European Academy of Allergy and Clinical Immunology (EAACI)

Food Allergy & Anaphylaxis Public Declaration
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Executive summary

Food allergy is a growing public health concern, affecting more than 17 million people in Europe alone. 3.5 million European sufferers are younger than 25 years old and the sharpest rise in food allergies is amongst children and young people. Furthermore, the number of severe and potentially life-threatening allergic reactions (anaphylaxis), due to food allergies, occurring in children is also increasing.

In light of these worrying statistics, the European Academy of Allergy and Clinical Immunology (EAACI) launched its Stop Anaphylaxis! Food Allergy Campaign in June 2012. The purpose of the campaign is to raise awareness of the sharp increase of anaphylaxis, especially in children. It aims at educating the public to recognise the symptoms of anaphylaxis and its triggers, and to explain how to react in case of emergency. The EAACI Patients organisations Committee also supports the Food Allergy Campaign, with more than 25 country representatives from across Europe, North America, South America, the Middle East, Asia and Oceania. This document is a key part of the campaign as it contains a public declaration, calling on European Union (EU) policy-makers, health professionals and the public to take concrete actions in order to improve the management and treatment of food allergies and anaphylaxis.

Europe-wide evidence-based guidelines for healthcare professionals and improved training for healthcare professionals in diagnosing food allergies could improve the current situation. It should be noted that most food allergies currently go undiagnosed, or are subject to self-help methods, not supervised by a medical professional. Setting clear guidelines for labelling foodstuffs for allergens would lower the risk of allergic reactions for food allergy sufferers. Better access to emergency treatment in public spaces would save lives. This is particularly true for the youngest of food allergy sufferers who are increasingly experiencing life-threatening reactions (anaphylaxis). EAACI calls for auto-injectors to be made available in schools: a simple solution that could save lives. EAACI will publish the Minimum Standards for the treatment of the allergic child in school to guide policy-makers in the implementation of such a policy change.

Much more research is needed to help develop strategies for prevention and management, and to improve the health and quality of life of food allergy sufferers. EU-funded research programmes should therefore continue to support work on food allergies, and bring more effective diagnostic tools and treatments to the market. EAACI also encourages the inclusion of anaphylaxis as a cause of death in the International Classification of Diseases (ICD-11) and the creation of national and European allergy and anaphylaxis registries, both of which would further enable the generation of better-quality data and help develop a stepwise approach for better treatment of these conditions.
What is **food allergy** and **anaphylaxis**?

Food allergies are an abnormal response of the body to otherwise harmless foods involving the immune system. Normally, our immune system defends against possibly harmful substances, such as bacteria, viruses, and toxins. However, the immune system of allergic individuals incorrectly identifies certain food constituents as harmful. The severity of an allergic reaction may vary between individuals. While one person may have to rush to the nearest emergency room within minutes of eating a food allergen because of life-threatening symptoms, another person may only develop itching in the mouth. The reaction may develop within a few minutes or a few hours.

Food allergy is often confused with food intolerance. Food intolerance is not related to the immune system, and people who are intolerant can often consume small quantities of that food and not experience intolerance allergic symptoms.

Anaphylaxis can be described as a rapidly developing severe, life-threatening systemic allergic reaction, in which the immune system responds to otherwise harmless substances, and can result in death. The most common causes of anaphylaxis include food, drugs, and insect stings (bees, wasps). The reaction may begin within minutes of exposure and can rapidly progress to cause airway constriction, skin and intestinal symptoms, and altered heart rhythms. In severe cases, it can result in complete airway obstruction, shock, and death.

Anaphylaxis can affect several body systems simultaneously. The skin is involved in 80% of anaphylactic incidents in the form of itching, a skin rash, and generalised redness or swelling under the skin’s surface (angioedema). In other cases, the respiratory system may be involved, in the form of irritation and inflammation inside the nose (acute rhinitis) or asthma, the digestive tract (nausea, vomiting, stomach cramps or diarrhoea), or the cardiovascular system (with palpitations, increased heart rate or low blood pressure) may be involved. These may lead to dizziness, loss of consciousness, and in the worst scenario, to respiratory or cardiac arrest.
How does food allergy and anaphylaxis affect the body?
Our immune system protects our bodies with a complex network of immune cells and antibodies intended to achieve immune tolerance to harmless environmental substances and protection from the dangerous ones. For example, we produce a number of different types of antibodies which play various specific roles in the immune system. The antibody type, which may cause an allergic reaction, is called Immunoglobin E (IgE). We produce IgE molecules to fight infections caused by parasites, like worms. Although the reason is not fully known at present, the immune system of some people mistakenly provides irregular responses resulting in overproduction of IgE antibodies and altered networks of immune cells in reaction to some foods, giving rise to food allergies. Proteins are usually responsible for an allergic reaction. However, it is not yet clear what makes some food proteins allergenic, and others not.

The development of an allergy occurs in two stages:

- **Sensitisation**: when a person is first exposed to a food (which sometimes may be the case even before birth). The food may trigger immune system cells to produce large amounts of IgE that specifically recognises that food.
- **Reaction**: once you have been sensitised, even a tiny quantity of that allergen can lead to an allergic reaction. When the person eats the same food again, the allergen triggers the newly armed immune system, which leads to allergy symptoms.

What causes food allergy and anaphylaxis?
Food allergy and allergic diseases in general share many risk factors, but the causes are still poorly understood. There appears to be a number of genetic and nutritional risk factors that are specific to food allergy. The timing of introduction into the diet of foods consumed in early life seems to play an important role. Additionally, the amount of gastric acid in our stomach, and the composition of bacteria in our gut, may influence susceptibility to food allergy.

However, much more research is needed into the causes of food allergy. Such research will help to develop strategies for prevention and management that could improve the health, and quality of life of many people.

It is well known that infants with food allergy are more likely to develop other allergic diseases, such as asthma, later in life. One explanation for this is that food allergy and allergic diseases in general probably have many risk factors in common. Diseases that may be taking place at the same time as food allergies include, asthma, allergic rhinitis and eczema.

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What treatments exist for food allergies and anaphylaxis?
The only way to avoid an allergic reaction is to avoid the foods that cause the reaction. However, accidental exposure is common and can cause a reaction. For a minor allergic reaction, over-the-counter or prescribed anti-histamines may help reduce symptoms. These drugs can be taken after exposure to an allergy-causing food to help relieve itching or hives. However, anti-histamines cannot treat a severe allergic reaction, and the occurrence of severe reactions is difficult to predict. For anaphylaxis, the administration of intramuscular adrenaline is the first-line treatment.

There is ongoing research to find better treatments to reduce food allergy symptoms and prevent allergy attacks. Currently there is no established treatment that can prevent or completely relieve symptoms. Although some promising treatments are under development, such as oral tolerance induction protocols for some foods, further research is needed to ensure the effectiveness and safety of these treatment methods.
More than 17 million people in Europe suffer from food allergy. Of these, 3.5 million are younger than 25 years.

The sharpest increase is seen in children and young people, especially in the number of life-threatening allergic reactions in children.

Across Europe, food allergy is the leading cause of anaphylaxis in children aged 0 - 14 years.

Available research indicates there is a 7-fold increase in hospital admissions for severe allergic reactions in children in the last 10 years.

Anaphylaxis as such, is not considered common. However, due to under-reporting the incidence may be underestimated. Furthermore, the impact of a life-threatening anaphylactic reaction is substantial.

Most of those who claim to suffer from some form of food allergy employ self-diagnosis and consequently implement treatment strategies (usually avoidance of foods) which are unsupervised by a medical practitioner.

More than 120 foods have been described as causing food allergies. However, foods that most commonly cause serious allergic reactions are milk, eggs, peanuts, tree nuts, (stone) fruits and some vegetables. Allergies to fish and shellfish are less common but usually quite severe.

In continental Europe, the most common food allergies in children are due to eggs, cow’s milk and peanuts, while in adulthood, they are caused by fresh fruit, peanuts, tree nuts and vegetables. However, national variations concerning the most common food allergies do exist. For example, in the UK, walnuts, hazelnuts and peanuts pose the biggest threat and cause 50% of all life-threatening allergic reactions whilst allergies to shellfish and cod are higher in Scandinavia and Northern Europe.
What is the impact on the lives of Europeans?

The daily reality of living and caring for somebody with a food allergy
When speaking about food allergies, individuals suffering from them, their families, friends, co-workers and helping professionals, all describe the stress and frustration induced by the need to be constantly alert and attentive, the embarrassment encountered in certain social occasions, the incomprehension or ignorance of others, and the overriding desire to be “normal”.

Parents of children with food allergy talk about the emotional tug of war that they go through every day as they negotiate what their child can or cannot do. They describe the difficulty of living in a world that they cannot entirely control. They confess their growing concern as their child grows up, and gains autonomy, as well as the feeling of helplessness when accidental exposure occurs. As for young sufferers, research shows that food allergy constitutes a burden, which considerably affects their physical and psychological well-being, and potentially also the development of their personality and self-image.

Health-related quality of life for patients with food allergy
When assessing the health-related quality of life, the research community not only focusses on symptoms, but also assesses the indirect consequences of a condition, such as heightened stress levels or depression. This is particularly important in the case of food allergy as patients do not have daily chronic symptoms, but must remain constantly vigilant to avoid exposure. Food avoidance also has physical side effects as it may cause dietary imbalances, which could generate additional complications. Studies have found that across their lifetime, food allergic patients have a worse quality of life than patients with diseases sometimes considered to be more severe, such as diabetes.

Children suffering from food allergies are at risk of hospitalisation for food-related anaphylaxis and are most often afflicted by co-existing diseases, such as allergic rhinitis, asthma, and eczema. Yet, despite this heavy physical burden, studies have found that children suffer less psychologically than adults with food allergies do. This is largely due to the protective role that parents and carers play in managing the disease.

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of allergic reactions to food occur at school, with 4-7% of children being affected by food allergy. These percentages are constantly rising.

However, parents cannot always supervise the food consumption of their children, so schools also need to ensure the safety of their pupils. This is particularly important since food allergy affects at least 4-7% of children, with 20% of allergic reactions occurring in schools. In addition, up to two-thirds of schools currently have at least one child at risk of anaphylaxis but many are poorly educated and poorly prepared to handle emergencies. EAACI has been working on the Minimum Standards for the Allergic Child at School. It is aimed at harmonising the minimum requirements for the safety of children with food allergies at school. This should help every school apply well-thought out and science-based requirements for the safety of pupils with allergies and at risk of anaphylaxis.

Cost of food allergy on households
The economic impact of food allergy can be incurred directly in managing the allergy, or as an indirect effect of the allergy. Direct, or out-of-pocket costs, are measured by tallying items such as the purchase of drugs, allergen-free foods, hospitalisation, specialist medical care and out-patient visits. Indirect costs are measured by assessing the amount of lost time from work or school, as well as the loss of productivity. However, the resulting impact on future career prospects and professional advancement are measured with less certainty.

A study spanning four Member States – the Netherlands, the UK, Poland and Spain – found that direct and indirect costs associated with food allergies at the household level, decreased as the severity of the allergy increases. This may seem contradictory but in fact, the more severe the allergy, the more restricted the diet and lifestyle of the whole family becomes, thus limiting expenditure. Research also shows that a disproportionate part of costs generated by the disease is intangible, because it relates to issues such as pain, distress and anxiety, which severely impinge on quality of life.

Impact on schooling and child development
Research consistently notes significant negative effects on daily family life, school and extra-curricular activities, physical functioning and social life amongst young sufferers. The disease seems to also have important implications on a child’s development and construction of their personality as well as their own perception of themselves and self-acceptance. Growing up, children tend to describe themselves as “different” and this has consequences on how they perceive themselves and how they feel others perceive them. However, studies have shown that compared to the general population, children and adolescents suffering from food allergy report fewer problems with school work or behavioural problems. Although, as they grow into adulthood, they develop more limitations in social activities, and less vitality. Their self-esteem is also more affected by the disease.

This may be because individuals with food allergy learn at a very young age that they must maintain a heightened level of cautiousness to manage the demands of the condition – a trait that they apply in other situations as well. However, more research needs to be conducted in this field to fully understand the impact of food allergy on children and their families.

Adolescents with food allergy feel constrained by their disease and experience a sense of insecurity, particularly in new or unknown situations. At the same time, the fear of severe reactions threatens their personal sense of competence, which is already, as a rule, lower than their peers. This is partly because parents are often over-protective of a child with food allergy.
What is the macro-economic and health economic impact?

Difficulties in measuring social and economic impact
There is a shortage of good-quality health economic data concerning food allergy. Where data does exist, the methodology of cost-of-illness research is not well defined or scientifically validated. The economic costs of food allergy apply to a variety of economic sectors, including the health sector, where direct costs can be incurred by providing hospital primary care, and indirect costs by launching a public health campaign. Economic costs also apply to the public sector generally, the food industry, individuals and households. Calculating the direct costs of managing an allergy to a household, such as the purchase of drugs is an important consideration when calculating the economic impact. Furthermore, calculating the indirect costs, such as, the amount of lost time from work or school, and the resulting effect on future career prospects needs to be measured with more certainty. Therefore, more research is needed in assessing the social and economic impact of food allergies.

Anaphylaxis is a growing paediatric clinical emergency, which is difficult to diagnose. A starting point for this and the difficulties in understanding the socio-economic burden of anaphylaxis is that a commonly agreed definition is still lacking. A widely used definition of anaphylaxis is “a serious allergic reaction that is rapid in onset and may cause death”. There is, however, still some way to go in reaching agreement on a common definition, and consequently, understanding anaphylaxis better.

Therefore, EAACI encourages the creation of national and European allergy and anaphylaxis registries, which would further enable the generation of better-quality data and help develop a stepwise approach for better treatment of these conditions. It would also encourage the inclusion of anaphylaxis as cause of death in the International Classification of Diseases, called ICD-11.
What needs to be done to **tackle food allergy** and the dangers of **anaphylaxis**?

**Where do we stand today?**

EAACI regularly organises training for healthcare professionals in diagnosis and treatment of food allergies, but there is currently no compulsory training in allergy for medical students. This means that qualified general practitioners are not equipped to recognise symptoms, with the consequence that this condition is under-diagnosed. Issues around lack of training of health care professionals, consequent under-diagnosis and reporting, together with the **lack of systematic registration of severe food allergy**, means there is a lack of data on the actual prevalence and trends in the condition in the EU.

More research is needed at the European level to better understand this disease, which is affecting more and more of our children. This is particularly important, as good health from early childhood, is a fundamental prerequisite and integral part of the healthy ageing process. The very recently published “**EAACI Research Needs in Allergy**” position paper emphasised the importance of research in food allergy by pointing out the essential and urgent unmet needs for research:

- Understand molecular mechanisms of allergen tolerance and its disruption in food allergy
- Improve diagnosis with individual allergen components, food matrix interactions and threshold identification
- Establish food allergy phenotypes
- Establish novel immunotherapeutic approaches and their combinations
- Europe wide clarification of all epidemiological aspects of food allergy
- Standardise nutritional interventions
There are no EU guidelines on food allergy and anaphylaxis, which makes prevention, diagnosis and treatment across the EU varied and at times inadequate. Some public authorities in the EU have developed good practice guidelines in allergen labelling. This is the case in the UK, France and Ireland. In some other Member States, food suppliers and manufacturers have developed these guidelines, as is the case in Sweden, Italy and the Netherlands. There is a need for harmonised guidelines across EU countries to ensure an effective and systematic approach is adopted in this area.

The new EU legislation on food labelling (which comes into force in December 2014) has strengthened the rule, which requires the presence of allergens to be indicated with the word “contains” before the known allergen. This is known as mandatory labelling. The legislation also requires the European Commission to update the list of allergens required on packaging. Furthermore, the European Commission has acknowledged that seven out of ten severe allergic reactions happen when people eat out, and have therefore ensured that mandatory labelling is applied to non-pre-packed foods. Whilst this increases the protection afforded to an allergic individual, the new legislation still does not regulate, in a legally binding way, precautionary labelling. This refers to labelling products with the “may contain” sign to warn allergen sufferers of the potential for cross-contamination.

Regulation concerning the use of adrenaline auto-injectors varies across EU countries. In most of the EU countries, for example, a prescription is required for an adrenaline auto-injector, and is usually prescribed once someone has suffered from a severe allergic reaction. Prescribing after the event has occurred, does not protect allergy sufferers who are at risk of a severe allergic reaction. In some countries an emergency kit is prescribed that contains treatments such as anti-histamines and steroids for those diagnosed with food allergy and at risk of anaphylaxis.

The prescription of the auto-injectable adrenaline for patients at risk of anaphylaxis must be encouraged. It would be beneficial to adopt a harmonised approach, which would require adrenaline auto-injectors to be available in all public spaces in the EU.
Supporting views

EAACI works closely with patient groups, teachers’ representatives and other key organisations involved in tackling food allergy and anaphylaxis. EAACI is proud to have the support of these groups in addressing the challenges that food allergy and anaphylaxis pose in Europe. Listed below are some supporting views on EAACI’s campaign.

“We are glad to endorse the EAACI Food Allergy and Anaphylaxis Campaign. We particularly appreciate the stress on clear labelling of foodstuffs. Inaccurate, unavailable or misleading information, low readability, untrustworthy precautionary labelling for cross contamination, recipe changes or strange ingredients and language barriers can result in poor quality of life or nutrition, fear, restrictions, social isolation and even death for people with food allergy. Over the past years, the EFA Food Allergy Working Group has worked diligently on this topic in the context of the new EU regulation on food information to consumers. We share EAACI’s objective that European guidance is needed on the use of precautionary “may contain” labelling. We also support the adoption of the International Minimum Standards for the Allergic Child at School with the active involvement of all stakeholders, including patients’ representatives”.

Breda Flood
European Federation of Allergy and Airways Diseases Patients and Associations (EFA)
“EAACI’s Food Allergy and Anaphylaxis Campaign aims at better management of food allergies and wider access to emergency treatment. Wider access to adrenaline auto-injectors is important, particularly in schools where a third of all allergic shocks in children occur for the first time. Therefore, we fully support EAACI’s efforts in addressing the increasing health problem of food allergies and anaphylaxis. Parents, school staff, doctors and education authorities need to be prepared to manage allergic reactions in schools and this can be supported through the adoption at an EU and national level of the Minimum Standards for the Allergic Child at School.”

Prof. David Parmigiani
Association for Teacher Education in Europe (ATEE)

“Anaphylaxis Ireland fully supports the current EAACI Food Allergy and Anaphylaxis Campaign. There is a pressing need for increased training of medical professionals in the diagnosis and management of food allergies. Increased training would lead to earlier recognition and diagnosis of food allergy, resulting in improved quality of life for families who sometimes struggle to get a diagnosis. More training would also facilitate greater involvement of community health care professionals in managing allergy in schools; an area we have advocated for here in Ireland. We also support the call for more research into food allergy. In particular, we believe that research into understanding why children develop food allergy could lead to the development of strategies and guidance to prevent the onset of food allergy.”

Regina Cahill
Anaphylaxis Ireland

“We fully support the EAACI Stop Anaphylaxis Campaign because it aims to help people with severe allergies manage them better and get on with living their lives. An education network involving families, health care and education providers is crucial in ensuring that children are identified, the school staff alerted and trained, and specific allergy management plans initiated. There is also a demand for improved and harmonised education and training of health care professionals so that allergy sufferers receive more effective diagnosis of their allergies. We also welcome the emphasis EAACI places on the clear labelling of foodstuffs. By developing a better understanding of food allergy and communicating these risks to consumers the incidents of allergic reactions can be reduced.”

Lynne Regent
The Anaphylaxis Campaign (UK)