

# Guidance for the management of Cow's Milk Allergy (CMA).

	IgE CMA	Mild-moderate non-IgE CMA	Severe non-IgE CMA	Lactose Intolerance
Signs and Symptoms	<p>(One or more of the following symptoms)</p> <p><b>Gastrointestinal:</b> Acute vomiting or diarrhoea, abdominal pain/colic.</p> <p><b>Dermatological:</b> Acute worsening of eczema, urticaria, pruritis, swelling (angio-oedema)</p> <p><b>Respiratory:</b> acute rhinitis +/- conjunctivitis</p> <p><b>Anaphylaxis</b></p> <p><i>(Symptoms usually within 2 hours of exposure)</i></p>	<p>(Usually several of the following symptoms)</p> <p><b>Gastrointestinal:</b> Frequent regurgitation or vomiting, persistent distress or colic, diarrhoea, constipation (especially soft stool with excessive straining), abdominal discomfort, painful flatus, an otherwise well child with blood in stool, food refusal or aversion.</p> <p><b>Dermatological:</b> Persistent eczema, erythema, pruritis.</p> <p><b>Respiratory:</b> Persistent catarrhal symptoms, nasal congestion.</p> <p>PLEASE NOTE: MOST CHILDREN DO NOT EXPERIENCE FALTERING GROWTH</p> <p><i>(Symptoms can take 2-72 hours to appear after exposure)</i></p>	<p>Severe persisting symptoms of one or more of the following</p> <p><b>Gastrointestinal:</b> Diarrhoea, vomiting, irritability, food refusal, significant blood or mucus in stool</p> <p><b>Faltering growth</b></p> <p>Severe atopic eczema.</p>	<p>Diarrhoea, colic</p> <p>Symptoms are usually transient and secondary to GI insult</p> <p>Can be hereditary (e.g. Chinese or Swedish descent)</p> <p>Clinical history (see attached guideline)</p> <p>Normal growth.</p>
Actions	<p>Refer to Dietitian for cow's milk exclusion advice.</p> <p>Refer to a paediatrician with a special interest in allergy testing and management.</p> <p>NICE food allergy guideline states children with IgE allergy must not be challenged in the community.</p>	<p>Elimination diet (2-4 weeks) followed by a planned reintroduction challenge.</p> <p>This is to check whether symptoms recur and confirm diagnosis. (This may not be appropriate in all cases)</p> <p><b>If diagnosis confirmed, refer to Dietitian for CMP exclusion diet advice</b></p> <p><b>If symptoms are well controlled – No need to refer to a paediatrician</b></p>	<p>Urgent referral to Paediatrician with a special interest in allergy.</p> <p>Urgent dietetic referral.</p>	<p>Elimination diet (2-4 weeks) followed by a planned reintroduction challenge (*see attached re challenge titration guide)</p>
Treatment – Initial Prescription	<p><b>Breast fed babies</b> - Emphasise the importance of breast feeding until at least 6 months</p> <p>Cow's Milk Protein free diet for mum. Supplement mothers diet with 1000mg Calcium daily (divided into several doses).</p> <p>All breast feeding mothers should take a 10 microgram vitamin D supplement</p> <p><b>Formula fed babies</b> – Please prescribe an extensively hydrolysed formula (eHF)</p> <p>If the child continues to have reactions, change to an Amino Acid (AA) formula</p>	<p><b>Formula fed babies</b> – Prescribe the following:</p> <p>Trial of extensively hydrolysed formula (eHF) for 2-4 weeks</p> <ul style="list-style-type: none"> <li>If the child persistently refuses new formula, please see attached titration guide .</li> <li>If symptoms have improved please to continue to prescribe</li> <li>Children can have home reintroduction of cow's milk in a controlled manner at 12 months under dietetic supervision</li> </ul> <p>If symptoms do not improve after 4 weeks and CMA still suspected, prescribe an amino acid (AA) formula and refer to a Paediatrician with a special interest in allergy.</p> <p><b>Note: eHF is recommended first line choice</b></p>	<p><b>Formula fed babies</b> – Please prescribe an Amino Acid (AA) Formula.</p>	<p><b>Breast fed/ Formula fed babies</b> - Lactase drops (colief) 4 drops per feed.</p> <p>Add to formula/expressed breast milk 30 minutes before feeding baby</p> <p><b>Do not prescribe</b> - Patients encouraged to purchase over counter</p> <p><b>Formula fed babies – OVER THE COUNTER</b> lactose free formula e.g SMA LF - may be found behind pharmacy counter</p> <p>Note: Healthy start vouchers can be used to purchase</p> <p>Weaned Children – Lactose free diet as well</p> <p>If symptoms do not improve after 2 weeks, consider alternative diagnosis</p>
Ongoing Prescription	<p>0-6 months 5 x 400g tins every two weeks</p> <p>6-12 months 6 x 400g tins every two weeks</p> <p>Please prescribe on a two week basis and review every 3 months (requirement should gradually reduce after weaning).</p> <p>Prescription formula may be required beyond the age of 12 months, on dietetic/ paediatrician advice.</p> <p>An alternative milk must be established before the prescription of specialist formula is stopped.</p>			 <p>County Durham and Darlington Area Prescribing Committee</p>

#### Guideline notes:

- Symptoms of CMA occur often, but not always, within the first weeks after the introduction of cow's milk.
- Symptoms range from mild – moderate - severe
- Review repeat prescription quantity @ 3 month intervals – milk requirements should reduce with age.
- CMP challenge is recommended in infants who become symptom free during a cow's milk free diet. This will help reduce the number of false diagnosis of CMA. However a significant timely improvement upon cow's milk elimination may be adequate.
- Soya formula may only be used in infants over 6 months.
- 35% of patients who present with CMA will also present with an adverse reaction to soya
- Prescription formula should not be routinely be required beyond the age of 12 months, except on dietetic/ paediatrician advice. An alternative milk needs to be established before the prescription of specialist formula is stopped. See attached alternative milk list (from 1 year onwards)
- If families wish to try colic/comfort/anti-reflux milks, they can do so at their own wish. Not to be prescribed. There may be some benefit for functional symptoms, but not suitable if an allergy is suspected.

#### History Taking

- Taking an allergy-focused history forms the cornerstone of the diagnosis of food allergies and the UK NICE clinical guideline (CG) 116 "Diagnosis and assessment of food allergy in children and young people" recommends that questions should be asked regarding:
  - family history of atopic disease in parents or siblings
  - personal history of early atopic disease
  - the infant's feeding history
  - presenting symptoms and signs that may be indicating possible CMA:
    - age of the infant/child when symptoms first started
    - speed on onset following food contact and duration of symptoms
    - severity of reaction
    - frequency of occurrence
  - details of previous management, including any medication and the perceived response to any management
  - was there any attempt to change the diet and what was the outcome?
- Following on from these questions, the next important step is to attempt to differentiate between possible IgE and non-IgE-mediated allergies and decide appropriate management.

#### Recommended 1<sup>st</sup> line hypoallergenic formulas

<b>Extensively hydrolysed formula (eHF)</b>	<b>SIMILAC ALIMENTUM. 400g. Abbott</b>
<b>Amino Acid formula (AA)</b>	<b>SMA ALFAMINO. 400g. SMA/Nestle</b>

- Other formula milks may be preferable in certain circumstances, however deviation from this guideline should only be made after consultation with Paediatric or Dietetic teams.
- A different formula milk may have been initiated by the Hospital team – in this instance, the existing milk should be continued.

#### References

Vandenplas Y, Koletzko S, Isolauri E et al. Guidelines for the diagnosis and management of cows milk protein allergy in infants. Arch Dis Child 2007; 92:902-8

du Toit G, Meyer R, Shah N, Heine RG, Thomson MA, Lack G, et al. Identifying and managing cow's milk protein allergy. Arch Dis Child Educ Pract Ed 2010; 95:134–44.

Koletzko et al. Diagnostic approach and management of cow's-milk protein allergy in infants and children: ESPGHAN GI Committee practical guidelines. J Pediatr Gastroenterol Nutr. 2012 Aug;55(2):221-9

Venter et al. Diagnosis and management of non-IgE mediated cow's milk allergy in infancy - a UK primary care practical guide. Clinical and Translational Allergy 2013 3:23.

Riza R Taylor, Erikas Sladkevicius et al. Cost effectiveness of using an extensively hydrolysed formula for cow milk allergy in the UK. Paediatric Allergy and Immunology 2011;23 : 240-249

NICE. CG116 Food allergy in children and young people: full guideline. London: NICE, 2011. Available at: <http://www.nice.org.uk>

Roberto Berni Canani, Rita Nocerino et al. Formula selection for the management of children with cows milk allergy influences the rate of acquisition of tolerance. A prospective multicentre study. The Journal of Pediatrics

CMO update 37 Advice issued on soya-based infant formulas

## Titration Guide

When changing to a specialist cows milk protein free formula, such as an Extensively Hydrolysed Formula or Amino Acid Formula, taste may be an issue.

Gradual titration may help with acceptance.

Example: For a 7 fluid ounce bottle, the following titration guide can be used

Day 1	Usual formula 6 fl oz	Prescription Formula 1 fl oz
Day 2	Usual formula 5 fl oz	Prescription Formula 2 fl oz
Day 3	Usual formula 4 fl oz	Prescription Formula 3 fl oz
Day 4	Usual formula 3 fl oz	Prescription Formula 4 fl oz
Day 5	Usual formula 2 fl oz	Prescription Formula 5 fl oz
Day 6	Usual formula 1 fl oz	Prescription Formula 6 fl oz
Day 7	Usual formula 0 fl oz	Prescription Formula 7 fl oz

## **Alternative milk drinks**

### **Almond drinks**

Almond Dream, original  
Alpro Almond drink  
Alpro Almond drink unsweetened  
EcoMil Almond  
Provamel Almond  
Provamel Almond, unsweetened

### **Hazelnut drinks**

Alpro Hazelnut original  
EcoMil Hazelnut  
Provamel Hazelnut drink

### **Oat drinks**

Oat Dream, original  
Oatly Oat Drink, chocolate  
Oatly Oat Drink, enriched and fresh enriched  
Oatly Oat Drink, organic  
Oat Supreme  
Provamel Oat Drink

### **Soya drinks**

Alpro Soya Original  
Alpro Soya +1  
Provamel Soya, banana  
Provamel Soya, chocolate  
Provamel Soya, unsweetened  
Provamel Soya, sweetened  
Provamel Soya, vanilla

### **Other**

EcoMil Quinoa  
Hemp Milk (Braham and Murry)  
Koko Dairy Free, original  
Koko Dairy Free, chocolate  
Koko Dairy Free, strawberry  
Provamel Spelt drink

### **Please note:**

- **Rice drinks are not suitable under the age of four and a half years**
- **Organic milks tend to be generally NOT calcium fortified**

# The Early Home Reintroduction to Confirm the Diagnosis of Cow's Milk Allergy

## Practical Pointers for Parents/ Carers on how to carry out the:

### iMAP Home Reintroduction to Confirm or **Exclude** the Diagnosis of Mild-to-Moderate Non-IgE Cow's Milk Allergy

After an agreed period of cow's milk protein exclusion has resulted in a clear improvement in symptoms

A carefully planned home reintroduction of cow's milk protein is still needed to either confirm or exclude the diagnosis of cow's milk allergy because any clear improvement in your baby's symptoms could be due to other factors.

1. DO NOT start the Reintroduction if your child is unwell:  
e.g. Any respiratory or breathing problems (this includes a common cold)  
Any tummy or bowel symptoms  
Any 'teething' symptoms which are thought to be unsettling your child  
If your child has atopic dermatitis/eczema - any current flare-up of the skin
2. DO NOT start the Reintroduction if your child is receiving any medication that may upset the bowels, such as a course of antibiotics
3. DO NOT stop any medication that your baby may be on, e.g. reflux medicine
4. DO NOT introduce any other new foods during the Reintroduction.
5. Keep a record of what your child eats and drinks during the reintroduction and record any possible symptoms such as, vomiting, bowel changes, rashes or changes in their eczema

## The Home Reintroduction

How you carry out the Reintroduction depends on whether you are giving any formula milk or are fully breast feeding.

### Formula Fed Child

(those taking only formula feeds or taking formula as well as breast feeds)

Each day gradually increase the amount of cow's milk formula only in the FIRST bottle of the day (as set out in the example below). For the rest of the day, all the remaining bottles will continue to be made up only with the special low allergy (hypoallergenic) formula. If you are also breast feeding and on a milk free diet yourself, start eating products containing milk again, e.g milk, cheese and yoghurt.

If the symptoms return, **STOP** the Reintroduction. Give only the prescribed formula again and inform your doctor or dietitian. Your child's symptoms should settle again within a few days and the diagnosis of cow's milk allergy is now confirmed.

If no symptoms occur after day 7, when you have replaced the 1st bottle of the day completely with cow's milk formula, give your child cow's milk formula in all bottles

If no symptoms occur within 2 weeks of your child having more than 200mls. (almost 7 fl. oz.) of cow's milk formula per day, your child does not have cow's milk allergy.

## A Practical Example of a Reintroduction in a Formula Fed Child

The Days	Volume of Boiled Water mls. (fl. oz.)	Hypoallergenic Formula mls. (fl. oz.)	Cow's Milk Formula mls. (fl. oz.)
Day 1	210 mls. (7 fl.oz.)	180 mls. (6 fl.oz.) in 1st bottle <b>only</b>	30 mls. (1 fl.oz.) in 1st bottle <b>only</b>
Day 2	210 mls. (7 fl.oz.)	150 mls. (5 fl.oz.) in 1st bottle	60 mls. (2 fl.oz.) in 1st bottle
Day 3	210 mls. (7 fl.oz.)	120 mls. (4 fl.oz.) in 1st bottle	90 mls. (3 fl.oz.) in 1st bottle
Day 4	210 mls. (7 fl.oz.)	90 mls. (3 fl.oz.) in 1st bottle.	120 mls. (4 fl.oz.) in 1st bottle
Day 5	210 mls. (7 fl.oz.)	60 mls. (2 fl.oz.) in 1st bottle	150 mls. (5 fl.oz.) in 1st bottle
Day 6	210 mls. (7 fl.oz.)	30 mls. (1 fl.oz.) in 1st bottle	180 mls. (6 fl.oz.) in 1st bottle
Day 7	210 mls. (7 fl.oz.)	0	210 mls. (7 fl.oz.) in 1st bottle
If no symptoms occur after Day 7, when you have replaced the 1st bottle of the day completely with cow's milk formula, give your child cow's milk formula in all bottles.			

### Fully Breast Fed Child

Simply reintroduce cow's milk and cow's milk containing foods into your own diet in amounts previously consumed over a 1 week period. You do not need to do this gradually.

If the symptoms return, **STOP** the Reintroduction, return to your full milk exclusion diet and inform your doctor or dietitian. Your child's symptoms should settle again within a few days and the diagnosis of cow's milk allergy is now confirmed.

If no symptoms occur, you can continue to drink cow's milk and eat cow's milk containing products, e.g. cheese and yoghurt. Your child does not have cow's milk allergy.

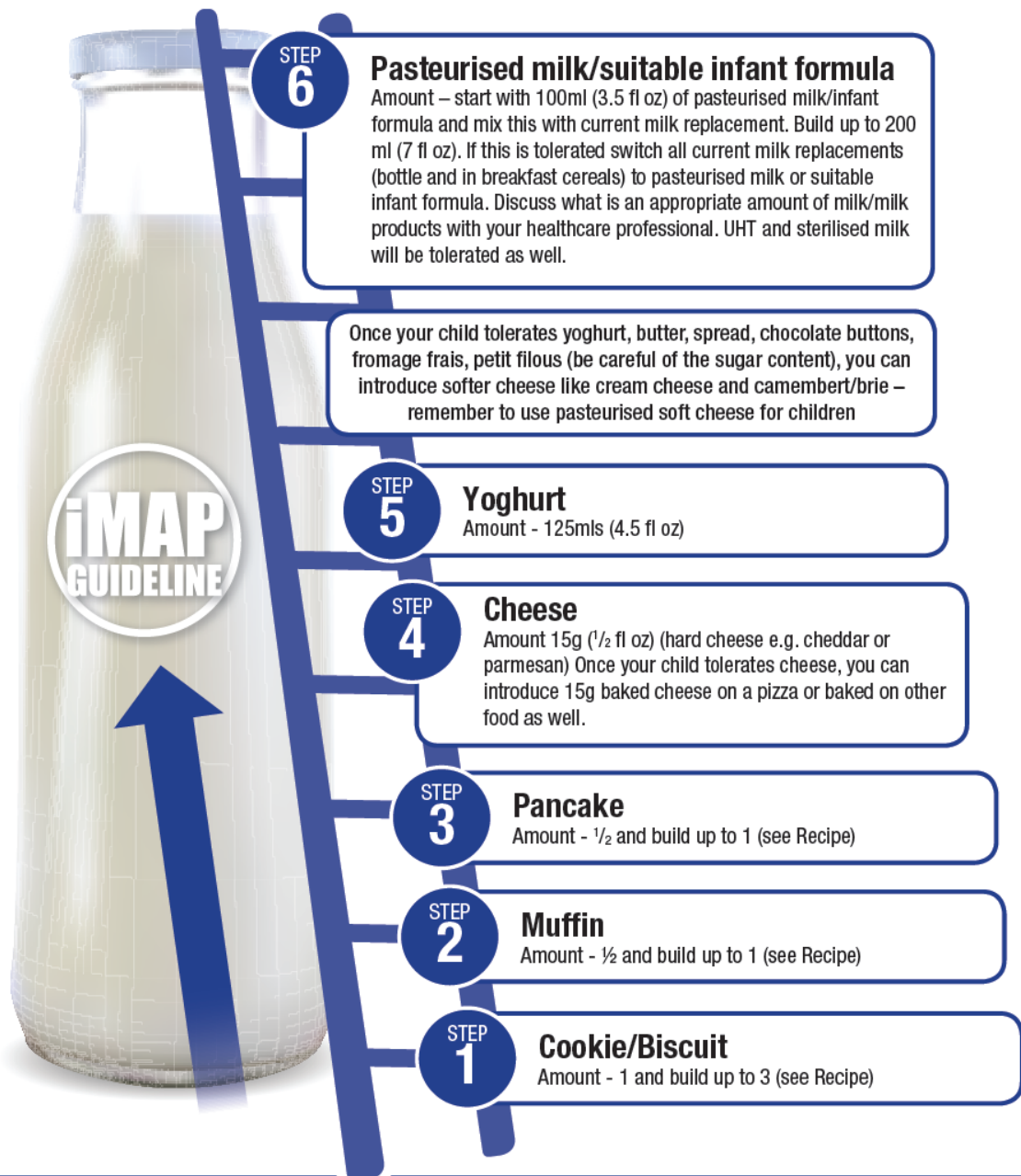
In a few children possible symptoms of cow's milk allergy may appear later when larger amounts of cow's milk protein come to be introduced into the child's diet, either when formula milk is introduced or on weaning when milk containing products or plain milk is introduced. Should this happen contact your doctor or dietitian.

Adapted from: Clinical and Translational Allergy 2013, 3:23

The iMAP ladder is included below for information, however clear guidance with supporting information/recipes will be provided at dietetic consultation.

# THE iMAP MILK LADDER

To be used only in children with Mild to Moderate Non-IgE Cow's Milk Allergy  
Under the supervision of a healthcare professional  
PLEASE SEE THE ACCOMPANYING RECIPE INFORMATION



## AT EACH OF THE FOLLOWING STEPS

### Cookie, muffin, pancake, cheese and yoghurt

It may be advisable in some cases to start with a 1/4 or a 1/2 of that particular food and then over a few days to gradually build up to a whole portion - Please ask your healthcare professional for guidance on this

**THE LOWER STEPS ARE DESIGNED TO BE USED WITH HOME MADE RECIPES. THIS IS TO ENSURE THAT EACH STEP HAS THE APPROPRIATE MILK INTAKE. THE RECIPES WILL BE PROVIDED BY YOUR HEALTHCARE PROFESSIONAL**  
Should you wish to consider locally available store-bought alternatives - seek the advice of your healthcare professional Re: availability



# Practical Pointers for Parents/Carers on using at home the iMAP Milk Ladder



## ONLY FOR CHILDREN WHO ARE BEING MANAGED AS MILD-TO-MODERATE NON-IgE COW'S MILK ALLERGY

The practical concept of this Ladder is the recognised fact that the more 'baked' cow's milk protein is, usually the less allergenic it is. Therefore you will see that Step 1 begins with a form of very well baked milk protein and then the further Steps give examples of gradually less well baked milk protein products.

The following 'Pointers' should make it easier for you to understand how best to use this Ladder. We advise that you are supported by a Healthcare Professional (HCP) until the Ladder has been successfully climbed. This may be your doctor, nurse but ideally your dietitian.

- Before starting the Ladder and progressing to each further Step, please ensure that your child is well at the time and also that any tummy symptoms, bowel symptoms or eczema are settled.
- Most children will start on Step 1. However some may be already eating one or more foods on the Ladder. If that is the case, you need to be advised which Step you should start on.
- The Ladder has 6 Steps, but your HCP may adjust the number of Steps to suit your child best.
- The time spent on each Step will vary from one child to another depending on their individual expression of milk allergy. This should also be discussed and agreed with you.

- The amounts in the Ladder are given as a guide – occasionally smaller or larger amounts may be recommended.
- Each of the early Steps of the Ladder importantly is accompanied by the appropriate recipe (see recipes).
- Each of the recipes has an egg and wheat free option (they are all soya free) to make the Ladder suitable for children who may have other co-existing food allergies.
- If the food on any Step of the Ladder is tolerated, your child should continue to consume this (as well as all the foods in the previous Steps) and then try the food on the next agreed Step.
- If your child does not tolerate the food in a particular Step, simply go back to the previous Step. You should then be advised when that further Step can be tried again.