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# Diagnostic Tests Used in Allergy **for Healthcare Professionals**

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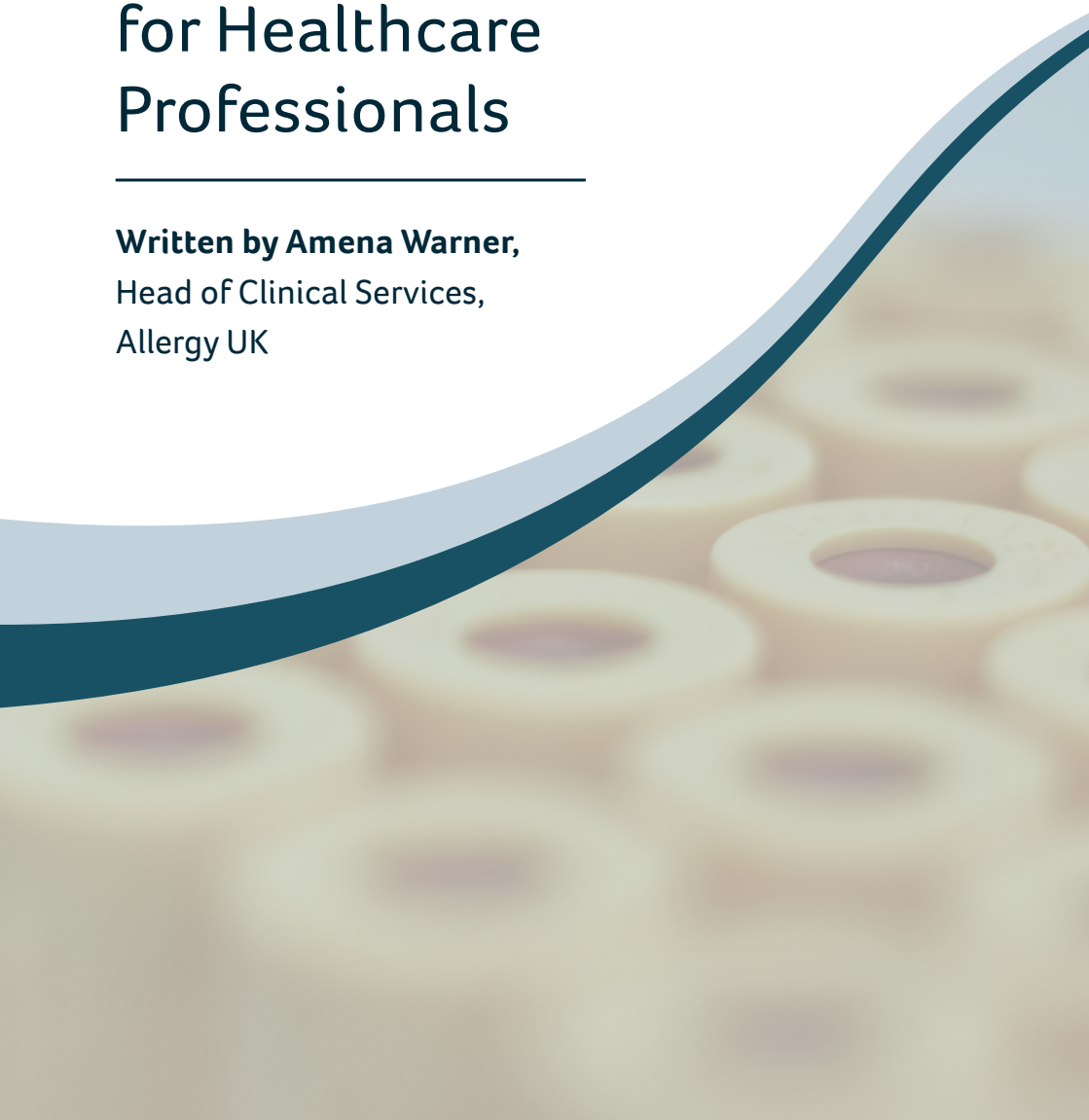

# Introduction

Allergic disease (allergy) can present in many ways, such as hay fever, food allergy, allergic triggers of asthma, drug allergy etc. Getting these symptoms properly diagnosed is important for the correct management and treatment.

To help with identifying the possible allergen (trigger of allergic symptoms) there are tests available that can help support the diagnosis. These are called diagnostic tests for allergy.

Allergy is a clinical diagnosis that can be supported by testing. Testing aims to confirm or exclude the presence of allergen specific IgE antibodies (sIgE) either by skin prick testing or blood testing.

A detailed allergy focused clinical history (symptoms, time to onset, suspected triggers etc) is most important, pictures also can help, especially if it's a rash, urticaria, angioedema etc.

**This leaflet only covers validated diagnostic tests.** These are the ones that have the most scientific evidence and the only ones that are recommended by the British Society of Allergy & Clinical Immunology (BSACI) and the National Institute of Clinical Excellence (NICE). Inform patients to avoid unproven/ unvalidated tests like hair analysis, vega testing etc as they are not recommended.

Skin prick testing (SPT) is generally performed in specialist clinics, these can be based in primary, secondary or tertiary care. But sIgE blood testing is more broadly available to non-specialists and can be test requested from pathology services, often in immunology laboratories.

Testing should be strictly guided by the clinical history and sIgE blood testing should be requested when there is a compatible clinical history.

There is no role for “screening” with multiple sIgE tests just to see what may come up, as this may lead to false positive restrictions, especially in food allergy, where the person is eating the food without symptoms.

Measurement of total IgE on its own is not helpful in the routine investigation of allergic disease, but it may be useful in interpreting sIgE results.[1]

SIgE testing is only validated for IgE mediated hypersensitivity often referred to as immediate/type 1, where symptoms typically appear quickly or within two hours.

# Types of testing

**Specific IgE (sIgE)**

This is a blood test which measures sIgE antibodies in your blood against a specific allergen that has been test requested, such as grass pollen, a food, wasp or bee venom, house dust mites etc.

It is used most often when SPT is not available or able to be done, for reasons such as a person cannot stop their antihistamines or the skin has eczema on. It can also sometimes be used to confirm a negative SPT result.

It is used to test for suspected IgE-mediated hypersensitivity (immediate) reactions, not delayed responses like atopic eczema. This type of test used to be called RAST testing, but the technology has changed now, and the test is sIgE.

The results of these tests are usually not available immediately as they are tested in a certified laboratory and may take a few days/week or so to come back.

## Skin prick testing (SPT)

A SPT is a quick, common allergy test, most frequently used by allergy clinics, where tiny amounts of potential allergens - such as pollen, dust mites, pet dander or foods - are pricked into the skin, usually on the inner forearm. The tests check for immediate reactions, like itchy red bumps (wheals) at the skin test site, to help identify allergy triggers for conditions such as hay fever, asthma or food allergies. Results are provided within 15 minutes in front of the patient. As this test is so visual, it can also help support symptom discussion.

Allergens are selected for testing based on the allergy focused clinical history. They are in liquid form and only a drop is required for testing by the skilled clinician.

## Challenge testing

This is a dose graded, highly accurate, medically supervised procedure (not to be tried at home).

For food allergy, it is often referred to as an oral food challenge. It is the current gold standard for confirming or ruling out food allergy, and it can be used to confirm the threshold of a reaction, especially in paediatrics.

The patient consumes small, gradually increasing amounts of the suspected food allergen, over several hours, in a controlled environment, where adrenaline, resuscitation facilities and trained staff are immediately available.

A challenge test is also used in some types of drug allergy as it help determine if a patient can tolerate a medication. This could help 'de label' a person, where it had previously been thought they had allergy. It is being used for penicillin de labelling.

## Component resolved diagnostics

These are highly specialised, advanced precision blood-based allergy tests, which should only be used by those who understand the test and can discuss the results with the patient. They measure IgE antibodies against individual purified allergen proteins, rather than whole allergen extracts eg peanut storage proteins which would give a higher risk of severe reactions.

They are also known as molecular allergy tests.[3] Their use includes to distinguish true allergy from cross reactivity, assess risk level and guide more precise management. It is valuable in complex cases, especially when multiple sensitisations are present or when sIgE tests or SPT are inconclusive.

These tests are usually only carried out in specialist allergy/immunology clinics.

## Patch testing

This is a specialist dermatological procedure, used to identify substances that trigger delayed allergic reactions of the skin, often referred to as contact allergy or allergic contact dermatitis. It helps determine whether the skin condition - such as eczema, a rash or irritation - is caused or worsened by allergens in everyday products or work environments - such as cosmetics, metals or chemicals.[2]

Various small amounts of common allergenic substances are applied to skin, most commonly on the back. They are held in place by adhesive patches for a couple of days (48 hours) then removed and the application sites assessed after a further 72-96 hours, as it is testing for delayed responses. A positive result shows localised redness, swelling at the site of the allergen tested.[2]

It is not a test to be used for food allergy, allergic rhinitis, anaphylaxis, hives (urticaria) as these require testing for immediate allergic reactions NOT delayed reactions.

This type of test is usually carried out in dermatology clinics.

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## *Need further support?*

Our Helpline advisors are available Monday – Friday, 9am – 5pm

**Call**: 01322 619898 **Webchat**: allergyuk.org **Email**: info@allergyuk.org

## References


1. The Royal College of Pathologists. Best practice recommendations. Guidelines for the use of laboratory allergy testing in primary care January 2025 Authors: Dr Tomaz Garcez, Dr Sarah Johnston, Dr Kristen Lilly
2. The British Association of Dermatologists patient information leaflet update 2024
3. British Society of Allergy and Clinical Immunology website www.bsaci.org CRD accessed 8.3.26


## Acknowledgements


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