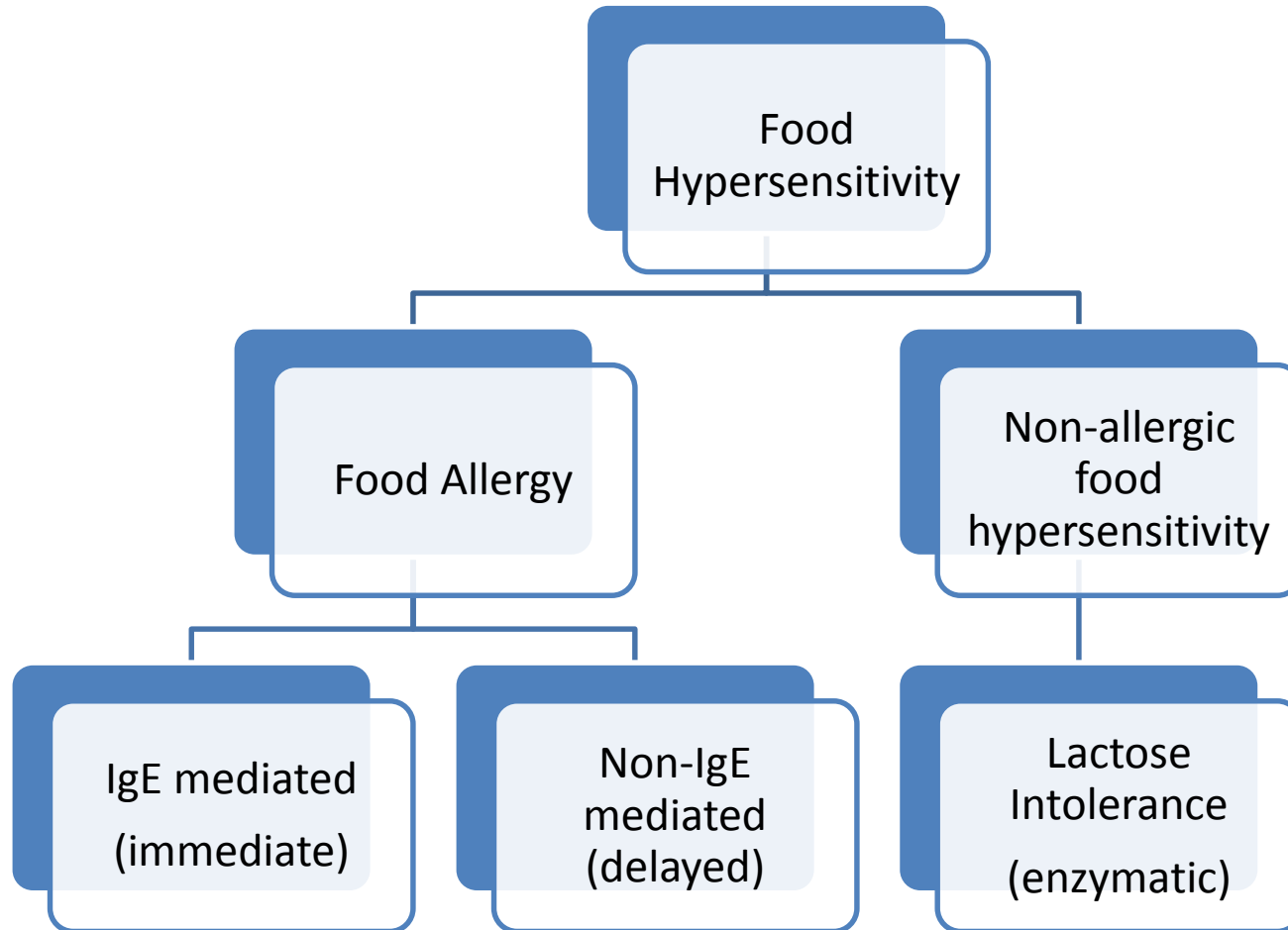


Cow's Milk Protein Allergy

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Classification of Adverse Reactions to Cow's Milk



Prevalence of Cow's Milk Protein Allergy

- prevalence of 1.9 – 4.9%
- Peak onset - first year of life
- Prognosis good, with 90% of children tolerance by 3 years
- Cow's milk is one of the most common foods responsible for allergic reactions in European children
- Can develop in breast-fed infants and bottle-fed infants and when cow's milk is introduced at weaning

Clinical Presentation

	Mild to Moderate Symptoms	Severe Symptoms
GI	Frequent regurgitation, reflux, vomiting ,colic Loose or frequent stools, Food refusal or aversive feeding, Constipation, Abdominal discomfort	Severe persisting symptoms of one or more of diarrhoea, vomiting, abdominal pain, food aversion, significant blood/mucus in stools, faltering growth
SKIN	Atopic eczema, pruritus,erythema	Severe atopic eczema

Diagnosis of Cow's Milk Protein Allergy

- All infants suspected of having a cow's milk protein allergy should be given a totally dairy-free diet for a period of 4-6 weeks.

Diagnosis of Cow's Milk Protein Allergy

- Diagnosis of non-IgE mediated CMPA is confirmed if symptoms improve or disappear on a cow's milk free diet **AND** if symptoms return following the reintroduction of cow's milk.

Diagnosis of Cow's Milk Protein Allergy

- Diagnosis of IgE-mediated CMPA is confirmed by symptom improvement on a cow's milk free diet **AND** a positive allergy sensitisation test.

Dietary Management of Cow's Milk Protein Allergy

- Once CMPA is confirmed infants should have a completely cow's milk free diet until around 1 year of age, and for at least 6 months, before reintroducing cow's milk.
- NICE guidelines recommend that all children should be referred to a paediatric dietitian if they are to remain on a cow's milk free diet for longer than 6 weeks.

Choice of hypoallergenic formula

- Hypoallergenic formulas are divided according to the degree of protein hydrolysis. eHF contain short chain peptides whereas amino acid formulas provide protein in the form of amino acids.

Bottle Fed Infants

Age	< 6 months	More than 6 months
Mild to moderate symptoms Recommended formula - eHF	Aptamil Pepti 1 – contains lactose Althera Nutramigen Lipil 1 Similac Alimentum	Aptamil Pepti 2 – contains lactose Nutramigen Lipil 2 Similac Alimentum
➤ 6 months Severe Symptoms Recommended formula - AAF	Neocate LCP Nutramigen AA	Neocate LCP Nutramigen AA

Breast-fed Infants

- Exclusive breast-feeding:
Encourage mothers to continue breast-feeding and exclude milk from their own diet.

Ensure mother is taking a calcium and vitamin D supplement.

Prescribe an amino acid formula, if required, for weaning or mixed feeding.

Breast-fed Infants

- If reactions occurred only on the introduction of formula or weaning foods containing cow's milk then follow the guidelines for bottle-fed infants

Weaning

- Cow's milk free diet
- Timing of introduction of other major food allergens
- Recipes and ideas for using hypoallergenic formula
- Nutritional adequacy of the diet
- Review of formula
- Other suitable milks
- Food Labelling

Reintroduction of Cow's Milk

- Infants with CMPA should remain on a milk-free diet until around 12 months of age and for at least 6 months after diagnosis before reintroducing cow's milk into their diets.

Reintroduction of Cow's Milk

- Nice UK Food Allergy Guideline states that no child with IgE-mediated food allergy should be challenged in primary care or community setting

Reintroduction of Cow's Milk

- For infants with severe non-IgE mediated allergy it would be appropriate to take guidance from secondary care before re-introducing cow's milk.
- All other infants with mild-moderate non-IgE mediated allergy are suitable for home challenge.

Reintroducing Cow's Milk

- The following step-wise reintroduction of cow's milk is used in Barnsley. It is based upon the knowledge that during extensive heating or food processing structural changes to the proteins take place which may reduce their allergenicity.

Reintroducing Cow's Milk

- At each stage of the milk reintroduction begin with small portions of the food gradually building up to a full portion over a few days as tolerated.

Reintroducing Cow's Milk

- If, at any stage, symptoms recur the level at which milk is tolerated should be continued and further challenging undertaken again at 4-6 months.

Reintroducing Cow's Milk

- Step 1: Foods containing milk as an ingredient and which have been cooked to a high temperature
eg. Yorkshire Pudding, biscuit, cake.

Reintroducing Cow's Milk

- Step 2: Foods containing lightly cooked milk
eg. Custard, pancake, chocolate, normal infant formula/follow-on milk, margarine

Reintroducing Cow's Milk

- Step 3: cheese, yoghurt, milk

What About Soya?

- Soya based infant formula should not be used as first line treatment for CMPA. 10-14% of infants with IgE-mediated allergy will also react to soya. 30-60% of infants with non-IgE CMPA will also react to soya.

What About Soya?

Soya based infant formula is not recommended for infants under 6 months. Soya formula contains high levels of phytate which may affect nutrient absorption, especially calcium. In addition there is the debate about the impact of phytoestrogens in early infancy.

What About Soya?

- Infants over the age of 6 months who are tolerating soya products could have a soya based infant formula.

Case study 1

- 4 mth ? Lactose intolerance slow weight gain and not interested in feed.
- Mum bought soya otc- wgt gain slow
- Referred
- Tried nutramigen 1
- Gave weaning advice
- Improving- weight gain /improved appetite
- Milk introduction
- >1 yr old. Tolerating soya

Case 2

- 5 months ? CMPA
- Loose stools, reflux, discomfort- mum hayfever
- No growth concerns
- Referral- dietician
- Started Pepti 1– no improvement
- Tried Nutramigen 1
- Massive improvement in symptoms
- Weaning advice

Case 3

- GP referral - ?CMPA
- Diarrhea vomiting – intermittent
- Unsettled since birth
- GP prescribed Nutramigen AA
- Referred to dietician
- Baby settled- weaning advice
- Now tolerating step 1 /step2 cow milk introduction

What should GPs be referring to Community Paediatric Dieticians

- Suspected / proven food Allergy/ hypersensitivity
- GI conditions- constipation/ coeliac disease
- Growth faltering
- Selective eating- major food groups
- Micro- nutrient deficiencies
- Preterm babies- not under care of other dieticians
- Feeding difficulties
- Obesity

What GPs should NOT refer

- Diabetics
- Metabolic disorders
- Cystic fibrosis
- Home tube feeding

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