GUIDELINES FOR FEEDING INFANTS AND CHILDREN UNDER 5 YEARS OLD

(Excluding Breast Feeding)
Introduction

The following guidelines have been produced for all health care professionals who work with infants and children from 0-5 years. They are research based and provide up to date advice on infant feeding, weaning and providing a healthy, balanced diet for all infants and children under 5 years of age. This guidance purposely excludes advice on breastfeeding as this is covered in a number of linked policies and guidance developed by Salisbury Maternity Service— the links are given below and can be found on ICID.

Breastfeeding policy
Guidance on supporting mothers to bottle feed
Enhancing lactation with medication
Management of babies at high risk of developing hypoglycaemia
Management of babies at low risk of hypoglycaemia
Division of Tongue-tie in Neonates
Prevention of excessive weight loss in the newborn

A link to guidance on mastitis:
Information for mothers about donating milk to the milk bank for breastfeeding mothers.

Breastfeeding is acknowledged to be the most beneficial food for babies protecting against infection and promoting physical development supported by an increasing accumulation of research evidence. Breastfeeding is also a healthy option for women, reducing the risks of breast cancer, osteoporosis and some forms of ovarian cancer. All professional staff working with new mothers and babies must know the principles embedded in the Ten Steps for Successful Breastfeeding’ outlined by the Baby Friendly Hospital Initiative. All mothers have the opportunity to discuss infant feeding with a midwife during their pregnancy and are offered support from the Maternity Services for the first 10 days after delivery, whether breast or artificially feeding. They may receive support up to 28 days if this is required and access advice from the hospital Infant feeding Coordinator/Lactation Consultant. Mothers should also be
encouraged to seek further support from local peer support
groups and national support organisations and helplines.

This document has been developed to support key information
providers including Midwives, Health Visitors and GPs as well as
Children Unit Staff within the hospital setting.

The guidelines are intended to increase professional knowledge
and promote best practice in infant feeding and ultimately, to
promote consistent advice for parents and carers.

As health professionals, it is our responsibility to be familiar with
these guidelines and to aim to avoid inconsistent and confusing
messages reaching parents.

This guidance also identifies indicators for referral on to
secondary care through the infant’s GP in line with national
guidance.
Contents

1  INFANT FORMULA MILK.................................................................7
   1.1  Whey and Casein Based Formulas ......................................7
   1.2  Feed Requirements ..............................................................8
   1.3  Making Up Feeds.................................................................9
   1.4  Follow-on Milks (All Casein-Dominant) .............................11
   1.5  Good Night Milks ...............................................................11

2  OTHER MILK DRINKS......................................................................13
   2.1  Soya Based Infant Formulae .................................................13
   2.2  Soya Milk Drinks .................................................................15
   2.3  Cow’s Milk .............................................................................16
   2.4  Mammalian Milks – Goat and Sheep .................................16
   2.5  Oat Milk ................................................................................17
   2.6  Rice Milk ................................................................................17

3  OTHER DRINKS................................................................................19
   3.1  Water ......................................................................................19
   3.2  Other Drinks ..........................................................................20

4  WEANING ..........................................................................................23
   4.1  When to Wean .........................................................................23
   4.2  Stage 1 and baby led weaning (ideally from six months (26 weeks) but no earlier than 4 months (17 weeks)) ...........................................25
   4.3  Stage 2 (around 7 months) ....................................................26
   4.4  Stage 3 (from 9 months) .......................................................27
   4.5  Home-made vs. Commercial Baby Foods ............................27
   4.6  Salt .........................................................................................28
   4.7  Honey .....................................................................................29
4.8 Careful Weaning for Infants with Allergy to Cow’s Milk or in Families with an Allergic History ......................... 29
4.9 Weaning Pre-Term Infants........................................ 30

5 VITAMIN AND MINERAL SUPPLEMENTATION .............. 31
5.1 Vitamin Supplementation and Healthy Start Scheme 31
5.2 A Guide to Calcium.................................................. 33

6 SPECIAL DIETARY CONSIDERATIONS ....................... 37
6.1 Vegetarian and Vegan Diets ....................................... 37
6.2 Cultural and Ethnic Diets............................................. 43
6.3 Iron Deficiency Anaemia.............................................. 47
6.4 Faddy Eating and Food Refusal .................................. 49
6.5 Infantile Colic............................................................ 52
6.6 Gastro–Oesophageal Reflux (GOR)............................... 54
6.7 Constipation .............................................................. 55
6.8 Toddler Diarrhoea......................................................... 58
6.9 Cow’s Milk Protein Allergy (CMPA) ......................... 59
6.10 Lactose intolerance.................................................... 63
6.11 Coeliac Disease/Gluten Intolerance ......................... 64

7 INFANT FEEDING REFERENCES ............................... 65
7.1 Sources of information .............................................. 65
1 INFANT FORMULA MILK

1.1 Whey and Casein Based Formulas

Breast milk is the best food for a new baby and it can also provide the main drink throughout the first year of life. If this source is unavailable, infant formula milk can also be used throughout the first year. Cow's milk formula is modified to make it suitable as an alternative to breast milk for infants under 1 year. Formula milk cannot substitute for the unique irreplaceable qualities of breast milk.

There is a wide range of standard infant formula available. The composition of standard infant formulas must comply with strict criteria set by the European Union regulations.

There are two types - whey based formula and casein based formula. Whey and casein are two types of milk protein. Whey based formula are recommended as these more closely mimic breast milk in terms of their whey: casein ratio. Whey based formulas are suitable has a main drink up to and beyond 12 months.

The casein based milks are often labeled as stage 2 or second milks, but there is no need for babies to move from whey based to a casein based formula. These formulas have a higher renal solute load than whey based milks. Care should be taken that these are not over concentrated when prepared. Casein based formulas have been shown to slow stomach emptying.
### Table of infant formulas

<table>
<thead>
<tr>
<th>Manufacturers</th>
<th>Whey based milks whey:casein ratio: 40:60</th>
<th>Casein based formula whey:casein ratio: 20:80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow &amp; Gate (C&amp;G)</td>
<td>C &amp; G First infant milk</td>
<td>C &amp; G Hungrier Babies</td>
</tr>
<tr>
<td>Milupa</td>
<td>Aptamil First infant milk</td>
<td>Aptamil Hungry</td>
</tr>
<tr>
<td>SMA</td>
<td>SMA First infant milk (used to be SMA Gold)</td>
<td>SMA Extra Hungry (used to be SMA White)</td>
</tr>
<tr>
<td>Hipp Organic</td>
<td>Hipp Organic First Infant milk</td>
<td>Hipp Organic Extra Hungry Infant milk</td>
</tr>
</tbody>
</table>

All the infant formulas now contain long chain polyunsaturated fatty acids (LCPs) as evidence is growing that LCPs are beneficial for good growth, brain development and vision. LCPs are present in breast milk.

In addition, most infant milks now contain different blends of Oligosaccarides or dietary fibres. These are also naturally present in breast milk and promote natural gut flora. There are 2 types added: prebiotic Galacto- and Fructo- Oligosaccharides (GOS/FOS). SMA First and Extra Hungry milks contain neither and Hipp First and Hipp Hungry only contain GOS.

### 1.2 Feed Requirements

The general rule for bottle feeding is to feed to 150-200ml/kg/24hours over 6-8 feeds in healthy term infants. As with breast fed infants, bottle fed infants should also be fed to demand and requirements do vary.
1.3 Making Up Feeds

- All UK milks should be made up with one scoop of milk powder to 30ml of water (water added first).
- All feeds should be made up fresh for each feed. To achieve safe reconstitution of feeds when out and about or overnight, parents should be advised to fill a dedicated flask with boiling water that can be measured out into disinfected bottles and the powder added at the time the feed is required.
- Boiled, fresh tap water should be used. Boiled water should be cooled to no less than 70 degrees. To achieve this temperature, the water should be left for no more than 30 minutes after boiling.
- Any milk left at the end of a feed or left for 2 hours should be discarded.
- Water that has been artificially softened by a chemical softener is **NOT** recommended for infant feeding, due to its high mineral content. Water should be taken from the tap that has been left “untreated”.
- Water from water filter jugs should not be used, because the bacteria and their toxins produced in the charcoal filter are not necessarily destroyed by boiling.
- Bottled water should only be used to make up feeds if reliable tap water is not available, uncarbonated bottled water that has a sodium content less than 200mg per 1000ml such as Evian, Vittel, and Highland Spring Water. Bottled water should be treated in the same way as tap water i.e. boiled before use.
- Infant formula should **NOT** be warmed in a microwave oven once it is in the feeding bottle because very hot fluid in the centre of the bottle may scald the infant. The milk feed will continue to cook and heat after it is removed from the microwave.
- No sugar or solids should be added to bottles e.g. feeds should not be thickened with baby cereals or rusks etc. This concentrates the feed and can cause acute thirst in the baby. Adding food to milk in bottles is also known to delay feeding skills and poses a choking hazard.

- Feed thickeners should only be used under medical supervision and only specialist thickening agents such as Instant Carobel, Thick and Easy or Thixo-D should be used.

- All equipment used to feed the infant under 6 months should be disinfected e.g. breast pump, bottles, teats, spoons and bowls etc. Salt should not be used to clean teats. After 6 months it is only necessary to disinfect bottles and teats.

Infants and young children are particularly vulnerable to disease because of their immature immune system. **Health professionals need to ensure that all parents in their care realise the importance of bottle hygiene.** This is necessary to avoid the risk of infectious intestinal disease. Many babies will have a bottle feed at some time, even if only the occasional bottle of expressed breast milk so all parents should be shown how to disinfect equipment.

Education should always be given on the importance of correct reconstitution. Over concentration of feeds can lead to electrolyte overload, dehydration and obesity. Over diluted feeds can lead to inadequate intake of nutrients and failure to thrive.

Some manufacturers produce their formula milk as Ready to Feed milk available to purchase in cartons and sachets. This should be stored according to the manufacturer’s instructions.

Resources: Guidelines for the safe preparation and handling of powdered infant formula, WHO, 2007

Guide to Bottle Feeding How to prepare infant formula and sterilise feeding equipment to minimise the risks to
1.4 Follow-on Milks (All Casein-Dominant)

Follow on formulae have a higher iron content than infant formula milk and are an alternative to infant formulae for infants over 6 months. Iron stores laid down before birth are becoming depleted by six months but, a nutritious weaning diet can provide the extra nutrients required so changing to a follow-on formula is not necessary.

Growing up milks aimed at 10 month to 3 year olds depending on the manufacturer are also not necessary for those eating a varied diet.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Product name</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMA nutrition</td>
<td>Follow-on milk (number 2)</td>
</tr>
<tr>
<td>Cow &amp; Gate</td>
<td>Follow-on milk</td>
</tr>
<tr>
<td>Milupa</td>
<td>Aptamil Follow-on</td>
</tr>
<tr>
<td>Hipp Organic</td>
<td>Follow-on milk</td>
</tr>
</tbody>
</table>

1.5 Good Night Milks

These are not recommended. They are higher in calories than other follow-on milks and contain rice and buckwheat. The most effective way to settle a baby is to establish a consistent and predictable bedtime routine.
2 OTHER MILK DRINKS

2.1 Soya Based Infant Formulae

There is evidence of potential risk to health of infants fed soy infant formulas. Since the COT report of 1996, two studies raised concern over the possible long term effects of using soy formula in infancy. One relating to a significant increase in prolonged and painful menstruation in adult women fed soy formula as infants and the other indicated an increase in the number of Leydig cells in the testes and suppression of the testosterone rise in neonatal marmosets partially fed soy formula compared with cow’s milk based formula.

These studies do give rise for concern, but more studies (particularly more long term studies) are needed to clarify the safety of soya based infant formulas.

It is therefore recommended as a precautionary measure, that the use of soy based formulas as first line treatment should be discouraged during the first six months of life for the following reasons:

- Permanent changes due to phytoestrogens are most likely to occur during this developmental stage of 4-6 months.
- Some infants with cow’s milk allergy may also be sensitized to soy protein, particularly before 6 months.
- The prevalence of concomitant soy allergy in infants with cow’s milk allergy varies between IgE and Non-IgE mediated disease. It ranges between 10-14% and up to 50% respectively. (BDA position statement, 2010)

Despite the potential risks outlined above there is clinical need to use soy based infant formula in the following groups:

- Infants with cow’s milk allergy/ intolerance who refuse extensively hydrolysed / amino acid formulas.
• Vegan mothers- these should be strongly encouraged to breast feed, but if they are unable to breastfeed or chose not to do so, soya formula would be the only suitable choice.

• Galactosaemia – some units consider the low lactose content of the low lactose formulas too high for the treatment of galactosaemia and the use of extensively hydrolysed formulas not appropriate for this condition.

From the Age of Six Months:

From the age of six months soya formulas can be used for the treatment of cow’s milk protein allergy/ intolerance and lactose intolerance where soya is being considered or used in the weaning diet. The risks after the age of six months are likely to be reduced as the dose of phytoestrogens per kilogram body weight will be lower as the infants begins to take solids. Also, the infant’s potentially vulnerable organ systems are likely to have matured by this age, therefore reducing the risk of any long-term harm.

Previous research expressed concerns about soy formula increasing the risk of developing peanut allergy (Lack, 2003). However, a recent study concluded that using a soy formula during the first 2 years of life did not increase the risk of developing a peanut allergy (Klemola, 2005).

In summary if cow’s milk protein allergy/ intolerance is suspected then an extensively hydrolysed formula or amino acid formula should be used in under 6 month olds following assessment by their GP/ Paediatrician. These products are only available on prescription. See Section 7.9. for more detail.

For parents with children already on soya milk formula, they can remain on this or can be switched if the parents are at all concerned.
### Table of suitable soya infant formulae

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Product name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow &amp; Gate</td>
<td>InfaSoy</td>
</tr>
<tr>
<td>SMA Nutrition</td>
<td>Wysoy</td>
</tr>
</tbody>
</table>

#### 2.2 Soya Milk Drinks

Soya formulae are not being discouraged for use in older infants under the age of 2 years. They should continue to be used in preference to supermarket soya milk until such time as an infant or child is no longer cow’s milk allergic.

Soya milk drinks are available in shops and health food stores but they are not the same as soya infant formula. Most are often low in energy, vitamins and minerals. Therefore are not suitable for children under the age of 2 years.

However, a soya milk company has launched a new soya milk aimed at children over the age of 1 year. This soya milk has been fortified with extra energy, calcium, vitamin D, iron, Vitamin C and B1. It can be used as a main drink like cow’s milk is in a child over the age of one without allergy or intolerance. It is becoming more widely available in mainstream supermarkets.

For children over the age of 2, a standard adult soya milk drink can be introduced, provided that their diet is varied and provides adequate calcium. Always choose fortified soya milk drinks with added calcium e.g. Provamel, Alpro, So Good or supermarkets own calcium enriched soya milk.

Other suitable products in weaning infants are soya cheeses and yogurts and desserts - always encourage parents to choose calcium enriched products if at all possible.
2.3 Cow's Milk

Whole, pasteurised cow’s milk can be given as a main drink after the age of one year. It does not contain the right balance of nutrients for infants and is particularly low in iron. It is also low in Vitamin D, which is essential for good bone development.

Cows' milk can be given in small quantities for mixing in with custard, other milk puddings or on baby cereal, from weaning age. Formula milk may be more convenient for this especially if the rest of the family is having semi-skimmed or skimmed milk.

From one until five years of age, approximately 600ml (1 pint) of pasteurised full fat cow’s milk daily should be encouraged. This includes milk used on cereal, in custard, yoghurts and sauces.

After the age of 2, semi-skimmed milk can be introduced gradually as a main drink as long as a young child is eating well and getting plenty of calories and nutrients from a varied diet.

Fully skimmed milk is not suitable as a main drink for a young child until they are 5 years old as it does not contain enough calories or vitamins.

Excessive consumption of milk will reduce appetite and may lead to iron deficiency anaemia. See Section 6.3 for more detail.

2.4 Mammalian Milks – Goat and Sheep

Infant milks based on goat’s milk are no longer available in the UK.

Goats or sheep's milk should not be given to children under 1 year of age for the same reasons as cow’s milk is not given – they have a high solute loads and are low in vitamins. If used in older infants it should be boiled before use if not already pasteurised. Diets will need to be supplemented with vitamins A, D, iron, and folic acid.
Goats and sheep's milks contain similar milk proteins to cow's milk and offer no benefit in cow's milk protein allergic infants.

2.5 Oat Milk

Oat milks are now available in supermarkets and health food shops these are low in energy, vitamins and minerals. There are calcium enriched varieties which could be used in infants over the age of 2 years as a main drink providing their diet is nutritionally adequate. Oat milk is particularly useful for children allergic to both milk and soya. Oat milk can be useful in cooking.

Oat cream can be used widely in cooking and can help fortify the diet with energy.

2.6 Rice Milk

Rice milk is no longer recommended as a main drink in under 5 year olds, due to concerns regarding arsenic content. The Food Standards Agency recommended this in May 2009, because young children will potentially drink a relatively large amount of it, and therefore their intake of arsenic will be greater than that of older children and adults relative to their bodyweight.

There is no concern regarding baby rice and other rice products, having high levels of inorganic arsenic.
3 OTHER DRINKS

3.1 Water

Breast fed infants do not generally require any additional drinks. If necessary, cooled boiled water can be given but most infants will simply take in more breast milk. Bottle fed infants may need extra fluid during hot weather.

Always use freshly boiled water for making up feeds and drinks of water in infants under 6 months of age, as re-boiling water will concentrate the mineral content. After 6 months of age tap water no longer needs to be boiled unless it is being used to make infant formula.

In older houses where piping may be made of lead, advise parents to run the tap for at least one minute.

Water filters and softened waters

The use of a water filter to remove "impurities" in tap water has become popular in recent years. However, water filters are breeding grounds for bacteria and filtered water used for infants under 6 months of age must be boiled. Freshly filtered water can be given to older infants.

Softened water produced by an ion-exchange system contains high levels of sodium and must not be used to prepare infant formulae. If an installed water softener is present, water should be taken from the rising main.

Bottled water

Some parents wish to use mineral or spring water for their babies, as they perceive them to contain fewer chemicals and other contaminants. However, bottled waters are not sterile and must be boiled for infants under the age of 6 months.

The sodium content of the water should not exceed 200mg/l, and the sulphate content not higher than 250mg/l. Some brands of spring water currently exceed this level, and parents should be aware of the need to check labeling information to ascertain that the product is suitable.
3.2 Other Drinks

Infants in their first year need breast milk or about 500ml of formula milk each day, as a main drink. If an infant is over 6 months old and breast fed or drinking less than 500ml formula they will require vitamin supplementation, see Section 6.1 for more detail.

From 6 months, fruit juices or “baby” juices can be given as part of a meal but it is recommended that parents continue to offer only water. The high acidity and sugar content of these drinks may adversely affect dental health, so it is suggested that they should be diluted, 1 part fruit juice to at least 10 parts water (DoH Birth to Five). They should never be served in a bottle or a (non-spill) valved feeder.

Drinks should be offered from an open cup from 6 months. If beakers are used encourage a free flowing teat so this skill can be developed, rather than a (non-spill) valved feeder.

Bottles should be discouraged after one year, including at bedtime. This is a difficult time but parents should be encouraged to gradually cut these down and replace with drinks from a beaker. The practice of leaving infants with a bottle of milk in their cot at bedtime should be strongly discouraged.

If flavoured drinks, squash etc. are consumed in excess or between meals, they are likely to reduce appetite for more nutrient dense drinks and foods. Excess intake can also contribute to faltering growth and toddler diarrhoea.

Drinks containing artificial sweeteners are not recommended for use in infants, and may in any case be just as acidic and detrimental to teeth as sugar-containing alternatives. It is worth noting these drinks are not intended for babies and children.

Tea and Coffee

Tea and coffee should not be given as the tannins and polyphenols in them inhibit iron absorption.
Herbal Drinks

All herbal drink and herbal teas should be discouraged due to their high sugar content and because the pharmacology of these drinks is unknown.
4  WEANING

4.1  When to Wean


Weaning is necessary because energy and nutrient needs become too large to be met by milk alone. Stores of iron, for example, are depleted by about 6 months of age and additional sources of iron need to be introduced. Weaning in addition, gives infants the opportunity to learn to like new tastes and textures, based on family foods, at a time when they are receptive to them. When weaning the baby onto solid foods, parents should be advised that the intake of milk should not drop when solid food is first introduced but will be complemented with the extra nutrients the baby needs at this age and which solid foods provide.

The Specialist Paediatric Group of the British Dietetic Association concludes that: Breastfeeding is the best form of nutrition for healthy infants and can provide complete nutrition for the first 6 months (26 weeks) of life for some infants.

Some infants may experience a faltering in their growth or show evidence of nutritional deficiencies when exclusively breastfed for 6 months (Butte et al 2002, Lanigan et al 2001). Therefore, individual circumstances need to be considered when professionals are giving advice on the introduction of solid foods.

Each infant should be managed individually and developmental signs of readiness for solid food in the infant and parental opinions should be taken into consideration when advising on the ideal age to begin weaning an infant. It is normal for babies aged three to five months to begin waking in the night when they have previously slept through. It is not necessarily a sign of hunger and starting solids will not make night time sleeping any more certain: but some babies may need an
increase in calorie intake which they can obtain by a return to demanding a feed at night, whether breast or formula feeding.

**By six months all infants should be started on some solid food.** But weaning onto solid foods should not happen before 4 months (17 weeks).

Infants who are weaned at or near 6 months start by offering small amounts of mashed foods. In particular mashed food with soft lumps and soft finger foods and foods high in iron including meat, oily fish and pulses should be introduced from around 6 months.

Further studies to clarify the ideal age range for commencing weaning should continue. The age range recommended for beginning weaning should not be changed unless there is strong scientific evidence as frequent changes in policy undermine the credibility of HCPs with parents.

Whatever feeding decisions parents make (breastfeeding or formula feeding; early or later weaning) they need to be supported and given appropriate advice to ensure that all infants are fed safely and are having a nutritionally adequate diet.

**Useful resources:**

1. [http://www.nhs.uk/Planners/birthtofive/Pages/Healthydietweaninghub.aspx](http://www.nhs.uk/Planners/birthtofive/Pages/Healthydietweaninghub.aspx)
2. [http://www.nhs.uk/conditions/Babies-weaning/Pages/Introduction.aspx](http://www.nhs.uk/conditions/Babies-weaning/Pages/Introduction.aspx)
4.2 Stage 1 and baby led weaning (ideally from six months (26 weeks) but no earlier than 4 months (17 weeks))

At about six months, babies are ready to be moved to a mixed diet.

Baby-led weaning encourages the infant to feed him/herself with a mixture of hand held solid foods rather than initially feeding the infant just pureed foods. To date there has been very limited research to support baby-led weaning and until there is more evidence it is difficult to state any potential benefits or problems it may offer. However, studies have shown that children who, from 6 months onwards, have opportunities to eat a mixture of foods, both pureed and solid, have the greatest nutrient intakes and the healthiest diets throughout childhood and into adulthood (Cooke L 2007). It therefore, seems likely that the presentation of a variety of foods with differing flavours and textures that the child can explore is important, rather than a focus on puree food versus solid food per se (Reeves S, 2008).

Pureed or softened solids should be given from a small, shallow plastic spoon, beginning by offering 1-2 teaspoons after one milk feed. This should be to get the infant used to the idea of the spoon, rather than to provide nourishment.

Tips for starting weaning:

http://www.nhs.uk/Planners/birthtofives/Pages/weaningfirststeps.aspx


Initially the food should be a smooth, semi-liquid consistency and bland tasting. Suitable foods are baby rice, sago, maize or cornmeal, pureed or softened vegetables cooked without salt (e.g. potato, carrot),
pureed or softened non-citrus fruit (e.g. apple, pear, banana), and pureed or softened lentils, pulses and beans. These foods can be mixed with water, expressed breast milk or infant formula.

Food can progress to introduce new tastes and provide some nourishment. Solid foods can be increased to two, then three feeds per day and this is dictated by appetite, gradually replacing milk feeds. Breast or formula milk will continue to provide the majority of the infants needs at this stage. They will need equivalent to 568ml or 1 pint per day.

After six months, protein foods can be introduced for example: pureed meats, chicken, fish, liver (only once a week due to its high vitamin A content) and pulses. Pasteurised full cream cow’s milk (can be used in cooking and on cereals but not given as a main drink), cheeses, including full fat cottage cheese and plain yoghurts could also be introduced now.

**Eggs, gluten, soya and citrus fruits should not be included in the diet until six months.**

From six months, infants should be encouraged to drink from a cup or free flowing beaker and not given a bottle after 12 months due to the risk of dental caries and negative effect on oral skill development.

### 4.3 Stage 2 (around 7 months)

The aim now is to lessen the dependence on milk as a source of nourishment. At about six months encourage experimentation with food that has soft lumps, or is mashed.

- Introduce small lumps gradually.
- Solids can be given from three up to five times a day and should now be given before the milk feed with more substantial servings.
- Foods to include could be more family foods without added salt, sugar or spices.
- Foods should be mashed, minced or scrambled and then chopped.
- Finger foods can be introduced **always under supervision** - soft finger foods first e.g. bread, rice cakes, pitta bread, banana, cheese, moving onto harder foods such as carrot, apple and egg when chewing improves.
- Eggs, gluten and citrus fruits can now be introduced into the diet.

**Eggs should be cooked until firm to avoid the risk of salmonella.**

Nuts of a suitable texture i.e. ground nuts or peanut butter can be introduced from 6-8 months, unless the child has a known allergy or there is a strong family history of allergy, see Section 4.8 for more detail. Whole nuts should not be given before the age of 5 years due to the risk of choking.

**4.4 Stage 3 (from 9 months)**

From 9-10 months, parents should be encouraged to offer normal family foods which have been mashed or chopped as necessary. A regular meal pattern should be established and drinks should be offered from a cup. 3 meals a day with 2-3 nourishing snacks in between are recommended.

Finger foods are preliminary to full self-feeding. Examples include small cubes of fruit and vegetables, potato, toast, pasteurised cheese or soft meat such as thinly sliced ham/chicken.

**4.5 Home-made vs. Commercial Baby Foods**

There are advantages and disadvantages to each type and most parents find a mixture of both the best option.

Home-made foods are easily prepared, less expensive and preparing food at home enables control over what it contains. They also help the infant to develop a taste for family foods and to participate in family meal times from a young age.
Commercial baby foods are very convenient, especially dried varieties in the early stages of weaning to prevent wastage of food. They are however very expensive. Baby food manufacturers do need to comply with strict guidelines on their nutritional content. Therefore, they do provide a good balance of nutrients when a mixed diet is chosen, not just desserts. Advise parents to read the instructions on the packet carefully on how much liquid to add and whether this should be milk or water etc. Choose products marked low in sugar and salt.

Commercial baby foods are often fortified with vitamins and iron (with the exception of organic varieties).

Many commercial baby foods do add gluten and cow’s milk to their four month jars and packets which are not appropriate until six months of age.

**It is better not to use manufactured products exclusively, but to mix them with some fresh ingredients too.**

### 4.6 Salt

Infants under a year should have less than 1g salt per day, which is less than 0.4g sodium per day.

If parents want to use tinned foods, encourage the use of vegetables, beans, pulses, spaghetti without added salt.

Family meals can be adapted to be lower in salt by not adding salt to cooking and avoiding salty foods.

Certain tinned foods such as meats in gravy/ processed meats such as corned beef are very high in salt and should be avoided before six months at least, but are best avoided. If used in older infants, the gravy should be drained off before mincing to try to reduce the salt content.

Meat and yeast extract have a very high salt content and should not be included in the early weaning diet.

Gravy should not be added to weaning foods unless simply made from meat juices.
4.7 **Honey**

Honey can contain Clostridium Botulinum spores and due to this small risk of contamination, it should not be given to infants below the age of 1 year. Infant botulism is a rare parasitic disease caused by the micro-organism Clostridium botulinum. If an infant swallows enough spores, the spores can colonise the large intestine, multiply and produce toxin.

4.8 **Careful Weaning for Infants with Allergy to Cow’s Milk or in Families with an Allergic History**

Infants at high risk of allergy are those who have an atopic parent or sibling. The risk of atopy increases if a parent of sibling has atopic disease (20-40% and 25-35% respectively), and is higher still if both parents are atopic. (Bjorksen, B 2005). Ideally these infants should be breastfed throughout weaning and the high allergen foods should be introduced one at a time so that any reaction can be attributed to a specific food (Grimshaw, 2009). There is no clear evidence that delaying the introduction of these foods until after 6 months reduces the risk of allergy however some parents may prefer to do this (Grimshaw, 2009, Venter et al. 2009, Muraro et al. 2004).

The high allergen foods are milk, eggs, fish, shellfish, wheat, soya, peanuts, tree nuts, sesame seeds, lupins, celery, and mustard.

Previous advice was to avoid giving children peanuts and products made from peanuts, such as peanut butter before the age of 3 years. Advice has now changed due to lack of evidence to support this. Now the advice is to avoid peanuts before 6 months of age. If a child has known atopy, or immediate family history of atopy, the Department of Health (DH) recommend that parents seek advice from their GP, Health Visitor or Consultant Paediatrician before giving peanuts for the first time (Food Standards Agency, 2009).

Do not offer whole nuts to children under the age of 5 due to the risk of choking.
4.9 Weaning Pre-Term Infants

Each premature baby (born before 37 weeks gestation) should be considered individually and sometime between 5 to 8 months after their actual birth date is likely to be the best time to begin weaning (King & Aloysius 2009, King 2009). Many of the organ systems develop precociously following preterm delivery and it is considered safe to wean preterm infants at this time even though their age may be less than 4 - 6 months after their Expected Delivery Date (EDD). The majority may benefit from delaying until after 3 months from their EDD; this will allow more time for the development of motor skills which are desirable for safe transition to solid foods eg head control (van Haastert et al 2006, King 2009). All young babies, especially those born prematurely, need back and head support when they are fed to minimise the risk of choking.

More information is available on weaning preterm infants from a booklet produced by BLISS ‘The premature baby charity’: www.BLISS.org.uk.

As growth and nutritional status can be issues in this group, careful attention is needed to supply a diet of sufficient nutrient density and variety. They often need vitamin, mineral, and sometimes protein and energy supplements - particularly those that are breastfed. Preterm infants are a special case and advice should be sought from the Paediatric Dietitian and medical team who are caring for them.

Once weaning has started, it should proceed according to the guidelines above.
5 VITAMIN AND MINERAL SUPPLEMENTATION

5.1 Vitamin Supplementation and Healthy Start Scheme

From weaning age, infants become more at risk of developing nutritional deficiencies as their bodies need to gain nutrients from sources other than milk. This becomes particularly important from the age of six months.

The incidence of childhood rickets is increasing again and therefore a good intake of vitamin D rich foods through a varied diet and moderate exposure to summer sunlight should be encouraged, for mother and infant. Vitamin D is essential to aid the absorption of calcium from the diet.

All children aged between one and five years should receive Vitamin D supplements (SACN, 2007, DoH, 2005).

**Vitamin D** is found in fortified breakfast cereals and margarines, whole milk, eggs and oily fish. Vitamin D is made from sunlight under the skin.

Supplementation of Vitamin A, C and D in the form of Healthy Start vitamin drops available from Child Health Clinics or Abidec, available from local supermarkets/pharmacies, is necessary in infancy in the following circumstances:

a. Breast fed infants at risk of vitamin deficiency because of concerns about the adequacy of the mother’s diet during pregnancy. Supplementation should start at age 1 month.

b. Breast fed infants aged 6 to 12 months, where breast milk is their main drink because their vitamin stores may be depleted.

c. Formula fed infants consuming less than 500ml of infant formula per day.

d. Vitamin D deficiency has been found to be very common during and after pregnancy in mothers of South Asian and Black African origin, particularly
those who are inadequately exposed to sunlight on their skin. Infants who are born to these mothers, especially those who are breast fed, are at high risk of Vitamin D deficiency. They should receive 10mcg of Vitamin D in the form of infant A, C, D drops until adequate weaning is completed.

e. Infants using unsupplemented soya/ milk alternatives under the guidance of a Registered Dietitian/ Paediatrician.

There is no evidence that Vitamin D supplements at the doses recommended, in addition to what is normally consumed in the diet, are “harmful” (NICE, 2008).

**Healthy Start**

Healthy Start replaced the Welfare Food Scheme. It is now live throughout Great Britain and Northern Ireland.

The new scheme:

- includes fresh fruit and vegetables as well as milk and infant formula milk
- supports breastfeeding
- encourages earlier and closer contact between health professionals and families from disadvantaged groups.
- includes free vitamin supplements for children from 6 months until their 4th birthday, and free vitamin supplements for pregnant women and women with babies up to one year old.

Health Professionals working with people who qualify for Healthy Start, will need to encourage them to apply for the scheme and offer them appropriate health advice.

More information, including a dedicated section for Health Professionals is available at [www.healthystart.nhs.uk](http://www.healthystart.nhs.uk).
5.2 A Guide to Calcium

Calcium is vital for good bone and teeth development and in the prevention of osteoporosis in adult life. The risk of calcium deficiency is high in those infants who are milk allergic/intolerant or who dislike dairy products.

Sources of calcium are listed in the table below:

**Approx 250mg**
- 200ml (1/3rd pint) soya or fortified oat milk
- 1 pot (150g) plain yoghurt
- 1 Slice of fortified white bread (check label)
- 1/3 pint of milk (any type)
- 2 oz (half tin) sardines in tomato sauce
- 50g (2oz) Tofu
- Serving of milk pudding 200g (8oz)
- Slice of cheese and egg quiche 100g (4oz)

**Approx 200mg**
- 30g (1oz) cheddar cheese
- 30g (1oz) Edam cheese
- 130g (5oz) serving of spring greens or okra/curly kale or spinach

**Approx 150mg**
- 1 medium cheese scone
- 120g (5oz) serving of custard made with milk
- 50g (2oz) (half small tin) pilchards in tomato sauce
- 1 scoop of dairy ice-cream
- 3 dried figs
Approx 100mg
125g (small pot) soya yoghurt*
2 slices of white or wholemeal bread
500ml calcium-fortified mineral water
100g (4oz) slice of frozen pizza
1 pot (100g) fromage frais
(25g) large cheese spread triangle
½ small tin canned salmon (without bones)
100g (4oz) (small tub) cottage cheese
50g (2oz) (small bar) milk chocolate
15g (large tbls) sesame seeds

Approx 50mg
3 heaped tsp Horlicks powder
220g 1 small tin baked beans
8 dried apricot halves
145g (5oz) boiled cabbage
48g Plain scone
2 tbsp canned red kidney beans
Medium orange
¼ bunch (20g) watercress
1 frube / 1 petit filous (40g)

If infants do not take a range of calcium sources or their milk intake is low, then calcium supplementation should be considered. Supplements should only be given if the infant cannot be tempted to have more dairy products or calcium enriched soya products.
The amount and type of calcium supplementation given depends on the age of the infant and how much calcium they are receiving from their diet.

Requirements

<table>
<thead>
<tr>
<th>Calcium requirement</th>
<th>mg/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-12 months</td>
<td>525mg</td>
</tr>
<tr>
<td>1-3 years</td>
<td>350mg</td>
</tr>
<tr>
<td>4-6 years</td>
<td>450mg</td>
</tr>
</tbody>
</table>

Supplements which are suitable for infants and young children are:

- **Calcium Sandoz Syrup** provides 108mg calcium per 5ml
- **Calcichew (chewable tablets)** provides 500mg per tablet
- **Sandocal (effervescent tablets)** provides 400mg per tablet
6  SPECIAL DIETARY CONSIDERATIONS

6.1  Vegetarian and Vegan Diets

The majority of vegetarian diets can provide adequate nutrition to support normal growth and development. Nutritional requirements can be met if a varied diet is offered with attention to nutrients at risk of deficiency.

There is a wide range of dietary restriction under the general umbrella terms of vegetarian and vegan (see table below). The greater the dietary restriction, the higher the risk of nutritional deficiency. Those infants who tend to be most at risk of nutritional deficiencies are those who receive a vegan diet. A referral to a Dietitian may be appropriate if there are any nutritional concerns. Classification of diets

<table>
<thead>
<tr>
<th></th>
<th>Foods excluded</th>
<th>Protein source</th>
<th>Nutrient at risk of deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partial vegetarian</td>
<td>Red meat, Offal</td>
<td>Poultry, Fish, Beans, Lentils, Tofu/TVP, Quorn®</td>
<td>Iron</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Milk, Cheese, Yoghurt, Nuts, Eggs</td>
<td></td>
</tr>
<tr>
<td>Pescatarian (eat fish but no meat)</td>
<td>Red meat, Offal, Poultry</td>
<td>Fish, Beans, Lentils, Nuts, Eggs, Milk, Cheese, Yoghurt, Tofu/TVP, Quorn®</td>
<td>Iron</td>
</tr>
<tr>
<td>Lacto-ovo vegetarian</td>
<td>Red meat, Offal, Fish</td>
<td>Milk, Cheese, Yoghurt, Eggs</td>
<td>Iron</td>
</tr>
<tr>
<td>Foods excluded</td>
<td>Protein source</td>
<td>Nutrient at risk of deficiency</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---------------</td>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>Poultry</td>
<td>Beans, Lentils Nuts Tofu/TVP, Quorn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lacto vegetarian</td>
<td>Red meat Offal Poultry Fish Eggs Quorn®</td>
<td>Milk, Cheese Yoghurt Beans, Lentils Nuts Tofu/TVP</td>
<td></td>
</tr>
<tr>
<td>Vegan</td>
<td>Red meat Offal Fish Poultry Eggs Milk Cheese Yoghurt Quorn® Honey</td>
<td>Beans Lentils Nuts Tofu/TVP Soya products e.g. yoghurts</td>
<td></td>
</tr>
</tbody>
</table>

**Breastfeeding (vegetarian Mum):**

- Breast milk will meet the nutritional needs of the infant for the first 6 months of life, providing that Mum’s diet is adequate. Mum’s intake of calcium, vitamin D and iron should be considered. Supplementation may be necessary.
- Breastfeeding vegan Mums may also require vitamin
  \( B_{12} \) supplementation.

**Formula feeding:**

- Most infant formulas contain long chain polyunsaturated fatty acids (LCPs) that are beneficial for infant brain and retinal development. These LCPs are usually derived from fish oils. Parents may wish to consider the benefits of these fish oils.
- If there are concerns regarding dietary iron intake, follow-on formula may be considered after 6 months of age to provide additional iron. However this is not necessary if dietary intake is good.
- Vegan mothers wishing to stop breastfeeding have limited formula options. Certain soya formulas (not all) are classified as vegan. However, if given to infants under 6 months old parents should be made aware of the potential risks to development due to the phytoestrogen content. See [Section 3.1](#) for more detail.

**Balanced diet:**

For an infant over 6 months of age, there is a risk that a vegetarian/vegan diet might not meet their iron, energy and protein needs. Other concerns are that it may be too high in fibre, and may not provide adequate vitamin \( B_{12} \) if on a vegan diet. Therefore, recommend:

- Nutritious snacks in between meals (not too close to meal times so as not to reduce appetite)
- 2-3 servings or protein foods daily (see details below)
- Limit high fibre cereals. Opt for lower fibre options most of the time.
- Add extra fats to meals such as olive / rapeseed / vegetable oil, butter, cream or if vegan try soya/oat cream and vegan fat spreads.

Nuts are a good source of protein and energy. Whole nuts are not suitable for children under 5 due to risk of choking.
Finely ground nuts or smooth nut butters can be used, unless the child has a known allergy or there is a strong family history of allergy, See Section 4.8 for more detail.

See below for advice on specific nutrient

**Protein:**

- Meat alternatives, pulses, nuts and eggs (serve 2-3 times each day):
  - Meat substitutes such as textured vegetable protein (TVP), soya, tofu, or Quorn®
  - Beans, chick peas, lentils, hummus. Pulses must be thoroughly cooked
  - Eggs
  - Ground nuts or nut butters (see advice above under “Balanced diet” regarding choking and allergy)
- Milk and dairy (3 servings daily):
  - Milk:
    - Full fat/whole milk if age 1-2 years.
    - After age 2 years, semi-skimmed can be offered if eating and growing well.
    - Skimmed milk is not recommended in children under 5 years.
    - Vegan children should be offered standard adult calcium and vitamin fortified oat or soya milk once over the age of 2 years. However, these milks can be used in cooking/meals from 6 months. Rice milk is not suitable for children under 5 years due to low nutritional content and levels of inorganic arsenic.
      
      *(Food Standards Agency, 2009b)*
    - Yoghurt or calcium fortified soya yoghurt
    - Vegetarian cheese or soya cheese (check for calcium fortified varieties)
    - Milky puddings e.g. rice pudding, custard etc.
Iron

- Sources of dietary iron:
- Iron fortified breakfast cereal (check the label, choose one with at least 8mg iron per 100g)
- Egg yolk (well cooked)
- Dark green leafy vegetables e.g. cabbage, spinach, broccoli
- Nut butters
- Bread
- Beans, lentils or dhal
- Dried fruit e.g. figs, apricots, prunes
- Tofu
- If pescatarian, offer boneless oily fish e.g. fresh tuna, salmon, mackerel, sardines, pilchards.
- The iron in non-meat foods is not as well absorbed as iron from meat. Give foods or drinks high in vitamin C at meal times to enhance iron absorption e.g. orange juice, vitamin C fortified squash, fruits and vegetables.
- Avoid serving tea or coffee as this reduces iron absorption.
- See Section 6.3 for more detail on iron deficiency anaemia

Calcium

- Milk, cheese, yoghurt
- If pescatarian, mashed tinned fish with edible soft bones e.g. salmon or sardines
- Calcium-fortified oat or soya milk, soya yoghurts, soya cheese. Please note that organic varieties will not contain added calcium.
- Tofu
- Fortified breads
• Smaller amounts in dried fruit, nut butters, green leafy vegetables and pulses.

**Vitamin B_{12}:**

• Fish if pescatarian
• Eggs
• Cheese, milk and milk products
• Yeast extract (high in salt therefore use sparingly in children under 2 years)
• Foods that may be fortified: breakfast cereals, soya milk, fat spreads, textured vegetable protein (TVP) products, certain commercial baby foods.

**Vitamin D:**

• Sunlight
• If pescatarian – oily fish
• Whole milk
• Eggs
• Fortified fat spreads and breakfast cereals

**Omega 3 fatty acids**

Oily fish provide omega 3 fatty acids e.g. trout, salmon, fresh tuna, sardines, pilchards, mackerel. If fish is avoided, then sources of omega 3 may include rapeseed, linseed, flaxseed or walnut oils. However, evidence suggests that these forms of omega 3 oils may not provide the same health benefits as those found in oily fish.

**Vitamin and mineral supplements:**

• Vegan children may need vitamin B_{12} supplementation in addition. They may also need a calcium supplement if they are unable to manage 3 servings a day of calcium-fortified dairy alternatives once weaned.
• Some breakfast cereals are fortified with vitamin B_{12}, check the label.
• See Section 6.1 for more detail.
Zen Macrobiotic Diet

- Based on balancing foods considered to have Yin and Yang properties.
- There are 10 levels of dietary elimination. Animal products, fruits and vegetables are progressively removed from the diet until only brown rice is consumed.
- Fluids are also severely restricted
- This diet is nutritionally inadequate and not recommended for children of any age due to association with malnutrition, faltering growth, muscle wasting, micronutrient deficiency and delayed development, (Shaw and Lawson, 2007).

Fruitarian Diet

- Based on fruits and uncooked fermented cereals and seeds.
- This diet is nutritionally inadequate and not recommended for children of any age due to association with malnutrition and micronutrient deficiency (Shaw and Lawson, 2007).

6.2 Cultural and Ethnic Diets

A family’s cultural and ethnic background or religious beliefs can have an influence on dietary intake. The following provides a general idea of dietary practices associated with certain religious, cultural or ethnic backgrounds. However, please note that the information given is generalised and not exhaustive. Always clarify individual dietary practices.
## Table of foods avoided by certain religious groups

<table>
<thead>
<tr>
<th>Religious group</th>
<th>Pork</th>
<th>Beef</th>
<th>Other meats</th>
<th>Non scaly fish and shellfish</th>
<th>Eggs</th>
<th>Milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judaism * ∞</td>
<td>●</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hinduism *</td>
<td>●</td>
<td>●</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td></td>
</tr>
<tr>
<td>Jainism º</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Sikhism*</td>
<td>▲</td>
<td>▲</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islam Ь</td>
<td>●</td>
<td></td>
<td></td>
<td>●</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Buddhism</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Seventh Day Adventist</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rastafari +</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

- ● - Foods generally avoided.
- ▲ - May be avoided by some members.
- ∞ - Strict orthodox Jewish practice defines foods that cannot be prepared and eaten together. Food that complies with Jewish law is termed Kosher.
- * - Other foods may be avoided if method of preparation is unacceptable.
- Ь - Some Muslims only eat meat that has been slaughtered by the “halal” ritual. Young children do not usually fast during Ramadan (the annual month long fast from dawn to dusk).
- + - Rastafarians may avoid other foods as well.
- º - Jains may also avoid honey and root vegetables.

Adapted from Infant feeding guidelines - Building Blocks for Life. East Dorset NHS Trust 61
Asian Diets

Within the Asian community in the UK, traditional dietary customs often relate to the beliefs of the three main religious groups:

- Hindus – beef is not eaten, often pork is not eaten, and some Hindus may be vegetarian or vegan and may avoid alcohol.
- Muslims – Haram foods are prohibited (pork, carnivorous animals, fish without scales, certain birds and alcohol). All meat and poultry should be Halal (ritually slaughtered).
- Sikhs – may avoid pork and beef. Lamb, poultry, fish, eggs and dairy are eaten by some. Vegetarianism is common.

Nutritional problems commonly found in children of an Asian ethnic origin in the UK:

- Iron deficiency anaemia – inadequate iron intake may result from delayed weaning (later than 6 months), early introduction of cow’s milk (before 12 months), or excessive intakes of unfortified cow’s milk (greater than 1 pint or 600ml per day).
- Megoblastic anaemia – can result from low vitamin B_{12} intakes in strict vegan or vegetarian children.
- Rickets – low dietary intake of vitamin D, low sunlight exposure, skin pigmentation, and late weaning are contributing risk factors for rickets. See Section 6.1 for more detail. Shaw and Lawson, 2007

African-Caribbean Diets

In the UK, within the African-Caribbean community dietary practices may incorporate a mixture of traditional customs and British cultural influences.

A small amount of individuals within the UK African-Caribbean community are Rastafarian. Associated dietary beliefs vary, but may include avoidance of certain or all meats, vine fruits, chemicals, additives, processed foods,
and salt. This can be associated with similar dietary risks as those on a vegan diet (see Vegetarian and Vegan). Some may eat dairy and fish with scales.

Nutritional problems commonly found in children of an African-Caribbean ethnic origin in the UK:

- Obesity and diabetes – contributing factors include the adoption of British dietary influences such as high fat/sugar convenience foods.
- Iron deficiency anaemia – prolonged bottle feeding, early introduction of cow’s milk (before 12 months), or excessive intakes of unfortified cow’s milk, delayed weaning, weaning onto low-iron foods.
- Megoblastic anaemia – specifically associated with poor vitamin B$_{12}$ intake in Rastafarian children on a strict vegan-like diet.
- Rickets – see above under Asian Diets.
- Lactose intolerance – due to a high incidence of hypolactasia (deficiency of lactase, the enzyme that helps digest lactose which is the sugar in milk), (Shaw and Lawson, 2007).

**Chinese Diets**

There is little food avoidance, although members of the Chinese Muslim community may avoid pork.

Nutritional problems commonly found in children of a Chinese ethnic origin in the UK:

- High salt intake – due to preserved foods, seasoning and soya sauce.
- increasing fat and sugar intake associated with influence of British dietary customs.
- Lactose intolerance – due to high incidence of hypolactasia (deficiency of lactase, the enzyme that helps digest lactose), (Shaw and Lawson, 2007).
6.3 Iron Deficiency Anaemia

Iron-deficiency anaemia can develop if there is an inadequate intake of dietary iron. However, there are other causes such as iron malabsorption (e.g. in Coeliac disease), haemoglobinopathies (e.g. sickle cell disease and the thalassaemias), post infection suppression of bone marrow red cell production, or blood losses (e.g. intestinal bleeding). Symptoms of iron-deficiency anaemia may include tiredness, lack of concentration, pale complexion, poor appetite and poor growth amongst others. In some instances, symptoms can include pica, which is a pattern of eating non-food substances (e.g. hair or paper).

Risk factors

Those at risk of developing iron-deficiency anaemia include:

- Infants born preterm, with low birth weight or maternal iron deficiency during pregnancy (may require supplementation).
- Infants where weaning has been delayed beyond 6 months.
- Infants where breast milk or formula milk has been replaced with cow’s milk before age 12 months.
- Children with an excessive cow’s milk intake (greater than 1 pint or 600ml per day). This can suppress appetite for food and the high calcium intake can inhibit iron absorption.
- Children with a poor dietary iron intake.
- Children who drink excessive amounts of tea.

General guidance

- The child’s GP or Paediatrician may assess whether a course of iron supplementation is required.
- Recommend breast milk or formula milk, as opposed to cow’s milk, as the main milk drink before 12 months of age.
- After 12 months of age, limit cow’s milk intake to one pint (approximately 600ml) per day.
- From age 6 months, rapidly introduce regular sources of dietary iron into the weaning diet (see below).
- Encourage sources of dietary iron at mealtimes (see below).
- Iron from animal sources (haem iron) has a higher bioavailability and is better absorbed than iron from plant sources (non-haem iron).
- Encourage a source of vitamin C with each meal, as this can increase iron absorption by over 200% (Thankachan et al, 2008), e.g. orange juice (diluted 1 part juice to 10 parts water), fortified squash, oranges, potatoes, tomatoes, peppers, mango, melon.
- Avoid giving tea as a mealtime drink, as this significantly reduces iron absorption by around 50% (Thankachan et al, 2008).

**Sources of dietary iron**

- **Meat:**
  - Red meat is the best source of bioavailable dietary iron
  - The light meat (breast) from chicken and turkey contains small amounts of iron. The dark meat (leg) contains a larger amount of iron.
  - Well cooked eggs (most of the iron is contained within the yolk).
- Boneless oily fish e.g., salmon, trout, mackerel, sardines, pilchards, fresh tuna, taramasalata.
- Iron fortified breakfast cereals, preferably fortified with at least 8mg of iron per 100g.
- Whole meal bread, rolls, chapattis etc. White flour products may also be fortified with iron.
- Pulses such as beans, lentils, or chickpeas, (ensure well cooked or use tinned varieties), hummus.
- Green leafy vegetables.
• Finely ground nuts or nut butters
• Follow-on infant formula provides additional iron and is suitable from 6 months. It may be useful for infants older than 6 months with very poor intake of iron-rich foods. However, follow-on formulae are not necessary if dietary intake is adequate.

Resources
Further guidance and leaflets to support parents with managing iron deficiency anaemia is available to download from the Infant and Toddler Forum: www.infantandtoddlerforum.org

6.4 Faddy Eating and Food Refusal
Faddy eating and food refusal is a normal part of development, particularly in toddlers. In the second year of life, toddlers often develop neophobia, which can manifest as a fear of new or unfamiliar foods, or even a change in brand or packaging. This response decreases over time, and most cases of faddy eating and food refusal will resolve. Reassuring the parents to reduce anxiety around mealtimes is often very helpful.

Factors to consider
• Research suggests that toddlers may need to be offered a new food more than 10 times before they learn to like it (Birch and Marlin, 1982).
• It is normal for the amount of food eaten to vary from day to day. Toddlers may eat less if tired, unwell, anxious, or distracted. However, they usually self-regulate and make up for this by taking more another day.
• Children are likely to refuse extra food when they have eaten enough. If they are growing and developing normally, they are having enough food to meet their requirements. Parents may sometimes expect their child to eat a larger portion than they actually need.
• Reassure parents to be as relaxed as possible around mealtimes, as parental anxiety may be picked up on by the child, resulting in reduced food intake.

• Large volumes of drinks, especially milk, juice or squash, before and during mealtimes may reduce appetite.

• Constipation, anaemia, and gastro-oesophageal reflux can exacerbate food refusal.

Tips to Help Parents with First Line Management:

• Try to limit mealtimes to a maximum of 30 minutes.

• Establish a regular meal pattern, including planned meals, desserts and snacks, rather than allowing the child to graze throughout the day. A typical meal pattern would be 3 meals, 2 small snacks (not too close to mealtimes), and 2 courses at main meals (1 savoury and 1 sweet e.g. fruit and yoghurt).

• Aim to keep mealtimes fun, with a pleasant atmosphere. Eat together and give lots of positive praise and attention for eating well. Try to ignore food refusal or faddy eating without fuss or attention. Offer plenty of attention when the child is eating, as opposed to only when they stop eating.

• Try offering a small portion that your child may find easier to finish. Then give lots of praise and attention, before offering a second helping.

• Encourage toddlers to feed themselves and get involved in messy play.

• Never force a child to eat. Respond to their signals that they have had enough. For example, if they say no, hold their mouth shut, turn their head away, push away the spoon or plate, continually spit out the food, cry, gag or retch.

• Avoid pressurising, bribing, bargaining or forcing the child to eat.
• Avoid using a ‘liked’ food as a reward for eating a ‘disliked’ food as this can have the effect of making the disliked food seem even less desirable.

• Avoid offering a completely different meal if the first one is refused. Instead, remove the rejected meal without a fuss and wait until the next planned meal/dessert/snack.

• Eating together at a table as a family, with minimal distractions, and role-modeling eating specific foods can help toddlers to learn to like new foods.

• Present food in fun attractive ways. Try using brightly coloured plates and cups.

• Avoid excessive drink intakes. About 6 to 8 drinks a day is about enough. A toddler-sized drink would be a 120ml beaker or cup. Avoid giving drinks immediately before a meal. Sweet drinks such as fruit juice, squash and fizzy drinks can have an appetite-suppressant effect on toddlers.

• Avoid excessive milk intakes and aim to phase out night milk feeds. Aim to eventually limit milk and milk products to three servings per day once over 12 months.

• You may need to offer a new food more than 10 times before they accept it. Eating new foods together can help.

• Ensure that everyone involved with your child’s mealtimes is consistent and adopts the same approach.

Further Support

If there is evidence of faltering growth as a result of faddy eating or food refusal referral via GP to secondary care for further support from Paediatrician and Paediatric Dietitian may be indicated. In some instances, parental support from a behavioural specialist may be beneficial. Toddlers who cough and gag on more difficult textures may require
referral to a Speech and Language Therapist for assessment of oral-motor dysfunction.

**Messy play**

Through food play children can become more accustomed to the different textures and smells. They can get this through their hands and may be less sensitive to accept new foods and textures.

**Ideas for food play**

**Dry foods**
Dried pasta
Breadcrumbs can be given soft or toasted for a rougher texture
Coconut flakes
Breakfast cereals

**Sticky foods**
Flour mixed with a little vegetable oil and water. It can be coloured with food dye.
Jelly made up in different colours and settings
Baked beans
Tinned spaghett
Grated carrot
Diced fruit
Mashed potato, carrot or swede

**Useful Resources**

The Infant and Toddler Forum is a great resource for supporting parents with tackling faddy eating and food refusal. A selection of parent information leaflets are available to download from: [www.infantandtoddlerforum.org](http://www.infantandtoddlerforum.org)

**6.5 Infantile Colic**

Colic is a common problem, possibly affecting 5-20% of infants (Lucassen et al, 2001). Defined as intractable
crying, lasting at least 3 hours a day at least 3 times a week in otherwise thriving infants starting in the first week of life and ceasing around 3-4 months of age (Wessel et al, 1954).

Fortunately, colic is normally self-limiting condition, which disappears spontaneously at about 3 months of age without any intervention. However, sometimes these episodes can mask a more serious condition e.g. milk protein or lactose intolerance which requires intervention.

Colic should be recognized as causing considerable parental anxiety and managed sympathetically by staff.

An assessment of the baby’s feeding pattern should be undertaken, including feeding position, feed concentration, over feeding, teat size and winding method.

All infants causing parental concern should be reviewed by the health visitor who will refer on if necessary (Garrison & Christakis, 1998).

Colic should not be used as a reason to stop breastfeeding. Gripe water which contains sugar and water, and herbal drinks containing sugar are not recommended.

Changing an infant’s feed is not recommended; certainly changing from whey to casein based formula may well aggravate the problem.

**Modified Infant Formula for Minor Digestive Problems**

There are formulas available that are marketed for babies with minor digestive problems such as colic and constipation. They contain partially hydrolysed whey protein, prebiotics, modified fat and thickeners. Some of the lactose is replaced with starch. The evidence for their use is based on limited research studies of small numbers of infants showing very slight improvements (Savino, F et al 2006). However, many health visitors now recommend them as there is anecdotal evidence for positive results (More, J, 2010).
<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Product</th>
<th>Manufacturers description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow &amp; Gate</td>
<td>C &amp; G Comfort</td>
<td>For minor feeding problems, easier digestion, more settled babies.</td>
</tr>
<tr>
<td>Milupa</td>
<td>Aptamil Comfort</td>
<td>For minor feeding problems, easier digestion, more settled babies.</td>
</tr>
</tbody>
</table>

6.6 **Gastro–Oesophageal Reflux (GOR)**

In the large majority of infants, GOR is a normal occurrence which is self-limiting and they will outgrow it with time, resolving spontaneously by 12-14 months of age (Falconer, 2010). Reassuring the parents and advice on the frequency and volume of feeds may be all that is needed.

**First-Line Management**

Reassuring parents and simple feeding measures such as reviewing volumes and frequency of feeds, together with postural advice (keeping baby upright after feeds) and avoiding exposure to cigarette smoke are helpful.

Frequent winding is also recommended before, during and after feeds.

**Thickeners and Thickened Feeds**

Infants who regurgitate a lot may benefit from thickening the milk with a prescribed available thickening agent for example: Carobel, Thixo D or Thick and Easy. It can be given as a gel before breast feeds. Infant Gaviscon is an alternative that can be added to feeds.

Pre-thickened Formula milks are also available, such as Enfamil AR and SMA Staydown. These can be purchased in most chemists and supermarkets. Enfamil AR is prescribable.

Manufacturers recommend that parents should inform their health care professional when using these products in case their use is masking a more serious diagnosis.
Cow’s Milk Protein Allergy?

In more complicated GORD which fails to respond to simple feeding and medical measures, a therapeutic trial for 2-4 weeks of an extensively hydrolysed formula should be considered (Rudolph et al, 2001). In those failing to benefit from an extensively hydrolysed formula, an amino-acid based formula should be used. Soya and partially hydrolysed formula should not be used due to the high incidence of cross reactions of proteins. See Section 6.9, for more detail.

In the Breast-Fed Infant:

Cow’s milk protein and other proteins pass into human breast milk in small quantities. Breast fed infants with regurgitation and vomiting may therefore benefit from a trial of withdrawal of cow’s milk from the maternal diet. Symptoms of infant reflux are almost never severe that breastfeeding should be discontinued. Considerations should be made for the mother’s calcium requirement and a calcium supplement with vitamin D should be recommended.

6.7 Constipation

Infants can become constipated for a number of reasons. Constipation is very rare in breast fed infants but more common in bottle fed babies. Normal bowel frequency may vary from several stools per day to 4-5 days between stools. Infants are not constipated if stools are soft but passed infrequently. In breast fed infants, infrequent stools being passed (less than 1 stool in 12 hours) may indicate an inadequate intake of milk, especially in babies under 4 weeks old. In older breastfed babies, passage of infrequent stools is not uncommon or abnormal.

If constipation is present from birth, it may need medical investigation. Otherwise, if constipation is a problem in young babies:

1. Check that the formula is being made up correctly i.e. not over concentrated.
2. Ensure that fluid intake is adequate.
3. Give extra drinks of cooled, boiled water.
4. If the measures above do not alleviate the problem, infants over 4 weeks can be given drinks of diluted fresh orange juice (1 in 10 dilution), in addition to their milk. This should not continue once the problem is solved.
5. Diluted prune juice has also been found to be helpful. Great care should be taken that this is not used routinely in case it gives the infant a “sweet tooth”.

Before advising treatment, make sure, by taking a history, that the infant really is constipated. Parents often become anxious about their infant’s bowel habits and often reassurance that is required rather than action since the infants are not truly constipated.

Parents are often advised by older family members to add honey or sugar to the bottle. Although effective, it works by inducing an osmotic softening of the stool, and this can lead to further dehydration, therefore it is not recommended.

If constipation is a problem in older infants:

1. Check that fluid intake is adequate.
2. Purée fruits, vegetables and cereals should be encouraged.
3. In infants over 6 months, whole grain cereals, pulses and beans can be introduced gradually.

Pure bran should not be given to infants or young children, as it may compromise nutrient absorption.

Children can become constipated because they are picky eaters, eat irregularly and dislike the foods which are good sources of fibre, such as whole meal bread and fruits and vegetables.

Constipation can cause tummy pain and a poor appetite, which can make the constipation worse.
In some children, the cause is excessive milk drinking with a poor food intake.

In a small number of cases, the constipation is actually a symptom of cow’s milk protein allergy and strict exclusion is then necessary.

Some young children will develop a habit of stopping themselves from opening their bowels to prevent pain. This can be intentional or subconscious.

Many children will be given laxatives to encourage regular bowel habits and to aim to decrease the chronically large rectum. This should not be seen as a long term measure except in children with proven motility disorders or physical disabilities for example.

These children should again be encouraged to increase their fibre and fluid intake, as well as being encouraged to sit on the toilet each day after meals, to make use of the peristaltic reaction which occurs after eating. Behavioural therapy can be useful e.g. star charts. Star charts could be used to encourage a better diet or better fluid intake or even to encourage regular use of the toilet. Children with severe constipation with no organic cause, may be referred to the psychologist if there are suspected emotional or social reasons for the problem.

Try to encourage high fibre foods which are enjoyed by children.

**Examples are:**

- Fruits and any vegetables they enjoy.
- Baked beans or kidney beans added to recipes.
- Snacks such as raisins or other dried fruits.
- Higher fibre breakfast cereals e.g. Weetabix or Shreddie’s
- Soups
- Whole meal, granary or even added fibre white bread.
• Higher fibre biscuits e.g. Hob Nobs, Digestives
• Replace half of the white pasta with whole meal pasta.
• Potato wedges to encourage them to eat the fibrous skins.

Useful Resources:

• ERIC (Education and Resources for Improving childhood Continence) [http://www.eric.org.uk/](http://www.eric.org.uk/) - this website provides information and support on childhood bedwetting, daytime wetting, constipation and soiling to children, young people, parents and professionals.
• Infant and Toddler Forum have parent information available to download from: [www.infantandtoddlerforum.org](http://www.infantandtoddlerforum.org)

6.8 Toddler Diarrhoea

This condition can present between the ages of 6 and 20 months and is associated with frequent, loose stools containing undigested food such as peas and carrots. There appears to be a rapid gut transit time. Although this condition seems alarming, these infants grow normally, remain well and have good appetites.

If there is no evidence of failure to thrive and stool cultures and reducing substances are negative, then further investigation is not normally necessary. Parents need a lot of reassurance that there is nothing seriously wrong with their child. Dietary advice should focus on:

1. Reducing excessive fibre in the diet e.g. switching to a lower fibre cereal, switching from whole meal bread to white bread. Only reduce fruit and vegetable intake if it seems excessive.

2. Reducing intake of fruit juices and squash and increasing water intake in place of these.

3. Checking fat intake. A diet low in fat can increase gut transit time, therefore exacerbating the problem
for example infants who don’t take dairy products well.

If the diarrhoea is unresolved by the age of three years or the child is unwell, other more serious causes of chronic diarrhoea must be excluded. A referral via the GP to a Consultant Paediatrician for confirmation of the diagnosis should be made. A Paediatric Dietitian may be able to give advice on dietary modification, e.g. increasing fat intake if necessary, if symptoms are troublesome or offensive.

6.9 Cow’s Milk Protein Allergy (CMPA)

Approximately, 2% to 7.5% of children suffer from CMPA (Wright et al, 2009). CMPA is easily missed in primary care settings. CMPA can develop in exclusively and partially breast-fed infants and when cow’s milk protein is introduced into the weaning diet.

Out Growing Allergy

The prognosis of CMPA is good, with a remission rate of approximately 45-50% at 1 year, 60-75% at 2 years, and 85-90% at 3 years, 92% at 5 years and 10 years and 97% at 15 years of age (Skypala, 2009).

Monitoring the development of tolerance is an essential part of managing food allergy. CMPA is commonly outgrown, so retesting and reassessment is required annually. Skin prick testing or specific IgE blood tests can help the decision to exposing a child to a food challenge. Often children would have had accidental ingestion of cow’s milk protein (CMP).

Once tolerance has been established, it is important that CMP is reintroduced to the child’s diet. In practice this is often done with processed dairy products (for example cheese/ cakes) first before introducing fresh milk.

There is much debate over the best time to “challenge” milk protein back into the diet. Some children have severe reactions to cow’s milk resulting in life threatening anaphylaxis. If doubt exists over the risks of food challenges the child should be referred to a Consultant Paediatrician for assessment and planned hospital admission if needed.
Symptoms of CMPA

Symptoms are usually classified according to the different immune response. These include IgE-mediated response (Immediate response), mixed IgE and cell mediated (immediate and/or delayed response) or only cell mediated response. There is a wide clinical spectrum of symptoms. CMPA may present with symptoms affecting the gastrointestinal tract, respiratory tract or the skin.

<table>
<thead>
<tr>
<th>Immune response</th>
<th>Clinical presentation</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>IgE-mediated (immediate response)</td>
<td>Urticaria (Itch, hives, swelling) angioedema (swelling of lips or eye lids), pruritus, gastrointestinal anaphylaxis (vomiting, pain, and/or diarrhoea), acute rhinoconjunctivitis (itchy red eyes and runny nose, nasal congestion, sneezing), wheezing, coughing, stridor and anaphylaxis</td>
<td>Clinical history, specific IgE testing and skin prick testing (SPT). If required a supervised incremental oral challenge</td>
</tr>
<tr>
<td>Mixed IgE and cell-mediated (mixed response)</td>
<td>Eoinophillic oesophagitis (gastro-intestinal reflux, nausea and vomiting, sleep disturbance, does not respond to conventional reflux treatment), colitis, and/or proctocolitis, atopic eczema and asthma.</td>
<td>There is a lack of validated diagnosis tests. Clinical history, specific IgE-testing and SPT need careful interpretation. Elimination diet often required.</td>
</tr>
<tr>
<td>Non IgE-Mediated (delayed response)</td>
<td>Food protein induced enterocolitis (protracted vomiting and diarrhea, often get dehydrated,</td>
<td>Clinical history, elimination diet. Specific IgE-testing and SPT not useful</td>
</tr>
<tr>
<td>Immune response</td>
<td>Clinical presentation</td>
<td>Diagnosis</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------</td>
<td>-----------</td>
</tr>
<tr>
<td></td>
<td>abdominal distension and growth faltering), Food protein induced proctocolitis (blood in stool, infants thrive and look well), Food protein induced enteropathy syndrome and cow’s milk protein induced contact dermatitis.</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Rosan Meyer, 2008

**Specialist Formulas on Prescription**

<table>
<thead>
<tr>
<th>Formula</th>
<th>Protein source</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Nutramigen 1 and 2</em></td>
<td>Hydrolysed Casein</td>
<td>Clinical insignificant lactose content</td>
</tr>
<tr>
<td><em>(Mead Johnson)</em></td>
<td></td>
<td>Nutramigen 2 suitable from 6 months of age.</td>
</tr>
<tr>
<td><em>Pregestimil</em></td>
<td>Hydrolysed Casein</td>
<td>Contains 55% Medium Chained Triglycerides (MCT) for increased absorption.</td>
</tr>
<tr>
<td><em>(Mead Johnson)</em></td>
<td></td>
<td>Clinically insignificant lactose intolerance.</td>
</tr>
<tr>
<td><em>Pepti-Junior</em></td>
<td>Hydrolysed whey</td>
<td>Contains 50% MCT, Clinically insignificant lactose intolerance.</td>
</tr>
<tr>
<td><em>(Cow and Gate)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Pepti</em></td>
<td>Hydrolysed whey</td>
<td>Contains prebiotics and 28% carbohydrate from lactose</td>
</tr>
<tr>
<td><em>(Milupa)</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Formula

<table>
<thead>
<tr>
<th>Formula</th>
<th>Protein source</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neocate LCP (SHS Nutricia)</td>
<td>Amino acid</td>
<td>Truly hypoallergenic, lactose free with Long Chain Polyunsaturated fats</td>
</tr>
<tr>
<td>And Neocate Active</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutramigen AA (Mead Johnson)</td>
<td>Amino Acid</td>
<td>Truly hypoallergenic, lactose free with Long Chain Polyunsaturated fats</td>
</tr>
</tbody>
</table>

Adapted from Rosan Meyer, 2008

It is estimated that up to 10% of infants will continue to react to extensively hydrolysed formulas. Amino acid formulas especially useful in patients with non-IgE mediated food enterocolitis/proctitis syndromes with faltering growth, severe atopic dermatitis and symptoms during exclusive breast feeding. A major hurdle in the use of hypoallergenic formula is their poor taste, this is less of an issue for infants under 6 months of age with a relatively “naïve” taste repertoire, (Skypala, 2009).

### Weaning on the Milk Free Diet

General weaning advice applies see Section 5 for more detail. Infants need around 600ml or 20floz of milk substitute per day to get enough calcium. This can be mixed with cereal or can be used in adapted recipes for custard and white sauce.

### Checking food labels, ingredients to be avoided on a milk free diet:

- Milk
- Modified milk
- Milk solids
- Non fat milk solids whey
- Butter
- Margarine
- Ghee
- Whey solids
Skimmed milk powder  Hydrolysed whey protein  Hydrolysed whey protein
Cream  Hydrolysed whey sugar
Artificial cream  Casein (curds)
Cheese  Caseinate
Yoghurt  Hydrolysed casein
Buttermilk  Lactose

Soya

There are a wide range of soya products on the market which increase the variety and acceptance of the milk free diet greatly. Even though there is a risk of a child having concurrent soya allergy it is worthwhile trialing soya protein as its inclusion in the diet makes the diet more acceptable.

NICE guidance CG116 Food allergy in children and young people February 2011 offers best practice advice on the care of children and young people with suspected food allergies and includes guidance on referral to secondary or specialist care.

6.10 Lactose intolerance

Lactose intolerance is often confused with CMPA. It is distinctly different that it is not immune-mediated and is due to an intolerance to the carbohydrate lactose (milk sugar), caused by an absence or deficiency, to a varying degree, of the enzyme lactase in the gastrointestinal tract (Skypala, 2009). This can occur has a result of gut damage as a result from damage caused by cows milk protein enteropathy, rotavirus infection, Crohn’s disease, short gut syndrome and immunodeficiency syndromes. Lactase deficiency is the most common secondary enzyme deficiency to be seen (Lawson, 2007).

Treatment

Is to eliminate the offending carbohydrate. Clinical course depends on the underlying disease but studies in infants with rotavirus infections have shown an incidence of 30-
50% lactose intolerance which recovers 2-4 weeks after the infection.

Children requiring a lactose free formula and diet can either use lactose free cows milk protein based formula (SMA LF, Enfamil Lactofree ) or if over six months old, soya formula (Wysoy, InfaSoy). A milk free diet is also necessary. Including checking for lactose in medicines where it is often added as a filler.

6.11 Coeliac Disease/Gluten Intolerance

The development of intolerance to gluten may be delayed (although not prevented) by not introducing gluten containing foods (wheat, rye, barley and oats) until age 6 months. Mothers should be encouraged to choose rice, fruit and vegetables as first foods. If coeliac disease is suspected in a child, it is important that the diagnosis be confirmed or refuted by a Paediatrician. An empirical trial of gluten exclusion will only cause confusion and should never be attempted

More information can be found at: www.coeliac.org.uk.
7 INFANT FEEDING REFERENCES

7.1 Sources of information


23. NICE (2011) Food allergy in children and young people NICE clinical guidance 116


33. The Healthy Start website www.healthystart.nhs.uk


Acknowledgements are due to the following for their valuable professional help.

Amicia Boden  Dietitian
Wiltshire Community Health Services. NHS Wiltshire

Produced by:
Julia Shelley
Paediatric Dietitian
Nutrition & Dietetic Department
Salisbury District Hospital
Wiltshire Community Health Services. NHS Wiltshire

Angela Siderfin
Midwifery Sister/
Lactation Consultant
Midwifery Department
Salisbury District Hospital
Salisbury NHS Foundation Trust