

# IgE Stewardship: Does the IgE Food Allergy Screening Panel Have a Role?

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Dear Editor,

We are writing to draw attention to the issue of the global overuse of food allergy screening tests and the potential harm they can cause. In this audit, we investigated the appropriateness of routine food allergy screening tests in our Immunology Laboratory.

We know that Immunoglobulin E (IgE) testing is an essential tool in the management of patients with IgE-mediated food allergy-related symptoms (1-3). However, when used without a compatible history, these tests have no value and can have potentially dangerous consequences, including increased patient fear and anxiety, unnecessary food avoidances, and even lifestyle modifications, as well as negative impacts on health economics both directly and indirectly (4,5).

The IgE food screening test is a serum screening test provided by ImmunoCAP (Thermo Fisher, Sweden). It allows clinicians to order specific IgE to multiple foods with a single request and the results show the specific IgE value to a range of common food allergens. In our panel, the test included: Egg white, cow's milk, codfish, wheat, soya bean, and one component analysis of pathogenesis-related (PR-10) protein as a marker of pollen-food syndrome for soy, which is the soy PR-10.

We conducted an audit in our Adult Allergy Service to investigate the appropriateness of food IgE screening requested in primary care. We collected data from all IgE

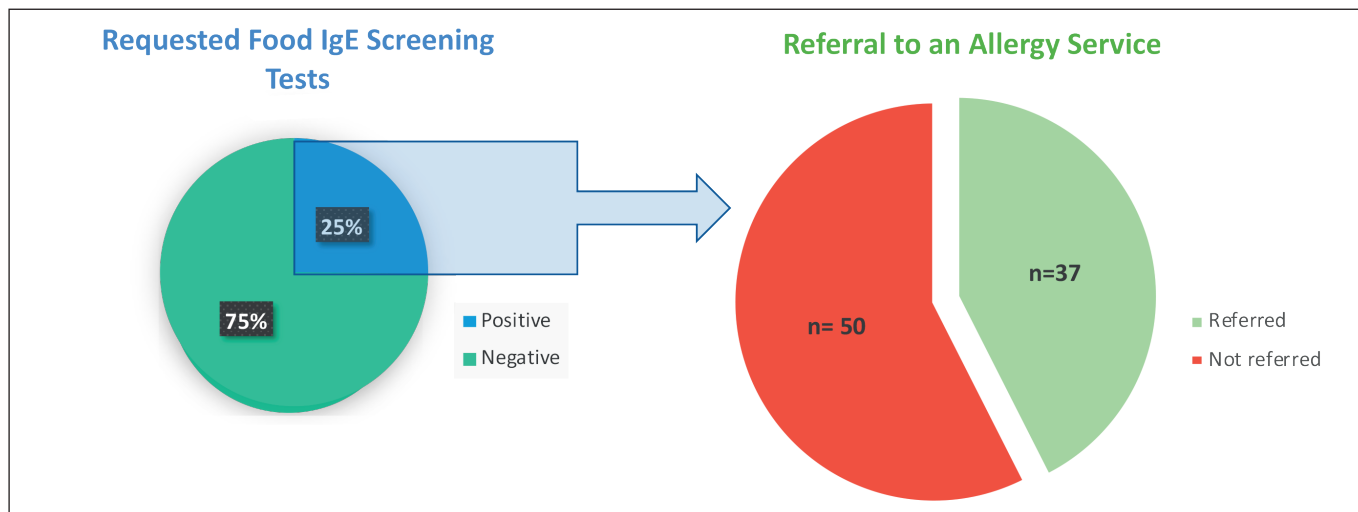
food screening tests requested from primary care between January and December 2019 (pre-coronavirus pandemic times) and checked the demographics, presence of a referral to an allergy service, clinical details of the patients, and the causes and consequences of these blood test requests.

The results showed that 345 IgE food screening tests were requested within the time period indicated above, with 87 patients having positive screening results. Their mean age was 17±15 years and the total IgE was 1138±1529 kU/L. The majority (54%) also had further food-specific IgE test requests. Among those patients with a positive (>0.35 kUA/L) IgE food screening result (n=87), only 43% were referred to an allergy service (n=37) (Figure 1). Among the ones who were seen in allergy services, 27% (n=10) had already been on an unnecessary dietary restriction prior to their consultation, which was more frequent in the adult compared to the pediatric population (adults=7, p=0.017).

Our audit enabled us to understand current practice in IgE food testing in primary care.

Our results suggested that requesting tests in patients without a history of IgE-mediated food allergy led to inappropriate and possibly harmful dietary restrictions.

According to our audit, the most common reason for requesting food allergy screening was atopic dermatitis. It is well known that a high proportion of children with atopic dermatitis exhibit asymptomatic sensitization to foods.



**Figure 1:** The most common indication for these tests to be requested in primary care was atopic dermatitis (46%). Food allergy was the indication in a minority of the population (16%). The remaining indications were respiratory symptoms (8%), other skin lesions (5%), gastric symptoms (5%), and no identifiable reason (3%).

Testing to identify potential food triggers is not recommended unless the patient has a history highly suggestive of food allergy (6,7). Indiscriminate testing can lead to a high proportion of false-positive tests and harmful dietary restrictions especially in this patient group due to their highly elevated total and specific IgE results. These dietary restrictions can cause serious nutritional harm and allergists may need to perform food challenges to reintroduce avoided foods back into the patients’ diets which would impose an additional economic burden on health systems (8). Another concerning finding from our audit was related to patients who had undergone food allergy screening with positive results but were not referred to Allergy Services. Since these patients were not evaluated in our services, we cannot comment on the reasons of this approach.

The American Academy of Allergy, Asthma & Immunology has already recommended against performing IgE testing without a suggestive clinic history (9). Equally, the British Society for Allergy and Clinical Immunology and the Italian Allergy Society have published documents for healthcare professionals (10,11). Two similar retrospective analyses from the United States about the Food Allergy Panel among paediatric patients showed similar results (12,13). Although we hope there has been some progress since the launch of the international societies’ recommendations for food allergy screening, food panels are still being ordered frequently, most often by non-allergists, for symptoms that should not raise suspicion for IgE-mediated food allergy (13).

Another possible risk of these false positive test results and consequential food avoidances is the loss of an existing tolerance towards foods. In our audit, we did not have any patients with documented problems in this regard. However, fatal consequences of unnecessary dietary restrictions have already been reported (14,15).

Although limited by a small size, our audit was still significant as it is the first reported from the UK, where healthcare is mainly provided by a public system free to all residents at the point of use, and it included both adult and paediatric populations.

Therefore, we believe that allergists should recommend ‘choosing wisely’. Allergists also need to closely monitor the judicious usage of IgE tests for their role of ‘IgE stewardship’. Based on our findings, we concluded that this screening test is causing more harm than good, albeit unintentionally. Therefore, as stewards, we have removed this food allergy screening blood test from our Immunology request panel, and we recommend that our colleagues in the community consider the ‘Choosing Wisely’ campaign to identify overused or unnecessary tests and treatments. As Grady and Redberg have pointed out, sometimes “less is more” when it comes to medical testing (16).

In conclusion, our audit highlights the importance of appropriate IgE test stewardship in food allergy and the potential harm caused by the overuse of such testing in primary care. We hope that our findings can help raise

awareness about this important issue and promote more responsible use of allergy testing. We also hope they will contribute to reducing unnecessary healthcare costs.

#### Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

#### Author Contributions

All authors contributed to the design of the paper. **Leyla Pur Ozyigit** drafted the manuscript with the input of all authors. **Leyla Pur Ozyigit** designed the figure. **Beatrice Ondondo, Adefolake Yusuff, Arthur Price** registered the audit with **Leyla Pur Ozyigit** and they completed data collection. **Nasreen Khan** has reviewed the final version of the manuscript.

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