Wessex Infant Feeding Guidelines and Appropriate Prescribing of Infant Formulae

A guide to the most common conditions requiring prescribable formulae and currently available products

These guidelines were written by the Prescribing Support Dietitian for North Hampshire and West Hampshire CCGs in collaboration with Paediatricians and Paediatric Dietitians in Wessex, Health Visiting teams from Southern Health, Solent and Dorset, and the 10 CCGs across Wessex

Supported by
Frimley Health NHS Foundation Trust
Hampshire Hospital NHS Foundation Trust
Portsmouth Hospitals NHS Foundation Trust
University Hospital Southampton NHS Foundation Trust
Dorset HealthCare University NHS Foundation Trust
Dorset County Hospital NHS Foundation Trust
Poole Hospital NHS Foundation Trust
Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust
Isle of Wight NHS Trust
Solent NHS Trust
Southern Health NHS Foundation Trust

Dorset Clinical Commissioning Group
Isle of Wight Clinical Commissioning Group
Fareham and Gosport Clinical Commissioning Group
North East Hampshire and Farnham Clinical Commissioning Group
North Hampshire Clinical Commissioning Group
Portsmouth Clinical Commissioning Group
Southampton City Clinical Commissioning Group
South Eastern Hampshire Clinical Commissioning Group
West Hampshire Clinical Commissioning Group
Wessex Infant Feeding Guidelines and Appropriate Prescribing of Specialist Infant Formulae

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Colour key for prescribing used in these guidelines:

<table>
<thead>
<tr>
<th>Prescribe as first line</th>
<th>Should not routinely be commenced in primary care</th>
<th>Over the counter (OTC) products – Do not prescribe</th>
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</thead>
<tbody>
<tr>
<td>Prescribe as second line</td>
<td>Should not routinely be prescribed</td>
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Introduction

Breastfeeding is the healthiest way to feed a baby. This should be promoted and supported.

Giving formula to a breastfed baby will reduce breastmilk supply.

Purpose of the guidelines

The total annual spend in England and Wales for Cow’s Milk Protein Allergy (CMPA) products is £59.9 Million. If a review of these products for continued need and wastage led to a 20% reduction in prescribing, then savings would be over £11.9 Million. This equates to £19,679 per 100,000 patients (PRESCQIPP nov2016).

The quantity of hypo-allergenic infant formulae prescribed has increased by 30% in 4 years whereas the cost has increased by 47% in that time (ePact data).

A North Hampshire CCG GPs audit has shown that 25% of infant formulae are prescribed inappropriately: either the wrong formula is used for the condition or age, or the wrong quantity.

The audit also revealed the variety of health professionals initially consulted for the conditions mentioned in these guidelines. Babies present indiscriminately to Health Visitors, GPs, Community Paediatric Nurses, Out of Hours GP Services, Paediatric specialists (Consultants, Registrars, Dietitians) or Emergency Services.

Therefore these guidelines aim to assist Health Professionals with diagnosing, signposting and managing common conditions and when to recommend or prescribe a specific infant formula.

Each condition has a stand-alone section and is laid out for easy printing, with a flow chart on page one and additional notes at the back. However they are presented together in this document as some infants can present with one or more conditions simultaneously. The different sections are available on the Wessex Healthier Together website (www.what0-18.nhs.uk) for easy navigation and live links.

The links can be sent directly by text message (SMS) to parents and carers during a consultation from the above website

The guidelines are targeted at infants 0-12 months. However, some of the prescribable items mentioned here can be used past this age, usually under the recommendation of a Paediatric Dietitian or Paediatrician.

Limitations of the guidelines:

The guidelines represent current standards developed with the best evidence available at this time (see reference list). They will be updated as new evidence, resources and products arise.

The recommended level of onward referrals to Paediatricians and Paediatric Dietitians in these guidelines may vary locally because of local services provision and different levels of experience within primary care. Please check with your local providers.

No pharmaceutical sponsorship or rebate were received during the writing of these guidelines
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Dietitians’ contacts in Wessex:

<table>
<thead>
<tr>
<th>Area</th>
<th>NHS Trusts</th>
<th>Address</th>
<th>Switchboard</th>
<th>Dietitians</th>
<th>Website</th>
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<tr>
<td><strong>Southampton</strong></td>
<td>University Hospital Southampton</td>
<td>Tremona Road, Southampton SO16 6YD</td>
<td>023 8077 7222</td>
<td>02381206072</td>
<td></td>
</tr>
<tr>
<td><strong>Andover, Basingstoke, Winchester, Hampshire Hospitals</strong></td>
<td>Basingstoke and North Hampshire Hospital</td>
<td>Aldermaston Road, Basingstoke RG24 9NA</td>
<td>01256 473202</td>
<td>01256 852644</td>
<td></td>
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<tr>
<td></td>
<td>Royal Hampshire County Hospital</td>
<td>Romsey Road, Winchester SO22 5DG</td>
<td>01962 863535</td>
<td>01962 824731</td>
<td></td>
</tr>
<tr>
<td><strong>Portsmouth, Portsmouth Hospitals</strong></td>
<td>Queen Alexandra Hospital</td>
<td>Cosham, Portsmouth PO6 3LY</td>
<td>023 9228 6000</td>
<td>extensions 4348/4349</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community: Rodney Rd centre</td>
<td>Rodney Road, Southsea PO4 8SY</td>
<td>02392 681798</td>
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<td></td>
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<tr>
<td><strong>Frimley, Frimley Health</strong></td>
<td>Frimley Park Hospital</td>
<td>Portsmouth Rd, Frimley, Surrey GU16 7UJ</td>
<td>01276 604604</td>
<td>01276 604053</td>
<td></td>
</tr>
<tr>
<td><strong>Isle of Wight, Isle of Wight NHS Trust</strong></td>
<td>St Mary’s Hospital</td>
<td>Parkhurst Road, Newport, Isle of Wight, PO30 5TG</td>
<td>01983 822099</td>
<td>01983 534790</td>
<td></td>
</tr>
<tr>
<td><strong>North &amp; West Dorset, Dorchester, Weymouth</strong></td>
<td>Dorset County Hospital</td>
<td>Williams Avenue, Dorchester, DT1 2JY</td>
<td>01305 251150</td>
<td>01305 253466</td>
<td>01305 255535</td>
</tr>
<tr>
<td><strong>East Dorset, Poole, Bournemouth, Christchurch &amp; Purbeck</strong></td>
<td>Poole Hospital</td>
<td>52 Longfleet Road, Poole, BH15 2JB</td>
<td>01202 665511</td>
<td>01202 442840</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dorset HealthCare NHS Trust</td>
<td>Parkstone Health Centre, Mansfield Road, Poole, BH14 0DJ</td>
<td>01202 733323</td>
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</tr>
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</table>

Really useful websites

**www.what0-18.nhs.uk/**

“The Healthier Together initiative aims to support you when you’re worried about the health of your child and provides you with information about what you should do and where you should go. It also provides information to healthcare professionals in order to ensure that your child receives the same quality of care irrespective of where they are seen”

**www.firststepsnutrition.org/**

“Wants to ensure that everyone working to support mums-to-be and young families has access to independent, expert and practical ‘eating well’ resources. Provides up-to-date information on infant milks for sale in the UK and promote better regulation and marketing of breastmilk substitutes”

**www.healthystart.nhs.uk/**

Healthy Start is a UK-wide government scheme to improve the health of low-income pregnant women and families on benefits and tax credits

**www.unicef.org.uk/babyfriendly/**

**www.nhs.uk/**

**www.nice.org.uk**

Apps

**Breast Start**: App will give you evidence based information from NHS professionals about all aspects of breastfeeding

**Baby Buddy**: Award-winning app for parents and parents-to-be who will guide you through your pregnancy and the first six months of your baby’s life
Note on Breastfeeding

“Breastfeeding has profoundly beneficial effects on the lives of infants, children and their mothers, and is an arena where the interests of mothers and babies align with those of the health service and wider society” Professor Mike Kelly, Director of the Centre for Public Health Excellence. The National Institute for Health and Clinical Excellence (NICE)

Breastfeeding is the healthiest way to feed babies but almost everyone needs help and support to achieve this. The language we use and the way we present information is vitally important: ‘Breast is best’ can be seen as idealistic, and for many mothers, choosing a formula is simply good enough. Moreover if breastfeeding is not achieved/not possible, mothers may feel a sense of failure.

So, rather than listing the benefits of breastfeeding, here is an infographic showing the risks associated with not breastfeeding:

![Infographic showing risks of not breastfeeding]

Source: Public Health England, July 2016 Commissioning Infant feeding services: Infographics

In the UK, the Millennium Cohort Study suggests that each month, an estimated 53% of hospitalisation for diarrhoea and 27% for lower respiratory tract infections could have been prevented by exclusive breastfeeding (Quigley et al., 2007).

Advice on the correct preparation method and storage of infant formula is therefore essential to prevent some contamination.

The incidence of food allergy is increased if the duration of concurrent breastfeeding at the introduction of other food proteins (including milk) is decreased (Grimshaw et al., 2013). The prevalence of cow’s milk allergy in formula fed babies is 2-3% vs 0.5% in breastfed babies (i.e. a fourfold increase risk) (Høst, 2002).

Only 17% of UK women manage to exclusively breastfeed to 17 weeks (HSCI, 2010). In Wessex the breastfeeding initiation rate remains stable at just below 80%. However, only around 40% of babies are fully or partially breastfeed at 6-8 weeks (Government statistics, 2017 data).

All Health Visitors in Wessex are BFI accredited but further work is needed to encourage, support and promote breastfeeding.
GPs’ quick prescribing reference guide

Breastfeeding is best for baby & mother and is free. So support, encourage and promote at any opportunity

<table>
<thead>
<tr>
<th>Prescribe as first line</th>
<th>Should not routinely be commenced in primary care</th>
<th>Over the counter (OTC) products: Do not prescribe</th>
</tr>
</thead>
</table>
| Prescribe as second line| Should not routinely be prescribed

→ Emphasize the need to strictly follow manufacturer’s instructions when making up formula milk

- Cow’s Milk Protein Allergy (CMPA)
  - Similac Alimentum®
  - SMA Althéa
  - Aptamil Pepti 1 & 2®
  - Nutramigen LGG 1 & 2
  - SMA AlfaMino
  - Nutramigen Puramino
  - Neocate LCP® and Syno
  - SMA Wysoy®

- Extensively Hydrolysed formula (EHF)
  - Take an allergy focused clinical history
  - Confirm diagnosis for mild-moderate symptoms by re-challenging
  - Diet sheets available for parents

- Amino Acid formula (AAF)
  - First line for anaphylactic reaction/severe reactions / reaction to breastmilk. These should be referred to secondary care

- Gastro-Oesophageal Reflux Disease (GORD)

- Pre-thickened formula
  - Enfamil AR
  - SMA Pro Anti-reflux
  - Cow&Gate Anti Reflux
  - HiPP Organic Anti-Reflux
  - Instant Carobel®

- Thickening formula (reacts with stomach acid)
  - Enfamil AR
  - SMA Pro Anti-reflux
  - Cow&Gate Anti Reflux
  - HiPP Organic Anti-Reflux
  - Instant Carobel®

- Thinner formula
  - Enfamil AR
  - SMA Pro Anti-reflux
  - Cow&Gate Anti Reflux
  - HiPP Organic Anti-Reflux
  - Instant Carobel®

- Thicker formula
  - Enfamil AR
  - SMA Pro Anti-reflux
  - Cow&Gate Anti Reflux
  - HiPP Organic Anti-Reflux
  - Instant Carobel®

- Secondary lactose intolerance
  - Enfamil O-Lac®
  - SMA LF
  - Aptamil LF®
  - SMA Wysoy®

- Lactose-free formula
  - Enfamil O-Lac®
  - SMA LF
  - Aptamil LF®
  - SMA Wysoy®

- Soya formula
  - Enfamil O-Lac®
  - SMA LF
  - Aptamil LF®
  - SMA Wysoy®

- Energy dense ready-to-use formula
  - Similac High Energy
  - Infa®
  - SMA Pro High Energy

- Energy dense EHF with Medium Chain Triglycerides (MCT)
  - Infatini Peptisorb®
  - Pregestimil Lipil®

- Ready to use formula
  - Nutriprem 2 Powder®
  - SMA Pro Gold Prem 2®
  - Nutriprem 2 liquid
  - SMA Pro Gold Prem 2 liquid

- Simeticone Lactase

→ Quantity to prescribe for 28 days (approximate guide)

<table>
<thead>
<tr>
<th>Birth to 6 months</th>
<th>&gt; 6 months to 1 year</th>
</tr>
</thead>
<tbody>
<tr>
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<td>400g tin</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>400g tin</td>
</tr>
<tr>
<td>3.5 - 5</td>
<td>7</td>
</tr>
<tr>
<td>5.5 - 6.5</td>
<td>9</td>
</tr>
<tr>
<td>7.7 - 7.5</td>
<td>11</td>
</tr>
<tr>
<td>8 - 8.5</td>
<td>12</td>
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<tr>
<td>9 - 10</td>
<td>14</td>
</tr>
<tr>
<td>5.13</td>
<td>6 -12</td>
</tr>
</tbody>
</table>

- Infant Formulae are for age 0–12 months unless advised by a Paediatrician/Paediatric Dietitian. 
- Review all prescriptions for children over 2 years

→ Direct parents/carers towards websites, resources and support groups (see full guideline), especially the Wessex Healthier Together website: www.what0-18.nhs.uk. Use “text page to patient” tab

→ Promote the use of the allergy focused history sheet and formula request form (see full guideline)
Managing the unsettled baby

Baby presenting with repeated episodes of excessive and inconsolable crying

History and Examination
- Onset and length of crying
- Factors which lessen or worsen the crying
- Parent’s response to the baby’s crying
- Antenatal and perinatal history
- General health of the baby including growth
- Allergy focused history
- Feeding assessment
- Mother’s diet if breastfeeding
- Nature of the stools

Red flags
- Seizures, cerebral palsy, chromosomal abnormality
- Unwell child / fever / altered responsiveness
- Unexplained faltering growth
- Severe atopic eczema
- Frequent forceful (projectile) vomiting
- Blood in vomit or stool
- Bile-stained vomit
- Abdominal distention / chronic diarrhoea
- Late onset vomiting (after 6 months)
- Bulging fontanel/rapidly increasing head circumference
- Immediate allergic reaction / anaphylaxis
- Collapse

Best fit cluster of symptoms (with no red flags)
- Crying for more than 3 hours a day, 3 days a week for 3 weeks
- Crying most often occurs in late pm / evening
- Growing normally
- No overt vomiting
- No constipation/diarrhoea
- No skin symptoms
- No suspected underlying condition such as infection
- Family history of atopy
- 1 or 2 systems involved:
  - GI (usually present in 50-60% of CMPA)
  - Skin (50-70%)
  - Respiratory (20-30%)
- 2 or more symptoms (e.g. reflux AND constipation)
- Symptoms started with infant formula use

Most likely diagnosis
- Infantile colic
- Cow’s Milk Protein Allergy (CMPA)
- Transient lactose intolerance
- Gastro-Oesophageal Reflux Disease (GORD)

Reassure and Support:
- Provide strategies that may help (see pathway)
- Safety netting advice
- Never shake a baby
- Only consider advising simeticone / lactase drops if parents not coping

Breastfed
- Trial of Maternal strict milk free diet

Formula fed
- Trial of Extensively Hydrolysed Formula (EHF) e.g. Similac Alimentum (should be prescribed)
- And milk free diet if started solids

Formula fed
- Trial of Lactose free formula e.g. Aptamil LF, SMA LF Or Enfamil 0-Lac
- And lactose free diet if started solids

Breastfed
- Breastfeeding assessment by trained professional

Formula fed
- Trial of pre-thickened formula (Need large hole/fast flow teat):
  - Anti-reflux Cow&Gate/HiPP Organic/Aptamil (carob bean gum)
  - Or thickening formula (Needs to be made up with cool water)
  - SMA Pro Anti-reflux (potato starch) / Enfamil AR (rice starch)
  - Or Thickening agent to add to usual formula
  - Instant Carobel (carob bean gum) (can be prescribed)

Follow clinical pathways from the Wessex Infant Feeding Guidelines
Provide relevant literature / weblinks
- www.what0-18.nhs.uk

Produced by Prescribing Support Dietitians
Published September 2018 – review September 2019
Guide quantities of formula to prescribe

For powdered formula, approximate number of tins for 28 days:

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>Birth to 6 months</th>
<th>&gt; 6 months to 1 year</th>
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<tbody>
<tr>
<td></td>
<td>400g tin</td>
<td>800g tin</td>
</tr>
<tr>
<td>3.5 - 5</td>
<td>7</td>
<td>3 1/2</td>
</tr>
<tr>
<td>5.5 - 6.5</td>
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</tr>
<tr>
<td>5 - 13</td>
<td>6 - 12</td>
<td>3 - 6</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.

  *N.B.: Some infants may require more than 150mls/kg/day, e.g. those with faltering growth.*

- Infants 6-12 months requiring less formula as solid food intake increases. 600mls of milk per day once food intake is established is recommended, mostly to meet calcium requirements.

There is a considerable variation between individuals and wastage can be significant: Formula milk is advised to be discarded soon after being made up (always follow manufacturers’ instructions).

Preparation methods need to be strictly followed to prevent contamination of milk.

Manufacturers’ instructions regarding safe storage once opened and expiry of ready to drink formulae should be adhered to – this may differ from manufacturer to manufacturer.

Formulae should not be used as a sole source of nutrition for infants over 6 months unless under dietetic or medical supervision.

For ready-to-use energy dense formula:

- Follow recommendations made by a Paediatrician or Paediatric Dietitian.

For babies fed via feeding tubes:

Where nutrition is provided via NG/NJ/PEG tubes, the Paediatric Dietitian will be involved. Depending on the area, the GP may need to prescribe appropriate monthly amounts of formula required as advised by the Dietitian (this may exceed the guideline amounts for other infants). However some areas have contracts and agreements with the company providing infant formula, which means that the GP does not need to issue a regular prescription (“off FP10” model). Check with your local Paediatric Dietitians (see contact list).
Dos and Don’ts of Prescribing Specialist Infant Formulae

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 (see contacts page 4).
- Prescribe only 2 tins initially until compliance/tolerance is established.
- Advise to follow the manufacturer’s advice on safe storage once mixed or opened.
- Check any formula prescribed is appropriate for the age of the infant.
- Check the amount of formula prescribed is appropriate for the age of the infant and /or refer to the most recent correspondence from the Paediatric Dietitian.
- Review prescriptions regularly to ensure quantity is still age and weight appropriate.
- Review any prescription (and seek guidance from a Paediatric Dietitian if appropriate) where:
  - The child is over 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

Don’t:

- Recommend lactose free formula (Aptamil LF*, SMA LF*, Enfamil O-Lac*) for infants with CMPA*.
- Recommend low lactose /lactose free formula in children with secondary lactose intolerance over 1 year who previously tolerated cow’s milk (they can use Lactofree whole* or Alpro growing up drink* from supermarkets).
- 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.
- 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 Pro 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.

*CMPA: Cow’s Milk Protein Allergy
# Common Specialised Infant formulae available

(Excluding non ACBS approved and highly specialised formulae)

## Extensively hydrolysed formulae

<table>
<thead>
<tr>
<th>Product</th>
<th>Presentation</th>
<th>Cost*</th>
<th>Cost per 100Kcal</th>
<th>Cost per 100mls</th>
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<tbody>
<tr>
<td>Nutriprem 2 Powder</td>
<td>800g tin</td>
<td>£10.37</td>
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<td>SMA Pro Gold Prem 2</td>
<td>400g tin</td>
<td>£4.92</td>
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<td>Nutriprem 2 liquid</td>
<td>200mls</td>
<td>£1.74</td>
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<td>SMA Pro Gold Prem 2 liquid</td>
<td>200mls</td>
<td>£1.64</td>
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## Energy dense formulae

<table>
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<th>Cost per 100mls</th>
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<td>200mls</td>
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<td>Infatrin®</td>
<td>200mls</td>
<td>£2.40</td>
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<td>125mls</td>
<td>£1.51</td>
<td>£0.12</td>
<td>£0.21</td>
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<td>SMA Pro High Energy</td>
<td>200mls</td>
<td>£1.96</td>
<td>£0.09</td>
<td>£0.98</td>
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## Amino Acid Formulae

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<tbody>
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<td>SMA Alfamino</td>
<td>400g tin</td>
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<td>Nutramigen Puramino</td>
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<td>£1.38</td>
<td>£0.94</td>
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<tr>
<td>Neocate LCP and Neocate Syneo</td>
<td>400g tin</td>
<td>£29.56</td>
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## Lactose-free formulae

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<tr>
<th>Product</th>
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<tbody>
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<td>SMA LF®</td>
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<tr>
<td>Aptamil LF®</td>
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</tr>
<tr>
<td>SMA Wysoy®</td>
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## Pre-thickened and Thickening formulae

<table>
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<th>Product</th>
<th>Presentation</th>
<th>Cost*</th>
<th>Cost per 100Kcal</th>
<th>Cost per 100mls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfamil AR</td>
<td>400g tin</td>
<td>£3.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMA Pro Anti-Reflux®</td>
<td>800g tin</td>
<td>≈£10.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aptamil Anti-reflux®</td>
<td>900g tin</td>
<td>≈£13.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cow&amp;Gate Anti Reflux®</td>
<td>900g tin</td>
<td>≈£11.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HiPP Organic Anti-Reflux</td>
<td>800g tin</td>
<td>≈£11.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Prices correct as of MIMS July 2018

Prescribe as first line: Should not routinely be commenced in primary care – Over the counter (OTC) products
Prescribe as second line: Should not routinely be prescribed – Do not prescribe

## OTC

Produced by Prescribing Support Dietitians

Published September 2018 – review September 2019
Flowchart for managing Cow’s Milk Protein Allergy (CMPA)

Symptoms suggest CMPA (see diagnosis page) - Commonly:
- History / Family history of atopy
- Symptoms involving 2 or more systems

Mild to moderate Symptoms
- No immediate reactions (usually non-IgE mediated)

Severe Symptoms
- Acute reaction (Usually IgE mediated)

Referral to secondary care
Include Allergy Focused History

Secondary Care led
1. Maternal milk free diet And/Or
2. Suitable formula, e.g. SMA Alfamino or Wysoy if >6m
3. Milk free diet if started solids
4. Clear communication and f/up plans

Review after minimum 2 weeks

Exclusively breastfed
- If at all possible, encourage exclusive breastfeeding

Formula Fed or mixed feeding

Trial of Maternal strict milk free diet (Appendix A)

Trial of Extensively Hydrolysed Formula (EHF)
1. Prescribe 2 tins, e.g. Similac Alimentum or Nutramigen, Aptamil Pepti, Althera initially (more tins may be needed before the 2 weeks review if quickly accepted)
2. Advise milk free diet if started solids (Appendix B1)

Review after minimum 2 weeks

EHF not accepted
- Consider alternative EHF (see formulary)
  Or
- Trial of soya formula if >6months
  Advise Wysoy OTC

Some Improvement
- Consider extending trial for a further 2 weeks
  Or
- Consider excluding Soya as well if started solids
  Or
- Consider trial of Amino Acid formula

Improvement
- Confirm diagnosis with Home Milk Challenge
  (See appendix C)

No improvement
- Consider alternative diagnosis
  Or
- Consider referring to, or seek advice from secondary care

CMPA diagnosed
- Formula fed:
  - Advise mother to take daily 1000 mg Calcium + 10 µg (400IU) Vit D OTC
  - Provide with resources/signpost to websites
  - Refer to trained Professional or Paediatric Dietitian

Breastfed:
- Advise suitable formula
  (Or advise Wysoy OTC)

Some Improvement
- Consider extending trial for a further 2 weeks
  Or
- Consider excluding Soya as well if started solids
  Or
- Consider trial of Amino Acid formula

No improvement
- Consider alternative diagnosis
  Or
- Consider referring to, or seek advice from secondary care

Symptoms return

YES
- Not CMPA
  Stop milk free diet

NO
Dr. John Smith, M.D.
Department of Pediatrics
St. Mary's Hospital

Diagnosing CMPA (from NICE Guideline 116, IMAP and BSACI)

Cow’s Milk Protein Allergy (CMPA or CMA) 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.

**Allergy-focused clinical history (adapted from Skypala et al. 2015) – See form in Appendix J**

- 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

**Acute symptoms (minutes) ➔ Refer to secondary care**

- Abdominal pain / Colic / excessive crying
- Vomiting (repeated or profuse)
- Diarrhoea (Rarely a severe presentation)

**Delayed symptoms (2-72hrs) ➔ Refer to secondary care only if symptoms severe**

**Gut** (Range of symptoms & severity)

- ‘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)*

**Skin** (Range of symptoms & severity)

- Significant to severe atopic dermatitis+/- faltering growth

**Respiratory** (Usually with other symptoms)

- ‘Catarrhal’ airway symptoms

**Systemic**

- Urticaria
- Acute pruritus
- Angioedema
- Erythema
- Acute ‘flaring of atopic dermatitis

- Red/itchy eyes
- Blocked/runny nose, sneezing
- Cough, wheeze, breathlessness

- Drowsiness, dizziness, pallor, collapse
- Anaphylaxis

**Red Flags (urgent referral to secondary care):**

- Faltering growth
- Severe atopic dermatitis
- FPIES, Anaphylaxis, collapse
Cow’s Milk Protein Allergy additional notes

Breastfeeding is the optimal way to feed a baby with CMPA, with, if required, individualised maternal elimination of all cow’s milk protein foods (+ Calcium and vitamin D supplementation).

For more detailed directions to diagnose and manage CMA, use the ‘Managing Allergy in Primary care’ (iMAP) guidelines (developed by a team of specialists in the field of paediatric milk allergy but published by Nutricia).

- 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.
- In the UK, 2-3% of 1-3 year olds have confirmed CMPA (the highest prevalence in Europe).
- Only about 10% of babies with CMPA will require an AAF (Murano et al., 2014). The remainder should tolerate an 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 because of better palatability soya formula is worth considering in babies>6months.

Hypoallergenic Infant Formulae (Prices correct as of MIMS July 2018)

**Extensively Hydrolysed Formulae (EHF)** Indication: Mild to moderate symptoms/reactions (IgE or non IgE mediated allergies)

<table>
<thead>
<tr>
<th>Product</th>
<th>Calcium RNI (525mg/d) met in:</th>
<th>Lactose</th>
<th>Tin size</th>
<th>Cost per tin</th>
<th>Cost per 100Kcal</th>
<th>Average requirement / 28d***</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st line</td>
<td></td>
<td></td>
<td>0-6months</td>
<td>6-12months</td>
<td></td>
<td>7-12 tins</td>
</tr>
<tr>
<td>Similac Alimentum*</td>
<td>740mls</td>
<td>no</td>
<td>400g</td>
<td>£9.10</td>
<td>£0.43</td>
<td>(800g: 6 tins)</td>
</tr>
<tr>
<td>SMA Althéra*</td>
<td>800mls</td>
<td>yes</td>
<td>450g</td>
<td>£10.68</td>
<td>£0.47</td>
<td>(800g: 6 tins)</td>
</tr>
<tr>
<td>Aptamil Pepti 1*</td>
<td>1120mls</td>
<td>yes</td>
<td>800g</td>
<td>£9.87</td>
<td>£0.50</td>
<td>7-12 tins</td>
</tr>
<tr>
<td>Nutramigen LGG 1*</td>
<td>680mls</td>
<td>no</td>
<td>400g</td>
<td>£11.21</td>
<td>£0.56</td>
<td>7-12 tins</td>
</tr>
<tr>
<td>Aptamil Pepti 2*</td>
<td>830mls</td>
<td>yes</td>
<td>800g</td>
<td>£9.41</td>
<td>£0.50</td>
<td>7-12 tins (800g: 6 tins)</td>
</tr>
<tr>
<td>Nutramigen LGG 2*</td>
<td>600mls</td>
<td>no</td>
<td>400g</td>
<td>£11.21</td>
<td>£0.58</td>
<td>7-12 tins (800g: 6 tins)</td>
</tr>
</tbody>
</table>

**Amino Acid formulae (AAF)** Indication: Severe symptoms / reactions to breastmilk (IgE or non IgE mediated allergies) and if EHF tried initially but still experiencing symptoms

<table>
<thead>
<tr>
<th>Product</th>
<th>Tin size</th>
<th>Cost per tin</th>
<th>Cost per 100Kcal</th>
<th>Average requirement / 28d***</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Line</td>
<td></td>
<td></td>
<td></td>
<td>7-12 tins</td>
</tr>
<tr>
<td>Alfamino®</td>
<td>400g</td>
<td>£23.81</td>
<td>£1.18</td>
<td>7-12 tins</td>
</tr>
<tr>
<td>Nutramigen Puramino®</td>
<td>400g</td>
<td>£27.63</td>
<td>£1.38</td>
<td>7-12 tins</td>
</tr>
<tr>
<td>Neocate LCP® or Syneo</td>
<td>400g</td>
<td>£29.56</td>
<td>£1.56</td>
<td>7-12 tins (800g: 6 tins)</td>
</tr>
</tbody>
</table>

**Soy formula** Indication: CMPA in infants over 6 months of age, not reacting to soya

<table>
<thead>
<tr>
<th>Product</th>
<th>Tin size</th>
<th>Cost per tin</th>
<th>Cost per 100Kcal</th>
<th>Average requirement / 28d***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wysoy®</td>
<td>860g</td>
<td>£10.54</td>
<td>£0.24</td>
<td>Not for ≤6months</td>
</tr>
</tbody>
</table>

**Top Tips**

- **EHF and AAF have an unpleasant taste and smell**, which is better tolerated by younger babies. Unless there is anaphylaxis, 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 only 2 tins initially** until compliance/tolerance is established. Only then give additional prescription.

NB: Instruction for making up Nutramigen LGG includes the use of cold water, which goes against current DoH guidelines.

NB: Instruction for making up Neocate Syneo includes the use of cold water, which goes against current DoH guidelines.

Neocate Junior® is not suitable for the under 1 and will not automatically be needed. These should only be prescribed under the supervision of a Paediatric Dietitian or Paediatrician with a clear rationale.

**Soy formula** is a weaning convenience product usually for children with severe multiple allergies. Neocate Syneo is not suitable for the under 1 and will not automatically be needed. These should only be prescribed under the supervision of a Paediatric Dietitian or Paediatrician with a clear rationale.

**OTC**

- Wysoy®

**Prices correct as of MIMS July 2018**

**Based on meeting Calcium requirement. However, there is a considerable variation of intake between individuals and wastage can be significant**
Review and discontinuation of treatment (and challenge with cow’s milk)

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).

- **Trial of reintroduction of cow’s milk** – Use the Milk Ladder (see appendix D). This should be supervised by a suitably trained health professional if symptoms are severe.

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

- **Quantities of formula** required will change with age – see guide to quantities required. Refer to the most recent correspondence from the Paediatric Dietitian, or contact your local paediatric dietetic department for clarification.

- **Prescriptions can be stopped** when the child has outgrown the allergy, or on advice of the Dietitian/Paediatrician.

- **Review the need for the prescription if:**
  - The patient is over 2 years of age
  - The formula 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

- **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.

Useful resources for parents and health professionals

- **Breastfeeding**
  For breastfeeding and bottle feeding advice, visit the UNICEF baby friendly pages:
  - [www.unicef.org.uk/BabyFriendly/](http://www.unicef.org.uk/BabyFriendly/)
  - [http://www.nhs.uk/start4life](http://www.nhs.uk/start4life)

- **Local Breastfeeding Support Services**
  - [www.southernhealth.nhs.uk/services/childrens-services/breastfeeding-service/](http://www.southernhealth.nhs.uk/services/childrens-services/breastfeeding-service/)

- **Cow’s Milk Protein Allergy**
  CMPA Support ([www.cmpasupport.org.uk](http://www.cmpasupport.org.uk))

- **For Health Professionals**
  Managing Allergy in Primary care: [https://www.allergyuk.org/health-professionals/mapguideline](https://www.allergyuk.org/health-professionals/mapguideline)

  **NICE** Clinical Guideline 116 Food Allergy in Children and Young People. 2011 [www.nice.org.uk](http://www.nice.org.uk)

  Luyt et al. British Society for Allergy and Clinical Immunology (BSCACI) guideline for the diagnosis and management of cow’s milk allergy, July 2014 [www.bsaci.org](http://www.bsaci.org)
NICE NG1: Flow Chart for managing GASTRO-OESOPHAGEAL REFLUX (GOR) and GORD

Infant presents with Gastro-Oesophageal Reflux

Are Red flag symptoms present?

NO

Is infant showing marked distress?

NO

Breastfed

Breastfeeding assessment by trained professional

YES

Investigate or refer to secondary care using clinical judgement

YES

Formula fed

1 Review feeding history, making up of formula, positioning...

2 Reduce feed volumes if excessive for infant’s weight (>150mls/kg/day)

3 Offer trial of smaller, more frequent feeds (6-7 feeds/24hrs is the norm)

4 Advise parent to purchase pre-thickened formula (need large hole/fast flow teat): Cow&Gate Anti-reflux®, HiPP Organic Anti-reflux, Aptamil Anti-reflux® (carob bean gum)
   Or thickening agent to add to usual formula: Instant Carobel
   Or thickening formula (made up with cool water): SMA Pro Anti-reflux® (potato starch)
   Or Enfamil AR® (rice starch)

If unsuccessful after 2 weeks

If using, STOP pre-thickened / thickening formulae or thickener

2 weeks trial of Infant Gaviscon®

Bottle fed: 1-2 doses* into 115mls (4oz) of feed
Breastfed: 1-2 doses* mixed up into a liquid (with cooled boiled water or expressed breastmilk) and given with a spoon

If successful after 2 weeks

Try stopping it at regular interval for recovery assessment as GOR usually resolves spontaneously

If not successful after 2 weeks

Consider CMPA and/or Refer to Paediatrician for further investigation if GORD or alternative diagnosis suspected

Red Flags:
- Bile-stained vomit: Same day referral
- Frequent forceful (projectile) vomiting
- Blood in vomit or stool
- Faltering growth
- Abdominal distention / chronic diarrhoea
- Unwell child / fever / altered responsiveness
- Bulging fontanelle / rapidly increasing head circumference
- Late onset (after 6 months)

Reassure:
- GOR very common
- Usually begins before 8 weeks
- May be frequent
- Usually becomes less frequent with time
- Does not usually need further investigation or treatment

*1 dual sachet = 2 doses

Infant Gaviscon®:

If < 4.5kg, 1 dose
If > 4.5kg, 2 doses

Prescribe with directions in terms of ‘dose’ to avoid errors
Maximum 6 doses a day
Omit if fever or diarrhoea

PPI /H2RA can be initiated in primary care if alginate therapy is not working but it is best reserved if overt regurgitation
AND Unexplained feeding difficulties or distressed behaviour or faltering growth

Produced by Prescribing Support Dietitians

Published September 2018 – review September 2019
GOR and GORD additional notes

Full NICE guidance: [www.nice.org.uk/guidance/ng1](http://www.nice.org.uk/guidance/ng1)

Background

- Passive regurgitation of stomach contents into the oesophagus is a **normal** finding in infancy. Most is swallowed back into the stomach but occasionally it appears in the mouth or comes out as non forceful regurgitation. At least 40% of infants will have symptoms of reflux at some time.
- Reflux will often improve by 6-8 months but it is not unusual for an otherwise well child to continue to have intermittent effortless regurgitation up to 18 months.
- Parents/carers should seek urgent medical attention if:
  - regurgitation becomes persistently projectile
  - There is bile-stained (green or yellow-green) or blood in vomit
  - There are new concerns (marked distressed, feeding difficulties, faltering growth)
- Possible complications of GOR are:
  - Reflux oesophagitis
  - Recurrent aspiration pneumonia
  - Frequent otitis media

**GORD** (Gastro-Oesophageal Reflux Disease) is a diagnosis reserved for those infants who present with significant symptoms and/or faltering growth.

- Prematurity, neurodisability, family history of heartburn, hiatus hernia, congenital oesophageal atresia are associated with an increased prevalence of GORD.
- Forceful vomiting should not be ascribed to reflux without closer review of the child’s symptoms. Bilious (green) vomiting is always pathological and warrant urgent same day medical attention.
- GORD can sometimes be a sign of CMPA. The presence of atopic dermatitis, a family history of allergy / atopy and additional gastrointestinal symptoms should prompt consideration of a cow’s milk protein allergy. CMPA can occur in breastfed infants (see CMPA section).
- Consider UTI especially if faltering growth or late onset, or frequent regurgitation + marked distress.
- Do not routinely treat or investigate for GORD in infant with or without overt regurgitation if they only exhibit one of the following: distressed behaviour / unexplained feeding difficulties / faltering growth / chronic cough / hoarseness / single episode of pneumonia.

Onward referrals

<table>
<thead>
<tr>
<th>Referrals</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Same day to Secondary Care</strong></td>
<td>Worsening or forceful vomiting in infant &lt;2months Unexplained bile-stained vomiting Haematemesis or Melaena or Dysphagia</td>
</tr>
<tr>
<td><strong>Secondary Care</strong></td>
<td>No improvement in regurgitation &gt;1year old Persistent faltering growth secondary to regurgitation, Feeding aversion + regurgitation, Suspected recurrent aspiration pneumonia, Frequent otitis media, Suspected Sandifer’s syndrome Unexplained apnoea, Unexplained non-epileptic seizure-like events, Unexplained upper airway inflammation If thought necessary to ensure acid suppression</td>
</tr>
</tbody>
</table>
### Management of GORD

- Sleeping infants should be placed on their back but bed can be raised at an angle.
- Starch-based thickeners (Thick&Easy®, Nutilis®, Resource thicken up® ...) are not suitable for children under 1 year (unless faltering growth/recommended by Paediatric specialist).
- Pro-motility agents such as domperidone should not be initiated in primary care. There is no evidence of benefit when treating infantile GOR. They can cause paradoxical vomiting and have been associated with a risk of cardiac side effects.

### Products available

<table>
<thead>
<tr>
<th>Instant thickener</th>
<th>Not to be used with thickening formula or Infant Gaviscon®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carobel Instant - Add to specialised formula (or expressed breastmilk) if anti-reflux formula not practical or possible</td>
<td>From birth £2.91 per 135g Contains carob seed flour May cause loose stools</td>
</tr>
<tr>
<td>OTC pre-thickened formulae</td>
<td></td>
</tr>
<tr>
<td>Cow &amp; Gate® Anti-reflux (Danone)</td>
<td>Birth to 1 year Contains carob gum</td>
</tr>
<tr>
<td>Aptamil® Anti-reflux (Danone)</td>
<td>Birth to 1 year</td>
</tr>
<tr>
<td>HiPP Organic Anti-reflux (HiPP)</td>
<td>Birth to 1 year</td>
</tr>
<tr>
<td>OTC thickening formulae</td>
<td>Not to be used with thickener or Infant Gaviscon® or PPIs/H2 antagonists</td>
</tr>
<tr>
<td>SMA Pro Anti-reflux (SMA )</td>
<td>Birth to 18 months Contains potato starch</td>
</tr>
<tr>
<td>Enfamil AR® (Mead Johnson)</td>
<td>Birth to 18 months Contains rice starch</td>
</tr>
</tbody>
</table>

- Over the counter thickeners / thickened formulae contain carob gum. This produces a thickened formula and will require the use of a large hole (fast-flow) teat.
- 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. However thickening formula need to be prepared with cooled pre-boiled water, which is against recommendation of using boiled water cooled to 70°C. There is therefore an increased risk of bacteria being present in the milk. This risk should be assessed by a medical practitioner.
- Thickening formulae should not be used in conjunction with separate thickeners or with medication such as antacids (e.g. Infant Gaviscon®), H₂ antagonists (e.g. Ranitidine), or with proton pump inhibitors (e.g. Omeprazole).

### Gaviscon

May cause a change in the baby’s stool, and commonly constipation.

### Resources for parents and health professionals

- NICE guidelines NG1: GORD in children and young people. January 2015
- Living with reflux website: [www.livingwithreflux.org/](http://www.livingwithreflux.org/) includes a Facebook support page
- For breastfeeding and bottle feeding advice, visit the UNICEF baby friendly pages: [https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/](https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/)
  - Breastfeeding counsellors directory provided by the NCT, or Southern Health NHS Foundation Trust: [www.nct.org.uk/branches](http://www.nct.org.uk/branches) or [www.southernhealth.nhs.uk/services/childrens-services/breastfeeding-service/](http://www.southernhealth.nhs.uk/services/childrens-services/breastfeeding-service/)
Flow chart for managing PRE-TERM INFANTS

Breastmilk is the preferred milk for these babies but if needed, infants will have pre-term formula commenced in hospital before discharge. These formulae should **not** be used in primary care to promote weight gain in babies other than those born prematurely.

**Babies born <34 weeks gestation, weighing <2kg at birth may be initiated on:**

- **Nutriprem 2® powder**
- **OR**
- **SMA Pro Gold Prem 2® powder**

  **Secondary care initiation only**
  Prescribing to be continued by GP in primary care until infant reaches 6 months corrected age*

**Growth (weight, length & head circumference) should be monitored by the Health Visitor on a monthly basis using UK WHO growth charts**

**Is there a concern with growth?**
*(See faltering growth flowchart)*

**NOTE:**
- **Prescribe POWDER formula**
- Nutriprem 2® liquid or SMA Pro Gold Prem 2® liquid should **NOT BE prescribed** except in rare instances where there is a clinical need in e.g. immunocompromised infant.

Rationale and duration should be clearly indicated by secondary care and communicated to the GP.

**Growth (weight, length & head circumference) should be monitored by the Health Visitor on a monthly basis using UK WHO growth charts**

**Is there a concern with growth?**
*(See faltering growth flowchart)*

**NOTE:**
- 6 months corrected age = Expected Date of Delivery + 26 weeks

**NO**
- **Use up to 6 months corrected age**
- Then change to a standard OTC formula thereafter

**YES**
- **Refer to/Alert the paediatric team**
  They may recommend the use of the pre-term formula until sufficient catch up growth is achieved
Pre-term additional notes

- Pre-term formulae are usually started for babies born before 34 weeks gestation, weighing less than 2kg at birth, and IUGR (intra uterine growth retardation).
- These infants should already be under regular review by the Paediatricians. Check correspondence for more details.
- Pre-term and low birthweight infants are particularly vulnerable to over and underfeeding. Therefore, the Health Visitor should monitor growth monthly while the baby is on these formulae:
  - Weight and centile
  - Length and centile
  - Head circumference and centile
- Not all babies need these formulae for the full 26 weeks from expected date of delivery (EDD).
- These products should be discontinued by 6 months corrected age (unless advised by the paediatric team).

6 months corrected age = Expected Date of Delivery + 26 weeks

- If there is excessive weight gain (e.g. weight centile over 2 centiles above length centile) at any stage up to 6 months corrected age, stop the formula and change to standard OTC formula. Also notify the Paediatric Dietitian/Paediatrician if still under their care.
- The introduction of solids should start no later than 6 months actual age (rather than corrected age) as the gut matures from birth.

Formulae

<table>
<thead>
<tr>
<th>Formula</th>
<th>Presentation</th>
<th>Cost*</th>
<th>£/Kcal</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutriprem 2 Powder® (Cow&amp;Gate)</td>
<td>800g tin</td>
<td>£10.37</td>
<td>£0.26</td>
<td>Birth up to a maximum of 6 months corrected age</td>
</tr>
<tr>
<td>SMA Pro Gold Prem 2® (SMA)</td>
<td>400g tin</td>
<td>£4.92</td>
<td>£0.24</td>
<td></td>
</tr>
<tr>
<td>Nutriprem 2 liquid® (Cow&amp;Gate)</td>
<td>200mls</td>
<td>£1.74</td>
<td>£1.16</td>
<td>Should not be routinely prescribed unless there is a clinical need e.g. immunocompromised infant</td>
</tr>
<tr>
<td>SMA Pro Gold Prem 2 liquid® (SMA)</td>
<td>200mls</td>
<td>£1.64</td>
<td>£1.12</td>
<td></td>
</tr>
</tbody>
</table>

*MIMS July 2018

Useful resources for parents and health professionals

- Bliss website and helpline number: [www.bliss.org.uk/](http://www.bliss.org.uk/) helpline: 0808 8010322
- Unicef baby friendly resources: [www.unicef.org.uk/BabyFriendly/Parents/](http://www.unicef.org.uk/BabyFriendly/Parents/)
- Royal college of Paediatric and Child health website for WHO growth charts and tutorials: [https://www.rcpch.ac.uk/resources/uk-world-health-organisation-growth-charts-guidance-health-professionals](https://www.rcpch.ac.uk/resources/uk-world-health-organisation-growth-charts-guidance-health-professionals)
Flow Chart for managing Faltering Growth

Using WHO UK Growth charts

Early days
- >10% weight loss from birthweight, and/or
- Birthweight not regained after 3 weeks

>3 weeks
- A fall across 1 or more centile if birthweight <9th centile
- A fall across 2 or more centiles if birthweight between 9th & 91st centile
- A fall across 3 or more centiles if birthweight >91st centile
- Current weight is <2nd centile

Use clinical judgement

Clinical, developmental and social assessment
Is there a concern? e.g. medical/physical condition or illness (or dehydration)

NO

Detailed feeding / eating history:
Breast attachment/ bottle preparation
Frequency, duration, quantity and tolerance
Solid foods intake, type, timing, quantity and frequency
Environment
Parent-infant interactions
Physical disorder (cleft palate, tongue-tie, inverted nipples)
Consider direct observation by suitably trained professional
And/or parents/carer to keep feeding or food diary

Provide feeding support
- Establish plan, goals and review with parents/carers
- Give simple advice around managing any behavioural aspects (see appendix E ‘What can I do if my child won’t eat’ leaflet)
- Ensure parents/carers are given advice on high calorie foods (see appendix F ‘High energy diet for babies’)

Referral to Paediatrician / specialist services

Consider investigating
- e.g. for UTI or coeliac disease (if solids started)
- or as indicated by clinical assessment

NO

Review: goals met?

YES

To ensure catch up growth and minimise excessive weight gain, monitor weight/length but no more than:
- Daily if <1month
- Fortnightly if 6-12 months
- Weekly if 1-6months
- Monthly if >1year

YES

Support continuation of breastfeeding
Consider high calorie infant formula:
- Suitable for infants up to 18months or 8-9kg
  - SMA PRO High Energy
  - Infatrini
  - Similac High Energy
- Clear communication of goals, action and follow up plans
Faltering growth additional notes

Symptoms and diagnosis

● It is not a condition in itself – there are lots of different possible explanations, with feeding problems being the most common.
● UK WHO growth charts should be used to plot weight, length and head circumference.
● The weight / length of an infant need to be measured properly to interpret changes in pattern:
  ○ Use only appropriate scales/equipment that are regularly serviced and/or calibrated
  ○ Remove clothing and nappies before weighing
  ○ Ensure staff is skilled and practiced
● Pre-term birth, neurodevelopmental concerns and maternal postnatal depression/anxiety are factors associated with faltering growth.
● If a child is not growing at the expected rate, it is important that this is picked up at an early stage and the reasons investigated. E.g. dehydration, acute illness, iron deficiency anaemia, CMPA, Coeliac disease, GORD or a child safeguarding issue.
● In the majority of cases, there isn’t an underlying medical problem and a baby can be successfully treated at home. However recognise that a range of factors may contribute to the problem and it may not be possible to identify a clear cause.
● There may be difficulties in the interaction between an infant and the parents or carers that may contribute to the problem (but this may not be the primary cause).

Treatment

● Early days: provide feeding support as per NICE guideline CG37 “postnatal care up to 8w after birth”.
● Under 6 months: Check frequency and timing/volume of feeds, as well as breastfeeding and/or bottle preparation technique. An infant’s requirements are around 150mls/kg/day and most will need one or more feeds during the night.
● 6 months and over: Ensure appropriate solids are offered at regular intervals; ask about volume and frequency of milk and solids food. Once a food routine is established, milk intake should be around 500-600mls a day. More than that may compromise appetite for solids.

Review and discontinuation of treatment

● All infants on high energy formula will need growth (weight and length) monitored to ensure catch up growth occurs but also prevent excessive weight gain.
● Paediatric Dietitians or Paediatricians should advise if/when the formula should be stopped.

<table>
<thead>
<tr>
<th>Formula</th>
<th>Presentation</th>
<th>Cost*</th>
<th>Cost / 100Kcal</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMA Pro High Energy (SMA)</td>
<td>200mls</td>
<td>£1.96</td>
<td>£0.99</td>
<td>100Kcal /100mls From birth up to 8kg</td>
</tr>
<tr>
<td>Similac High Energy (Abbott Nutrition)</td>
<td>60 / 200mls</td>
<td>£0.71 / 2.38</td>
<td>£1.18</td>
<td></td>
</tr>
<tr>
<td>Infatrini (Nutricia)</td>
<td>125 / 200mls</td>
<td>£1.51 / 2.40</td>
<td>£1.21</td>
<td></td>
</tr>
<tr>
<td>Infatrini Peptisorb (Nutricia)</td>
<td>200mls</td>
<td>£3.67</td>
<td>£1.84</td>
<td>+ malabsorption</td>
</tr>
</tbody>
</table>

*MIMS July 2018

Useful resources for parents and health professionals

● Royal college of Paediatric and Child health website for WHO growth charts and tutorial: [https://www.rcpch.ac.uk/resources/uk-world-health-organisation-growth-charts-guidance-health-professionals](https://www.rcpch.ac.uk/resources/uk-world-health-organisation-growth-charts-guidance-health-professionals)
Flowchart for managing SECONDARY LACTOSE INTOLERANCE

Infant presenting with the following symptoms for 2 weeks or longer, and significantly distressed (If not suffering and growing well advise that symptoms will resolve once gut is healed)

- Loose and frequent (occ. green) stools
- Increased (explosive) wind
- Abdominal bloating

Usually following an infectious gastrointestinal illness

>12 months

Bottle Fed

Advise

1. Lactose free milk (available from supermarkets e.g. Lactofree whole®, Alpro Growing Up Drink®)

2. Lactose free diet (see diet sheet in appendix B3)

If baby is distressed advise

Lactose free formula can be purchased from supermarket or pharmacy e.g.:
- Aptamil LF®, SMA LF®
- Or Enfamil 0-Lac®

And a lactose free diet if weaned (see diet sheet in appendix B3)

Review after 2 days of exclusion - symptoms improved?

YES

Lactose intolerance confirmed

- Continue lactose free formula / milk for up to 8 weeks to allow resolution of symptoms
- Then advise parents to slowly re-introduce standard formula/milk into the diet. (Lactase production needs to be re-build after a period of exclusion)

Have symptoms returned on commencement of standard infant formula/milk?

YES

NO

NO further action needed

NO

If baby distressed, return to lactose free formula / milk if ≤ 12m

And re-introduce lactose more slowly

Refer to Dietitian/seek dietetic advice if concerned

Breastfed

Consider alternative diagnosis e.g. cow’s milk protein allergy

0 - 12 months

NOTE: Lactose intolerance in young infants is rare

Cow’s milk protein allergy (CMPA) should always be considered as an alternative diagnosis

Mother may benefit from referral to Breastfeeding Specialist, Health Visitor or Breastfeeding Counsellor
Secondary Lactose Intolerance additional notes

Primary lactose intolerance is very rare and does not usually present until later childhood/adulthood.

Secondary lactose intolerance does not involve the immune system. It is caused by damage to the gut which results in an insufficient production of the enzyme lactase. Gastroenteritis or Cow’s Milk Protein Allergy can cause such damage. Restored gut function will resolve secondary lactose intolerance.

Resolution of symptoms within 48 hours of withdrawal of lactose from the diet confirms diagnosis*. *The medical tests ('hydrogen breath test' and tests for 'reducing sugars' in the stools) would be expected to be positive. However they are also positive in most normal breastfed babies under 3 months. Their use in diagnosing lactose intolerance in young babies is therefore open to question.

Common myths about lactose intolerance
- There is no relationship between lactose intolerance in adult family members, including in the mother, and in babies. Lactose intolerance may develop around 6 years of age if there is a strong family history.
- Breastmilk contains lactose (as does any mammalian milk) and decreasing dairy intake in maternal diet does not alter the amount of lactose in breastmilk.
- A baby with symptoms of lactose intolerance should not necessarily be taken off the breast and fed on special lactose-free infant formula (especially if the child is under 6 months old).
- Lactose intolerance does not cause vomiting or GORD.

Treatment
- Secondary lactose intolerance is temporary, as long as the gut damage can heal. When the cause of the damage to the gut is removed, the gut will heal, even if the baby is still fed breastmilk, or their usual formula.
- Continuing to breastfeed (or their usual formula) will not cause any harm as long as the baby is otherwise well and growing normally.
- Lactase drops such as Colief®, Care-Co Lactase infant drops® can be added (as per manufacturers’ instruction) to the baby’s feed to make digesting the lactose easier. Using lactase drops for more than a week if symptoms do not improve isn’t usually recommended.
- Lactose-free formulae have a greater potential to cause dental caries because the non-cariogenic sugar lactose is replaced with cariogenic glucose. Therefore parents must follow good dental hygiene.

Formulae
- Low lactose/lactose free formula should not be used for longer than 8 weeks without review and trial of discontinuation of treatment.

<table>
<thead>
<tr>
<th>Formula</th>
<th>Description</th>
<th>Size</th>
<th>Price</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enfamil O-Lac®</td>
<td>Lactose, sucrose and fructose free</td>
<td>400g</td>
<td>£5.08</td>
<td></td>
</tr>
<tr>
<td>SMA LF®</td>
<td>Low lactose</td>
<td>430g</td>
<td>£5.34</td>
<td></td>
</tr>
<tr>
<td>Aptamil LF®</td>
<td>Lactose and sucrose free</td>
<td>400g</td>
<td>£5.50</td>
<td></td>
</tr>
<tr>
<td>SMA Wysoy®</td>
<td>Soya based formula NOT for &lt;6months</td>
<td>860g</td>
<td>£12.00</td>
<td>vary</td>
</tr>
</tbody>
</table>

Soya formula is not recommended for those under 6 months due to high phyto-oestrogen content. It can be advised in infants over 6 months who do not accept the lactose free formula suggested here.
Flowchart for managing Colic in Infants

Infant presenting with Colic (repeated episodes of excessive and inconsolable crying)
- Started in the first weeks of life
- Crying most often occurs in the late afternoon or evening
- The baby draws its knees up to its abdomen or arches its back when crying

Take history and examine:
- General health of the baby including growth
- Antenatal and perinatal history
- Onset and length of crying
- Nature of the stools
- Feeding assessment
- Mother’s diet if breastfeeding
- Family history of allergy (see Allergy Focused History appendix J)
- Parent’s response to the baby’s crying
- Factors which lessen or worsen the crying

Consider differential diagnosis if sudden onset

Treatable causes:
- Hunger or thirst
- Too hot / too cold / too itchy
- Nappy rash
- Poor feeding technique
- Wind (Ensure infant is upright if bottle feeding)
- Constipation if bottle fed
- Gastro-oesophageal reflux disease (See GORD section)
- Cow’s milk protein allergy (See CMPA section)
- Transient lactose intolerance (see section)
- Parental depression or anxiety
- Mother’s intake if breastfeeding (anecdotal, e.g. medication, high intake of caffeine/alcohol/certain foods)
- Rare serious causes (seizures, cerebral palsy, chromosomal abnormality)

Management:
Reassure and acknowledge (do not ignore/dismiss concerns) colic usually resolves by 4 months
Offer ongoing support and review
Advise strategies one at a time, e.g.:
Holding baby through crying (although putting the baby somewhere safe is sometimes needed)
Gentle motion
White noise
Bathing in warm water
Encourage parents to look after their own health

Only consider medical treatment if parents unable to cope (see notes overleaf):
- 1 week trial of OTC simeticone drops (e.g. Infacol®, Dentinox®) OR
- 1 week trial of OTC lactase drop (e.g. Colief®, Care-Co Lactase infant drops®)
Only continue if improvement. Simeticone can be prescribed if strong rationale present but Lactase drops are not licensed for colic even if some small trials have shown some effects. Low lactose and/or lactose free formula are NOT recommended.
Colic in Infants additional notes

Although infantile colic is considered to be a self-limiting and benign condition, it is often a frustrating problem for parents and caregivers. It is a frequent source of consultation with healthcare professionals and is associated with high levels of parental stress and anxiety.

**Infantile colic** is defined for clinical purposes as repeated episodes of excessive and inconsolable crying in an infant that otherwise appears to be healthy and thriving [National Collaborating Centre for Primary Care, 2006].

Researchers use more specific definitions, often that of Wessel and colleagues: 'paroxysms of irritability, fussing or crying lasting for a total of three hours a day and occurring on more than three days in any one week for a period of three weeks in an infant who is otherwise healthy and well-fed' [Wessel et al, 1954].

**Estimates of prevalence** range from 5–20% of infants, depending on the definition used for colic (NICE CKS 2014).

The underlying cause of infantile colic is unknown.

- Suggested underlying causes include:
  - Parenting factors (for example overstimulating the baby and misinterpreting cries)
  - Gastrointestinal causes (for example gastro-oesophageal reflux and constipation)
  - Cow’s milk protein allergy
  - Transient intolerance to lactose (rare)

- Others have suggested that colic is just the extreme end of normal crying, or that it is due to the baby's temperament (for example a baby with a sensitive temperament).

Possible complications

- Infantile colic can cause significant distress and suffering to the parents.
- Stress on the parents may affect their relationships with the child.
- Breastfeeding might be stopped earlier, or introduction to solid foods begun sooner, than would otherwise have happened.
- Infantile colic usually resolves by 3–4 months of age, and by 6 months at the latest, although it may persist for longer if it is associated with other conditions such as constipation, gastro-oesophageal reflux disease, and cow’s milk protein allergy.

Note on simeticone and lactase drops

- Although studies of simeticone have not provided evidence of benefit in infantile colic, a 1-week trial as a placebo may still be worth a try because simeticone is easily available, cheap, licensed for this indication and has no reported side effects.
- Lactase drop has been shown to be moderately effective but the studies are small. However, these are not licensed for prescribing for colic under ACBS rules, so advise to buy over-the-counter.

The simple act of being able to give their babies something may help parents cope better with the crying

Useful resources for parents and health professionals

- CRY-SIS support group: [www.cry-sis.org.uk](http://www.cry-sis.org.uk) Helpline number : 08451 228 669 (9.00-22.00 daily)
- NICE Clinical Knowledge Summary, November 2014 [cks.nice.org.uk/colic-infantile](http://cks.nice.org.uk/colic-infantile)
Appendices

Information sheets for parents / carers

A- Milk free diet for breastfeeding mums
B1- Milk-free diet for babies
B2- Milk and Soya free diet for babies
B3- Lactose free diet for babies
B4- Milk free recipes
C- Home milk challenge to confirm diagnosis of CMPA
D- Has my baby grown out milk allergy? The Milk Ladder
E- What can I do if my child won’t eat?
F- High energy diet for babies

Forms for Health Professionals

H- Infant formula request form for Health Visitors
I- Infant formula request form for secondary care
J- Allergy focused clinical history for Health Visitors and GPs
Breastfeeding provides the best source of nutrition for babies. Occasionally breastfed babies can react to cow’s milk proteins in breastmilk from the mother’s diet. This dietary advice sheet gives some general information to help you make the recommended changes to your diet and should only be followed for 4 weeks.

*If you have any other allergies or medical conditions, please seek further advice.*

It is important for you to have a **milk free diet, and to avoid major sources of soya**. This is because many babies who cannot tolerate cow’s milk also react to soya proteins. Soya can often be tried later to see if your baby reacts to it or not, but it is best not to include it for the first 4-6 weeks. However, do not worry about “soya lecithin” or “soya flour” in products such as bread and sausages.

You will need to avoid cows’ milk, soya milk, dairy and soya yoghurts, dairy and soya custard, cheese and any product that contains these. Other mammal milks such as goat and sheep are **not** suitable alternatives as your baby is likely to react to these.

**Suitable alternatives to cows’ milk and soya milk:** Calcium enriched oat milk, calcium enriched hemp milk, calcium enriched coconut/almond/hazelnut/cashew milks.

<table>
<thead>
<tr>
<th>milk and soya free foods</th>
<th>Foods to Avoid / check labels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fruit &amp; vegetables</strong></td>
<td></td>
</tr>
<tr>
<td>All plain fruit and vegetables</td>
<td>Vegetables mixed with sauces made from cows’ milk</td>
</tr>
<tr>
<td>Fresh, dried, frozen or tinned</td>
<td>Fruit mixed with ordinary yoghurt, custard, cream, ice-cream or soya alternatives</td>
</tr>
<tr>
<td><strong>Meat, fish, eggs, quorn, pulses</strong></td>
<td></td>
</tr>
<tr>
<td>Plain meat, fish, eggs, nuts and pulses</td>
<td>Meat, fish, eggs and pulses in a sauce made from cows’ milk</td>
</tr>
<tr>
<td>Plain Quorn products (but check labels)</td>
<td>Processed/prepared meat/fish (check labels)</td>
</tr>
<tr>
<td><strong>Dairy products</strong></td>
<td></td>
</tr>
<tr>
<td>Calcium enriched milk alternatives can be used in cooking as well as in cereals E.g. Oat milk, nut milks, coconut based yoghurts</td>
<td>Cows’, goats’ and sheep’s, Soya milk and all products made from these</td>
</tr>
<tr>
<td><strong>Starchy food and cereals</strong></td>
<td></td>
</tr>
<tr>
<td>Bread/rolls/wraps/bagels/pitta/crackers if no milk in ingredients (soya in the ingredients is fine)</td>
<td>Bread/rolls/wraps/bagels/pitta/crackers with milk in ingredients list.</td>
</tr>
<tr>
<td>Flour, plain pasta and rice</td>
<td>Filled pasta/ravioli or rice in cows’ milk based sauces</td>
</tr>
<tr>
<td>Plain potatoes</td>
<td>Processed potato products (check labels)</td>
</tr>
<tr>
<td>Plain breakfast cereals (oats, cornflakes, Weetabix, shredded wheat (check labels)</td>
<td>Breakfast cereals which contain milk</td>
</tr>
<tr>
<td><strong>Other foods</strong></td>
<td></td>
</tr>
<tr>
<td>Any oils, lard, suet, dripping</td>
<td>Standard butter, ordinary margarine or spread</td>
</tr>
<tr>
<td>Dairy-free margarine e.g. Pure™, Vitalite™, Tomor™, Flora dairy-free, supermarket own dairy-free brand, Kosher and some vegan spreads</td>
<td>Biscuits and cakes that contain milk</td>
</tr>
<tr>
<td>Milk free chocolate and spread</td>
<td>Milk chocolate, most chocolate spread</td>
</tr>
<tr>
<td>Large quantity of soya spreads</td>
<td>Large quantity of soya spreads</td>
</tr>
</tbody>
</table>
Ingredients to watch out for on labels

Milk and milk products will be indicated as ‘Milk’ in bold on the ingredient list, so check the labels. Most supermarkets will provide a list of their milk-free foods on request.

No need to avoid all products with ‘soya’ in the ingredients. Only avoid the main source of soya such as soya milk and yogurts, soya desserts and cream, soya cheese and tofu.

When eating out, check with the restaurant or food outlets as they have to provide allergen information by law.

As a breastfeeding mum your daily calcium requirements are 1250mg. If this is not met from your diet, then you should take a supplement that provides 1000mg of calcium per day.

Use the following chart to check your calcium intake:

<table>
<thead>
<tr>
<th>Food</th>
<th>Average Portion</th>
<th>Calcium (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative milk (calcium enriched)</td>
<td>100ml</td>
<td>120mg</td>
</tr>
<tr>
<td>Sardines</td>
<td>60g (1/2 small tin)</td>
<td>550</td>
</tr>
<tr>
<td>Pilchards</td>
<td>60g</td>
<td>300</td>
</tr>
<tr>
<td>Salmon (tinned with bones)</td>
<td>52g (1/2 tin)</td>
<td>47</td>
</tr>
<tr>
<td>Prawns</td>
<td>60g</td>
<td>90</td>
</tr>
<tr>
<td>Whitebait</td>
<td>50g</td>
<td>130</td>
</tr>
<tr>
<td>Lentils, boiled</td>
<td>100g</td>
<td>19</td>
</tr>
<tr>
<td>Cooked chickpeas</td>
<td>50g</td>
<td>25</td>
</tr>
<tr>
<td>Peanuts</td>
<td>20g</td>
<td>18</td>
</tr>
<tr>
<td>Tahini</td>
<td>15g (1 tablespoon)</td>
<td>100</td>
</tr>
<tr>
<td>Quorn mince</td>
<td>100g</td>
<td>30</td>
</tr>
<tr>
<td>White bread</td>
<td>100g (2 large slices)</td>
<td>100</td>
</tr>
<tr>
<td>Wholemeal bread</td>
<td>100g (2 large slices)</td>
<td>54</td>
</tr>
<tr>
<td>Calcium fortified bread</td>
<td>40g (1 slice)</td>
<td>191</td>
</tr>
<tr>
<td>Pitta bread/chapatti</td>
<td>65g (1)</td>
<td>60</td>
</tr>
<tr>
<td>Calcium fortified cereals</td>
<td>30g</td>
<td>137</td>
</tr>
<tr>
<td>Calcium fortified hot oat cereals</td>
<td>15d (1 tablespoon dry cereals)</td>
<td>200</td>
</tr>
<tr>
<td>Broccoli, boiled</td>
<td>85g (2 spears)</td>
<td>34</td>
</tr>
<tr>
<td>Spring greens</td>
<td>75g (1 serving)</td>
<td>56</td>
</tr>
<tr>
<td>Curly kale</td>
<td>67g</td>
<td>100</td>
</tr>
<tr>
<td>Medium orange</td>
<td>120g (1 medium)</td>
<td>75</td>
</tr>
<tr>
<td>Dried apricot</td>
<td>5 apricots</td>
<td>20</td>
</tr>
</tbody>
</table>

From the British Dietetic Association Food Fact Sheet on Calcium [www.bda.uk.com](http://www.bda.uk.com)

What about Vitamin D?

Vitamin D is needed by the body to absorb calcium and the best source is from the action of sunlight on the skin. Vitamin D is only found in a few foods so a supplement is recommended for everyone.

<table>
<thead>
<tr>
<th>Target group</th>
<th>Recommended supplement (SACN 2016)</th>
<th>Do not exceed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breastfeeding mothers</td>
<td>Equivalent to 10 micrograms /day or 400IU</td>
<td>100 micrograms /day</td>
</tr>
</tbody>
</table>

NB micrograms (mcg) can also be written as µg. IU stands for International Unit.

If your baby requires a cows’ milk free diet then you should be referred to a Paediatric Dietitian or a trained Health Professional for advice on introducing solids and to ensure you are achieving a nutritionally adequate diet.


This sheet was written by Dietitians working in Dorset, Hampshire and the Isle of Wight - 2018
**Milk Free Diet**

For babies

**Why a milk free diet?**

Around 3% of children develop Cow’s Milk Protein Allergy (CMPA). In most cases a strict cow’s milk free diet is needed to treat the allergy. This information will help you avoid cow’s milk whilst making sure your child gets all the nutrition they need to grow and develop well.

**Which milk should be excluded?**

*All cow’s milk including fresh, UHT, sterilised and dried milk should be avoided. The diet should be free of cow’s milk protein (casein and whey) and milk sugar (lactose). Other mammalian milks are not suitable alternatives to cow’s milk as their protein structure is similar and may still cause an allergic response. Therefore, do not use milks such as goats, sheep, camel and buffalo milk.*

**Replacing cow’s milk**

Milk is an important source of nutrition for babies and children. If you are breastfeeding, ideally continue to do so alongside introducing cow’s milk protein free solids. This is because breastmilk can protect against developing other food allergies. Breastfeeding mothers should also follow a milk free diet (see ‘Milk free diet for breastfeeding mothers’).

If your baby is taking an infant formula, it needs to be a milk free formula.

**Suitable infant formula free of cow’s milk proteins**

Your baby may have been prescribed an allergy formula such as Similac Alimentum, Althera, Nutramigen LGG, Aptamil Pepti, (or more rarely Alfamino, Puramino, Neocate or Pepti-Junior). They should continue this until 12 months or as advised by your Health Care Professional.

For babies over 6 months, Wysoy is a soya based infant formula to consider. This does not need to be prescribed as it is available to buy from pharmacies and larger supermarkets at a similar price to standard infant formula.

Most babies aged 6-12 months need approximately 600ml (20oz) each day to ensure they are meeting their nutritional needs, especially Calcium. Over 1 year this amount reduces to around 350ml (12oz). These amounts do vary according to the child and their diet. Check with your Health Visitor or Dietitian if you have concerns about their calcium needs.

**Other alternatives to cow’s milk for cooking**

Alternatives to milk that are fortified with calcium are available to buy from most supermarkets. They can be used in cooking from six months of age or as a main drink after one year old.

Examples include: Soya, Nuts (Almond, Coconut, Cashew, Hazelnut), Oat or Hemp milks. Brands include Supermarket’s own range, Alpro range, Oatly range. Rice milk should not be given to children under 4.5 years old.

*Always choose a milk alternative that is fortified or enriched with calcium – they should provide at least 120mg of calcium /100mls. Organic versions do not usually have calcium added – check the label.*

Please be aware that some milk alternatives may not be suitable for other allergies and some may be low in calories, protein, calcium and/or other vitamins and minerals. Discuss with your Health Visitor or Dietitian if unsure.

**Foods to avoid**

Some of the foods to avoid are obvious. However, many other foods may contain cow’s milk proteins and these should be avoided too. Look for the list of ingredients printed on the package and avoid foods which have ‘milk’ in bold on the label. When eating out, food outlets need to provide you allergy information by law, so always ask.

Check with your Pharmacist about tablets or medicines which may contain milk proteins and/or lactose.

**Introducing solids (Weaning)**

Starting solids for a baby who has Cow’s Milk Protein Allergy should be the same as for non-allergic baby, except of course you must not give any foods that contain cow’s milk or dairy products (see list). Aim to start around six months, but not before four months (17 weeks). For general information on introducing solids, check the NHS choice website (www.nhs.uk) and type in ‘weaning’ into the search box.
Adapting Recipes
Many ordinary recipes can be adapted by using your milk alternative. Use a milk free margarine instead of butter, milk alternatives in place of milk, and soya/vegan cheese in place of ordinary cheese. Try making up batches of milk free meals/puddings and freezing them in ice-cube trays to allow you to serve small portions with less waste.

What about Calcium?
Calcium is needed for strong teeth and bones. Babies under 1 need 525mg/day, 1-3 year olds need 350mg/day.

Sources of Calcium (portion sizes are not necessarily baby size!)

<table>
<thead>
<tr>
<th>Best source - Foods providing 250mg of Calcium</th>
<th>Portion Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sardines/pilchards – canned (including boned)</td>
<td>60g or half a tin</td>
</tr>
<tr>
<td>Soya cheese</td>
<td>55g</td>
</tr>
<tr>
<td>Tofu</td>
<td>50g</td>
</tr>
<tr>
<td>Calcium-enriched milk alternatives</td>
<td>200mls</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Foods providing 150mg of Calcium</th>
<th>Portion Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curly Kale/spring greens</td>
<td>90g</td>
</tr>
<tr>
<td>Tahini paste (sesame seed paste)</td>
<td>20g (1 tsp)</td>
</tr>
<tr>
<td>Fortified milk free breakfast cereal</td>
<td>35g</td>
</tr>
<tr>
<td>Soya yoghurt/dessert</td>
<td>125ml pot</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
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<td>Tinned salmon</td>
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<td>90g</td>
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</thead>
<tbody>
<tr>
<td>White bread</td>
<td>60g (2 slices)</td>
</tr>
<tr>
<td>White flour products e.g. milk free hot cross buns</td>
<td>1</td>
</tr>
<tr>
<td>Cabbage</td>
<td>90g</td>
</tr>
<tr>
<td>Dried figs</td>
<td>20g or 1 dried</td>
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<tr>
<td>Chapatti x 1</td>
<td>55g</td>
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<tr>
<td>Egg</td>
<td>1 medium</td>
</tr>
<tr>
<td>Hummus</td>
<td>50g</td>
</tr>
<tr>
<td>Dried fruit e.g. sultanas</td>
<td>50g or 2 tablespoons</td>
</tr>
<tr>
<td>White fish poached in water</td>
<td>170g</td>
</tr>
<tr>
<td>Wholemeal bread x 2 slices</td>
<td>60g</td>
</tr>
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What about Vitamin D?
Vitamin D is needed by the body to absorb calcium and the best source is from the action of sunlight on the skin, however young children should not be exposed to the sun for long. Vitamin D is only found in a few foods so a supplement is recommended for everyone.

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A supplement containing vitamins A, C and D can be given from 6 months, rather than Vitamin D alone (Department of Health advice). This is a precaution because growing children may not get enough of these vitamins, especially those not eating a varied diet, such as fussy eaters. Supplements are available to purchase in pharmacies and supermarkets, or may be available on prescription. Ask your Health Visitor or Dietitian for advice. Vitamins are also available from the Healthy Start Scheme.

Useful website for further help and practical tips: [http://www.cmpasupport.org.uk/](http://www.cmpasupport.org.uk/)
**Milk and Soya Free Diet**

**For babies**

**Why a milk and soya free diet?**
Around 3% of children develop Cow’s Milk Protein Allergy. Some children who are allergic to cow’s milk protein are also allergic to soya protein so this may need to be excluded from the diet too. It can take longer for children to recover, but many ‘grow out’ of cow’s milk and soya protein allergy. This information will help you avoid cow’s milk and soya whilst making sure your baby gets all the nutrition they need to grow and develop well.

**Which milks should be excluded?**
All cow’s milk and Soya milk including fresh, UHT, sterilised and dried milk should be avoided. The diet should be free of cow’s milk protein (casein and whey), milk sugar (lactose) and soya proteins. Other mammalian milks are not suitable alternatives to cow’s milk as their protein structure is similar and may still cause an allergic response. Therefore, do not use milks such as goats, sheep, camel and buffalo milk.

**Replacing cow's and soya milk**
Milk is an important source of nutrition for babies and children. If you breastfeed you baby, ideally continue to do so when introducing cow’s milk and soya protein free solids. This is because breastmilk can protect against developing other food allergies. Breastfeeding mothers should also follow a milk and soya free diet (see ‘milk free diet when you are breastfeeding’).

If your baby is taking an infant formula, it needs to be a milk and soya free formula.

**Suitable infant formula free of cow's milk and soya proteins**
Your baby may have been prescribed an allergy formula such as Similac Alimentum, Althera, Nutramigen LGG, Aptamil Pepti (or more rarely Alfamino, Puramino, Neocate or Pepti-Junior). They should continue this until 12 months or as advised by your Health Care Professional.

Most babies aged 6-12 months need approximately 600ml (20oz) each day to ensure they are meeting their nutritional needs, especially Calcium. Over 1 year this amount reduces to around 350ml (12oz). These amounts do vary according to the baby and their diet. Check with your Health Visitor or Dietitian if you have concerns about their calcium needs.

**Other alternatives to cow’s milk and soya milk for cooking**
Alternatives to milk that are fortified with calcium are available to buy from most supermarkets. They can be used in cooking from six months of age or as a main drink after one year old.

Examples include: Nuts (Almond, Coconut, Cashew, Hazelnut), Oat or Hemp milks. Brands include Supermarket’s own range, Alpro range or Oatly range. Rice milk should not be given to children under 4.5 years old.

Always choose a milk alternative that is fortified or enriched with calcium – they should provide at least 120mg of calcium /100mls. Organic versions do not usually have calcium added – check the label.

Please be aware that some milk alternatives may not be suitable for other allergies and some may be low in calories, protein, calcium and/or other vitamins and minerals. Discuss with your Health Visitor or Dietitian if unsure.

**Foods to Avoid**
Some of the foods to avoid are obvious. However, many other foods may contain cow’s milk and/or soya proteins and these should be avoided too. Look for the list of ingredients printed on the package and avoid foods which have ‘milk’ and/or ‘soya’ in bold on the label. When eating out, food outlets need to provide you allergy information by law, so always ask.

Check with your Pharmacist about tablets or medicines which may contain milk or soya proteins and/or lactose.

**Introducing solids (Weaning)**
Starting solids for a baby who has Cow’s Milk and Soya Protein Allergy should be the same as for non-allergic baby, except of course you must not give any foods that contain cow’s milk, soya or dairy products. Aim to start around six months, but not before four months (17 weeks). For general information on introducing solids, check the NHS choice website (www.nhs.uk) and type in ‘weaning’ into the search box.
Adapting Recipes
Many ordinary recipes can be adapted by using your milk alternative. Use a milk and soya free margarine instead of butter and milk alternatives in place of milk. Try making up batches of milk and soya free meals/puddings and freezing them in ice-cube trays to allow you to serve small portions with less waste.

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Supplements are available to purchase in pharmacies and supermarkets, or may be available on the Healthy start Scheme. Ask your Health Visitor or Dietitian for advice

Useful website for further help and practical tips: [http://www.cmpasupport.org.uk/](http://www.cmpasupport.org.uk/)

www.what0-18.nhs.uk
This sheet was written by Dietitians working in Dorset, Hampshire and the Isle of Wight - 2018
Why a lactose free diet

Some babies **temporarily** do not tolerate the natural milk sugar ‘lactose’ which is found in breastmilk and ordinary infant formula (made from cow’s milk, and also in goat’s and sheep’s milk).

**Lactose intolerance in infants is usually a short-term problem. It occurs most often following a bad bout of gastroenteritis (stomach bug) and can lasts for up to 2 - 4 months.** Lactose should only be avoided if the symptoms cause significant distress to the baby (e.g. crying, pain, nappy rash etc.)

**Lactose-free infant formulas** are available such as SMA LF, Aptamil Lactose Free or Enfamil 0-Lac. These taste similar to ordinary formulas and are available from pharmacies to buy. Until the age of 1, it is important your baby drinks at least 600ml (20 ounces) a day of a lactose-free formula to receive sufficient nutrients, especially calcium.

**General advice for introducing solids** (Although this will not be dairy free specific, more detailed information available at [http://www.nhs.uk/start4life/documents/pdfs/introducing_solid_foods.pdf](http://www.nhs.uk/start4life/documents/pdfs/introducing_solid_foods.pdf))

- Solid food should be introduced at **around 6 months of age**, when your baby shows signs that he/she is ready (sitting up, holding head, reaching for food...).
- First foods can include a wide range of simple, unprocessed foods (rice, oats, barley, semolina, peas, beans, lentils, meat, fish, eggs, ground nuts, fruit and vegetables).
- Babies progress at different paces. You can offer different consistencies: smooth, soft, mashed foods, or finger foods.
- Gradually increase the amount and range of foods to include foods from the ‘allowed’ list overleaf.
- Never add sugar or salt to your baby’s food, and avoid processed foods (foods with more than a handful of ingredients on the label).
- Wheat, nuts, seeds, fish, shellfish, eggs and soya should not be introduced until 6 months of age.
- Never leave a baby unsupervised with foods.
- By 1 year of age, most babies can manage to eat chopped up family meals.

**Can I give other drinks?**

The main drink for your baby needs to be breastmilk and/or lactose-free formula. If other drinks are needed, cooled boiled water is the best drink to give. Baby juices are not necessary and they would just encourage your baby to have a sweet tooth. Tea should not be given to babies and small children as it reduces iron absorption from your child’s diet.

**Milk substitutes to be used in cooking**

If your baby is having a Lactose Free formula, these can be used in cooking. The Lacto-free brand milk and products can also be used. Alternatively soya, oat, hemp or nut milks can be used in cooking (as long as they are calcium enriched and not used as a main drink until 1 year of age). Please note rice milk is **not** recommended for babies and children under 5 years.

**Lactose and cheese**

Lactose is found in soft cheeses e.g. cream cheese and cheese spreads, mozzarella, feta. However, due to the maturing process of hard cheese, most of the lactose has been removed. Therefore, hard cheeses such as cheddar and Edam are usually tolerated on a lactose-free diet.

**Check labels:** **All milk-containing products must now clearly state ‘milk’ in the ingredient panel on the label. Most supermarkets will provide a list of milk free foods.**

www.what0-18.nhs.uk

This sheet was written by Dietitians working in Dorset, Hampshire and the Isle of Wight - 2018
# Lactose Free Foods

<table>
<thead>
<tr>
<th><strong>Fruit and Vegetables</strong></th>
<th><strong>Lactose free</strong></th>
<th><strong>Foods to avoid or check labels for ‘milk’ in the ingredient list</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>All plain vegetables and fruit – puréed, mashed and finger foods</td>
<td></td>
<td>Vegetables mixed with sauces made from cow’s milk</td>
</tr>
<tr>
<td>Fruit mixed with dairy-free alternative to custard, cream</td>
<td></td>
<td>Fruit mixed with ordinary yogurt/custard/cream/ice-cream</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Meat/fish/eggs/pulses/nuts</strong></th>
<th><strong>Lactose-free infant formula</strong></th>
<th><strong>Processed Meat/ fish/ eggs/ pulses/ nuts products</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain meat/fish/eggs/pulses/nuts/quorn/tofu</td>
<td>Cow’s, goat’s and sheep’s milk and all products made from these Ordinary yogurts Soft cheese e.g. cheese spreads, cream cheese, mozzarella, feta</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Dairy Products</strong></th>
<th><strong>Lactose-free infant formula</strong></th>
<th><strong>Cow’s, goat’s and sheep’s milk and all</strong></th>
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</thead>
<tbody>
<tr>
<td>Lacto-free brand products (can be used in cooking from 6 months)</td>
<td>Dairy-free yogurts and desserts Ordinary yogurts</td>
<td></td>
</tr>
<tr>
<td>Hard cheese e.g. Cheddar, Edam</td>
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<tr>
<th><strong>Starchy Foods</strong></th>
<th><strong>Bread and Flour</strong></th>
<th><strong>Others</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Potatoes, sweet potatoes</td>
<td>Milk breads, brioche Pasta in cow’s milk based sauces</td>
<td></td>
</tr>
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<td>Pasta, Rice</td>
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<tr>
<td>Breakfast cereals (check label)</td>
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<tr>
<th><strong>Others</strong></th>
<th><strong>Any oils, lard, dripping</strong></th>
<th><strong>Butter, ordinary margarine</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy-free margarine e.g. Pure™, Vitalite™, Tomor™, Flora dairy-free, supermarket own dairy-free brand</td>
<td>Ice-cream, cream Milk chocolate, chocolate spread</td>
<td></td>
</tr>
<tr>
<td>Biscuits/cakes if milk-free</td>
<td>Biscuits/cakes that contain milk</td>
<td></td>
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<tr>
<th><strong>Baby Jars/Packets</strong></th>
<th><strong>All baby jars/packets/rusks which do not have ‘milk’ in the ingredient list</strong></th>
<th><strong>All baby jars/packets/rusks which have ‘milk’ in the ingredient list</strong></th>
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*consistency given appropriate to age

## How long does my baby need a lactose-free diet?

Most babies grow out of lactose intolerance once their gut has recovered. To test this, try giving small amounts of dairy products e.g. ordinary yogurt or food made from cow’s milk. If your baby has loose nappies and is unsettled, stop lactose-containing foods and try again in 1 - 2 weeks. It will take a bit of time for your baby to regain his/her ability to digest lactose, so increase the amount gradually.

If your child is still lactose intolerant at 1 year of age, please ask your Health Visitor/GP to refer her/him to a registered Dietitian.

## What about Vitamin D?

Vitamin D is needed by the body to absorb calcium and the best source is from the action of sunlight on the skin, however young children should not be exposed to the sun for long. Vitamin D is only found in a few foods so a supplement is recommended for everyone.

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NB micrograms (mcg) can also be written as μg.
Many items that usually contain cows’ milk protein can be adapted by using a suitable milk alternative and a dairy free margarine. All the family can then eat the same foods helping you to provide a range of healthy meals. Recipes can easily be adapted for soya free diets too – avoiding soya cheese alternatives and using a non-soya alternative to milk and a non-dairy spread that is soya free.

Helpful hints

- Many meals do not need to contain milk - such as roast dinners or casseroles served with potatoes and plain vegetables.
- Use a calcium fortified milk alternative (e.g. soya, oat, coconut…) to make sauces, pancakes, batter and desserts. Do not use rice milk for children Under 4.5 years old.
- Use cornflour mixed with water to thicken sauces, or make a roux with a milk free margarine and your child’s milk alternative.
- Allow hot drinks to cool a little before adding soya milk as it may curdle.
- Grate soya/vegan hard cheeses on the fine part of the grater if they are not melting very well.
- Use a dairy free melting cheese (Cheezly super-melting mozzarella™) on pizza, cheese on toast and on lasagne.
- Use a hard dairy free cheese (Sheese™) to make cheese sauces. Grate on the fine part of the grater so that it melts more easily. Using a microwave will save it sticking to the bottom of the saucepan (which also works for dairy free custard & porridge).
- Use plain dairy free yogurts or coconut milk alternative to make curries, raita, stroganoffs, creamy sauces and dips.
- Try Soyatoo™ whipping cream (spraycan), or Oatly cream as an alternative to cream.
- Use dairy free/vegan cream cheese/sour cream or dairy free plain yogurt in dips, cheesecakes, quiches and savoury and sweet sauces.

Recipes

<table>
<thead>
<tr>
<th>Savoury</th>
<th>Sweets and Desserts</th>
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<tbody>
<tr>
<td>Basic white sauce</td>
<td>Custard</td>
</tr>
<tr>
<td>Fish Pie</td>
<td>Rice pudding</td>
</tr>
<tr>
<td>Shepherd’s Pie</td>
<td>Pancakes</td>
</tr>
<tr>
<td></td>
<td>Ice cream</td>
</tr>
<tr>
<td></td>
<td>Sponge cake</td>
</tr>
<tr>
<td></td>
<td>Cherry muffins</td>
</tr>
<tr>
<td></td>
<td>Flapjacks</td>
</tr>
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<td>Ginger biscuits</td>
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Some recipes taken from ‘Cow’s milk free diet for infants and children’ Produced by FAISG of the BDA (2012)
**Basic White Sauce**

**Ingredients:**
- 20g (¾oz, 1 tbsp) dairy free margarine
- 20g (¾oz, 1 tbsp) plain flour or corn flour
- 300ml (½pint) milk alternative
- Salt and pepper to taste

**Hob Method:**
Place all ingredients in a pan and heat gently, whisking continuously until the sauce thickens.

**Microwave Method:**
Place all ingredients in a bowl. Whisk to remove lumps. Microwave it for 30 seconds and then whisk. Repeat this until it makes a smooth sauce. Flavour with cooked mushrooms, vegetables or parsley.

---

**Fish Pie (for family of 4)**

**Ingredients:**
- 300g (12oz) fillet of haddock or cod
- 300g (12oz) potatoes
- 1 hard-boiled egg
- 2 tomatoes
- 50ml (2 fl oz) milk alternative
- 15g (1/2 oz) milk free spread
- 300ml parsley sauce (use white sauce recipe and add 2 tbsp parsley)

**Oven temperature:** 350°F / 180°C / Gas Mark 4

**Method:**
Bake fish for 20 minutes. Boil potatoes and make parsley sauce. Flake cooked fish and add to sauce, season and place in ovenproof casserole dish. Skin and slice tomatoes, slice hard-boiled egg and place on top of fish. Cream potatoes with milk free spread and alternative milk, season and place on top of fish mixture. Bake in the oven for 20 minutes.

---

**Custard (Hob or microwave)**

**Ingredients:**
- 150ml (¼pint) milk alternative
- 15g (½oz, ½ tbsp) milk free custard powder

**Method:**
Mix the custard powder with 2 tablespoons of the milk alternative. Gently warm the remaining milk alternative on the hob or in the microwave until almost boiling. Remove from the hob/microwave and pour over the custard paste, stirring continuously. Return to the hob/microwave and heat for 2-3 minutes stirring regularly.

---

**Shepherd’s Pie (for family of 4)**

**Ingredients:**
- 450g minced lamb
- 1 large onion
- ¾ courgette
- 4 medium mushrooms
- Tin of chopped tomatoes
- 2 tbsp tomato puree
- Beef stock cube (milk free)
- 1 garlic clove
- 2 large potatoes
- 1 dessert spoon of milk free spread
- 1 tbsp milk alternative

**Oven temperature:** 350°F / 180°C / Gas Mark 4

**Method:**
Fry the mince in the frying or saucepan with oil if needed. When brown, drain off excess fat. Add chopped onion and garlic, cook for 2 minutes then add chopped courgette and mushrooms. Cook for 5 minutes. Add chopped tomatoes, tomato puree, season with salt and pepper. Mix well. Leave to simmer for 20 minutes. Meanwhile peel, slice and boil the potatoes for 15 minutes. Once cooked mash with milk alternative and milk free spread. Place meat sauce in an ovenproof dish and spread the mashed potato on top. Cook in the oven at 350°F / 180°C / Gas Mark 4 for 10 minutes.

---

**Ginger biscuits**

**Ingredients:**
- 75g (3oz) golden syrup
- 150g (6oz) self-raising flour
- 100g (4 oz) milk free margarine
- 10ml (2 level tsp) ground ginger
- 75g (3 oz) caster sugar
- Large pinch of bicarbonate of soda

**Oven temperature:** 375°F / 190°C / Gas Mark 5

**Method:**
Grease two baking sheets
Sieve flour, ginger and bicarbonate of soda into a bowl
Melt syrup, margarine and sugar in a pan
Stir and leave to cool for 5 minutes
Form into balls, place on baking sheet and flatten slightly
Bake for 10 minutes. Transfer to wire rack to cool whilst still warm
### Easy Ice-Cream

Use soya ready-made custard (e.g. Alpro™, Provamel™), put in ice-cream machine (according to volume specified by the manufacturer) and select the standard ice cream setting. Alternatively, put the custard in the freezer and stir or whisk once an hour until almost frozen.

### Rice Pudding

**Ingredients:**
- 50g (2oz) pudding rice
- 600ml (1 pint) milk alternative
- 25g (1oz) caster sugar

**Method:**
Put rice and milk into a pan. Heat gently for 2 hours, stirring occasionally. Add sugar and serve.

Or, put rice, milk and sugar into a greased ovenproof dish and bake in an oven at 150°C (300°F, gas mark 2) for 2 hours, stirring occasionally.

### Sponge Cake

**Ingredients:**
- 120g (4oz) dairy free margarine
- 120g (4oz) caster sugar
- 120g (4oz) plain sifted flour
- 1 teaspoon baking powder
- 2 eggs

**Method:**
Blend the margarine and sugar together until light and fluffy. Beat in the eggs slowly. Stir in the flour and baking powder, place in a greased and floured 18cm/7inch cake tin and bake at 180°C (360°F, gas mark 4) for 30 – 40 minutes.

Adaption for chocolate cake - replace 2 dessertspoons of flour with cocoa (milk free).

### Flapjacks

**Ingredients:**
- 100 g (4oz) milk free margarine
- 200g (8oz) rolled oats
- 4 level tbsp golden syrup
- Pinch of salt
- 75g (3oz) granulated sugar

**Oven temperature:** 335°F / 170°C / Gas mark 3

**Method:**
Grease a square shallow tin (approx 18cm/7inch) Melt margarine and syrup in a pan over a gentle heat. Remove from heat; add sugar, oats and salt. Mix thoroughly, turn into prepared tin. Bake for 30-40 mins until golden brown. Leave to cool in the tin for 5 minutes then cut into bars and cool on a wire rack.

### Pancakes

**Ingredients:**
- 300ml milk alternative
- 1 egg
- 125 g plain flour
- 4 tsp sunflower oil

**Method:**
Sieve the flour, make a well and crack the egg into it. Mix together and gradually add the milk alternative until smooth. Heat the oil in a non-stick frying pan, add a ladle of mixture, tip the pan so its just enough to cover the base, cook for 30 seconds. Use a spatula to flip the pancake over and cook for another 30 seconds. Repeat until used up the batter. Serve with sugar and lemon juice.

### Muffins – orange & cherry

**Ingredients:**
- 1 orange
- 125ml (4 fl oz) orange juice
- 1 egg
- 185 g (6 oz) plain flour
- 170 g castor sugar
- 125 g milk free spread
- 1 tsp bicarbonate of soda
- 1 tsp baking powder
- ¼ tsp salt
- 125 g cherries (washed)

Preheat oven to 220°C (400°F, gas mark 6)

**Method:**
Peel rind from orange, remove all pith, cut rind into small pieces. Remove membrane and seeds from orange and cut into small segments. In a food processor, place orange rind, segments and orange juice, milk free spread and egg and process until combined and mixture has curdled. Transfer into a large bowl. Sift in flour, bicarbonate of soda, baking powder and salt and mix lightly to combine. Batter should be lumpy. Fold in cherries. Divide batter between 12-16 greased muffin tins or cases, filling two thirds full. Bake for 18-20 minutes and cool on a wire rack.
For children with mild to moderate symptoms
It is important to try your baby with milk now. This is to make sure that any improvement in their symptoms is due to cutting out milk (and they have a cow’s milk protein allergy) rather than for any other reason.

Do NOT start this challenge if your child has had a positive blood or skin test (Specific IgE or Skin Prick Test) to cow’s milk.

Do NOT start this challenge if your child is unwell, e.g.
- Has a cold or any other lung infections or breathing problems
- Any tummy/bowel problems e.g. tummy ache or loose nappies
- Any ‘teething’ signs that are upsetting your child
- Atopic dermatitis (eczema) has flared up

Do NOT start this challenge if your child is having any medication which may upset their tummy, e.g. antibiotics.

Do NOT try any other new foods during this challenge.

Try to write down what your child eats and drinks during the challenge. Also note any symptoms e.g. sickness, loose nappies, rashes or any changes in their atopic dermatitis.

Home challenge for a formula fed baby (Those taking formula with or without some breastfeeds):

<table>
<thead>
<tr>
<th>Day</th>
<th>Volume of boiled water</th>
<th>Cow’s milk formula No. of scoops</th>
<th>Hypoallergenic formula No. of scoops</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>150mls</td>
<td>1 in the 1st bottle of day</td>
<td>4 in the 1st bottle of day</td>
</tr>
<tr>
<td>2</td>
<td>150mls</td>
<td>2 in the 1st bottle of day</td>
<td>3 in the 1st bottle of day</td>
</tr>
<tr>
<td>3</td>
<td>150mls</td>
<td>3 in the 1st bottle of day</td>
<td>2 in the 1st bottle of day</td>
</tr>
<tr>
<td>4</td>
<td>150mls</td>
<td>4 in the 1st bottle of day</td>
<td>1 in the 1st bottle of day</td>
</tr>
<tr>
<td>5</td>
<td>150mls</td>
<td>5 in the 1st bottle of day</td>
<td>0 in the 1st bottle of day</td>
</tr>
</tbody>
</table>

Follow the advice in the adjacent table: each day, increase the amount of cow’s milk formula given in baby’s FIRST bottle of the day. Use the scoop provided in each tin.

If you have not seen any symptoms in your child by day 5 (when you have completely replaced one bottle a day with cow’s milk formula) you can try giving cow’s milk formula for each feed they would usually have from a bottle.

Home challenge for an exclusively breastfed baby:
Simply start eating dairy products to the same levels as before starting on the diet.

All babies:
If you see any obvious symptoms e.g. sickness, tummy pains, a rash, itching, STOP the challenge. Go back to the previous formula baby was taking or to a milk free diet if you are breastfeeding, and inform your GP.
If you do not see any symptoms within 2 weeks of your baby having more than 150mls cow’s milk formula per day, or you having resumed your normal diet containing milk, then your baby does not have a cow’s milk protein allergy.
An assessment of your child’s allergy, medical history and/or results indicate that it is time to see if they have outgrown their food allergy. This can be done by adding milk into the diet gradually at home.

Milk is introduced into the diet by following a ‘milk ladder’ where each food contains increasing levels of milk protein. It is important to start with well-cooked/processed milk first before progressing to ‘raw’ dairy products. This ‘milk ladder’ is based on scientific research. Some of the foods may seem unusual to include in an infant’s diet, but it is because the type and amount of protein is suitable for the reintroduction process.

Remember, these foods are part of a mixed diet and are not expected to be a significant part of the child’s diet.

The Milk Ladder should only be used in children with Mild to Moderate Non-IgE cow’s milk protein allergy under the supervision of a healthcare professional.

- Do NOT start this challenge if your child has had a positive blood or skin test (Specific IgE or Skin Prick Test) to cow’s milk.
- Do NOT start this challenge if your child is unwell, e.g.
  - Has a cold or any other lung infections or breathing problems
  - Any tummy/bowel problems e.g. tummy ache or loose nappies
  - Any ‘teething’ signs that are upsetting your child
  - Atopic dermatitis (eczema) has flared up
- Do NOT start this challenge if your child is having any medication which may upset their tummy, e.g. antibiotics.
- Do NOT start this challenge if your child is taking antihistamin (e.g. Piriton, Zirtek...)
- Do NOT try any other new foods during this challenge.

Throughout the challenge, it is useful to keep a record of the foods tried/the amounts eaten and any reaction (including how long after the food was eaten did the reaction occur).

Before starting the Milk Ladder

Make sure you have a suitable antihistamine at hand (ask your pharmacist)

Start the challenge by testing some cow’s milk on your child’s skin (on the cheek or where eczema may flare up).

Wait a couple of hours, if no reaction (e.g. rash/itchy skin) progress to the Milk Ladder. Each of the foods listed contain progressively more milk protein in them. Try each food for a few days (up to a week) before moving onto the next food.
The Milk Ladder (available here on the web)
This Milk Ladder is designed to be used with homemade recipes to ensure that each step has the appropriate milk intake. You can ask your health professional for the recipes if you wish. If you prefer to use store-bought alternatives seek further advice from your healthcare professional if necessary.

1. One malted milk biscuit, build up to three. If using store-bought biscuits rather than homemade look for a biscuit that contains milk powder rather than whey powder.

2. Half a muffin and build up to one muffin.

3. Half a pancake and build up to one. If using store-bought pancakes, they should contain milk protein rather than whey powder. (Pancakes contain less milk than muffins but are cooked for a shorter time).

4. Half an ounce (15g) of hard cheese such as cheddar or parmesan. Once tolerated introduce 15g baked cheese e.g. on a pizza or lasagne

5. Try 125mls (4.5oz) yogurt. Once your child tolerates yogurt you can include butter, chocolate buttons and cream cheese.

6. Pasteurised milk (or suitable infant formula). Introduce 100mls pasteurised cow’s milk or infant formula (powder) and mix with current milk replacement. If this is tolerated switch all current milk replacements to pasteurised milk or suitable infant formula. UHT and sterilised milk will be tolerated as well.

Some children may be able to tolerate a certain amount of cow’s milk in their diet e.g. include milk in foods, have ordinary butter/margarine and cheese but are unable to tolerate drinks of milk. If they have more than the amount that they are able to tolerate then they may develop symptoms (up to 48 hours later). If this is the case it is sensible to include dairy products and cow’s milk up to the certain amounts they can tolerate while remaining symptom free.

If at any time your child has a reaction then you should STOP THE TEST but re-try in 6 months.

Symptoms of a reaction are usually similar to the reaction your child first presented with.

These include:

- Tingling, itching in mouth
- Developing rash
- Dry/red patches of skin appearing
- Nausea/vomiting
- Abdominal pain
- Diarrhoea / constipation
- Wheezing (give inhaler if available)

If any of these occur at any stage in the reintroduction, give your child some antihistamine and monitor their condition.

You and/or your child may feel quite nervous about trying this milk challenge, this is quite normal but you can help them by allowing adequate time and doing the challenge at home under your supervision in a calm environment.

They may also find cow’s milk products have a different taste/smell to the foods they are used to. Give your child time to accept the new tastes and flavours during the challenge period.
All children need to eat a variety of foods to achieve a balanced diet that is essential for growth and good health. Some children who are not growing well or who have certain medical conditions may need extra calories and protein in their diet.

**General advice**
- Aim to give 3 meals and 2-3 small snacks daily. Spread the meals and snacks evenly throughout the day.
- Avoid foods labelled as ‘low fat’ or ‘diet’.
- Avoid offering drinks 1 hour before meals as they can reduce their appetite.
- Measure & record your child’s weight regularly: once every 2 months is usually recommended.
- All babies under 1 should take an over the counter childrens’ multivitamin supplements each day which includes vitamin D, unless they drink 500mls of infant formula.

### The 5 Food Groups

<table>
<thead>
<tr>
<th>Do</th>
<th>Best choices</th>
<th>Top tips</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Milk, cheese, yogurt</strong></td>
<td>Use full fat dairy products or alternatives (the fat content should be at least 4 grams / 100 grams)</td>
<td>Add to sauces, omelettes, scrambled eggs, jacket potatoes, mashed potato, vegetables, baked beans etc.</td>
</tr>
<tr>
<td>Give your child breast or formula milk until they are at least 1 year old.</td>
<td>Cheddar / cream cheese</td>
<td></td>
</tr>
<tr>
<td><strong>Fats &amp; Oils</strong></td>
<td>Avoid low fats spreads</td>
<td></td>
</tr>
<tr>
<td>Fats are the richest source of calories</td>
<td>Use an oil high in mono-unsaturated fats</td>
<td></td>
</tr>
<tr>
<td><strong>Protein rich foods</strong></td>
<td>Aim for 2 portions daily</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meat and meat alternatives (quorn, soya mince etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eggs, pulses (lentils, beans)</td>
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<tr>
<td></td>
<td>Salmon and mackerel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ground almonds, peanut butter</td>
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<tr>
<td><strong>Starchy foods</strong></td>
<td>Include at least one portion at each meal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cereals, breads, potatoes, pasta, rice</td>
<td></td>
</tr>
<tr>
<td><strong>Fruit &amp; vegetables</strong></td>
<td>Aim to give up to 5 small portions per day. One portion is about half an adult handful or a tablespoon</td>
<td></td>
</tr>
<tr>
<td>These are low in calories but are an important source of vitamins and minerals</td>
<td>Avocados</td>
<td>Try mashed as a dip or in sandwiches</td>
</tr>
<tr>
<td></td>
<td>Dried fruit</td>
<td>Limit dried fruit /smoothies to one serving a day as they are high in sugar</td>
</tr>
<tr>
<td></td>
<td>Smoothies and fruit juices</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vegetables</td>
<td></td>
</tr>
<tr>
<td><strong>Sugary foods</strong></td>
<td>Such as biscuits, cakes, sweets &amp; chocolate, ice cream should be limited to after meals rather than snacks. Choose no added sugar drinks such as milk or water and avoid fizzy drinks. Sugar is harmful to your child’s teeth — aim to brush their teeth twice a day and visit the dentist regularly.</td>
<td></td>
</tr>
<tr>
<td><strong>Between-meal snack ideas</strong></td>
<td>Small energy dense snacks can be useful to boost nutritional intake but avoid within one hour of meals, as they may reduce their appetite:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Banana, dried fruit (watch the size to avoid choking risk)</td>
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</tr>
<tr>
<td></td>
<td>• Mashed avocado +mayonnaise, peanut butter or cream cheese on bread/toast (or bagel/ crumpets)</td>
<td></td>
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<tr>
<td></td>
<td>• Cheese pieces</td>
<td></td>
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<tr>
<td></td>
<td>• Greek style Yogurt, plain or with fruit puree</td>
<td></td>
</tr>
</tbody>
</table>
Mealtimes are a time for learning about food and eating and should be an enjoyable experience. Eating together as a family encourages the child to copy eating and drinking behaviour. It is also a social time for families so eating together should be encouraged.

Make sure your child is sitting in an appropriate chair and is sitting with the rest of the family.

A calm, relaxed environment for eating and drinking may be helpful for some children, especially if they are easily distracted, however some children may benefit from background noise. Try both approaches to find out what works best for your child.

Use brightly coloured bowls and plates. These may make the meal look more appealing.

Try not to show your concern or make negative comments in front of your child.

Never leave your child unsupervised whilst he or she is eating or drinking.

Offer regular meals and snacks at set times, as this is better than letting your child ‘pick’ through the whole day.

Avoid fluids just before and during meals, as this will reduce your child’s appetite. Often children are not hungry because they have had too much juice or milk during the day and night. Try to avoid giving more than 1½ pints of fluid during the day. Children over the age of one year should only be offered milk or water; and not be given drinks during the night.

Give your child lots of positive praise when he or she does eat and ignore any food refusal; calmly offer the food three times before telling your child the meal is over, then remove the meal without any further comment.

Limit mealtimes to 20 minutes. Try not to rush a meal, as your child may be slow to eat, but try not to let the meal drag on for too long. Your Dietitian will advise you on how to increase the energy density of your child’s meal so the mealtime can be reduced, if necessary.

Offer new foods in a predictable pattern, e.g. once a week for 8 weeks. Intersperse new meals with old ones. E.g. 3 new teatime/lunches and 4 tolerated teatime/lunches a week.

Do not worry if they make a mess, this is an important part of your child’s development. If your child stops eating at a meal, try once to encourage him or her to take a little more. If this is successful show that you are pleased and give positive verbal reinforcement.

Never use food as a reward.

NEVER force feed your child.

Only check your child’s weight once every 8 weeks. Most fussy eaters maintain good growth despite their apparent lack of intake.
Infant Formula – **Request Form from Health Visitors**

All fields **must** be completed – incomplete forms will be returned to the Health Visitor

### Child Details

<table>
<thead>
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### Surgery details

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### Health Visitors details

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<tr>
<td>Date</td>
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</table>

### Assessment (NICE recommendation CG116)

- **Allergy-Focused Clinical History Completed & attached**: Yes

### Treatment / Advice

Refer to the Infant Formula Guidelines for more detailed information on / help with conditions

#### Gastro-oesophageal Reflux Disease (GORD) – Thickened Formulas

- **Advise parent to purchase OTC DO NOT PRESCRIBE**
  - **Aptamil anti-reflux, Cow&Gate anti-reflux**
  - **SMA Pro anti-reflux or HiPP organic anti-reflux**

- **Advise on preparation**
  - If anti-reflux formula not possible: Carobel Instant* to add to usual formula

#### Secondary Lactose intolerance (Primary lactose intolerance is rare) up to 8 weeks

- **Formula-fed / Mixed**
  - **Advise parent to purchase OTC DO NOT PRESCRIBE**
    - **SMA LF** Aptamil Lactose-Free*
    - **Enfamil O-Lac**

#### Cows Milk Protein Allergy – Mild-Moderate (Extensively Hydrolysed Formulæ or EHF)

<table>
<thead>
<tr>
<th>Key</th>
<th>Product</th>
<th>Pack Size</th>
<th>Cost per 100Kcal*</th>
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<th>Quantity*</th>
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<tbody>
<tr>
<td>1st Line</td>
<td>Similac Alimentum*</td>
<td>400g tin</td>
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<tr>
<td></td>
<td>SMA Althéra*</td>
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<td></td>
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<td></td>
<td>Aptamil Pepti 2*</td>
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<td></td>
<td>Nutramigen LGG 1*</td>
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<td>Nutramigen LGG 2*</td>
<td>400g tin</td>
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</tbody>
</table>

*Prescribe **2 tins initially** until compliance / tolerance is established.

### Written information given

Details:

### Follow Up Plan

Details

---

Produced by Prescribing Support Dietitians

Published September 2018 – review September 2019
**Infant Formula - Request Form from Secondary Care**

All fields **must** be completed – incomplete forms will be returned to the requesting clinician.

### PATIENT DETAILS
- Name
- DOB
- NHS number

### SURGERY DETAILS
- Name
- Phone
- Fax

### PAEDIATRIC DIETITIAN / PAEDIATRICIAN DETAILS
- Clinician / Dietitian
- Direct Dial
- Date of consultation
- Location

### DIAGNOSIS
- [ ] Cow’s milk protein allergy
- [ ] Faltering growth
- [ ] Secondary lactose intolerance
- [ ] Pre-Term / IUGR infant
- [ ] Gastro-Oesophageal Reflux Disease (GORD)
- [ ] Other – Specify:

**Date of next review to assess ongoing need for infant formula**

### PRESCRIPTION REQUEST DETAILS

#### Treatment Goals / Duration

#### Expected date of Milk Challenge if applicable

<table>
<thead>
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<th>Key</th>
<th>Product</th>
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<td>1&lt;sup&gt;st&lt;/sup&gt; Line</td>
<td>SMA Pro Gold Prem 2*</td>
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<tr>
<td>Extensively Hydrolysed Formulae (EHF) - Cow’s Milk Protein Allergy 1&lt;sup&gt;st&lt;/sup&gt; line</td>
<td>Similac Alimentum</td>
<td>400g tin</td>
<td>£0.43</td>
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<td>400g tin</td>
<td>£0.50</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Line</td>
<td>Nutramigen LGG Lipil 1</td>
<td>400g tin</td>
<td>£0.56</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Line</td>
<td>Nutramigen LGG Lipil 2</td>
<td>400g tin</td>
<td>£0.58</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Amino Acid Formulae</td>
<td>SMA Alfamino</td>
<td>400g tin</td>
<td>£1.14</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Line</td>
<td>Nutramigen Puramino*</td>
<td>400g tin</td>
<td>£1.38</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Line</td>
<td>Neocate LCP® / Syneo®</td>
<td>400g tin</td>
<td>£1.51</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>EHF with Medium Chain Triglycerides (MCT)</td>
<td>Highly specialised</td>
<td>Aptamil Pepti-Junior®</td>
<td>450g tin</td>
<td>£0.57</td>
<td>☐</td>
</tr>
<tr>
<td></td>
<td>Neocate LCP® / Syneo®</td>
<td>400g tin</td>
<td>£1.51</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>High Energy Formulae</td>
<td>SMA PRO High Energy</td>
<td>90/200mls</td>
<td>£0.99</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Line</td>
<td>Similac High Energy</td>
<td>60/200mls</td>
<td>£1.17/£1.18</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Line</td>
<td>Infatrini®</td>
<td>125/200mls</td>
<td>£1.16</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Line</td>
<td>Highly specialised</td>
<td>Infatrini Peptisorb®</td>
<td>200mls</td>
<td>£1.77</td>
<td>☐</td>
</tr>
<tr>
<td>Lactose-free formulae: Advise to purchase from pharmacy/chemists’</td>
<td>OTC Formulae must be purchased initially</td>
<td>Aptamil LF / Enfamil O-Lac® / SMA LF®</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Thickened or thickening formula - Gastro-Oesophageal Reflux Disease (GORD)</td>
<td>OTC Formulae must be purchased initially</td>
<td>Anti-reflux (e.g. Aptamil/Cow&amp;Gate/HiPP) (pre-thickened)</td>
<td>☐</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other please specify with rationale:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*prices correct as of Mims July 2018  **Prescribe 2 tins initially until compliance / tolerance is established. Maximum of 28 days’ supply thereafter
Allergy Focused Clinical History Form (Adapted from NICE CG116 2011)

Infant Details

Name: .................................................................
NHS number: ..........................................................
DoB: ......................... Age: ........ Months / Weeks
Weight (+centile): ..............................................
Length (+centile) ..................................................
Head Circumference (+centile): ..................................
Form completed by: ........................... Date: .................................................................

Feeding History

☐ Exclusively breastfed (until ..................)
☐ Mixed feeding (from ..................)
☐ Exclusively Bottle Fed (from ..................)

Medication: ..........................................................

Types of infant formula tried:
☐ First milk formula: ...........................................
☐ Lactose free formula: ....................................
☐ Reflux formula: ..............................................
☐ Soya formula: ..............................................
☐ Comfort formula: ..........................................
☐ Other formula: ..............................................

Name of current formula ........................................

Started ☐ No ☐ Yes (details): ..............................

Solids? ...............................................................
References

Venter et al. *Clinical and Translational Allergy* 2013, 3, 238 http://www.ctajournal.com/content/3/1/23
NICE Clinical Guideline 116 Food Allergy in Children and Young People. 2011  https://www.nice.org.uk/

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.


Hojasak et al. Arsenic in Rice: A cause for concern, *JPGN* 2015, 60


National Institute for Health and Care Excellence. *CG37*: Postnatal care up to 6 weeks after birth, 2006
K. Grimshaw et al. The introduction of complementary foods and the relationship to Food Allergy. *Paediatrics* 2013: 132(6)
A. Hast. Frequency of Cow’s Milk Allergy in Childhood. *Ann All Asthma & Imm 2002: 89* (suppl 6) pp33-37

Acknowledgements
Adapted from Ipswich and East Suffolk Clinical Commissioning Group (Judith Harding, Prescribing Support Dietitian, NHS Essex CSU, SW Essex Medicines Management Team Implementation Arm)

Changes made with thanks to:
Paeidiatric Dietitians and Paediatricians at Hampshire Hospitals NHS Trust, Portsmouth Hospitals NHS Foundation Trust, University Hospital Southampton NHS Trust, Frimley Health NHS Trust, Poole Hospital NHS Foundation Trust and Dorset County Hospital NHS Foundation Trust. Community Dietitians from Dorset Health Care NHS Trust.

Health Visitors from Southend Health NHS Trust and Solent NHS Trusts.
GP prescribing leads from West Hampshire CCG, North Hampshire CCG, North East Hampshire and Farnham CCG and South East Hampshire CCGs.

Medicines Management teams from South East Hampshire CCG, particularly Jess Collins, pharmacy technician.

Dr Martha Wyles, Consultant Paediatrician at Hampshire Hospitals NHS Foundation Trust and Mark Tighe, Consultant Paediatrician at Poole Hospital NHS Foundation Trust.

Finally, a big thank you to the Wessex Healthier Together project, PIER and WANG networks and particularly to Dr Sanjay Patel, Consultant Paediatrician at Southampton Children Hospital NHS Trust for his continued support and guidance.