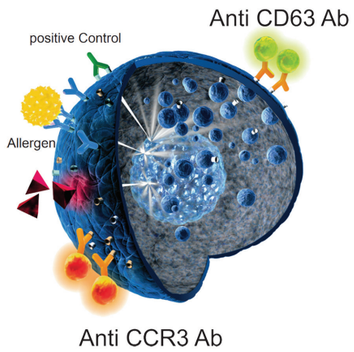
Basophil Activation Testing

A Safer Alternative for your Patients

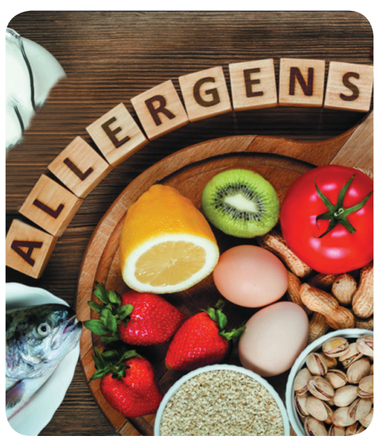
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The Basophil Activation Test (BAT) can be used for the *in vitro* detection of immediate type allergic reactions and hypersensitivities to suspected allergens. BAT is able to detect both IgE and non-IgE mediated allergies, making it suitable for the diagnosis of a range of different types of allergy, including food and drug allergies.



The physical symptoms of allergy can be similar to that of a sensitivity or intolerance. Roughly 20% of the population experience symptoms that make them believe they have a food allergy, but it's estimated that only 1-10% of adults and children actually have a food allergy[1].

The incidence of food allergies are becoming increasingly more prevalent; it's estimated that, in the UK, 1 in 40 infants are developing a peanut allergy, and 1 in 20 infants are developing an egg allergy[1].



With almost a third of allergy sufferers having to change their lifestyle[1], it's vital to determine who is truly allergic from those who are not; BAT can be a helpful tool to do this.

The current pathway for IgE-mediated food allergy diagnosis, as suggested by NICE[2] and the British Society for Allergy and Clinical Immunology (BSACI)[3, 4] recommends the following for patients presenting with a suspected food allergy:

- Firstly, a detailed clinical history of the patient will be taken. This will include:
  - details of personal or family history of atopic disease
  - food allergies in immediate family members
  - foods avoided by the patient
  - the age when symptoms first started
  - the speed of onset of symptoms
  - the duration of symptoms
  - the severity of the reaction
  - the frequency of occurrence
  - how much of the food is needed to cause a reaction
  - details of any previous treatment or attempts to eliminate and reintroduce the food.
- Based on the results of the clinical history, a healthcare professional will offer a skin prick test (SPT) and/or a blood test for specific IgE (sIgE). The results of these tests will then be interpreted along with the results of the clinical history.
- If the results from the SPT and sIgE tests are unable to confirm or exclude allergy conclusively, patients may be referred to specialist or secondary care settings for further investigation (e.g. an oral food challenge).

Oral food challenges can be unpleasant and stressful for patients and their families, as well as posing a danger to the patient. Patients undergoing oral food challenges are often young children; food allergy is estimated to affect 5-8% of toddlers, compared with only 1-2% of adults[1].

BAT could be incorporated into the current pathway (as shown in Figure 1) for the diagnosis of IgE-mediated food allergies, to reduce the number of patients having to undergo an oral food challenge.

Following the proposed pathway, if a patient were to present with a suspected food allergy:

- Firstly, a detailed clinical history of the patient will be taken.
- Based on the results of the clinical history, a healthcare professional will offer a SPT and/or a sIgE test. The results of these tests will be interpreted, taking into account the patient's clinical history.
- If the results of the SPT and sIgE tests are unable to conclusively confirm or exclude allergy, patients may be offered a BAT.
- If the patient has a positive BAT result, allergy can be confirmed with a high degree of certainty; if the patient's BAT result is negative, patients may be offered an oral food challenge to definitively confirm or exclude allergy.

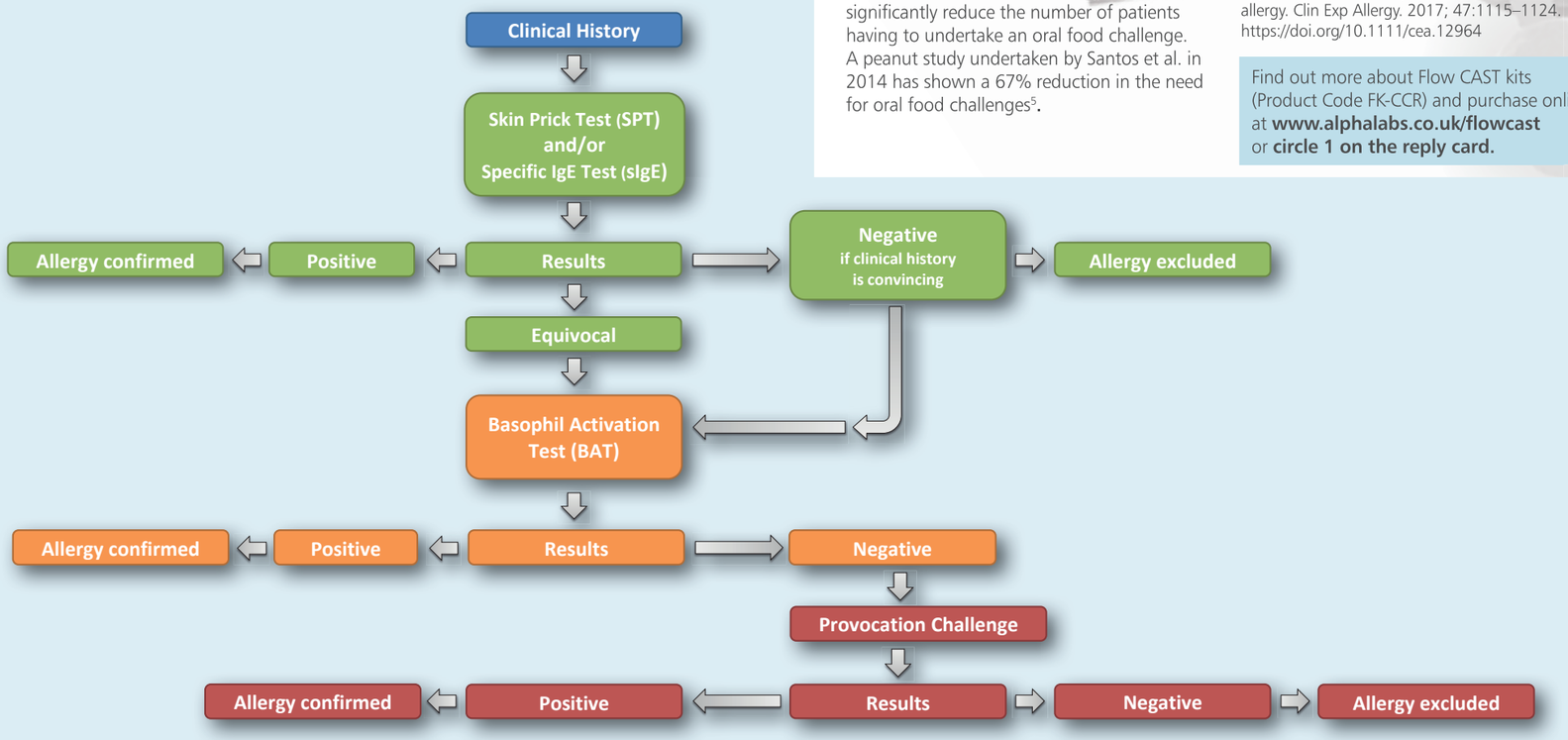
BAT is a much safer alternative to an oral food challenge for your patients. Offering BAT before an oral food challenge test will significantly reduce the number of patients having to undertake an oral food challenge. A peanut study undertaken by Santos et al. in 2014 has shown a 67% reduction in the need for oral food challenges[5].

The true value of BAT lies in its high specificity, reaching 100% in some studies[5]. This means that a positive BAT result confirms allergy with a high degree of certainty, resulting in fewer of the more dangerous positive oral food challenges being performed.

With over 150 standardised allergens available, the Flow CAST Basophil Activation Test, manufactured by BÜHLMANN Laboratories, can be used to diagnose a range of allergies, including food, food additives, drugs, insect venoms and inhalants. It is quick and easy to use, with results obtained in ~60 minutes. Samples can be analysed up to 48 hours after collection (up to 24 hours for drug responses). The kit contains all of the reagents and controls needed to run the test.

Figure 1.

A Proposed Patient Pathway for Allergy



References

1 Allergy UK, Allergy Prevalence: Useful facts and figures. www.allergyuk.org/assets/000/001/369/Stats_for_Website_original.pdf?1505209830

2 NICE Clinical Guideline 116. Food allergy in children and young people. February 2011.

3. A. T. Clark, I. Skypala, S. C. Leech, P. W. Ewan1, P. Dugu´e, N. Brathwaite, P. A. J. Huber, S. M. Nasser. British Society for Allergy and Clinical Immunology guidelines for the management of egg allergy. Clinical & Experimental Allergy. 2010. 40:1116-1129. doi: 10.1111/j.1365-2222.2010.03557.x

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