

ALLERGY PANELS IgE (serum)

Food sensitivities can cause a wide range of symptoms and disorders including asthma, eczema and migraines. The IgE food allergy test offers a useful tool for detecting the foods causing gastrointestinal and mucous membrane reactions. The results are patient specific and provide an easy, precise and effective starting point for dietary manipulation.

Health Disorders and Adverse Reactions to Food

Adverse reactions to foods can cause both mild and severe health problems in a subset of the population. Immediate food allergies are known to affect 4% of the general population, whereas general adverse reactions to food may affect a much higher proportion (>20%). The symptoms caused by the food reactions can be as mild as bloating but as severe as anaphylaxis. Conditions which may be caused or exacerbated by adverse food reactions include asthma, arthritis, irritable bowel syndrome (IBS), migraine, otitis media and skin rashes. A wide variety of more non-specific symptoms can be attributed to food sensitivities such as fatigue, headaches, and difficulty losing weight, food addictions and trouble concentrating.

Allergies versus Sensitivities to Foods

Adverse food reactions include any abnormal reaction resulting from the ingestion of a food. They can be categorised as food allergies (with an immune response) or food sensitivities/intolerance. The existence and classification of food sensitivities have been controversial. These types of reactions are difficult to diagnose because the time between consumption and response may be delayed (up to 2 days) and the symptoms are often subtle. In many cases ingestion of the offending food paradoxically masks the symptoms temporarily. Furthermore, multiple causes contribute to food sensitivities, making this area difficult to study.

IgE Allergy Testing

Classic allergy causes redness, swelling, and heat in the body as a result of the elevated blood levels of Immunoglobulin E (IgE). Contrary to popular belief, the symptoms produced by IgE can be subtle and similar to those seen in other conditions. An acute IgE reaction may present as anaphylaxis. Food allergies with an immediate onset (<2 hours) is usually IgE-mediated. In these circumstances patients normally recognise the link between the allergen and the symptom as the time between consumption and the adverse response is short. Common conditions associated with an IgE-mediated allergy include asthma, rhinitis and dermatitis, as well as anaphylactic events.

The development of IgE-mediated allergies involves two steps. Firstly the body is sensitised to the allergen or reactive food. In this process activated plasma cells produce IgE antibodies specific to this allergen, which then bind to receptors on the surface of basophils and mast cells.

When these sensitised individuals are then exposed to the allergen a second time, the allergen binds to the IgE antibodies causing a release of histamine and other chemical mediators. Effects such as dilation of blood vessels, increased vascular permeability and constriction of smooth muscle in pulmonary blood vessels results in symptoms characteristic of an IgE allergic reaction.

Blood tests for IgE can be used to diagnose allergens (both food and inhalants) that may be causing allergies with an immediate onset. Many studies have observed that the results correspond well with skin prick testing or oral challenge.

IgE testing has been shown to be very useful for detecting food allergies in various conditions. In a study on children with dermatitis and asthma, food allergies were investigated by the double-blind placebo-controlled food challenge (DBPCFC), skin prick testing and IgE blood test. The IgE levels were able to predict 95% of positive and 90% of negative food challenge reactions, providing comparable results to skin prick testing. The authors suggested that use of the IgE test could eliminate the need to perform the more time consuming DBPCFC in patients suspected of having IgE-mediated allergies. It may also be a safer option for those at risk of an anaphylactic event.

Precaution

IgE in vitro testing is a screening tool for determining foods and inhalants that are causing allergies. However, if a food that has been suspected of causing an anaphylactic event is found to be a negative on this in vitro test, we suggest that reintroduction of the food is only undertaken under the guidance of an allergy specialist.

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- ❖ **General Foods [Test code: 3202]** - Almond, Amaranth, Apple, Apricot, Avocado, Banana, Barley, Beans (Kidney, Lima, Pinto), Beef, Beet, Blueberry, Broccoli, Buckwheat, Cabbage, Capsicum (green), Carrot, Casein, Cauliflower, Celery, Cheese (Cheddar, Cottage, Mozzarella), Chicken, Clam, Cocoa, Coconut, Cod, Coffee, Corn, Crab, Cranberry, Cucumber, Egg White (Chicken), Egg Whole (Duck), Egg Yolk (Chicken), Garlic, Gliadin (Wheat), Gluten (Wheat), Grape, Grapefruit, Halibut, Hazelnut, Honey, Lamb, Lemon, Lentil, Lettuce, Lobster, Milk (Cow, Goat), Mushroom, Oat, Olive, Onion, Orange, Papaya, Pea (green), Peach, Peanut, Pear, Pecan, Pineapple, Plum, Pork, Potato (Sweet), Potato (White), Pumpkin, Radish, Raspberry, Rice (white), Rye, Sesame seed, Salmon, Scallop, Shrimp, Snapper, Sole, Soy Bean, Spelt, Spinach, Strawberry, String bean, Sugar cane, Sunflower seed, Tomato, Tuna, Turkey, Walnut, Wheat, Whey, Yeast (Baker's, Brewer's), Yoghurt, Zucchini
- ❖ **Asian Foods [Test code: 3201]** - Abalone, Almond, Apple, Bamboo Shoot, Banana, Bean (Kidney, Red), Beef, Bitter Gourd, Broccoli, Cabbage, Cantaloupe, Capsicum (green), Carrot, Casein, Cashew, Cauliflower, Celery, Cherry, Chicken, Clam, Cocoa, Coconut, Cod, Coffee, Corn, Crab, Cucumber, Curry powder, Cuttlefish, Duck, Egg (chicken), Egg (duck), Eggplant, Garlic, Ginger, Gluten, Goose, Grape, Grapefruit, Guava, Honey, Honeydew, Job's Tears, Kelp, Kiwi, Lamb, Leek, Lemon, Lettuce, Lian Woo, Lobster, Mango, Milk, Mung bean, Mushroom, Mustard, Oat, Olive, Onion, Orange, Oyster, Papaya, Peach, Peanut, Pepper (black), Pepper (Cayenne), Pineapple, Pork, Potato (Sweet), Potato (white), Radish, Rice (white), Salmon, Sea Bass, Sea Perch, Sesame seed, Shrimp, Soy bean, Spinach, Strawberry, Sunflower seed, Taro, Tea (Oolong), Tomato, Tuna, Vanilla bean, Vegetable Sponge, Walnut, Watermelon, Water Spinach, Whey, Woo-hsiang powder, Yeast (Baker's, Brewer's), Yoghurt
- ❖ **Inhalants [Test code: 3203]** **Grasses:** Bahia, Bermuda, Johnson, Meadow Fescue, Perennial Rye, Smooth Brome, Sweet Vernal, Timothy; **Moulds:** Alternaria tenuis, Aspergillus fumigatus, Cladosporium herbarum, Penicillium notatum; **Trees:** Acacia, Alder, Arizona Oak, Ash, Beech, Birch, Black Oak, Black Walnut, Box Elder, California Pepper, Cottonwood, Cypress, English Walnut, Elm, Eucalyptus, Hazelnut, Hickory, Mesquite, Queen Palm, Pecan, Pine, Red Maple, Red Mulberry, Sweet Gum, Sycamore, White Mulberry; **Weeds:** Dog Fennel, Firebush, Iodine bush, Lamb's Quarters, Marsh Elder, Mugwort, Nettle, Pigweed, Plantain, Poverty weed, Rabbit bush, Ragweed, Russian Thistle, Sagebush, Saltbush, Sheep Sorrel; **Other:** Cat dander, Cockroach, Dog dander, Dust mite, House dust

Phone 03 95108866 for further details

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