

**Strict Exclusion of Cow's Milk and Soya Products from Maternal Diet**

Maternal supplementation of Calcium and Vitamin D daily **(Appendix 1)**

If CMA - most symptoms will settle well within the 4-6 week elimination diet

**No Improvement**

**CMA is still suspected:** Consider other maternal foods e.g. egg. Refer to Paediatrician

**CMA no longer suspected:** Return to usual maternal diet

Consider referral to Paediatricians if symptoms persist

**Improvement -** Need to confirm diagnosis

**Home Challenge: Mum to revert to normal diet containing cow's milk containing foods over period of one week** (to be done 4-6 weeks after starting exclusion diet)

No return of Symptoms: **NOT CMA**

Return of Symptoms

Exclude cow's milk containing foods from maternal diet again. **If symptoms settle: CMA NOW CONFIRMED.** If top-up formula feeds required – eHF will likely to tolerated

Symptoms DO NOT settle

## Formula-Fed or 'Mixed Feeding' (Breast and Formula)

**Strict Cow's Milk Protein free Diet**

Formula-Fed - Trial an **Extensively Hydrolysed Formula (eHF) (appendix 2**)
Mixed feeding – Trial of a cow's milk and soya Maternal Diet with **eHF** top-ups for infant if needed
If CMA - most symptoms will settle well within the 4-6 week of elimination Diet

**Improvement -** Need to confirm diagnosis

**Perform Home Challenge using regular cow's milk based formula** (to be done between 4-6 weeks after starting dairy exclusion)- see appendix 3

Return of Symptoms

No return of Symptoms: **NOT CMA**

Return to the eHF again. **If symptoms settle: CMA NOW CONFIRMED**

For repeat prescription

Symptoms DO NOT settle

**No Improvement**

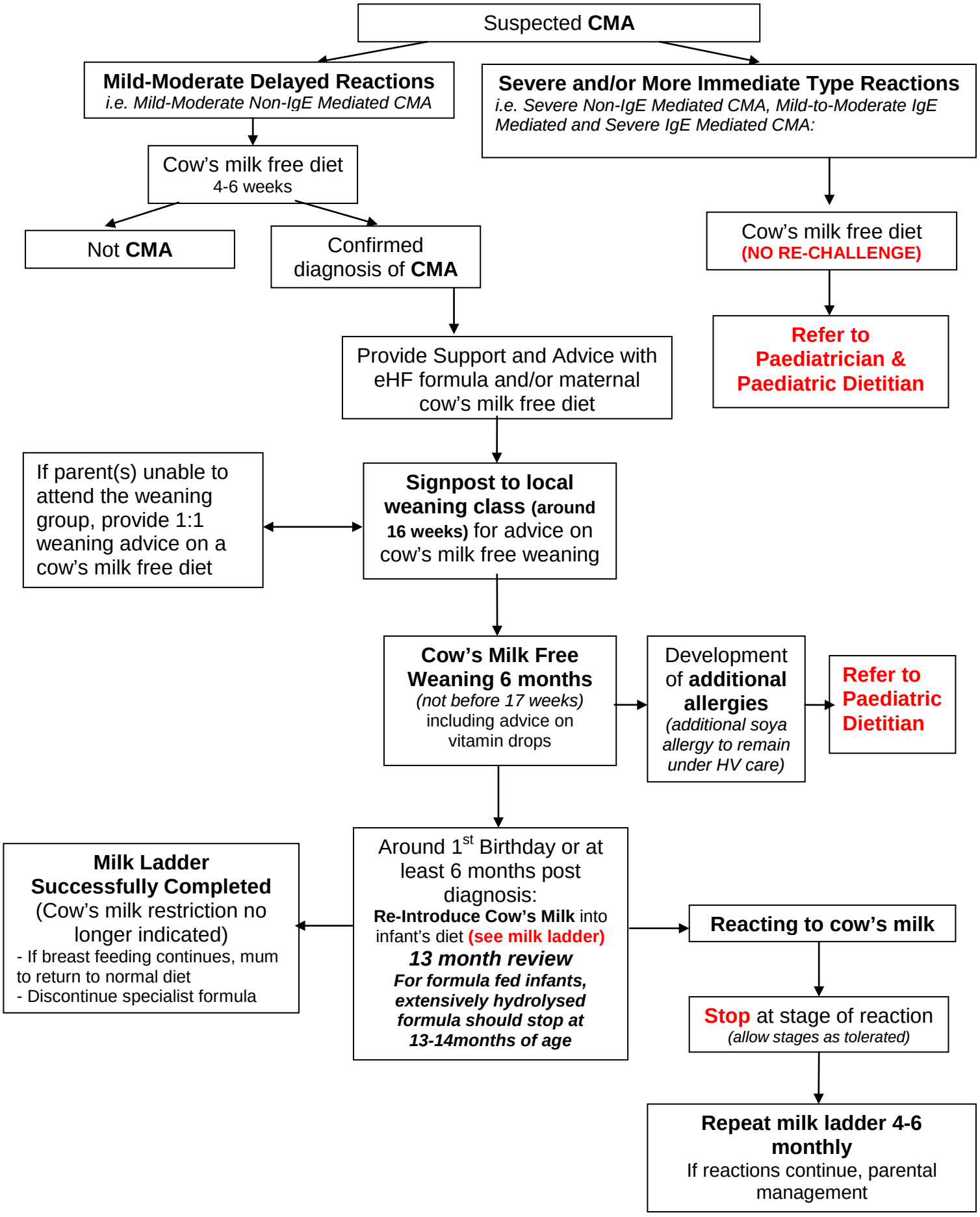
**CMA still suspected:** Need to consider other maternal foods e.g. egg. Refer to Paediatrician

**CMA no longer suspected:** Return to usual maternal diet

Consider referral to Paediatrician if symptoms persist

**A cow's milk free diet is required for at least 6 months** following the diagnosis.
**Signpost parents to local weaning groups** for cow's milk free weaning advice.
**A planned re-introduction of cow's milk** is then required to determine if tolerance has been achieved

# **Pathway 3:** Summary of management of CMA within NHS Borders



# Appendix 1

## Advice for Breast feeding mothers during the dairy & soya exclusion

**NHS Borders supports breastfeeding as the natural first choice for feeding infants due to the many benefits for the infant and mother.** To name but a few, breastfeeding helps protect infants from eczema and tummy upsets. In breastfed infants with cow's milk allergy (CMA) a maternal cow's milk and soya free diet is required. The use of dairy-free alternative milks and products for mum should be encouraged to ensure an adequate calcium intake of 1250mg/day. Well processed soya as an ingredient in foodstuffs e.g. soya lecithin is ok to have. **A vitamin D supplement providing 10µg is required – see examples below.**

**Suitable dairy free milks for mother include;**
Most supermarkets have own brand coconut, oat, almond and rice milks. Most dairy free milks are fortified with calcium (please check the label) providing 120mg calcium/100mls. Other examples include;

- Coconut milk e.g. Koko dairy free, Alpro Coconut, Coconut Dream
- Oat milk e.g. Oatly, Alpro Oat
- Almond milk e.g. Alpro Almond, Almond Breeze
- Rice milk e.g. Rice Dream, Alpro Rice

See over the page for foods to choose while following a cow's milk & soya free diet.

**Additional calcium supplementation** is often required to help breastfeeding mums reach the target of 1250mg calcium per day. Some over the counter versions are listed below:

| Supplement | Recommended intake per day | Vitamin D content | Calcium content |
|---|---|---|---|
| **Healthy Start Vitamins for Women** | Take 1 tablet daily | 10µg | Nil<br>(additional calcium supplement can be taken e.g. 500mg/day) |
| **Vitabiotics Pregnacare Breastfeeding** | Take 2 tablets and<br>x1 omega 3 capsule/day<br>Take on a full stomach | 10µg | 700mg |
| **Boots Breastfeeding** | Take 2 tablets and 1 Omega 3 Capsule/day with plenty of liquid | 10µg | 700mg |
| **Osteocare Original (Vitabiotics)** | Take 2 tablets per day with a main meal. Swallow with water (not to be chewed) | 10µg | 800mg |
| **Vitabiotics Pregnacare New Mum** | Take 2 tablets with a meal | 10µg | 400mg |

# Dairy & Soya Free Dietary Information

**Food labelling**

It is important to check all food labels for the presence of cow's milk and soya. Allergens are usually highlighted in bold on nutritional labels e.g.

Digestive biscuits: **wheat** flour, vegetable oil, sugar, raising agents, salt, dried skimmed **milk**

All cow's milk/dairy ingredients need to be **avoided**. Remember well processed soya as an ingredient in foodstuffs e.g. soya lecithin is ok to have

| Food group | Foods to choose |
|---|---|
| **Carbohydrates** | Bread*<br>Wraps<br>Pasta<br>Rice<br>Potatoes/Sweet Potatoes<br>Breakfast cereals*<br>Crackers including cream crackers/oatcakes/rice cakes/breadsticks |
| **Fruit & Vegetables** | All fresh, tinned, dried and frozen fruits and vegetables |
| **Protein** | Meat e.g. beef, chicken, pork, lamb, turkey<br>Meat free alternatives* e.g. Quorn mince<br>Fish<br>Eggs<br>Lentils/Baked beans/pulses/hummus<br>Peanuts/nuts |
| **Dairy alternatives** | Oat/Almond/Coconut/Rice milk<br>Coconut milk based yoghurts e.g. Coyo, The Coconut Collaborative<br>Violife cheese/Violife cream cheese<br>Oatly Vanilla Custard / Oatly single cream alternative |
| **Miscellaneous** | Vegetable/sunflower spread e.g. Vitalite, Pure margarine, Flora Freedom dairy free spread<br>Vegetable/olive/sunflower oils<br>Peanut butter<br>Jam/marmalade<br>Mayonnaise/salad cream<br>Ben & Jerry's non-dairy ice-cream<br>Dark chocolate* e.g. Green & Blacks<br>Bourbon biscuits*/Free from dairy free biscuits*<br>Ready salted crisps (other flavourings check label*)<br>Popcorn* |

* Check label to ensure dairy free

**Appendix 2** **Specialist Infant Formula for CMA**

| Type of Formula Required | Age | Formula | Size | Pip Code | Notes |
|---|---|---|---|---|---|
| Extensively Hydrolysed Formula (eHF) | Infants Diagnosed:<br><br>0 to 6 months | 1st Line:<br>Nutramigen 1 with LGG (Mead Johnson)<br><br>2nd Line:<br>Althera (SMA) | 400g<br><br>450g | 019-8861<br><br>378-7413 | If an infant is started on Nutramigen 1 then switch to Nutramigen 2 at 6 months |
| | Infants Diagnosed:<br><br>>6 months | 1st Line:<br>Althera (SMA)<br><br>2nd Line:<br>Nutramigen 2 with LGG (Mead Johnson) | 450g<br><br>400g | 378-7413<br><br>298-7766 | Althera (SMA) contains lactose therefore is likely to be more palatable for this age group |
| Amino Acid Formula | Infants Diagnosed:<br><br>0-12months | 1st Line:<br>Neocate LCP (Nutricia)<br><br>2nd Line:<br>Alfamino (SMA) | 400g<br><br>400g | 329-0301<br><br>385-6416 | |
| Soya/Goat's Milk Formula | ***Should NOT be used as first line treatment for the management of Cow's Milk Allergy for intants***<br>The prevalence of soya allergy in infants with CMA varied between IgE and non-IgE mediated reaction. In non-IgE the prevalence may be as great as 50%. | | | | |

# Guide To Prescription Volumes

1. Infants already on formula - Ask how many tins/tubes of formula they use weekly - prescribe a similar volume

2. If unsure/moving on from breastfeeding, prescribe as follows:

| | Two week trial | 1 month prescription |
|---|---|---|
| **0-3months** | 6 x 400g tins | 12x 400g tins |
| **4-6months** | 8 x 400g tins | 14 x 400g tins |
| **7-9months** | 6 x 400g tins | 13 x 400g tins |
| **10-12months** | 6 x 400g tins | 11 x 400g tins |

## Appendix 3

## Re-challenge to confirm the initial diagnosis of CMA (to be carried out after 4-6weeks dairy free trial)

If mild to moderate non-IgE mediated cow's milk allergy is suspected then a re-challenge should get completed after 4 weeks to confirm the diagnosis. This is important to reduce the risk of misdiagnosing the infant.

For infants with significant eczema the cow's milk free challenge may need to be extended to 6 weeks before re-challenging.

**Parents should be given a copy of 'Guide for parents: How to complete a cow's milk re-challenge to confirm whether your infant has cow's milk allergy' (see leaflet below)**

rechallenge leaflet.pub

**Infants with suspected mild-to-moderate non-IgE mediated CMA who react during the home re-challenge should be managed within primary care. These infants will require on-going support during weaning. Re-challenges are recommended to be carried out in primary care at around 1 year of age (or six months from start of dairy exclusion) to test for acquired tolerance.**

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