

## Allergy Testing

### What are allergies?

Allergies are very common in Australia and they are on the increase in both adults and children. About one in three people will be affected at some time in their lives. An allergy is an overreaction by the body's immune system to everyday things that should not normally bother people. Allergens are substances that cause allergies and can be found in the environment.

Allergic sensitivity tends to run in families. Most people can have multiple allergies. However, everyone reacts differently; something that is a problem for one person may not be for someone else. Most allergic reactions are due to a particular antibody called immunoglobulin E (IgE).

The first time you are exposed to a substance or allergen you are unlikely to have a major reaction; instead your immune system creates IgE antibodies and you become 'sensitised'. The next time you come into contact with the allergen, the IgE identifies it and triggers the release of chemicals, including histamine, that cause your symptoms.

### Common allergens

**Food:** Cashew, Egg, Milk, Peanut, Soy, Shrimp (prawn), Wheat

**Environment:** Dust mite

**Grasses:** Bahia, Bermuda, Johnson

**Moulds:** Alternaria alternata, Aspergillus fumigatus

**Animals:** Cat, Dog

### Allergy symptoms

Allergic reactions can affect many parts of the body and symptoms may vary from mild to severe.

**Symptoms include:** asthma, allergic rhinitis (runny nose), allergic conjunctivitis (weepy eyes), atopic dermatitis (itchy skin), urticaria (hives), upset stomach and bowel.

Anaphylaxis is a less common but far more serious reaction that affects the whole body. It can be life-threatening, and requires urgent medical treatment.

## Allergy tests

### RAST (Radioallergosorbent test)

RAST (radioallergosorbent test) is a way of testing your blood to confirm what you may be allergic to by looking for antibodies to specific substances. Your doctor will take a detailed clinical history regarding your allergic reactions and exposure to various substances.

RAST test is a simple blood test and no other preparation is required. The blood is collected and sent to the laboratory for testing. Your doctor will interpret the tests using your clinical history to determine next steps.

At Sullivan Nicolaides Pathology (SNP), we offer a wide range of allergy testing including common allergens, nuts, mammalian meats, as well as specialised recombinant allergen testing.

SNP's extended RAST panels for common allergens are below.

#### Extended RAST food panel

- Almond
- Avocado
- Banana
- Cashew
- Codfish
- Egg white
- Hazelnut
- Kiwifruit
- Macadamia nut
- Mango
- Milk (cow)
- Peanut
- Rice
- Sesame seed
- Shrimp (prawn)
- Soybean

#### Extended RAST inhalant panel

- Acacia (wattle)
- Alternaria alternata
- Aspergillus fumigatus
- Bahia grass
- Bermuda grass
- Blomia tropicalis
- Cat dander
- Cladosporium
- Common ragweed
- Dog dander
- Dust mite
- Eucalyptus
- Horse dander
- Johnson grass

#### Extended RAST combined allergy panel\*

- Almond
- Bahia grass
- Bermuda grass
- Cashew
- Cat dander
- Codfish
- Dog dander
- Dust mite
- Egg white
- Hazelnut
- Johnson grass
- Milk (cow)
- Mould mix
- Peanut
- Perennial rye grass

- Walnut
- Wheat

- Melaleuca
- Perennial rye grass

- Shrimp (prawn)
- Soy
- Wheat

*\*Preferable for children (<12 years) due to low serum volume.*

## Nut allergies

Nut allergies are one of the most common food allergies. Nut allergies can be due to either tree nuts or legumes (peanuts). The allergens or proteins in tree nuts are very different to peanuts and if you are allergic to tree nuts this does not necessarily mean you are allergic to peanuts as well.

Nut allergies are most common in babies and very young children and can be a lifelong condition. Peanut allergies attract more attention because they are increasingly common, exposure is difficult to avoid and in some cases even a trace amount may cause symptoms. Symptoms can range from mild to severe.

Living with a nut allergy requires great compromise and vigilance in reading product labels and avoidance of allergen-containing foods.

Peanuts contain many different proteins and peanut sensitivity occurs in up to 10% of children, while true peanut allergy affects 1-2% of children worldwide, though this figure may be higher in Australia.

Anaphylaxis (severe allergy) occurs in around 10% of children with confirmed peanut allergy, although traditional tests (either skin or blood) only give a rough guide to this.

An allergy to Ara-h2, a peanut protein, gives the greatest risk of being allergic and of having a severe reaction.

### RAST testing for nut allergies

SNP offers an extended RAST nut allergy panel which includes commonly consumed tree nuts, sesame seeds and peanuts. Please refer to the full panel below.

#### Extended RAST Nut Allergy Panel

- Almond\*

- Brazil\*
- Cashew\*
- Hazelnut\*
- Macadamia\*
- Peanut
- Peanut (Ara-h2)
- Pecan\*
- Pine nut\*
- Pistachio\*
- Sesame seed
- Walnut\*

\*Denotes tree nut.

### **Peanut allergy risk assessment**

Ara-h2 is a protein which is associated with anaphylaxis. Measuring Ara-h2 provides your doctor with information regarding anaphylaxis and the results can be used for monitoring purposes.

The Peanut Allergy Risk Assessment can be ordered separately.

### **Peanut allergy risk assessment**

- Ara-h2
- Peanut



## Specialised allergy testing

### Recombinant allergens

A traditional RAST test looks for all of the proteins present in a food or substance. Food and environmental allergens are made up of multiple different proteins. Recombinant allergen testing looks at specific characterised proteins within an allergen which may cause allergic symptoms.

Recombinant allergens available for testing:

- Alpha-gal
- Omega-5 gliadin
- Peanut (Ara-h2)

Please discuss testing options with your doctor.

## Mammalian meat allergy<sup>1</sup>

Mammalian meat allergy is an allergy associated with tick bites.

It was first described by Australian doctor Sheryl van Nunen in 2007 in patients she saw in New South Wales. Since then, tick-induced mammalian meat allergy has been seen worldwide and an increasing number of patients have been diagnosed.

The Australian paralysis tick is the cause of mammalian meat allergy in Australia but other tick species may cause it in other countries.

When a person is bitten by a tick, they are exposed to a molecule called alpha-gal. Some individuals will produce specific IgE antibodies after this exposure. This means they are at risk of allergic reactions when they come into contact with alpha-gal when eating mammalian meats.

The most commonly consumed mammalian meats are beef, lamb and pork. Other meats include veal, goat, kangaroo, venison and rabbit.

For some people, consumption of products derived from mammals may cause allergic reactions. This includes milks, gelatine and agents used in medical treatments.

## Mammalian meat allergy symptoms

People with mammalian meat allergy may experience symptoms ranging from abdominal pain and diarrhoea to itchy rash, swelling and anaphylaxis.

Unlike other allergies, these symptoms may be delayed up to 10 hours after eating.

## RAST testing for mammalian meat allergy

Mammalian meat allergy is diagnosed by RAST testing. The condition is diagnosed when a person has a compatible history of reaction and the detection of alpha-gal.

Some patients may also have positive results to individual meats, although for diagnosis, detection of alpha-gal is required.

A mammalian meat allergy panel is available.

### Mammalian meat allergy panel

- Alpha-gal
- Beef
- Lamb/Mutton
- Pork

If you test positive for mammalian meat allergy, your doctor will discuss the findings with you and likely refer you to an allergist or clinical immunologist.

#### References

1. van Nunen, Sheryl A. Tick-induced allergies: mammalian meat allergy and tick anaphylaxis. Medical Journal of Australia. 2018; 208 (7): 316-321.

## Medicare rebate and allergy testing

Your Medicare rebate is the subsidy provided by the Australian government for services that are included in the Medicare Benefits Schedule (MBS). Although Medicare rebate is available for RAST testing, Medicare Australia sets limits on the number, type and

frequency of tests you can have. When any of your tests are not covered by the Medicare rebate, you will need to pay for these tests in full.

For more information about personal and test eligibility, visit the **Medicare Australia website**. (<http://www.medicareaustralia.gov.au>)

The following tests incur complex test fees and cannot be bulk billed. All patients will receive an account.

### Extended RAST tests

- Extended RAST Food
- Extended RAST Nut
- Extended RAST Inhalant
- Extended RAST Combined

### Recombinant allergen tests

- Alpha-gal and mammalian meat allergy panel
- Omega-5 gliadin
- Peanut (Ara-h2)
- Peanut Risk Allergy Assessment

Once you have paid your account, you may submit the receipt to Medicare to claim your rebate if available.

For current pricing, please contact our Patient Services Team on **(07) 3377 8747** or **1300 732 030**.

## Getting tested

Pathology is a medical specialty, so your doctor will need to complete a pathology request form to refer you for allergy tests.

### Collection centre locations

Blood collections for RAST tests are routine tests performed at all of our collection centres. No appointment is required.

## Understanding your symptoms

When considering allergy testing, your reported symptoms and suspected triggers are invaluable to help your doctor determine what tests to order.

### What symptoms do you have?

- Cough
- Itchy eyes or nose
- Runny nose
- Shortness of breath
- Sinus pain
- Sneezing
- Wheezing
- Interferes with daily activities

### Do they get worse:

- indoors
- outdoors
- everywhere

### If indoors, are any of the following allergens present?

- Dust mites
- Cats
- Dogs
- Mould
- Cockroaches

### If outdoors, are any of the following allergens present?

- Grass pollen
- Mould
- Horses
- Trees - Eucalyptus
- Trees - Wattle

## What medications are you currently taking for your symptoms?

- Antihistamines (Telfast®, Zyrtec®, Phenergan®)
- Decongestants (Sudafed®, Otriven®)
- Nasal steroids
- Natural products

## Food allergy and intolerances

Foods can sometimes cause allergy symptoms (rash, swelling, asthma, vomiting and anaphylaxis) or intolerance symptoms (bloating, abdominal pain, diarrhoea and nausea) and it is often difficult to separate them.

### Do your symptoms usually occur:

- Whilst eating or within hours of eating (may be due to food allergy)
- Occurs hours after eating and symptoms may last for days (may be a food intolerance)

A food and symptoms diary can sometimes help determine the best way to test.