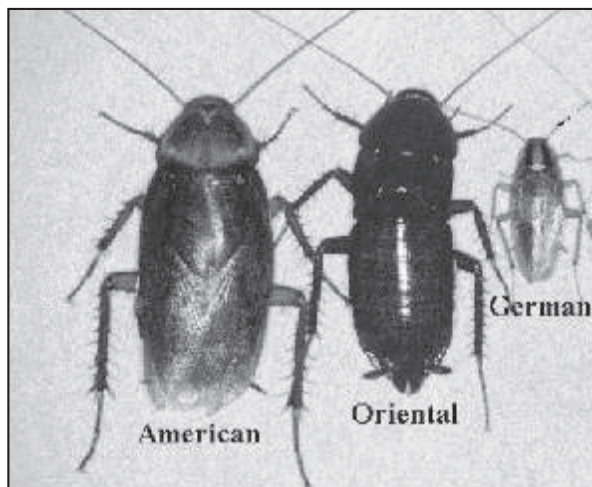


Information Sheet

COCKROACH ALLERGY



Cockroaches are very old insects and their ancestors lived even before the dinosaurs. Today, there are over 3,500 cockroach species existing in the world. Of these, approximately 10% are living in South Africa, but, thank goodness, only about three common ones live in and around our homes. These three species are the German (*Blattella germanica*), American (*Periplaneta americana*) and Oriental (*Blatta orientalis*) cockroaches (see Table I). They are world travellers, living with humans nearly everywhere across the globe. The presence of cockroaches in our homes undoubtedly causes more distress than nearly any other insect pest. This is not only because people dislike to share their living quarters with cockroaches but in addition, these “bugs” are a serious cause of allergic symptoms. One single female can produce in her lifetime up to 300 offspring, which in turn reproduce. From the original female cockroach there could be more than 100,000 cockroaches in your home by the end of one year.

How common is Cockroach Allergy in South Africa?

High infestation and sensitisation has been demonstrated for several countries with warm climates such as USA, Singapore, Hong Kong, Taiwan, India, Egypt, Latin America and South Africa. Cockroach allergy can start early in life, as has been demonstrated in Chicago, where one quarter of children under the age of 4 years were cockroach allergic and 14% were sensitive to only cockroach and to no other allergen. Often patients are allergic to only one of the three common cockroach species as has been shown in several studies e.g. New Orleans (44% of the patients investigated) and Taiwan (14%).

In South Africa it has previously been shown by Professor Potter and Dr Manjra that over 40% of tested asthmatic children were positive to the cockroach *B. germanica*. In another study by Professor Potter in 1998 it was shown that although House Dust-Mite was the single most important allergen, cockroach was always not far behind; and that was testing only for the one species *B. germanica*.

Recent results from the Allergology Unit, Groote Schuur Hospital, indicate that the German cockroach (*B. germanica*) is of greater importance in dryer climates such as in Pretoria. However, in more humid and warmer areas, such as Durban and Cape Town, sensitivity to the American (*P. americana*) and Oriental (*B. orientalis*) cockroach is in addition very important. In fact in Durban almost 20% of asthmatic subjects had no allergy to the German cockroach, but only to the American and Oriental cockroaches.

What are the Cockroach allergens?

Sources of allergens are the proteins found in dried bodies, scales, hairs, fragmented dead remains and metabolic products such as faeces. Over five different groups of allergens have been characterised using protein and cDNA analysis. However, only one common allergen has been found in the German and American cockroaches. Specific allergens are of importance when allergy to one of the three different cockroach species is diagnosed. Simultaneous reactivity to other insect-like allergen sources such as House Dust-Mite is frequently found. However, if this is simple cross-reactivity has yet to be determined.

The allergen levels of cockroaches in homes and work places can be measured using commercial laboratory tests. The highest levels of allergen are found in kitchens.

What are the symptoms of Cockroach Allergy?

The most common symptoms are rhinitis, conjunctivitis, urticaria and asthma. Many exposed subjects who develop symptoms have demonstrable IgE antibody to the responsible cockroach allergens.

How is Cockroach Allergy diagnosed?

The clinical evaluation should be supported by CAP RAST tests performed at a laboratory on a small blood sample. Cockroach specific IgE antibodies are frequently found in patients with asthma and other allergic conditions. There is good agreement between specific IgE levels for cockroach and clinical sensitisation. Furthermore, cockroach sensitivity can be identified by skin prick testing with appropriate solutions. The individual allergenic proteins can be identified using Western-blotting techniques, which are performed at the Allergology unit of Goote Schuur Hospital. All commercial laboratories and many state hospital laboratories are able to identify antibodies in the patient's blood to cockroach allergens using the CAP RAST test.

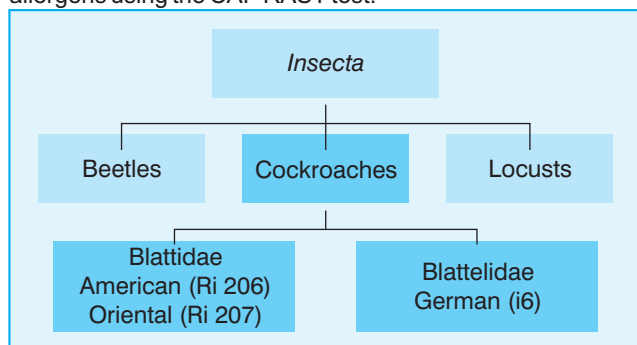


Table I. Main classes of the group Insecta causing allergies and the appropriate code numbers for the CAP RAST blood tests.

Treatment - What is to be done?

The cockroach is extremely hardy and a good survivor and they are said to be able to survive a nuclear holocaust and subsequent radiation! They can thrive on only crumbs. The simple truth is that cockroaches live in dwellings belonging to all ethnic groups and all socio-economic classes of people. However, any population of cockroaches is definitely centred in the kitchen of the house or building, especially in the areas under the sink, and near the refrigerator, rubbish bin and stove. There is also a smaller infestation in the bathroom, but usually not in the bedroom. Furthermore, some species such

as the American and Oriental cockroaches move into buildings from outdoors, whereas the German cockroaches are nearly always 'imported' into homes by human activities.

The only real treatment for an allergy to cockroaches is to remove the cockroaches and so avoid, or at least reduce exposure to the cockroach allergen. In the meantime, whilst the cockroach is being eradicated from your environment, any symptoms of asthma or rhinitis can be treated with any of the usual anti-histamines and other drugs normally used to treat these types of symptoms.

There are a number of active steps you can take against cockroaches in your home and workplace.

- **Cut down on the food supply to cockroaches**
 - Vacuum-clean or sweep floor after every meal
 - Keep rubbish in a tight-lidded containers
 - Keep unused portions of chips etc, in sealed containers
- **Dry up their water-supply**
 - Fix dripping taps
 - Clean the kitchen sink every night
 - Don't over water houseplants
- **Make it hard for them to hide**
 - Keep old food cans, newspapers, magazines out of the house
 - Fill holes where pipes disappear into walls with chalk
 - Keep sink plugs over drain nightly
- **Remove the dead cockroaches**
 - Vacuum-clean around and behind all lamps starting from the ceiling
 - Clean inside air-conditioning units and ventilation tubings
- **Use cockroach traps (roach hotels)**
- **Use a pest control company to fumigate your home with pesticides.**

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Written by Dr Andreas L. Lopata

See the ALLSA Internet site at:
<http://www.allergysa.org>

This sheet is available from:
ALLSA, PO Box 88,
Observatory 7935



THE ALLERGY COMPANY

Laboratory Specialities
P.O. Box 1513
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