APPROPRIATE PRESCRIBING OF SPECIALIST INFANT FORMULAE

CONTENTS

Introduction 2
Major changes from previous guideline 2
Appropriate Prescribing of Specialist Infant Formulae - Flowchart 3
Quantities of formulae to prescribe 4
Cow’s Milk Protein Allergy (CMPA) 5-9
Private Prescriptions 10
Pre-term infants 11-12
Faltering growth 13
Gastro-Oesophageal Reflux Disease (GORD) 14-15
Secondary lactose intolerance 16
Comparative costs of specialist infant formulae 17
Appendices 18
References 19-20
Acknowledgements 20

Colour key used on the following pages:

- Prescribe as first line
- Prescribe as second line
- Should not routinely be commenced in primary care
- Should not routinely be prescribed

Ratified by: Medicines Optimisation Group
Produced: September 2016
Review date: September 2018

Author;

- Nutrition and Dietetics, St. George’s University Hospitals NHS Foundation Trust
- Nutrition and Dietetics, Community Services Division, St. George’s University Hospitals NHS Foundation Trust
- Medicines Management Team, Wandsworth CCG,

This guideline is based on an original document produced by Thurrock CCG Medicines Optimisation team.

If you have any comments please contact Rajiv Dhir, Senior Prescribing Adviser Wandsworth CCG : Rajiv.dhir@wandsworthccg.nhs.uk
INTRODUCTION

Whilst these guidelines advise on appropriate prescribing of specialist infant formulae, breast milk remains the optimal milk for infants. This should be promoted and encouraged where it is clinically safe to do so and the mother is in agreement.

PURPOSE OF THE GUIDELINES

These guidelines aim to assist GPs, Health Visitors, Dietitians and hospital medical staff with information on the use of prescribable infant formula. The guidelines are targeted at infants 0-12 months. However, some of the prescribable items mentioned here can be used past this age and advice on this is included in the guidelines. The guidelines advise on:

- over the counter products available where appropriate
- initiating prescribing
- quantities to prescribe
- which products to prescribe for different clinical conditions
- triggers for reviewing and discontinuing prescriptions
- when onward referral for dietetic advice and/or secondary/specialist care should be considered

Major Changes from Previous Guideline

This document replaces the previous guideline ‘prescribing guidelines of infant formula for infants with CMPA or lactose intolerance’ last updated in March 2014. The most significant change to the previous guidance is the recommended first line product choices and the formularies. The associated formularies listed in this guideline should assist prescribers to choose the correct formula and promote the use of this formula for an appropriate length of time to avoid infants being left on a specialised formula unnecessarily.

Of the first line choices recommended for Cow’s Milk Protein Allergy (CMPA) the new recommendations;

- for an Extensively Hydrolysed Formula (EHF) is Similac Alimentum® (Abbott Nutrition)
- for an Amino Acid Formula (AAF) is SMA Alfamino® (Nestle)

This guideline also includes a section on the management of GORD which was not included in the previous document.
Appropriate Prescribing of Specialist Infant Formula

CMPA

Exclusively Breast-fed
Strict exclusion of cow's milk containing foods from maternal diet (trial 2-6 weeks). Maternal supplement of Calcium 1000mg and Vitamin D 10mcg.

Formula Fed or Mixed Feeding
Formula fed – trial an EHF
Mixed – maternal milk free diet with an EHF

Extensively hydrolysed formula (EHF) (trial for 2-6 weeks):
1st Choice EHF (lactose free):
Similac Alimentum: birth + (Abbott)
2nd Choice EHF:
Casenan based, lactose free): Nutramigen LGG: 1 (birth +) & 2 (6 months +)
(Mead Johnson)
Whey based (with lactose):
Aptamil Pepti 1: (birth +) & 2: (6 months +) (Milupa)

Tolerated: continue and refer to a Dietitian for milk free weaning advice.
Not tolerated: consider an AAF and refer to Dietitian

1st choice AAF:
SMA Alfamino

Gastro-oesophageal Reflux

Symptoms include regurgitation of significant volume of feed, reluctance to feed, distress/crying at feed times, small volume of feed taken.

Rule out overfeeding, average requirement is 150ml/kg/d up to 6 months and should be spread over 6-7 feeds. Infants with failure growth as a result should be referred to the paediatrician. Trial thickening formula with infant Gaviscon.

Thickened formula:
- Aptamil Anti-reflux
- Cow & Gate Anti-reflux
- Enfamil AR (Mead Johnson)
- SMA Staydown
Stop Infant Gaviscon if using these formulas

If symptoms do not improve after 1 month refer on to a Paediatrician or consider treatment for a CMPA.

Secondary Lactose Intolerance

Usually occurs following an infectious gastrointestinal illness. Symptoms include abdominal bloating, increased wind, loose green stools. Lactose intolerance should be considered in any infant with these symptoms for more than 2 weeks.

Treatment – 4-8 weeks lactose free formula/milk and diet, then slowly reintroduce formula/milk back into diet.

<1yr: SMA LF or Enfamil O-Lac, Aptamil Lactose Free.
>1yr: lactose free milk/milk alternative (full fat until 2 yrs)

Do not prescribe for longer than 8 weeks without reviewing

Notes:
Do not prescribe Soya formula for an infant less than 6 months of age.
Do not prescribe an AA formula as first line unless the infant is being exclusively breast fed.
EHF = extensively hydrolysed formula
AAF = amino acid formula

For appropriate guidance on referrals to primary care or secondary care and for contact details, please refer to page 4.
When any infant formula is prescribed the guide below should be used:

For powdered formula:

<table>
<thead>
<tr>
<th>Age of child</th>
<th>Number of tins for 28 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 6 months</td>
<td>13 x 400g tins or 6 x 900g tins</td>
</tr>
<tr>
<td>6-12 months</td>
<td>7-13 x 400g tins or 3-6 x 900g tins</td>
</tr>
<tr>
<td>Over 12 months</td>
<td>5 x 400g tins or 2 x 900g tins</td>
</tr>
</tbody>
</table>

These amounts are based on:

- Infants under 6 months being exclusively formula fed and drinking 150ml/kg/day of a normal concentration formula.
- Infants 6-12 months requiring less formula as solid food intake increases.
- Children over 12 months requiring less formula as solids are the primary source of nutrition.

For liquid high energy formula:

Prescribe an equivalent volume of formula to the child’s usual intake until an assessment has been performed and recommendations made by a paediatrician or paediatric dietitian.

N.B. Some children may require more e.g. those with faltering growth.

N.B. Review recent correspondence from the paediatrician or paediatric dietitian.
COW’S MILK PROTEIN ALLERGY (CMPA)

SYMPTOMS AND DIAGNOSIS


- Refer also to MAP guideline (Milk Allergy in Primary Care) - electronic interactive version here: http://cowsmilkallergyguidelines.co.uk/interactive-algorithm/#div3

- Symptoms can include:
  - Skin symptoms (pruritis, erythema, urticaria, eczema)
  - Acute angioedema of the lips and face, tongue and palate and around the eyes
  - Gastrointestinal (GI) symptoms (loose, frequent, bloody or mucus containing stools, nausea and vomiting, abdominal distension and/or colicky pain, constipation, GORD)
  - Recurrent wheeze or shortness of breath, cough, nasal itching, sneezing, rhinorrhea or congestion.
  - Anaphylaxis
  - Faltering growth, food refusal or aversion, with one or more of the above

- Most infants with non-IgE-mediated CMPA develop symptoms within 2-72 hours of exposure to cow’s milk protein. Most infants with IgE-mediated CMPA develop symptoms within minutes and up to 2 hours of exposure to cow’s milk protein. Some conditions, for example eczema, may demonstrate both IgE and non-IgE reactions.

- Refer to St. Georges’ University Hospital written information on non-IgE mediated CMPA aimed at parents and carers:
ONWARD REFERRAL

- **Most infants with CMPA can be managed in primary care.** Please complete the ‘Referral to Community Paediatric Dietitian’ form which is available on DXS. This referral form can be e-mailed to: cswdietitians@nhs.net / faxed to: 0208 487 6434 / or posted to Community Paediatric Dietitian, Queen Mary’s Hospital, Roehampton Lane, London. SW15 5PN.

- **Referral to a paediatric dietitian** should be made prior to weaning for all infants who will require a cow’s milk free diet. Breastfeeding mothers following a milk free diet should be referred to the paediatric dietitian who will advise them regarding their diet and that of their child.

- **Refer infant to secondary or specialist care if any of the following apply:** Written referrals to Paediatric Dietitians, Nutrition and Dietetics Dept, St George’s Hospital, Blackshaw Road, Tooting. SW17 0QT.
  - Faltering growth with one or more GI symptoms
  - Acute systemic reactions or severe delayed reactions
  - Significant atopic eczema where multiple or cross-reactive food allergies are suspected by the parent or carer
  - Possible multiple food allergies
  - Persisting parental suspicion of food allergy despite a lack of supporting history (especially where symptoms are difficult or perplexing)

TREATMENT- Breast fed infants

- **Breast milk** is the optimum choice for most infants with CMPA.

- If symptoms persist in the exclusively breast fed infant, a maternal cow’s milk free diet is indicated for a minimum trial of 2 weeks. Dietary advice is available here: https://www.bda.uk.com/foodfacts/milkallergy.pdf

- It is recommended that breastfeeding mothers on a milk free diet should take supplementation with 1000mg calcium per day as well as the recommended 10mcg (400 units) Vitamin D.

- If breastfeeding mothers do not wish to or are unable to follow a milk free diet, or are following a milk free diet and top-ups are required, an amino acid formula (AAF) will be needed and can be prescribed in primary care.

TREATMENT- Bottle fed infants

- **If breastfeeding is not occurring, extensively hydrolysed formulae (EHF) are the first choice,** unless the infant has a history of anaphylactic symptoms.

- AAF should normally be started in secondary or specialist care. They are suitable only when EHF do not resolve symptoms and/or there is evidence of severe (anaphylactic) allergy. See MAP guideline as above.

- If a patient has a history of anaphylactic reaction to cow’s milk, AAF may be started in primary care, with immediate onward referral to secondary or specialist care.

- **Only 10% of infants with CMPA should require management with AAF.**
### Choice of CMPA

**FIRST LINE EXTENSIVELY HYDROLYSED FORMULA**

- **Similac Alimentum®** (Abbott Nutrition)  
  Birth to 2 years or able to tolerate over the counter products. **Lactose free.** Casein based.

**OTHER EXTENSIVELY HYDROLYSED FORMULAE**

- **SMA Althera®** (Nestle)  
  Birth to 3 years or until able to tolerate over the counter products. **Whey based. CONTAINS LACTOSE.**

- **Pepti® 1** (Milupa Aptamil)  
  Birth to 6 months. **Whey based. CONTAINS LACTOSE.**

- **Pepti® 2** (Milupa Aptamil)  
  6 months to 2 years or able to tolerate over the counter products. **Whey based. CONTAINS LACTOSE.**

- **Nutramigen® 1 with LGG®** (Mead Johnson)*  
  Birth to 6 months. **Contains probiotics. Lactose free.** Casein based.

- **Nutramigen® 2 with LGG®** (Mead Johnson)*  
  6 months to 2 years or until able to tolerate over the counter products. **Contains probiotics. Lactose free.** Casein based.

*Please check mixing instructions.

### EXTENSIVELY HYDROLYSED FORMULAE WITH MEDIUM CHAIN TRIGLYCERIDES

**TO BE STARTED IN SECONDARY CARE.**

Only used where CMPA is accompanied by malabsorption.

- **ThPregestimil Lipil®** (Mead Johnson)  
  Birth to 2 years or until able to tolerate over the counter products.

- **Pepti – Junior®** (Cow & Gate)  
  Birth to 2 years or until able to tolerate over the counter products.
### First Line Amino Acid Formula

**SMA ALFAMINO (Nestle)**

Birth until able to tolerate over the counter products

### Other Amino Acid Formulae Normally to be Started in Secondary Care

- **Nutramigen® Puramino®** (Mead Johnson)
  - Birth until able to tolerate over the counter products
- **Neocate LCP®** (Nutricia)
  - Birth until able to tolerate over the counter products
- **Neocate® Active unflavoured** (Nutricia)
  - over 1 year
- **Neocate® Active blackcurrant flavour** (Nutricia)
  - over 1 year
- **Neocate® Advance unflavoured** (Nutricia)
  - over 1 year
- **Neocate® Advance banana/vanilla flavour** (Nutricia)
  - over 1 year

1. If a patient presents with clear anaphylactic reaction to cow’s milk these formula should be commenced in primary care, with immediate onward referral to secondary or specialist care.
2. If formula top-ups are needed for a child who is otherwise breastfed (mother on a milk free diet) AAF will be required.
3. Neocate Active® is a high calorie formula and will not be required automatically by all infants over 1 year. It is not suitable as a sole source of nutrition.
4. Neocate Advance® is a sole source of nutrition for patients with CMPA aged 1-10 years. It is a high calorie product and will not be required automatically by all patients over 1 year.
5. Neocate Spoon® may be recommended by a dietitian in rare cases. This is only suitable for infants from 6 months old and young children. It is a high calorie food supplement and not suitable as a sole source of nutrition.

### Review and Discontinuation of Prescriptions

- **Review prescriptions regularly** to check that the formula prescribed is appropriate for the child’s age.

- **Quantities of formula** required will change with age – see page 2, and/or refer to the most recent correspondence from the paediatric dietitian.

- **Avoid adding to the repeat template** for these reasons, unless a review process is established.

- **Prescriptions should be stopped** when the child has outgrown the allergy (see notes 1 and 5 below).

- **Review the need for the prescription if you can answer ‘yes’ to any of the following questions:**
  - Is the patient over 2 years of age? Or has the formula been prescribed for more than 1 year?
  - Is the patient prescribed more than the suggested quantities of formula according to their age?
  - Is the patient prescribed a formula for CMPA but able to eat any of the following foods – cow’s milk, cheese, yogurt, ice-cream, custard, chocolate, cakes, cream, butter, margarine, ghee?

- **Children with multiple or severe allergies may require prescriptions beyond 2 years.** This should always be at the suggestion of the paediatric dietitian.
NOTES

1. Soya formula (SMA Wysoy®) should not be used at all for those under 6 months due to high phyto-oestrogen content and the risk that infants with CMPA may also develop allergy to soya. It is more likely that children will tolerate soya formula from 1 year. If soya formula is used, parents should be advised to purchase this over the counter as it is a similar cost to cow’s milk formula and readily available. Alpro® Junior 1+ soya milk may be suitable from 1 year. The paediatric dietitian will advise on this and on other alternative milks which may be suitable.

2. EHF and AAF have an unpleasant taste and smell, which is better tolerated by younger patients. Unless there is anaphylaxis, advise parents to introduce the new formula gradually by mixing with the usual formula in increasing quantities until the transition is complete (see appendix 1). Serving in a closed cup or bottle or with a straw (depending on age) may improve tolerance.

3. Prescribe only 1 or 2 tins initially until compliance/tolerance is established to avoid waste.

4. Rice milk is not suitable for children under 5 years due to its arsenic content.

5. Outgrowing CMPA – 60-75% of children outgrow CMPA by 2 years of age, rising to 85-90% of children at 3 years of age.

6. Calcium and vitamin D supplementation may be needed for infants depending on volume and type of formula taken – the dietitian will advise.

7. Lactose free formulae (SMA LF®, Enfamil O-Lac®) goat’s, sheep, and other mammalian milks are not suitable for those with CMPA.

8. Partially hydrolysed formulae (Aptamil Comfort®, Cow & Gate Comfort®), available over the counter, are not suitable for those with CMPA.

9. Oat, almond and some soya milks as a main drink are not nutritionally adequate for children under 2 years unless recommended by a paediatric dietitian.

VITAMIN SUPPLEMENTATION

The Department of Health recommends that all infants and children from age 6 months to the age of 5 years receive a vitamin A and D containing multivitamin supplement with exception of the following:

- Breastfed infants under the age of 6 months, whose mothers are not at risk of vitamin D deficiency.
- Bottle fed infants up to 1yr of age, who are consuming at least 500ml of formula per day.
Private Prescriptions

If the infant has been seen by a private paediatrician/dietitian and prescriptions are being requested on the NHS, GPs are advised to ensure that prescribing recommendations are in line with these guidelines and product choices. This is to ensure equity for all patients.

Please note there is no obligation for the GP to prescribe the recommended treatment from the private specialists if it is contrary to these guidelines and 1st line formulary choice. The choices recommended by a private healthcare professional may be less clinically or cost-effective than the NHS local recommended option. In these circumstances the product prescribed on the NHS should be as recommended in these guidelines. Where there is a clinical, legal or cost-effectiveness reason not to accept prescribing of the requested product, a discussion with the patient’s parent and private healthcare professional should be initiated. Where appropriate, the parents of the patient should be reminded that they reserve the right to obtain their particular brand of product using a private prescription from the private specialist who originally recommended the treatment.
**INDICATIONS**

- These infants will have had their pre-term nutrient enriched post discharge formula commenced on discharge from the neonatal unit.
- It is started for some babies born before 34 weeks gestation, weighing less than 2kg at birth who are not breast fed, and who require catch up growth.
- These formulae should not be used in primary care to promote weight gain in patients other than babies born prematurely.

**ONWARD REFERRAL**

- These infants should already be under regular review by the paediatricians.
- If there are concerns regarding growth whilst the infant is on these formulae, a referral to the paediatric dietitian is appropriate.

**REVIEW AND DISCONTINUATION OF TREATMENT**

- Monitoring of growth (weight, length and head circumference) should be carried out by the Health Visitor while the baby is on these formulae.
- These products should be discontinued by 6 months corrected age, unless poor weight gain. If poor weight gain, continue formula and refer to a paediatric Dietitian.
- If there is excessive weight gain at any stage up to 6 months corrected age, stop the formula.

**PRE-TERM INFANT FORMULAE USUALLY STARTED IN SECONDARY CARE**

- SMA® Gold Prem 2 powder (SMA) Birth up to a maximum of 6 months corrected age
- Nutriprem® 2 powder (Cow and Gate) Birth up to a maximum of 6 months corrected age

6 months corrected age = EDD + 26 weeks

**PRE-TERM INFANT FORMULAE WHICH SHOULD NOT ROUTINELY BE PRESCRIBED unless there is a clinical need e.g. immunocompromised infant or in situations where powdered feed cannot be made up safely (eg when away from home)**

- SMA® Gold Prem 2 liquid (SMA) Birth up to a maximum of 6 months corrected age
- Nutriprem® 2 liquid (Cow and Gate) Birth up to a maximum of 6 months corrected age

Cost per 100kcal is £1.14-£1.21 for liquid compared with 25-28p for powders
Powders vs Liquids

• Powder feeds to be used routinely
• Liquid feeds should only be used when advised by the neonatal unit/secondary care, e.g. for immunocompromised patients.

<table>
<thead>
<tr>
<th>VITAMIN AND MINERAL SUPPLEMENTATION IN PRETERM INFANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All preterm babies are started on iron supplements on the Neonatal unit at 4-6 weeks of age and are discharged on Sytron 1ml once daily (unless on a high calorie infant formula or a post discharge infant formula). Iron supplementation should be continued until weaned onto a balanced diet, which includes a good source of iron such as red meat (this is often up until 1yr of actual age).</td>
</tr>
<tr>
<td>• All preterm babies born &lt; 34wks GA or &lt; 1800g birth weight, on breastmilk or standard infant formula, are given 0.6ml Abidec on discharge and this is to be continued until 1yr corrected age. After this, follow DoH guidelines for vitamin supplementation as above.</td>
</tr>
<tr>
<td>• Infants on a post discharge formula or on a high calorie formula (Infatrini or SMA High Energy), do not require Sytron or a multivitamin supplement. If these formulae are stopped before 6 months of age then Sytron and Abidec/Dalivit should be restarted.</td>
</tr>
</tbody>
</table>
FALTERING GROWTH

SYMPTOMS AND DIAGNOSIS

- Diagnosis is made when the growth of an infant falls below the 0.4th centile or crosses 2 centiles downwards on a growth chart or weight is 2 centiles below length centile
- It is not possible to detect faltering growth without using appropriate growth charts
- The height/length of an infant needs to be measured to properly interpret changes in weight
- It is essential to rule out possible disease related/medical causes for the faltering growth eg. iron deficiency anaemia, constipation, GORD or a child protection issue. If identified appropriate action should be taken

ONWARD REFERRAL

- Infants with faltering growth should be referred to paediatric services without delay
- Refer any infant who is weaned to a paediatric dietitian for advice on a high energy high protein diet
- If the problem appears related to food refusal/fussy eating, consider referral for behavioural intervention

TREATMENT

- Refer for a full assessment by a paediatrician or paediatric dietitian. A high energy formula may or may not be used depending on the outcome of the consultation

REVIEW AND DISCONTINUATION OF TREATMENT

- All infants on high energy formula will need growth (weight and height/length) monitored to ensure catch up growth occurs
- Once this is achieved the formula should be discontinued to minimise excessive weight gain

HIGH ENERGY FORMULA FIRST LINE

- Infatrini® 100/200ml bottle (Nutricia)  |  Birth up to 18 months or up to 8kg and over 1 year

HIGH ENERGY FORMULAE SECOND LINE

- Similac® High Energy 48 x 60ml/200ml bottle (Abbott Nutrition)  |  Birth up to 18 months or up to 8kg and over 1 year
- SMA® High Energy 250ml bottle (SMA Nutrition)  |  Birth up to 18 months or up to 8kg and over 1 year

HIGH ENERGY FORMULAE TO BE STARTED IN SECONDARY CARE

- Infatrini Peptisorb® (Nutricia)  |  Birth up to 18 months or up to 8kg and over 1 year
**GASTRO-OESOPHAGEAL REFLUX DISEASE (GORD)**

### SYMPTOMS AND DIAGNOSIS

- **Gastro-Oesophageal reflux** (GOR) is the normal physiological process of passage of GI contents into the oesophagus with or without regurgitation or vomiting. Occurs several times per day in healthy infants, children, and adults.
- Occurs daily in 50% of infants <3 months, and resolves spontaneously by 12-14 months.
- **Gastro-Oesophageal reflux disease** (GORD) is problematic reflux, where complications (e.g. oesophagitis, aspiration or faltering growth) and/or symptoms are present.
- Symptoms are non-specific and can be indistinguishable from same symptoms caused by food allergy, colic and other disorders.
- Symptoms of GORD may include excessive crying, crying while feeding, adopting unusual neck postures, hoarseness and/or chronic cough, a single episode of pneumonia, unexplained feeding difficulties, faltering growth.
- Some patient groups are more predisposed i.e. neurological impairment; obesity; certain genetic syndromes; oesophageal atresia; CLD; history of prematurity.
- Overfeeding needs to be ruled out by establishing the volume and frequency of feeds. Average requirements of formula are 150mls/kg/day for babies up to 6 months, and should be offered spread over 6-7 feeds.

### ONWARD REFERRAL

- Infants with faltering growth as a result of GORD should be referred to paediatric services without delay.
- If symptoms do not improve 4 weeks after commencing treatment as below, refer to a paediatrician for further investigations.

### TREATMENT, REVIEW AND DISCONTINUATION OF TREATMENT

- **If infant is thriving and not distressed by regurgitation** reassure parents and monitor.
- Provide advice on avoidance of overfeeding, positioning during and after feeding, and activity after feeding. Modification of feed consistency, frequency and volume.
- If bottle fed, a trial using thickened formula (see table below) can be done.
- If Breastfed a 2 week trial of Infant Gaviscon may be considered.
- Where vomiting is present, with unexplained crying and/or distressed behaviour, a 2-4 week trial of cows milk protein exclusion should be initiated. If breastfeeding the mother should be given advice on excluding cows milk from her diet for 2-6 weeks. If bottle feeding the infant should be trialled for 2-4 weeks on an EHF or amino acid formula.
- **If no improvement observed with management above** 4 week trial of a PPI may be considered and referral onward for specialist care.
- Infants with GORD will need regular review to check symptoms and growth.
<table>
<thead>
<tr>
<th>THICKENED FORMULAE (Over the counter)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Aptamil Antireflux (Milupa)</td>
<td>Birth to 1yr</td>
</tr>
<tr>
<td>- Cow and Gate Anti-reflux (Cow &amp; Gate)</td>
<td>Birth to 1yr</td>
</tr>
<tr>
<td><strong>THICKENING FORMULA (PRESCRIBABLE)</strong></td>
<td></td>
</tr>
<tr>
<td>- Enfamil AR® (Mead Johnson)</td>
<td>Birth to 18 months</td>
</tr>
<tr>
<td>- SMA Staydown (SMA)</td>
<td>Birth to 18 months</td>
</tr>
</tbody>
</table>

**NOTES**

1. **These formulae should not be used in conjunction with separate thickeners or with medication such as Gaviscon Infant®, ranitidine or proton pump inhibitors e.g. Omeprazole**.

2. Over the counter thickened formulae contains carob gum and will require the use of a large hole (fast-flow) teat.

3. Thickening formulae react with stomach acids, thickening in the stomach rather than the bottle so there is no need to use a large hole (fast flow) teat.

4. Alert parents/carers to the need to make up thickening formulae with fridge cooled pre-boiled water (see tin for full instructions).

5. **Gaviscon Infant®** contains sodium, and should not be given more than 6 times in 24 hours or where the infant has diarrhoea, vomiting, renal impairment or a fever. It should not be given if intestinal obstruction is suspected.

Each half of the dual sachet of Gaviscon Infant® is identified as ‘one dose’. To avoid errors, prescribe with directions in terms of ‘dose’. Dispensing pharmacists should advise about appropriate doses of over the counter products.
**SECONDARY LACTOSE INTOLERANCE**

**SYMPTOMS AND DIAGNOSIS**

- Usually occurs following an infectious gastrointestinal illness but may be present alongside newly or undiagnosed coeliac disease.
- Symptoms include abdominal bloating, increased (explosive) wind, loose green stools.
- Lactose intolerance should be suspected in infants who have had any of the above symptoms that persist for more than 2 weeks.
- Resolution of symptoms within 48 hours of withdrawal of lactose from the diet confirms diagnosis.

**ONWARD REFERRAL**

- If symptoms do not resolve when standard formula and/or milk products are reintroduced to the diet, refer to secondary or specialist care
- Refer to the paediatric dietitian if the child is weaned and a milk free diet is required

**TREATMENT**

- Treat with low lactose/lactose free formula for 4-8 weeks to allow symptoms to resolve. Rarely symptoms may last up to 3 months
- In infants who have been weaned, low lactose/lactose free formula should be used in conjunction with a milk free diet
- Standard formula and/or milk products should then be slowly reintroduced to the diet
- In children over 1 year who previously tolerated cow’s milk, do not prescribe low lactose/lactose free formulae. Suggest the use of lactose free full fat cow’s milk which can be purchased from supermarkets

**REVIEW AND DISCONTINUATION OF TREATMENT**

- Low lactose/lactose free formula should not be prescribed for longer than 8 weeks without reviews and trial of discontinuation of treatment

**LOW LACTOSE/LACTOSE FREE FORMULA FIRST LINE (Over the counter)**

<table>
<thead>
<tr>
<th>Formula</th>
<th>Age Range</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMA LF® (SMA)</td>
<td>Birth to 2 years but see treatment note above for those over 1 year</td>
<td></td>
</tr>
</tbody>
</table>

**LOW LACTOSE/LACTOSE FREE FORMULA FIRST LINE (PRESCRIBABLE)**

<table>
<thead>
<tr>
<th>Formula</th>
<th>Age Range</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfamil O-Lac® (Mead Johnson)</td>
<td>Birth to 2 years but see treatment note above for those over 1 year</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

1. Primary lactose intolerance is less common than secondary lactose intolerance and does not usually present until later childhood or adulthood.

2. Soya formula (SMA Wysoy®) should not routinely be used for patients with secondary lactose intolerance. It should not be prescribed at all for those under 6 months due to high phyto-oestrogen content. It should only be advised in patients over 6 months who do not tolerate the first line formula suggested here. Parents should be advised to purchase this as it is readily available.
### Comparative costs of prescribable infant formulae – Oct 2015 MIMS prices

#### Cow’s milk protein allergy

<table>
<thead>
<tr>
<th>Product</th>
<th>Presentation</th>
<th>Price</th>
<th>Cost per 100g</th>
<th>Cost per 100kcals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similac Alimentum®</td>
<td>400g tin</td>
<td>£9.10</td>
<td>£2.28</td>
<td>£0.43</td>
</tr>
<tr>
<td>Nutramigen® 1 with LGG®</td>
<td>400g tin</td>
<td>£10.87</td>
<td>£2.72</td>
<td>£0.54</td>
</tr>
<tr>
<td>Nutramigen® 2 with LGG®</td>
<td>400g tin</td>
<td>£10.87</td>
<td>£2.72</td>
<td>£0.57</td>
</tr>
<tr>
<td>SMA Althera®</td>
<td>450g tin</td>
<td>£10.68</td>
<td>£2.37</td>
<td>£0.47</td>
</tr>
<tr>
<td>Pepti® 1</td>
<td>400g tin</td>
<td>£9.74</td>
<td>£2.44</td>
<td>£0.49</td>
</tr>
<tr>
<td>Pepti® 1</td>
<td>800g tin</td>
<td>£19.48</td>
<td>£4.84</td>
<td>£0.97</td>
</tr>
<tr>
<td>Pepti® 2</td>
<td>400g tin</td>
<td>£9.29</td>
<td>£2.32</td>
<td>£0.49</td>
</tr>
<tr>
<td>Pepti® 2</td>
<td>800g tin</td>
<td>£18.58</td>
<td>£4.64</td>
<td>£0.97</td>
</tr>
<tr>
<td>Pregestimil Lipil®</td>
<td>400g tin</td>
<td>£12.06</td>
<td>£3.02</td>
<td>£0.60</td>
</tr>
<tr>
<td>Pepti-Junior®</td>
<td>450g tin</td>
<td>£12.89</td>
<td>£3.22</td>
<td>£0.65</td>
</tr>
<tr>
<td>SMA Alfamino®</td>
<td>400g tin</td>
<td>£23.00</td>
<td>£5.75</td>
<td>£1.14</td>
</tr>
<tr>
<td>Nutramigen Puramino®</td>
<td>400g tin</td>
<td>£26.80</td>
<td>£6.70</td>
<td>£1.34</td>
</tr>
<tr>
<td>Neocate LCP®</td>
<td>400g tin</td>
<td>£28.30</td>
<td>£7.08</td>
<td>£1.49</td>
</tr>
<tr>
<td>Neocate® Active unflavoured or blackcurrant flavour</td>
<td>15 x 63g sachets</td>
<td>£66.60</td>
<td>£7.05</td>
<td>£1.48</td>
</tr>
<tr>
<td>Neocate® Advance unflavoured</td>
<td>10 x 100g sachets</td>
<td>£58.60</td>
<td>£5.86</td>
<td>£1.47</td>
</tr>
<tr>
<td>Neocate® Advance Banana/vanilla flavour</td>
<td>15 x 50g sachets</td>
<td>£46.35</td>
<td>£6.18</td>
<td>£1.55</td>
</tr>
<tr>
<td>Neocate Spoon®</td>
<td>15 x 37g sachets</td>
<td>£39.30</td>
<td>£7.08</td>
<td>£1.50</td>
</tr>
<tr>
<td>SMA® Gold Prem 2</td>
<td>400g tin</td>
<td>£5.30</td>
<td>£1.33</td>
<td>£0.25</td>
</tr>
<tr>
<td>Nutriprem® 2</td>
<td>900g tin</td>
<td>£11.52</td>
<td>£2.88</td>
<td>£0.55</td>
</tr>
<tr>
<td>SMA® Gold Prem 2 liquid</td>
<td>250mls</td>
<td>£2.21</td>
<td>£0.88</td>
<td>£0.21</td>
</tr>
<tr>
<td>Nutriprem® 2 liquid</td>
<td>200mls</td>
<td>£1.72</td>
<td>£0.71</td>
<td>£0.14</td>
</tr>
</tbody>
</table>

#### Pre-term infant formulae

<table>
<thead>
<tr>
<th>Product</th>
<th>Presentation</th>
<th>Price</th>
<th>Cost per 100g</th>
<th>Cost per 100kcals</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMA® Gold Prem 2</td>
<td>400g tin</td>
<td>£5.30</td>
<td>£1.33</td>
<td>£0.25</td>
</tr>
<tr>
<td>Nutriprem® 2</td>
<td>900g tin</td>
<td>£11.52</td>
<td>£2.88</td>
<td>£0.55</td>
</tr>
<tr>
<td>SMA® Gold Prem 2 liquid</td>
<td>250mls</td>
<td>£2.21</td>
<td>£0.88</td>
<td>£0.21</td>
</tr>
<tr>
<td>Nutriprem® 2 liquid</td>
<td>200mls</td>
<td>£1.72</td>
<td>£0.71</td>
<td>£0.14</td>
</tr>
</tbody>
</table>

#### High energy formulae

<table>
<thead>
<tr>
<th>Product</th>
<th>Presentation</th>
<th>Price</th>
<th>Cost per 100kcals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similac® High Energy</td>
<td>200mls</td>
<td>£2.13</td>
<td>£1.05</td>
</tr>
<tr>
<td>SMA® High Energy</td>
<td>250mls</td>
<td>£2.42</td>
<td>£1.06</td>
</tr>
<tr>
<td>Similac® High Energy</td>
<td>48 x 60mls</td>
<td>£31.68</td>
<td>£1.10</td>
</tr>
<tr>
<td>Infatrini®</td>
<td>200mls</td>
<td>£2.23</td>
<td>£1.12</td>
</tr>
<tr>
<td>Infatrini® Peptisorb®</td>
<td>200mls</td>
<td>£3.41</td>
<td>£1.71</td>
</tr>
</tbody>
</table>

#### Thickening formulae and thickener

<table>
<thead>
<tr>
<th>Product</th>
<th>Presentation</th>
<th>Price</th>
<th>Cost per 100g</th>
<th>Cost per 100kcals</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMA® Stay Down</td>
<td>900g</td>
<td>£7.69</td>
<td>£0.85</td>
<td>£0.16</td>
</tr>
<tr>
<td>Enfamil AR®</td>
<td>400g</td>
<td>£3.69</td>
<td>£0.92</td>
<td>£0.18</td>
</tr>
<tr>
<td>Instant Carobel®</td>
<td>135g</td>
<td>£2.80</td>
<td>£0.77</td>
<td>£0.19</td>
</tr>
</tbody>
</table>

#### Lactose free formulae

<table>
<thead>
<tr>
<th>Product</th>
<th>Presentation</th>
<th>Price</th>
<th>Cost per 100g</th>
<th>Cost per 100kcals</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMA LF®</td>
<td>430g</td>
<td>£5.34</td>
<td>£1.24</td>
<td>£0.24</td>
</tr>
<tr>
<td>Enfamil O-Lac®</td>
<td>400g</td>
<td>£4.93</td>
<td>£1.23</td>
<td>£0.24</td>
</tr>
</tbody>
</table>

**Key:**
- **1st line:** Should not routinely be commenced in primary care
- **2nd line:** Should not routinely be prescribed
Appendix 1

Introduction of Hypoallergenic Formula (HAF)

Due to the unpalatable taste of HAF, it is recommended in non-IgE mediated, delayed allergenic reactions to grade the children onto it. The rate that this is done will depend upon their age. This promotes acceptance and ensures tolerance of the product.

Suggested Grading Procedure Hypoallergenic Formula (HAF)

<table>
<thead>
<tr>
<th>Age</th>
<th>Suggested grading procedure onto HAF</th>
<th>No. of scoops to 6floz (180ml water) Existing formula/breast milk:HAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10 weeks</td>
<td>Day 1: 50:50 mix of HAF with existing formula</td>
<td>3:3</td>
</tr>
<tr>
<td></td>
<td>Day 2: All HAF</td>
<td></td>
</tr>
<tr>
<td>10-20 weeks</td>
<td>Grade onto HAF formula on 2floz increments/bottle/day with existing formula:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Day 1</td>
<td>4:2</td>
</tr>
<tr>
<td></td>
<td>Day 2</td>
<td>2:4</td>
</tr>
<tr>
<td></td>
<td>Day 3</td>
<td>0:6</td>
</tr>
<tr>
<td>&gt;20 weeks</td>
<td>Grade onto HAF formula to 1floz increments/bottle/day with existing Formula:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Day 1</td>
<td>5:1</td>
</tr>
<tr>
<td></td>
<td>Day 2</td>
<td>4:2</td>
</tr>
<tr>
<td></td>
<td>Day 3</td>
<td>3:3</td>
</tr>
<tr>
<td></td>
<td>Day 4</td>
<td>2:4</td>
</tr>
<tr>
<td></td>
<td>Day 5</td>
<td>1:5</td>
</tr>
<tr>
<td></td>
<td>Day 6</td>
<td>0:6</td>
</tr>
<tr>
<td>&gt;6 months</td>
<td>As for &gt;20 weeks, but may need to Increase in 1-3tsp increments (5-15ml)/bottle/day if refuses</td>
<td></td>
</tr>
</tbody>
</table>

Once the 2-6 week exclusion trial is completed, the child’s symptoms should be reviewed. If they continue to suffer from symptoms, they may need to try an alternative HAF, moving through the products for increasing severity of CMA. If they still have symptoms on an amino acid formula, cow’s milk allergy can no longer be suspected and they should return to normal formula.
REFERENCES AND FURTHER READING

Cow’s milk protein allergy:
NICE Clinical Guideline 116 Food Allergy in Children and Young People. 2011

Venter C. et al Clinical and Translational Allergy 2013; 3:1-23 (MAP Guideline – Milk Allergy in Primary Care)

Royal College of Paediatrics and Child Health (RCPCH) Care pathway for food allergy
http://www.rcpch.ac.uk/allergy/foodallergy


World Allergy Organisation DRACMA guidelines 2010 (Diagnosis and Rationale Against Cow’s Milk Allergy)


Host A. Frequency of cow’s milk allergy in childhood. 2002; Ann Allergy Immunol;89 (suppl): 33-37.


Taylor R. et al Pediatric Allergy Immunol 2012;23:240-249

Canani R. et al Journal of Allergy and Clinical Immunology 2012;129:580-582


Soya formula:


Rice milk:
Food Standard Agency statement on arsenic levels in rice milk (2009)

Gastro-oesophageal reflux Disease:
NICE Guideline NG1 Jan 2015 Gastro-oesophageal reflux disease: recognition, diagnosis and management in children and young people https://www.nice.org.uk/guidance/ng1


Secondary Lactose Intolerance:

**General:**


BNF 70 Sept 2015-March 2016 and BNF for Children 2015-2016

MIMS October 2015

Appendix 2 – Adapted from Guidelines for the appropriate use of specialised infant formulas in cow’s milk protein allergy by Bromley Healthcare, Emma Daldorph –Prescribing Dietitian

**ACKNOWLEDGEMENTS**

The following have been involved in this guideline for Wandsworth CCG and St. George’s Hospital NHS trust:

Sarah Radford, Prescribing Paediatric Dietitian, Medicines Management Team, Wandsworth CCG.

Nicole Dos Santos, Acute Paediatric Dietitian, St. George's Hospital.

Tiffany Miller, Acute Paediatric Dietitian, St. George's Hospital.

Karen Laler, Community Paediatric Dietitian, Community Services Division, St George's University Hospitals NHS Foundation Trust.

Rajiv Dhir, Senior Prescribing Advisor, Wandsworth CCG

Gemma Stott, Dietitian – Divisional Head of Therapies, St. George’s Hospital

Claire Cullingham, Clinical Team Leader & Professional Lead – Nutrition & Dietetics, Community Services Division. St. George’s Hospital