This report contains a summary of the following presentations:

Allergy – a multi-system disease
Dr Louise Michaelis
Consultant in Paediatric Immunology & Allergy

Advances in the nutritional management of food allergy
Dr Rosan Meyer
Paediatric Allergy Dietitian & Senior Lecturer

Eosinophilic Oesophagitis – unravelling the maize of diagnosis
Dr Paul Turner
MRC Clinician Scientist & Honorary Consultant in Paediatric Allergy & Immunology

Eczema – advances in knowledge in relation to food allergies
Dr Helen Cox
Consultant in Paediatric Allergy, Immunology & Asthma
Dr Louise Michaelis, Consultant in Paediatric Immunology and Allergy at Great North Children’s Hospital, Newcastle Upon Tyne, focused her presentation on Non-IgE-mediated food allergy, which is becoming the dominant presentation in many gastro-allergy clinics. There is very little information published to date on Non-IgE-mediated dysmotility and its association with allergic inflammation and bacterial dysbiosis.¹ Dr Michaelis advised that whilst up to 40% of infants may present with gastrointestinal dysmotility, many may not be atopic with features of functional dysmotility. Healthcare professionals should suspect food allergy in children seen in the clinic who have:

- reflux symptoms
- blood or mucus in the stool
- chronic abdominal pain with back arching and distress
- chronic infantile colic that does not resolve when asleep or having a dream feed
- soft stool constipation
- excoriated nappy rash with inflamed buttocks.

Dr Michaelis discussed food protein-induced (FPI) syndromes: Allergic proctocolitis, dysmotility, enteropathy and enterocolitis (known as FPIES).²⁻⁶
Allergic Non-IgE-mediated FPI proctitis and proctocolitis (seen in otherwise happy, well nourished babies but with possible blood in their stools) may be due to inflammation of the distal bowel. Babies might present at less than two months old and are well and thriving. If cow’s milk is removed from the mother’s diet in a breast fed baby or the formula milk is changed to a hypo-allergenic formulation, symptom relief usually occurs within three days. Eighty per cent of these children are usually allergic to cow’s milk protein. As soya may be cross-sensitised with cow’s milk, soya milk is not routinely considered as an alternative milk in the first instance.

Children with FPI gastro-oesophageal reflux tend to present to secondary and tertiary care late. Up to 40% have food allergy, usually to cow’s milk but there is a cohort of children that are not atopic and present with functional dysmotility. Clues include:

- family history of atopy (eczema, rhinitis, asthma)
- presents with distress on all feeds
- fussing at the breast and the bottle
- dislike of the dream feed
- constant colic, 24 hours a day
- faltering growth
- atopic dermatitis
- rhinitis and wheeze with cow’s milk
- poor or no response to anti-reflux medication.

The children with inflammatory dysmotility benefit from a maternal dairy free diet and/or hypoallergenic formula for 8 weeks prior to the re-introduction of the cow’s milk ladder. Dr Michaelis cautioned that all mothers and infants on a restricted diet should be supervised by a paediatric dietitian. To withhold essential foods from a diet for too long might cause the immune repertoire to switch to IgE-mediated allergy. As such the re-introduction of foods in this group of infants is essential and both vitamin and calcium supplementation of the mother and infant is vital. In general at six months, half of the group may be tolerant to baked cow’s milk and by nine to twelve months the majority of children may be back to normal diet and weaned with fresh cow’s milk.
FPIES is a severe and rare form of Non-IgE-mediated disease caused by a systemic response to food protein(s) that typically occurs 1–4 hours after ingestion (although it can occur up to 8–12 hours later). Children with the condition are usually less than a year old and presentation peaks predominantly occur on weaning. Symptoms subside when the trigger food is removed: the condition resolves in 95% of children under three years old. A significant issue with FPIES is that the condition is less well known with limited evidence based research in the literature. Infants present to specialists far too late – on average at nearly two years of age. Allergy UK and FPIES UK are helping to raise awareness about the condition. As a result of more education about the condition, Dr Michaelis is starting to see more babies referred to the allergy clinic at six months.
Advances in the Nutritional Management of Food Allergy

Dr Rosan Meyer
Paediatric Allergy Dietitian & Senior Lecturer
Imperial College London

BACKGROUND
Rather than total elimination diets to manage food allergy, which were favoured in the past, dietitians are now advocating approaches such as six food elimination diets (SFED) and four food elimination diets (FFED) or a directed approach where foods eliminated are guided by a combination of SPT, blood testing (specific IgE) testing, and endoscopy with histology.

DISCUSSION
Although these approaches do not achieve such high rates of symptom resolution as an elemental diet in conditions such as Eosinophilic Oesophagitis (EoE), for example, remission rates with SFED and FFED are around 80%, and around 74% with the directed approach. Indeed, a 65% remission rate has also been achieved among children with EoE with the elimination of cow’s milk protein only.

There are also moves to earlier introduction of allergens such as peanut into babies’ diets. The LEAP study, which included children at least four months and less than 11 months old with severe eczema, egg allergy or both who were randomly assigned to consuming at least 6g of peanut protein each week or peanut avoidance provides evidence for this approach. At 60 months, in the group that initially had negative SPT, 13.7% of the avoidance group and 1.9% of the consumption group were allergic to peanuts. That represents an 86.1% relative reduction in the prevalence of peanut allergy. In the group with positive SPT at the beginning of the study, at 60 months 35.3% of the avoidance group and 10.6% of the consumption group were allergic to peanuts – a 70.0% relative reduction in the prevalence of peanut allergy.

CONCLUSION
However, the introduction of allergens into infants’ diet needs appropriate professional support. Dr Meyer reminded delegates that the milk ladder, for example, is designed for use in children with Non-IgE-mediated food allergy. There have been cases of severe reactions in children with IgE-mediated allergy where the ladder has been used. Indeed, the NICE food allergy guideline says that no child with IgE-mediated food allergy should have a diagnostic food challenge in primary care or community settings.
Dr Paul Turner explained that a diagnosis of Eosinophilic Oesophagitis (EoE) requires both symptoms and histological findings to be present. It is characterised by striking eosinophilia of the oesophageal mucosa, with or without eosinophilic microabscesses (see Figure 3).

- Symptoms include vomiting, gastroesophageal reflux and abdominal pain. Children may also show failure to thrive and adults and teenagers may have symptoms such as chest pain and dysphagia.

- There is a clear association between EoE and other allergic diseases, and more than two-thirds of patients with EoE have another form of atopic disease. The underlying cause of the immune response associated with EoE remains poorly understood. EoE probably occurs as the result of an interaction between environmental factors and genetic predisposition (similar to other allergic disorders).

- Foods commonly associated with EoE symptoms include milk, eggs, wheat and soya.¹⁹

A systematic review and meta-analysis by Arias et al. showed that elemental diets induced histological remission of EoE in 90.8% of cases (95% CI, 84.7%–95.5%), SFED in 72.1% (95% CI, 65.8%–78.1%), and allergy test result-directed food elimination in 45.5% of cases (95% CI, 35.4%–55.7%).²⁰ Allergy test guided food elimination is less effective, perhaps because EoE is associated with Non-IgE-mediated as well as IgE-mediated allergic reactions.²⁰ The initial objective is to achieve control quickly and effectively and therefore a reliable method is preferable.

**Figure 3.** EoE is characterised by striking eosinophilia of the oesophageal mucosa (left), with or without eosinophilic microabscesses (right).
Dr Helen Cox
Consultant in Paediatric Allergy, Immunology and Asthma, St Mary’s Hospital, London

Dr Cox detailed our increasing knowledge/evidence around eczema and allergy:

- Around half of children aged 0–3 months with eczema treated with prescription-only corticosteroids are allergic to peanut, egg white or sesame at one year\(^{21}\)

- One in five infants with eczema are allergic to egg, peanuts and sesame compared with 1 in 25 who do not have eczema

- The risk of food allergy in infants with eczema is increased fivefold in those allergic to egg and by 11 times in those allergic to peanut compared with infants who do not have eczema\(^{21}\)

Dr Cox estimated that about 50% of children coming into her practice have Non-IgE-mediated food allergy. Her red flags for food allergy among children with eczema include:

- infants – age of onset < 3–6 months
- moderate / severe eczema
- associated gut dysmotility
- IgE tests > 95% PPV
- immediate reaction to a major food allergen

NICE guidelines for eczema advise considering food allergy in infants with moderate to severe eczema, especially when associated with gut dysmotility.\(^{22}\)

Dr Cox commented that the NICE guideline appears to have had poor uptake. It recommends offering a six to eight week trial of an extensively hydrolysed formula or amino acid formula in place of cow’s milk for bottle-fed infants aged under six months with moderate to severe eczema not controlled by optimal treatment with emollients and mild topical corticosteroids.

For babies with eczema who are breastfed and where food allergy is strongly suspected a trial of an allergen-specific maternal exclusion diet under dietetic supervision should be considered.
The afternoon session was chaired by Dr Nikhil Thapar (Consultant Paediatric Gastroenterologist, Great Ormond Street Hospital) for Paediatric Gastroenterology. He is pictured with (left to right): Cem Kucukcan (General Manager, Nutricia UK & Ireland), Dr Louise Michaelis (Consultant in Paediatric Immunology & Allergy, Great North Children’s Hospital), Victoria Blewett (Head of Specialist Medical Services, Nutricia UK & Ireland), and Dr Rosan Meyer (Paediatric Allergy Dietitian and & Senior Lecturer, Imperial College London).

Allergy Symposium Resources
To view the full speaker presentations from the Paediatric Allergy Symposium, or find out about future educational events, please visit: www.neocate.co.uk/Events/Newcastle-Paediatric-Allergy-Symposium
Over 200 allergy specialists, paediatricians, specialist nurses and dietitians gathered at a Paediatric Allergy Symposium organised by Nutricia and held at the Royal College of Physicians in London, in February 2016

The event provided the opportunity for delegates to network, as well as learn more about Nutricia’s paediatric portfolio and services

Dr Rosan Meyer delivering her talk on Advances in the Nutritional Management of Food Allergy
Partners at the Paediatric Allergy Symposium

The Allergy Symposium was supported by Allergy UK and FPIES UK. Their stands allowed delegates to find out more about the services and support they offer to healthcare professionals, as well patients and their families.

ALLERGY UK

Allergy UK is the leading national charity supporting those with allergy throughout the UK. We are here to help anyone affected by allergy and also support healthcare professionals in caring for their allergic patients. We provide publications such as Allergy Today, bursaries, masterclasses, and other educational events on our website.

For more information, check our healthcare professionals webpage: www.allergyuk.org/hcp or call our helpline on 01322 619898.

FPIES UK

In September 2013 the patient support group FPIES UK was founded. The aim of the group was to offer much needed support to families dealing with the severe, delayed, food allergy, Food Protein Induced Enterocolitis Syndrome within the UK. It quickly became clear that there was little or no UK based information available for parents, misdiagnosis was common and delays in diagnosis were unacceptably high. A change was needed.

Our trustees, parents of young children with FPIES, got together and formed the charity FPIES UK. FPIES UK became a registered charity in December 2014. Our vision is to see patients with FPIES accurately diagnosed as early as possible and for all persons affected by FPIES to receive the medical and emotional support they need.

For more information, check our website: www.fpiesuk.org or email us: enquiries@fpiesuk.org.

“THE SYMPOSIUM WAS A GREAT OPPORTUNITY TO MEET A WIDE RANGE OF HEALTHCARE PROFESSIONALS AND GAUGE THE LEVEL OF FPIES AWARENESS AMONGST THOSE ATTENDING. WE WERE ABLE TO MAKE MANY USEFUL CONTACTS, PROVIDE THE LATEST FPIES INFORMATION, AND SHARE OUR STORIES.”

Louise Littler, Chairperson, FPIES UK
References

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