

# Cow's Milk Protein Allergy

## Weaning Group by:

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# What is Cow's Milk Allergy?

- **Cow's Milk Allergy (also known as Cow's Milk Protein Allergy or CMPA) is an abnormal response by the body's immune system in which protein in food (in this case cow's milk) are recognised as a potential threat. This can cause the immune system to be 'sensitised'.**
- **When this happens, there is the potential that when cow's milk is consumed the immune system remembers this protein and may react to it by producing allergic symptoms.**
- **Whilst CMPA is one of the most common allergies, it is still rare.**
- **Formula fed babies, and very rarely, breastfed babies can also be affected.**



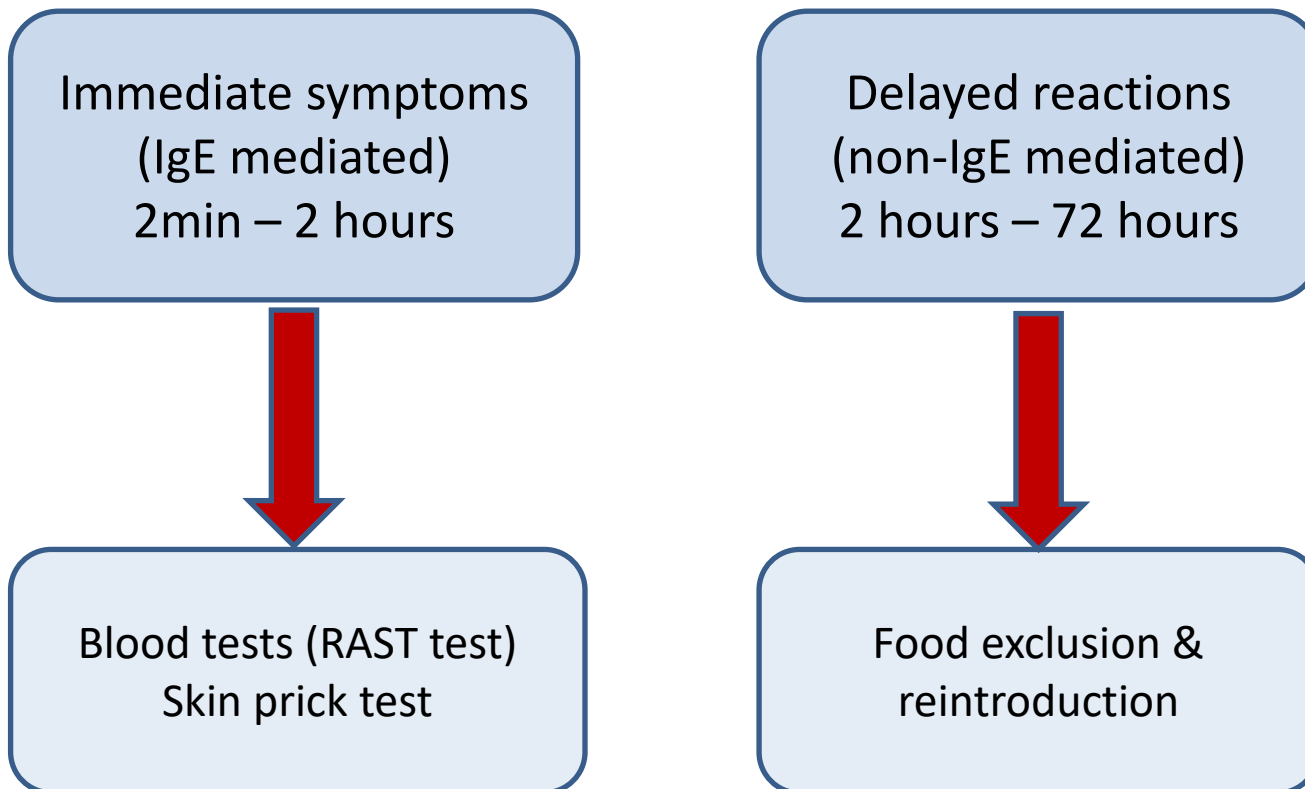
# CMPA in babies?

- **Estimated 2-4.5% of babies aged 1-3yrs old is affected.**
- **Most children do outgrow milk allergies**
  - **50% by 1 year of age**
  - **95% by 3 years of age**
- **Typically develops when cow's milk is first introduced in either formula or weaning or in more rare cases, the protein from the mother's diet is passing to the baby through the breast milk.**
- **Symptoms can present as mild, moderate or severe**



# Types of CMPA

- 2 types depending on how the immune system reacts

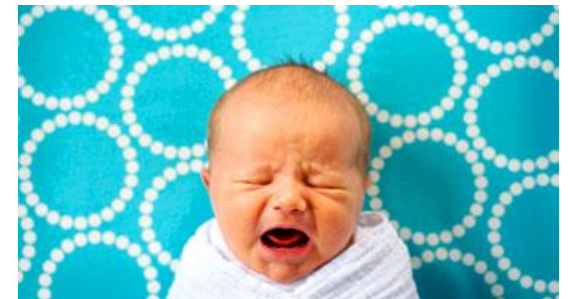


# Symptoms of CMPA

- **Diarrhoea or constipation**
- **Reflux or vomiting**
- **Colic with constant screaming and back arching**
- **Bloated tummy**
- **Blood or mucus (stringy) in stools**
- **Red, itchy rashes on the skin**
- **Swelling of face, lips or eyes**
- **Eczema**
- **Poor growth**
- **Runny or blocked nose**
- **Wheezing or coughing**
- **Breathing difficulties (rare)**

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# Could it be lactose intolerance?

- Lactose intolerance is another type of reaction to milk.
- It happens when the body cannot digest lactose, a natural sugar found in milk.
- This is not an allergy!
- It usually occurs temporarily after gastroenteritis (a tummy bug)
- Symptoms include diarrhoea, vomiting, bloated tummy, stomach rumbling and pain.
- It does not cause constipations, skin rash and eczema.
- Treatment depends on the extent of intolerance.

# Treatment of CMPA

- This involves a diet free from cows milk and food made with milk such as cheese, butter and yoghurt.
- Milk is often added to prepared manufactured food and it is therefore important to read labels.
- Goat, sheep and buffalo milk products need to be avoided as well. The proteins found in these animal milks are likely to cause the same allergic symptoms if consumed.



# Unsuitable 'alternative' drinks



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# Milk-free feeding in 0-6months

- **Breast feeding**

Some mothers may need to follow a milk-free diet whilst breast feeding if baby's symptoms continue

- **Extensively hydrolysed formula** (prescribed)

*Althera; Nutramigen Lipil 1 and 2 and Aptamil Pepti 1 and 2.*

suitable for most infants with milk allergy as a drink, and mixed in food when weaning

- **Amino acid formula** (prescribed)

*Alfamino; Neocate LCP; Puramino*

required by a small amount of infants with milk allergy as a drink, and mixed in food when weaning

# Introducing solid food in the first year

- **0-6 months:** Babies just need breast milk (or an appropriate formula)
- **Around 6 months:** Babies are likely to show signs of readiness for the introduction of solids alongside breast milk (or formula). Babies progress different but should be able to sit up and hold their head steady, pick up food and move it to their mouth, and swallow food. A range of smooth foods and soft finger foods can be offered.

# Introducing solid food ... /2

- **6-7 months:** This period is about introducing tastes and texture, learning to have confidence in your baby and the food they can manage, and gradually increasing the amount you offer alongside their milk. Include baby in mealtimes as they mimic others. You can introduce a small cup with water. Encourage your baby and be prepared for a messy time!
- **7-9 months:** Baby should be able to eat 3 meals a day alongside breast milk or formula. Meals can be mashed into small lumps and finger foods can be offered.
- **10-12 months:** Baby will enjoy meals that are chopped with bigger soft lumps and can manage a wider range of finger foods. Baby will also be more confident in using a cup.

# Introducing solid food ... /3

## *Example menu for a 7-9 month old infant*

- **On waking:** Breast milk or formula
- **Breakfast:** Cereal, dairy-free yoghurt or egg based breakfast with soft finger food (fruit)
- **Lunch:** Savoury meal and savoury finger food followed by breast milk or infant formula
- **Dinner:** Savoury meal and savoury finger food followed by breast milk or infant formula
- **Before bed:** Breast milk or formula

# Introducing a variety of solid food

**5532-a-day**  
Perfect portions for little tums (1-4 years)

Examples of foods and children's portion sizes:

**5 -a-day Starchy Foods**  
(Potatoes, bread, rice & pasta)

- ½-1 slice bread
- 1-2 oat cakes
- 3-6 tbsp breakfast cereal
- 1-3 tbsp mashed potato
- 2-5 tbsp cooked pasta/rice

**5 -a-day (or more) Fruit & Vegetables**

- 2-6 carrot sticks
- ¼-1 banana
- 3-10 grapes (halved)
- ½-2 tbsp peas
- ½-2 tbsp broccoli

**3 -a-day Dairy Foods**  
(Milk, cheese & yogurt)

- 1 beaker of milk (100-120ml)
- 1 pot of yogurt (125ml)
- 1 cheese triangle

**2 -a-day Protein Foods**  
3 portions if child is vegetarian  
(Beans, pulses, fish, eggs, meat and other proteins)

- 2-4 tbsp chickpeas, kidney beans, dhal, lentils or beans
- 2-4 tbsp cooked minced meat
- ¼-1 small fillet of fish

See overleaf for more examples...

Guide to number of portions across the day in meals and snacks

**Drinks**  
Offer 6-8 drinks a day, mostly water

**5 -a-day Starchy Foods**

**5 -a-day (or more) Fruit & Vegetables**

**3 -a-day Dairy Foods**

**2 -a-day Protein Foods\***

\*3 Portions if child is vegetarian

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BRITISH NUTRITION FOUNDATION

www.nutrition.org.uk/healthyliving/toddlers  
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# Milk-free pudding ideas

- Fruit
- Soya yoghurt /dessert e.g. Alpro; Tesco; Asda
- Coconut yogurt e.g. Koko
- \*Rice/Semolina pudding
- \*Sponge and \*Custard with fruit
- \*Pancakes and fruit pieces
- \*Ice cream/sorbet/frozen fruit smoothies
- Remember: manufacturers change their ingredients , so always check items are milk free
- (\* NB = made with breast milk; hypo allergenic formula or Alpro growing-up drink)



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# Milk-free snacks and finger foods

- Small pieces of soft, ripe fruit – banana, melon, mango, peach
- Softly cooked vegetable sticks – carrot, broccoli, green beans
- Raw vegetable sticks – cucumber, peppers
- Breadsticks\* or rice cakes\* – with hummus\*, mashed avocado or dairy-free soft cheese
- Toast\* fingers with dairy-free margarine
- *(\*check label for milk)*



# Dairy free cheeses – check labels are milk free





# Dairy free spreads – check labels are milk free



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# Milk substitutes you can add to foods from 6 months

- Not all dairy free milks are nutritionally the same.
- Preferred options; soya, pea and oat based.
- Choose higher calorie options if concerned re weight. Choose the one's that have a similar calorie content to full Fat milk.
- Opt for calcium fortified where possible
- Avoid unsweetened and organic versions (less calories and protein)
- Preferable stick to formula for most of the time if they'll take it in their food.

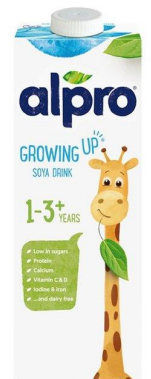


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# Suitable drinks from 1 year old

- **Breast milk** (mother may also need to exclude dairy, if causing symptoms in your baby).
- **Soya milk drinks** & products can help to add variety to a milk-free diet, e.g. Alpro soya 1-3+ drink. It should be calcium-fortified and can be added to cereal or used in other food preparation.
- Some infants may develop allergic symptoms to soya and if soya products are not tolerated, *formula* can be prescribed until 2 years old.
- Most toddlers start to tolerate cow's milk products from 1-3y.
- Rice milk should not be used before the age of 4 years.

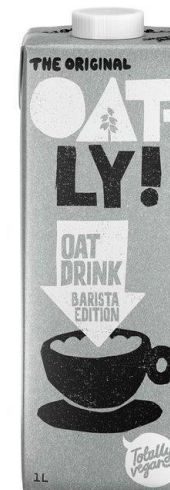


# Drinks from 12- 18 months

Alpro Soya growing up milk



If soya not tolerated, stick to prescribed formula. Can use an oat or coconut based milk substitute only if they have a good varied weaning diet.



# Bottles and Beakers

- Provide an extensively hydrolysed formula or amino acid based formula until 15 months to give time to grade over to suitable plant drink as a drink, in a beaker.

Help move away from the bottle, encourage using a beaker and eating solid food. Infants are more likely to accept a new flavour in a beaker i.e a plant drink. (Most would not accept their formula in a beaker as they associate it with the bottle.)

From 1 year, move towards a routine of giving approx 100mls in a beaker at breakfast ; mid morning ( with snack) ; mid afternoon ( with snack) and before bed. This helps the infant getting into the routine of taking it. Also when they are at nursery they are in the routine of having a milk alternative at snack time

# Checking food labels are milk free

- The law requires that food labels must state if a food contains any of the following allergens : celery, eggs, fish, lupin, milk, molluscs, mustard, nuts, peanuts, sesame, shellfish, soya, sulphur dioxide, wheat.
- This law also includes items that is sold loose (e.g. at a deli, bakery or butchers) or in cafes and restaurants.
- You are only required to avoid ‘milk’ containing ingredients.
- There are many ways milk can be labelled so check ingredients carefully!
- Different brands contain different recipes/ingredients.
- Manufacturers change the ingredients in foods from time to time, so double check.

# Terms to be aware of

## Check labels for these ingredients:

- buttermilk
- cows milk (*fresh, UHT*)
- condensed Milk
- cream/artificial cream
- evaporated milk
- butter, butter oil
- ghee
- margarine
- cheese
- fromage frais
- ice-cream
- yoghurt
- casein (curds), caseinates
- calcium or sodium caseinate
- hydrolysed casein
- hydrolysed whey protein
- lactoglobulin
- lactoalbumin
- lactose
- milk powder, skimmed milk powder
- milk protein
- milk sugar
- milk solids, non -fat milk solids
- modified milk
- whey, whey solids, hydrolysed whey
- whey protein, whey syrup sweetener

# Activity: Reading food labels

- Look at the 'ingredients list' on processed food, packets or tins.
- All allergens are required to be highlighted e.g. in bold or italic writing.
- Milk containing ingredients will usually have 'milk' after the ingredient, to make it easier to identify.
- Avoid all foods with 'milk' in the ingredients list.
- Labels which claim 'may contain' or 'made in a factory which handles milk products' , – **can be eaten, unless your child appears to react to these foods. Contact your Dietitian if you feel your child reacts to these.**



# Example of a Food label

Just add water

Source of iron & calcium

Creamy texture

No added sugar - contains naturally occurring sugars

Gluten free

No artificial colours, flavourings or preservatives

Pack size: 125g

Iron contributes to the normal cognitive development of children

Source of iron & calcium

No added sugar

## Information

### Ingredients

Milled Corn (27%), Skimmed **Milk** Powder (26%), Milled Rice (18%), Demineralised Whey Powder (from **Milk**), Vegetable Fat (Palm Oil, Rapeseed Oil, Coconut Oil, High Oleic Sunflower Oil, Emulsifier (**Soy** Lecithin)), Minerals (Calcium, Iron, Iodine), Vitamins (Vitamin C, Vitamin E, Vitamin A, Vitamin D3, Biotin, Vitamin B1, Vitamin B6), Natural Vanilla Flavour

### Allergy Information

Free From: Gluten

Contains: Milk, Soya

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# Cross contamination risk at home

- Prepare and cook milk free foods separately
- Use clean surfaces and equipment
- Use separate crockery and cutlery
- Separate knife for milk free spread/jams
- Keep milk free foods in separate shelf in fridge/freezer/  
cupboards

# Ensuring an adequate calcium intake

- Main sources:
  - Breast milk / hypoallergenic formula
  - Calcium-enriched soya products
  - Calcium-enriched oat (e.g. Oatly enriched) or coconut milk (e.g. Koko)
- Other foods which contain calcium
  - Tinned fish with small, soft bones in, e.g.. mashed pilchards / sardines
  - Tofu soya curd fortified with calcium and iron)
  - Dark green leafy vegetables such as broccoli, cabbage and okra
  - Tahini (sesame and chickpea paste)
  - Best of Both (50:50) bread and anything made with fortified flour

# Vitamins and minerals

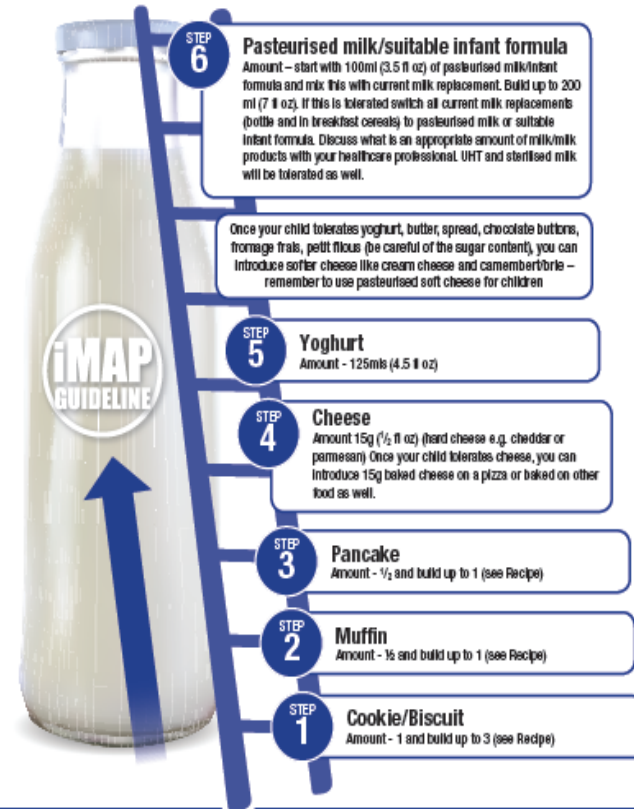
Who?	Vitamin / mineral supplement needed
Breastfeeding mums following a milk-free diet	1250 mg Calcium and 10mcg vitamin D (Healthy Start vitamin D available)
Babies over 6 months old taking <u>less</u> than 500ml (17 fl oz) infant formula per day	Vitamins A, C and D  Calcium intake to be assessed by dietitian if taking less than 500mls formula/day
Breast fed babies over 6-months old ----- Babies over 1 year old drinking Alpro soya 1-3+ or other non-prescribed drink	Vitamins A, C and D ----- Vitamins A,D and C NB 300mls calcium fortified drink provides enough calcium for 1-3 yr olds.

# Dairy challenge

- It is important to establish your child's tolerance to milk as different amounts can often be tolerated.
- When a baby is around 12 months old, consider a dairy challenge to assess your child's increasing tolerance to milk using the iMap milk ladder and recipes
- Ensure that you offer the cow's milk containing food earlier in the day, so you can observe your child for any allergic symptoms related to cow's milk throughout the day.
- If a child reacts to a stage, continue to give the stages they can tolerate, and try again with the stage they reacted to in 3 months' time

# THE iMAP MILK LADDER

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



#### AT EACH OF THE FOLLOWING STEPS

Cookie, muffin, pancake, cheese and yoghurt

It may be advisable in some cases to start with a ¼ or a ½ of that particular food and then over a few days to gradually build up to a whole portion - Please ask your healthcare professional for guidance on this

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

October 2016

The first step of the ladder starts with baked milk where the cow's milk protein has been extensively heated for approximately 20-30 minutes in an oven.

This changes the cow's milk protein and is therefore less likely to cause an allergic reaction.

The ladder then progresses through several stages to cooked milk, where the milk protein is cooked for less time, and then lastly to uncooked milk.

Wait 3 months and return to step which was not tolerated.

If your child was tolerating a previous step prior to the reaction, with no symptoms, continue to offer the same cow's milk containing foods from that lower step in your child's diet.

# THE MAP MILK LADDER<sup>®</sup>

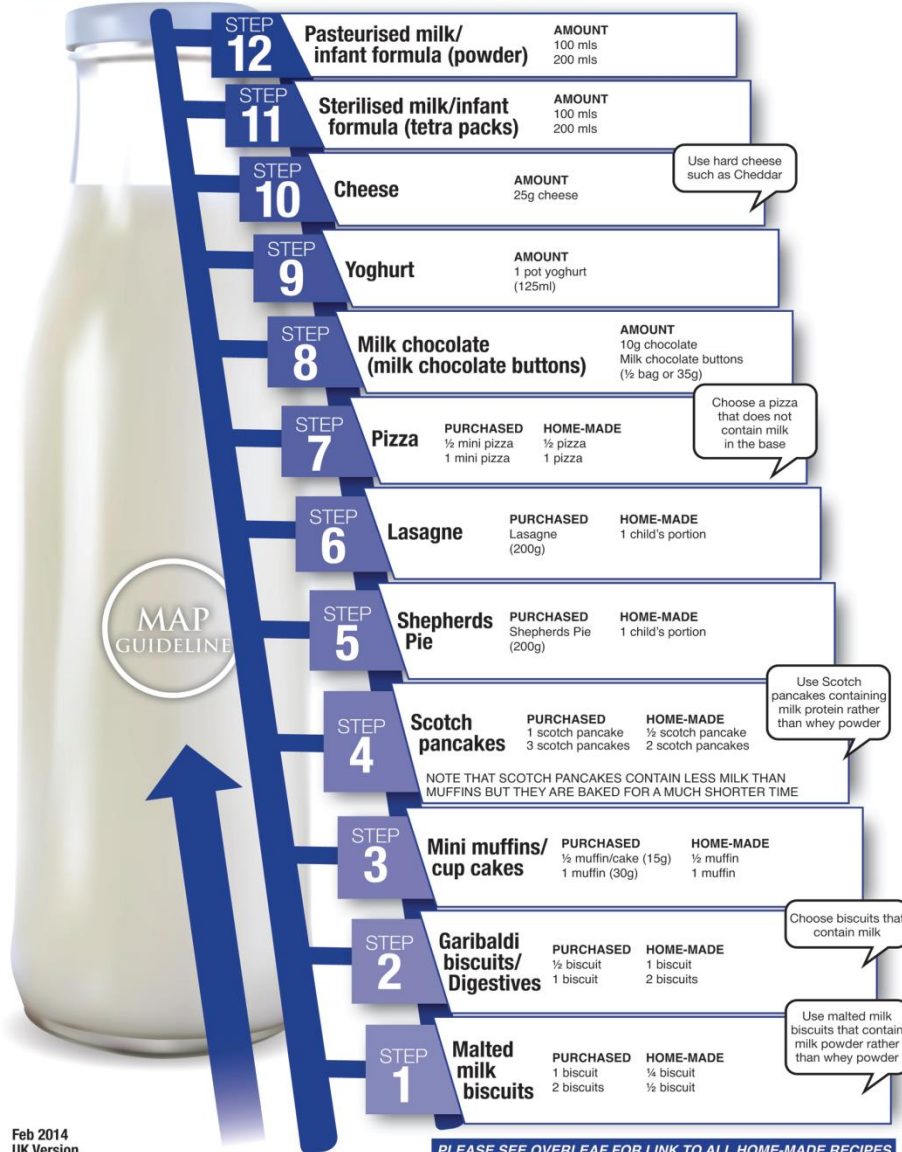
For Children with Mild to Moderate Non-IgE Cow's Milk Allergy  
Under the Supervision of a Health Care Professional, ideally a Dietitian



Great Western Hospitals



NHS Foundation Trust



PLEASE SEE OVERLEAF FOR LINK TO ALL HOME-MADE RECIPES

Feb 2014  
UK Version



# Useful Links

For support

- Allergy UK [www.allergyuk.org](http://www.allergyuk.org)
- NHS Choices [www.nhs.uk](http://www.nhs.uk)
- British Dietetic Association [www.bda.org.uk](http://www.bda.org.uk)

For recipes (cooking with cow's milk free alternatives)

- [www.oatly.com](http://www.oatly.com)
- [www.alpro.com](http://www.alpro.com)
- [www.kokodairyfree.com](http://www.kokodairyfree.com)
- [www.provamel.com](http://www.provamel.com)
- [www.tofutti.com](http://www.tofutti.com)
- [www.violifefoods.com](http://www.violifefoods.com)

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# End of Session

- Thank you for joining the cow's milk free weaning education session
- You and your GP will receive a letter of your attendance and any prescription requirements.
- No further appointments will be made, however your child's case will be kept open for 6 months.
- If you have any concerns, please contact Paediatric Dieticians, telephone number: 01793 605145.
- If no contact is made within 6 months you will be discharged.
- You can be referred by your GP, even if you were discharged.