## **The Pollen**

### News Letter

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It is an initiative started to help people with allergic disorders lead a good quality of life.

Abha Gupta Secretary

The members of the organisation include allergic individuals, their guardians, doctors, paramedics

and social activist with an interest to help allergic patients. Lack of registry of allergic patients and for many years the absence of any definite degree course in allergy in the country acted as hindrances in the information on the prevalence of allergy in India. Demographic projections based on various studies predict 22% of the total population in India suffer from some kind of allergy.

The perspective of food allergy patients in India reflect any food can be allergenic, Patterns of common allergens differ across regions and cultures, Dairy, eggs, peanuts, tree nuts such as walnuts, almonds and cashews, fish, shellfish, soya, wheat, seasame top the list, Incidence of allergies to milk, eggs and wheat is less frequent then in the West, Dals (Pulses) such as chickpeas more common.

It is evenly distributed, more in urban and semi urban areas as compared to rural areas, changing food pattern moving away from Traditional Dal, Rice, Vegetables to Fast Food, Ice cream, Chocolate and additionally increased number of houses have Carpets & Pets.

The one single site in India in the year 2008-09 conducted 66778 tests for allergy and found the following allergens & their percentage distribution is Mite – 36.1%, Cockroach – 32.5%, Asp. Fum. – 28.8%, H. dust – 21.8%, Bermuda Grass – 21%, Shrimp – 18%, Johanson Grass – 15.9%, Wheat – 12.4%.

All this reflects allergies are on the rise in India.

This year the Allergy Care India undertook the following activities:

Patient care camps

Public Education & Social Sensitization

Counseling sessions

Participation in Medical Conferences

Support to Blood donation camps

Research publication

Networking with governmental agencies, academic institutions, scientific research organizations & NGO's in the development of Food Safety Management Program

# International alliance of patient organizations

I had the opportunity of attending the European Academy of Clinical Immunology and Allergy (EAACI) annual scientific congress in June. EAACI has established a Patient Organisations Committee to help them develop better care and increase safety and quality of life for individuals with allergy and asthma. The move was discussed with, and welcomed by, the members of the Food Allergy and Anaphylaxis Alliance (FAAA) of which Allergy Care India is a member. Allergy Care India was invited by EAACI to nominate a representative to become a member, and I was subsequently appointed to the Patient Organisations Committee and invited to the congress.

The network of organisations associated with FAAA and EAACI has expanded significantly in recent years, with countries from Asia, the Middle East and South America, as well as more from Europe, now participating. This reflects the global spread of food allergy in the last decade. As a result of such diverse membership, many new topics have been raised for discussion, For example, at the FAAA meeting in September last year, discussions on guidelines for allergic children

at school identified a number of barriers that many of the new member ranged from legislation that prevented teachers from giving medications, through to no or limited access to auto-injectors.

With this in mind it was agreed that global minimum standards should be established for the care and protection of children with food allergy at risk of anaphylaxis in education settings.













# BACK TO BASICS The nitty gritty of allergies

The average allergy sufferer can find the road from diagnosis to treatment and then management a difficult one to navigate. Here is a back-to-basics guide on common allergy definitions and an A-Z glossasry of allergy terms.

#### What is an allergy?

Allergies are very common and increasing in India affecting around one in Five people at some time in their lives. There are many different causes of allergy and symptomas vary from mild to potentially life-threatening. Allergy is also one of the major factors associated with the cause and persistence of asthma. Fortunately effective prevention and treatment options are available for most allergies.

## What happens when you have an allergic reaction?

When a person who is allergic to a particular allergen comes into contact with it, an allergic reaction occurs. This begins when the allergen (for example, pollen) enters the body, triggering an antibody response. The antibodies attach themselves to special cells, called mast cells. When the pollen comes into contact with the antibodies, the mast cells respond by releasing certain substances, one of which is called histamine. When the release of histamine is due to an allergen, the resulting swelling and inflammation is extremely imitating and uncomfortable

#### ALLERGY – A DEFINITION

Allergy occurs when a person's immune system reacts to substances in the environment that are harmless for most people. These substances are known as allergens and are found in house dust mites, pets, pollen, inspects, moulds, food and some medicines. Atopy is the genetic (inherited) tendency to develop allergic diseases. People with atopy are said to be atopic. When atopic people are exposed to allergens they can develop an immune reaction that leads to allergic inflammation (redness and swelling). This can then cause symptoms in the:

- Nose and/or eyes hay fever (allergic rhinitis/ conjunctivitis).
- Skin eczema, hives (urticaria).
- Lungs Asthma.

A substance that is an allergen for one person may not be for another everyone reacts differently. The likelihood of developing allergies is increased if other family members suffer from allergy or asthma.

The most common causes of allergic reactions are :

**Dust mites** 

Pollen

Food such as peanuts, cow's milk, soy, seafood and eggs

Cats and other furry or hairy animals such as dogs, horses, rabbits and guinea pigs

Insect stings

Moulds

Medicines

Similar reactions can occur to some chemicals and food additives, however if they do not involve the immune system, they are known as 'adverse reactions' rather than 'allergy'.

## Which areas of the body may be affected?

Depending on the allergen and where it enters your body, you may experience different symptoms. For example, pollen, when breathed in through the nose, usually causes symptoms in the nose, eyes, sinuses and throat (allergic rhinitis). Allergy to food usually causes stomach or bowel problems and may cause hives (urticaria). Allergic reactions can also involve several parts of the body at the same time.

#### The nose, eyes, sinuses and throat

When allergens are breathed in, the release of histamine causes the lining of your nose to produce lots of mucus and to become swollen and inflamed. If causes your nose to run and itch and violent sneezing may occur. Your eyes may also start to water and you may get a sore throat.

#### The lungs and chest

Asthma can sometimes be triggered during an allergic reaction. When and allergen is breathed in, the lining of the passages in the lungs swells and makes breathing difficult. Not all asthma is caused by allergy, but in many cases allergy plays a part.

#### The stomach and bowel

Most stomach upsets are caused by richness or spiciness in food itself, rather than an actual allergy to it. However, foods that are most commonly associated with allergy include peanuts, seafood, dairy products and eggs. Cow's milk allergy in infants may occur and can cause eczema, asthma, colic and stomach upsets. It may also lead to failure to thrive. Some people cannot digest lactose (milk sugar). This intolerance to lactose also causes stomach upsets but must not be confused with allergy.

#### The skin

Skin problems such as eczema (dry, red, itchy skin) and urticaria (also known as hives) often occur. Hives are white, itchy bumps which look and feel like insect bites. Food may be a factor in some cases of hives and eczema.

## Life-threatening allergic reactions required immediate treatment

Most allergic reactions are mild to moderate and do not cause major problems, even thought for many people they may be a source of extreme irritation and discomfort.

However a small number of people may experience a severe allergic reaction called anaphylaxis. It is a serious condition that requires immediate life-saving medication.

Some of the more frequent allergens which may cause this are peanuts, shellfish, insect stings and drugs. If you know that you have a very severe allergy, you should have an anaphylaxis management plan from your doctor.

#### Effective prevention and treatment

Allergen avoidance (or reduction) relies on identifying the cause of your allergy and then taking steps to reduce your exposure to the allergen. For instance, many people are allergic to dust mites, therefore reducing them in the house is important. Medications used to treat allergies include:

Antihistamines – These block histamine release from mast cells, thereby reducing many irritating and uncomfortable symptoms. Nonsedating antihistamine tablets rarely cause drowsiness and are available from pharmacies without a prescription. Antihistamine nasal and eye sprays can also be used.

**Intranasal cortiocosteroid nasal sprays (INCS)** – are very effective for treatment of moderate to severe allergic rhinitis (hay fever) when used appropriately and regularly.

#### **Medicated eye drops**

Adrenaline – is used for first-aid emergency treatment of life-threatening severe allergic reactions (anaphylaxis).

Non-medicated treatments, such as saline douches and sprays, are used for treating allergic rhinitis and sinusitis.

Specific allergen immunotherapy (also known as desensitization) is a long-term treatment which changes the immune system's response to allergens. It involves regular, gradually increasing amounts of allergen extracts, by injections or sublingual drops.

Protecting Food Allergic
Consumers and Celiac
Patients in India Requires
Improvements in Diagnostic
Accuracy, Patient
Education, Food Handling
and Labeling Practices

Goodman, Richard PhD1; Gupta, Ashok MD2; Mahesh, Padukurdu MD3; Singh, Anand B. PhD4; Komarla, Nagendra Prasad MD5; van Ree, Ronald PhD6; Mills, ENC PhD7; Taylor, Steve, PhD1.

1Food Allergy Research and Resource Program, University of Nebraska, Lincoln, NE, USA; 2Dept. of Pediatrics, SMS Medical College, Jaipur, India; 3Allergy, Asthma and Chest Centre, Mysore, India; 4Institiute of Genomics and Integrative Biology, Delhi University, New Delhi, India; 5Bangalore Allergy Centre, Bangalore, India; 6Manchester Medical School, Univ. of Manchester, Manchester, United Kingdom; 7Academic Medical Center, Amsterdam, The Netherlands Background: Claims of marked increases in the prevalence of food allergy (FA) and celiac disease (CD) are common in the US and EU and increasingly in India where little is known about food allergy. Studies suggest increasing trends, but often lack rigorous definition of symptoms and tests. Reliance on Skin Prick Tests (SPT) or specific IgE alone, without corroborating clinical histories may be misleading. Once diagnosed, patients with FA or CD must avoid eliciting foods, which requires accurate information of food ingredients.

**Methods:** A screen of suspected pulse-allergic subjects by selected clinicians in New Delhi, Chandigarh and Mysore/Bangalore was followed by laboratory IgE-tests with pulse extracts. Case histories of FA and CD from a medical college Pediatric clinic in Jaipur were reviewed. A systematic home survey conducted in Bangalore and Mysore involved more than 60,000 subjects with questionnaires and detailed follow-up with serology and SPT as part of Europrevall. A non-scientific survey of Indian food recipes and ingredients was used to consider terminology.

**Results:** Based on limited data, the perceived rate of FA and CD in India by patients and clinicians is highly variable. Lack of standardized criteria, low availability and high costs of quality SPT reagents and laboratory tests (for CD and FA) hinder accurate diagnosis. Diverse terms and recipes for foods in India increases complexity. Allergy to milk and eggs is relatively common as expected. Reports of allergy to unlikely sources (e.g. brinjal, fruits and rice) are common, but are likely due to intolerance or too reliance on SPT or specific IgE binding, without clear clinical histories, which can be misleading. Rare cases of severe anaphylaxis to *Vigna sp.* (blackgram, mung bean and cowpea) and groundnut were found.

**Conclusions:** Preliminary evidence demonstrates that severe food allergy is present in India where

dietary habits, production and use of packaged foods are changing rapidly. Based on experiences in other countries it seems appropriate to expand education and training programs for clinicians, encourage development of valid testing systems and gather reliable information to aid the food industry and government regulators develop methods to help the food industry protect FA and CD patients from unintended exposure.

#### Introduction

Individual countries are responsible for the safety of food consumed by their people. However, as food production and consumption patterns become more global, countries are working together through organizations such as the CODEX Alimentarius Commission and OECD to provide food safety guidelines that should enable expanding trade, with some level of safety assured. Laws and mechanisms of regulation differ in each country and it is important to harmonize across countries to protect all at-risk consumers.

Food allergy and celiac disease (CD) are often hard to accurately diagnose. Relatively few consumers are affected, but a few are at risk of severe lifethreatening reactions that are acute (IgE mediated allergy) or chronic (CD). There are complex genetic factors that increase the likelihood of sensitivity, but also many complex environmental factors have great influence in controlling sensitization or tolerance, but they are not proven or highly predictive. Diet, vitamin intake, exposure and development airway allergy (pollen, molds and arthropods), intestinal microbiota, parasite exposure and various viral or bacterial infections are likely modulatory agents.

Specific proteins in allergenic foods and CD (grains) are not equal in sensitizing or eliciting properties. However, it is extremely difficult (because of relatively low prevalence and lack of standardized diagnostic procedures) to obtain accurate

prevalence data for specific allergens or CD for specific grains. Data from various studies of North America (US and Canada), various European (EU) countries (primarily Western Europe), Japan and Australia show likely prevalence of COMMON food allergens:

#### **Severe Reactions**

**Food Allergy**: Fatal anaphylaxis is relatively rare (<200 deaths in the US, most often due to peanut, tree nut, milk, eggs or crustacean shell-fish. More than 80,000 hospital emergency room visits per year in US. Typically requires administration of epinephrine within 5 to 10 minutes after first reactions.

**Celiac Disease**: Chronic, but can have rapid onset for some. Failure to thrive, retarded growth, chronic diarrhea, chronic constipation, vomiting to thrive, dermatitis herpetiformis, anemia, osteoporosis,

Allergen	Children	Adults
All foods (IgE)	3 - 8%	1 - 4%
Cow's milk	2.5%	0.3%
Eggs	1.5%	0.2%
Peanut		
(Ground nut)	1%	0.6%
Common tree		
Nuts	0.5%	0.6%
Fish	0.1%	0.4%
Crustacean		
Shellfish	0.1%	2%
Buckwheat		
(Japan)	0.2%	0.2%
Soybean	0.4%	0.3%
Wheat	0.3%	0.3%
Sesame seed	0.1%	0.1%
Celiac	0.5%-1.2%	0.5%
disease (Tcell) Glutens		

But we do not know what the important allergens or prevalence for India

#### Allergy / Allergology Societies and Consumer Groups

Global and country specific clinical / research organizations (WAO, AAAAI, EAACI, ICAAAI) provide opportunities to share scientific and clinical information to improve diagnosis and aid in risk assessment for the individual and the population. However, for food allergy there is a growing need for consumer education and support.

Patient and family organizations in the US (e.g. Food Allergy and Anaphylaxis Network or FAAN; Food Allergy Initiative or FAI; which have now merged to form FARE) and EU (e.g. European Federation for Allergy and Airways Diseases Patients' Associations or EFA, and country specific groups) have organized patient and family groups to help food allergic subjects learn to better manage risks by learning to avoid foods containing their specific allergens or CD eliciting grain. Dr. Ashok Gupta is organizing a consumer group in India (and there may be others), to help educate consumers and provide feedback to clinicians, food companies and the government. While food allergy and Celiac Disease are not widely recognized in India, the prevalence is likely growing and it is useful to foster broader understanding of issues for diagnosis and prevalence for both food-related diseases.

#### **QUESTIONS**

Is the prevalence of food allergy and celiac disease (CD) less common in India than in the US and EU?



If yes, will it grow as diets change?

How should clinicians diagnose these diseases?

What diagnostic tools are available in India? Disease management is by avoidance

How can the clinicians, the food industry and government help affected consumers

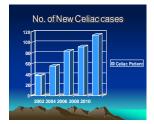
## Clinical History – The most important diagnostic tool

Requires time, knowledge of food contents and habits, carefully designed questionnaire, then clinical tests





# Celiac Disease diagnosis with +history:



Differs for adults and young children

- · Autoimmune disease triggered by specific grains
- Biopsy duodenum/jejunum following regular consumption of wheat/barley/rye
- •Test for serum anti-tissue transglutaminase-IgA
- •Test HLA (MHC DQ 2 or DQ8); essentially all CD patients have DQ2 or DQ8, but < 5% of subjects with DQ2 or 8 have CD (expensive test).
- Then avoid W/B/R very carefully. Follow-up.
- PREVALENCE ~ 0.5% to 1% of the Indian population ???

Reference: Kneepkens CMF, von Bloomberg BME. 2012.

Clinical Perspective of coeliac disease. Eur J Pediatr

171(7):1011-1021

### IgE mediated allergy



#### **Food Allergy Symptoms:**

Immediate (<10 mins -2 hr) Delayed (>2hr to  $\sim 8$  hr)

- · Angioedema (face, oral)
- · Rhinitis, conjunctivitis
- Oral itch
- · Urticaria (hives)
- Asthma
- · Vomit (emesis)
- Diarrhea
- · Atopic dermatitis (chronic)
- Systemic anaphylaxis (hypotension, may cause death)

#### Occurrences:

Symptoms and dose may vary, but should occur at essentially every exposure to same food source

#### **Treatment:**

- Avoidance, read labels, avoid consuming, ask friends and at restaurants
- If anaphylaxis is a risk...take epinephrine everywhere and use it if in doubt
- · No proven immuno-therapy for foodallergy

Indian Subject with Multiple Anaphylactic Episodes to Cowpea and Black gram, but also SPT positive to peanut, chickpea, mung bean, pigeon pea and common bean.



#### **Tests**

- · Careful and thorough history, food diary!
- Skin tests (~ 70% predictive at best)
- Skin prick tests (SPT) with extracts
- · SPT with fresh fruit/vegetables, milk
- Readout- primarily weal, > 3 mm diameter minimum, but 5 mm more predictive. Flair not very predictive
- Patch tests for delayed reactions
- Need quality extracts
- Many false positives, few false negatives
- · Serum IgE tests
- Total IgE not predictive
- Specific IgE if > minimum with quality test
- · Some false positives, and false negs
- · Food Challenges age dependent
- · Blinded, masked
- Open
- · SOME RISK from all tests!

## Food Identity and Clinical "History" are Often Complex in India

Many Indian dishes are "named" for the major legume or pulse....but the food is complex and Names are confounded by multiple languages and common names

How many allergists do not know food recipes or names?

How many patients know the "right name " for the whole food ingredients?

How should "packed" foods be labeled to inform and protect?

Which "pulses are in which of the three meals below







Soybean, blackgram, mung bean, cowpea, ground nut, pea, common bean (kidney bean), bengal gram?

Latin name	Common E	nglish	Indian	Indian (Kanada)
Vigna mungo	Black gram		Urad	
Vigna radiata	Mung bean		Moong bear	n Hesarukalu
Vigna unguiculata	Cowpea / B	lack eyed pe	a Lobhia	Alasandekalu /
				Thadagunikalu
Arachis hypogaea	Peanut / gro	ound nut	Mungaphali	
Cajanus cajan	Pigeon pea	/ Red gram	Arhar	Toor dal
Phaseolus vulgaris	Kidney bea	n		Rajma
Cicer arietinum	Chick pea (	two types) Cl	nana Daal Bla	ick Channa
				Sundal
Pisum sativum	Pea	Matar		

#### Diagnostic Tools?

High Quality Food Extracts doe Skin Prick Testing (SPT):

Commercial companies include: ALK, Jubilant (was Hollister-Stier), Greer, Stallergenes, r and a few

Indian Company products (Credisol India, Ltd.; All Cure Pharma, Ltd.; Alcit India, Ltd.; BioProducts &

Diagnostics, Ltd.). MOST international extracts Not available in India

FEW of these EXTRACTS ARE STANDARDIZED!

Clinician produced extracts or prick-to-prick (prick fruit/vegetable, and then prick patient) Many food allergens (proteins) are NOT stable in extracts

Laboratory "allergen-specific" IgE test systems Highly standardized, reliable and expensive ImmunoCAPS® Thermo Scientific (was Pharmacia, then Phadia)

IMMULITE® Siemen's

RIDAScreen® ELISA and RIDA®

AllergyScreen® r-Biopharm AG

Less standardized

Lab-specific tests

RAST, ELISA, Immunoblot, Inhibition of R/E/I Commercial

Disha Pathology & Diagnostic Services, Mumbai Dexall "Acti-Tip® (NOTE: Counterfeit systems have been found in India and Bangladesh) North Delhi Pathology Clinic panel of "40 allergens"

## Prevalence of IgE mediated Food Allergy

### Europrevall funded preliminary study: with ethical approval and consent

Bangalore and Mysore, statistically defined study

Statistically defined Household questionnaire – included 28,500 subjects to identify possibly food allergic

22,000 adults

488 answered as possible food reactors 139 rxns in <2 hours, plausible

Detailed survey & SPT with extracts, 12 finally defined with probable food allergy (<0.05%) 6,500 children

334 answered as possible food reactors 84 rxns in <2 hours, plausible

Detailed survey & SPT with extracts, 9 finally defined with probable food allergy (<0.1%)

### Results indicate far less than expected. Sera from willing subjects

### Conclusions: We STILL do NOT know very muchabout food allergy prevalence in India!

Celiac disease appears to be ~ 1%, especially in wheat consuming areas

Case reports demonstrate individuals can and do have severe anaphylaxis to some foods, primarily pulses and ground nuts

The experience of Indian clinical pediatric practices indicates children are most commonly allergic to cow's milk and eggs

There is a need for high-quality allergen extracts and allergen-specific IgE tests for Indian foods, and celiac reagents/tests

There is a need for additional training for pediatricians, allergists and other clinicians

There is a need for additional data and labeling strategies that would be useful for the Indian consumers and for exports as affected individuals must avoid their allergen, or the grains that cause CD – to remain symptom free.

# ALLERGY REDUCES TUMOUR RISK

The 'burden' of allergy may be a little lighter than we thought – the suggestion that having allergies reduces the risk of contracting a certain type of brain cancer is getting stronger.



A new study, led by Dr. Judith Schwartzbaum, Associate Professor of Epidemiology at Ohio State University, and published in the Journal of the National Cancer Institute (USA), found the reduced risk of glioma is

stronger in females, although men with certain allergies also have a reduced risk.

The glioblastomas (tumours) can suppress the immune system, which means they can grow. Studies of blood were taken from men and women decades before they were diagnosed with glioma. It was found that men and women whose blood had allergy antibodies were 50 per cent less likely to develop the disease than those without the allergy antibodies.

'Seeing this association so long before tumor diagnosis suggests that antibodies or some aspect of allergy is reducing tumor risk,' says Dr. Schwartzbaum. Schwartzbaum and colleagues were granted access to specimens from the Janus Serum Bank in Norway. The bank contains samples collected from citizens during their annual medical evaluations, or from volunteer blood donors for the last 40 years.

'It could be that in allergic people, higher levels of circulating antibodies amy stimulate the immune system, and that could lower the risk of glioma. Absence of allergy is the strongest risk factor identified so far for this brain tumour, and there is still more to understand about how this association works.'

Glioblastomas account for 60 per cent of adult tumours starting in the brain in the USA, affecting an estimated three in 100,000 people. Mortality is severely affected – fewer than 10 per cent of patients will live for five years after diagnosis with the disease.

# GENDER HAS MAJOR ROLE IN ALLERGY

The genetic risk of a child having allergies doubles if the parent of the same sex is an allergy sufferer, new research has found. The research was published in the Journal of Allergy and Clinical Immunology and funded by the National Institute of Health in the US.

Professor Hasan Arshad, a consultant in allergy and immunology at Southampton General Hospital (UK) and the Chairman of allergy and immunology at the University of Southampoton, says allergies are not just hereditary, but are related to gender.

He says allergists have previously thought that the maternal influence was predominant in passing on allergies to their children. However, now they know that mothers pass the risk of allergies to their daughters, as do fathers to their sons. In the study, which was funded by the National Institute of Health in the US and published in the Journal of Allergy and Clinical Immunology, 1456 patients were studied from birth to age 23. It was found that girls were 50 per cent more likely to have asthma if their mothers had it, with the same applying to boys and their fathers. The findings were also replicated for eczema.

'In the past, studies looking at the effect of parental allergy on children have not split their samples according to the sex of the child, having assumed the mother and father influence is identical in males and females,' said Professor Arshad.

'Now with these groundbreaking findings, we should see a change in the way we assess a child's risk of disease, asking girls for the allergy history of their mother and boys for that of their

father.' Professor Arshad said the findings may aid future research into the genetics of allergy and its prevention.

# TACKLING COW'S MILK ALLERGY

There are many alternatives available to replace the nutrients found in cow's milk.

Allergy to cow's milk is one of the most common-about one in 50 babies are affected. Fortunately, most will outgrow their allergy by the end of their childhood.

#### Symptoms of cow's Milk Allergy

Swelling of the lips, face or eyes.

Hives or welts on the skin (urticaria).

Tingling or peppery taste in the mouth.

Wheezing.

Eczema.

Gastro symptoms such as diarrhea, reflux/vomiting.

Eczema.



Most children will only experience mild symptoms but some can have a severe reaction – anaphylaxis – that can cause problems with swelling of the throat and breathing. You need to seek immediate medical attention if this happens.

#### Who does Milk Allergy Happen?

Milk allergy occurs when the immune system recognizes the protein in milk as a foreign body, and therefore attacks it. It's really important if you suspect a milk allergy in your child that you get professional advice from a doctor experienced in diagnosing and treating allergies. Your GP or specialist will make a diagnosis based on the history of previous reactions. The allergy can be confirmed by skinprick tests and /or bloods tests to measure the allergy antibodies.

#### How to Manage a Dairy - Free Diet

If your child is eventually diagnosed with a milk allergy, you need to completely eliminate milk, dairy products and any foods with milk-containing ingredients from their diet.

However, milk is an important sources of energy, protein, fat, calcium, vitamins B12, B2 (Riboflavin) and vitamin A. These are all critical for growth and health. Calcium is important for developing and maintaining strong bones in children and adults. It is always a good idea to work with a dietitian to manage a dairy-free diet in growing children.

#### Breastfeeding

Sometimes a baby who is exclusively breastfed can develop an allergy to milk, which is passed on through the mother's breast milk. In this case, the mother can stop consuming cow's milk themselves, and this usually stops baby's allergic reaction. Again, check this with a dietitian.

#### Replacements for Cow's Milk

#### Hypoallergenic formula

When a baby is allergic to cow's milk, it may be necessary to consider a specialized infant formula. There are many types available and should be selected on the advice of your GP, specialist or dietitian.

#### **Extensively hydrolysed formula (EHF)**

The cow's milk proteins have been broken down by enzymes into very small particles called peptides.

#### Amino acid formula (AAF)

Amino acids are the simplest form of protein and very easy for the human body to digest.

#### Soy milk formula

Soy- based formula is not generally recommend for infants under six months of age with cow's milk allergy as there is a risk they may become sensitized to soy or will react to the soy protein. Soy formula may be considered for infants over six months of age who are not sensitized to soy and who have refused the hypoallergenic formula.

#### Partially hydrolysed formula (PHF)

Partially hydrolysed formula is not suitable for the treatment of cow's milk allergy as the cow's milk protein has been only partially broken down.

#### Goat's milk

These animal milks are not suitable for children or adults with cow's milk allergy as the proteins are very similar to those in cow's milk and most people will react to these, too.

#### Milk replacements after one year of age

Some children may need to keep drinking a hypoallergenic formula after they reach 12 months of age, but only under the supervision of a dietitian.

### **MEMBERSHIP FORM**

1.	Name	:	
2.	Father's / Spouse Name	:	
3.	Age	:	
4.	Sex	:	
5.	Address (Office)	:	
6.	Address (Residence)	:	
7.	Contact Nos.	:	
8.	E-mail	:	
9.	Allergy (if any) Pls.	:	
	specify		
10.			
		1	L