

## Healthcare professional guidance: Cow's milk protein allergy in infants

- Cow's milk protein allergy (CMPA) is an immune mediated reaction to proteins within cow's milk
- Confirmed CMPA occurs in 2 - 3% of children aged 1 – 3 years
- **Breastfeeding is the best way to feed a baby** with cow's milk protein allergy. Mothers will need to exclude cow's milk from their own diets ([Excluding cow's milk guidance](#)) and take a calcium and vitamin D supplement
- Except after gastrointestinal infection, infants with gastrointestinal symptoms on exposure to cow's milk are more likely to have cow's milk protein allergy than lactose intolerance

### 1 Identify type of CMPA

<p><b>Symptoms</b> - Take an <a href="#">allergy-focused clinical history</a> tailored to the presenting symptoms and age of the child, including history of atopic disease, assessment of presenting symptoms, feeding history and any response to previous elimination and reintroduction of foods (For more detailed advice see <a href="#">NICE CG116</a> and <a href="#">iMAP Guideline</a>)</p>			
<ul style="list-style-type: none"> <li>• <b>Delayed onset</b></li> <li>• Mostly within 2 - 72 hours after ingestion of cow's milk protein</li> <li>• Infant is formula fed, exclusively breast-fed or at onset of mixed feeding</li> </ul>		<ul style="list-style-type: none"> <li>• <b>Acute onset</b></li> <li>• Mostly within minutes of (but may be up to 2 hours after) ingestion of cow's milk protein</li> <li>• Often infant is formula fed or at onset of mixed feeding</li> </ul>	
<p><b>AND</b> usually several of the following are present:</p> <p><b>Gastrointestinal:</b></p> <ul style="list-style-type: none"> <li>• Colic</li> <li>• Reflux/GORD</li> <li>• Food refusal or aversion</li> <li>• Loose or frequent stools</li> <li>• Perianal redness</li> <li>• Constipation</li> <li>• Abdominal discomfort</li> <li>• Blood &amp;/or mucus in stools in an otherwise well infant</li> </ul> <p><b>Skin:</b></p> <ul style="list-style-type: none"> <li>• Pruritus</li> <li>• Erythema</li> <li>• Significant atopic eczema</li> </ul>	<p><b>AND</b> one or more of the following is present which is severe &amp; persisting, with or without faltering growth:</p> <p><b>Gastrointestinal:</b></p> <ul style="list-style-type: none"> <li>• Vomiting</li> <li>• Diarrhoea</li> <li>• Abdominal pain</li> <li>• Food refusal or food aversion</li> <li>• Significant blood &amp;/or mucus in stools</li> <li>• Irregular or uncomfortable stools</li> </ul> <p><b>Skin:</b></p> <ul style="list-style-type: none"> <li>• Severe atopic eczema</li> </ul>	<p><b>AND</b> one or more of the following is present:</p> <p><b>Skin:</b></p> <ul style="list-style-type: none"> <li>• Acute pruritus</li> <li>• Erythema</li> <li>• Urticaria</li> <li>• Angioedema</li> <li>• Acute flaring of atopic eczema</li> </ul> <p><b>Gastrointestinal:</b></p> <ul style="list-style-type: none"> <li>• Vomiting</li> <li>• Diarrhoea</li> <li>• Abdominal pain/colic</li> </ul> <p><b>Respiratory:</b></p> <ul style="list-style-type: none"> <li>• Acute rhinitis &amp;/or conjunctivitis</li> </ul>	<p><b>AND ANAPHYLAXIS</b> requiring emergency treatment &amp; acute admission:</p> <p><b>Respiratory:</b></p> <ul style="list-style-type: none"> <li>• Immediate reaction with severe respiratory &amp;/or cardiovascular system signs &amp; symptoms</li> </ul> <p><b>Gastrointestinal (rare):</b></p> <ul style="list-style-type: none"> <li>• Severe gastro-intestinal reaction</li> </ul>
= Mild - moderate <b>non-IgE mediated</b>	= Severe <b>non-IgE mediated</b>	= Mild - moderate <b>IgE mediated</b>	= Severe <b>IgE mediated</b>

### 2 Diagnosis **Please note:** Initial diagnosis does **not** have to be made by Paediatrician or Paediatric Dietitian

- For **Mild – moderate non IgE mediated ONLY** - exclude cow's milk for 2 – 4 weeks ([iMAP Factsheet for Parents](#)):
  - If breast fed - advise mother to follow cow's milk free diet
  - If formula fed - prescribe 2 – 4 week trial of 1<sup>st</sup> line Extensively Hydrolysed milk (see overleaf)
- If **clear improvement** in symptoms – **CONFIRM DIAGNOSIS** by **HOME MILK CHALLENGE**
  - If symptoms return, re-start mothers cow's milk free diet/1<sup>st</sup> line Extensively Hydrolysed milk
- **CMPA CONFIRMED** if symptoms clearly improve again – now follow **3 Treatment and referral** overleaf
- For **Mild – moderate IgE mediated, Severe non-IgE mediated** OR **Severe IgE mediated** symptoms
  - Follow **3 Treatment and referral** overleaf

### 3 Treatment and referral based on type of CMPA

Type of CMPA →	Mild - moderate non-IgE mediated	Mild - moderate IgE mediated	Severe non-IgE mediated	Severe IgE mediated
<b>Treatment if breast fed</b>	Advise mother to follow cow's milk free diet ( <a href="#">Excluding cow's milk guidance</a> ) + start calcium & vitamin D supplement + <a href="#">cow's milk free diet for infant</a> if weaning has commenced			
<b>Treatment if bottle fed/ mixed fed</b>	<p><b>Prescribe Extensively Hydrolysed formula (EH) milk</b> <b>Up to 2 years:</b></p> <ul style="list-style-type: none"> <li>1<sup>st</sup> line – Alimentum (400g)</li> <li>2<sup>nd</sup> line – SMA Althera (400g) ‡</li> </ul> <p>+ advise cow's milk free diet for infant if weaning commenced</p> <p><b>Please note:</b> <i>EH formula milks are tolerated by 90% of infants with CMPA, therefore AA formula milks should only account for about 10% of scripts for infants with CMPA</i></p>		<p>Extensively hydrolysed (EH) milks are not halal or kosher. Parents of Muslim or Jewish children who require EH milks should be advised to seek medical exemption from their Imam or Rabbi</p>	<p><b>Prescribe Amino Acid (AA) formula milk</b> <b>Up to 2 years:</b></p> <ul style="list-style-type: none"> <li>1<sup>st</sup> line – SMA Alfamino (400g)</li> <li>2<sup>nd</sup> line – Nutramigen Puramino (400g) ‡</li> </ul> <p>+ if weaning commenced, advise cow's milk free diet for infant</p>
	‡ - If 1st & 2nd line not tolerated, consult HCT Paediatric Dietitian			
<b>Refer to:</b>	Paediatric Dietitian <a href="#">[referral form on DXS]</a>	Paediatric Dietitian <a href="#">[referral form on DXS]</a> + Paediatrician		<b>URGENT</b> Paediatric dietitian <a href="#">[referral form on DXS]</a> <b>+ URGENT</b> - Paediatrician

Soya milk in **Mild - moderate non-IgE mediated** **Please note:** Some children with CMPA may also react to soya

- Under 6 months of age - Soya milk should not be considered
- 6 months – 1 year of age - If child will not take an EH formula milk, a soya baby milk (Wysoy) can be suggested. Parents should be advised to purchase this OTC as cost is identical to a standard baby milk
- At 1 – 2 years: If still taking EH formula milk, advise parents to trial Alpro Growing Up Drink Soya 1-3+ (widely available).

### 4 Amount of milk to prescribe

Age of child	Suggested formula intake per day	Suggested volume per day	Amount to prescribe per week (for trial to determine diagnosis)	Amount to prescribe per month
Up to 2 weeks	7 – 8 feeds (60 - 70ml per feed)	420 - 560ml	2 x 400g OR 1 – 2 x 450g	5 – 6 x 400g OR 4 – 6 x 450g
2 weeks – 2 months	6 - 7 feeds (75 - 105ml per feed)	450 - 735ml	2 x 400g OR 2 x 450g	5 – 8 x 400g OR 5 – 7 x 450g
2 – 3 months	5 - 6 feeds (105 - 180ml per feed)	525 - 1080ml	2 - 3 x 400g OR 2 – 3 x 450g	6 – 12 x 400g OR 5 – 10 x 450g
3 – 5 months	5 feeds (180 - 210ml per feed)	900 - 1050ml	3 x 400g OR 2 – 3 x 450g	10 – 12 x 400g OR 9 – 10 x 450g
About 6 months	4 feeds (210 - 240ml per feed)	840 - 960ml	3 x 400g OR 2 – 3 x 450g	9 – 11 x 400g OR 8 – 9 x 450g
7 – 9 months	About 4 feeds	About 800ml	2 x 400g OR 2 x 450g	9 x 400g OR 8 x 450g
10 – 12 months	About 3 feeds	About 600ml	2 x 400g OR 2 x 450g	7 x 400g OR 6 x 450g
1 – 2 years	About 2 feeds (+ used in cooking if infant unable to tolerate soya milk)	About 400 – 600ml	2 x 400g OR 1 – 2 x 450g	5 - 7 x 400g OR 4 – 6 x 450g

### 5 When to stop extensively hydrolysed or amino acid formula milk prescription

- At 2 years of age or sooner if child has grown out of allergy (i.e. able to consume cow's milk without symptoms)
- If advised to do so by Paediatric Dietitian/Paediatrician

<b>Developed by</b>	Alison Smith, Prescribing Support Consultant Dietitian, Herts Valleys CCG in partnership with Paediatric Dietitians and Paediatricians from Hertfordshire Community NHS Trust, West Hertfordshire Hospital NHS Trust and East & North Hertfordshire NHS Trust, amended September 2020 by Ruth Hammond, Prescribing Support Dietitian, Herts Valleys CCG
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