
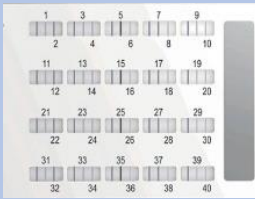

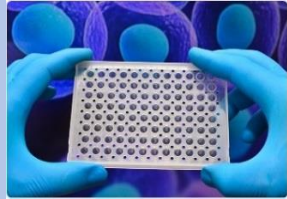



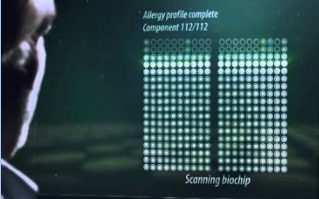








Blood Tests

Technique	Enzyme-Linked Immunosorbent Assay (ELISA)		Enhanced Chemiluminescence Immunoassay		ELISA Multiplex Microarray		Antigen Leukocyte Cellular Antibody Test (ALCAT)		RAST		Singleplex ImmunoCAP		Multiplex ImmunoCAP ISAC			
Test Theory	Put blood to the food proteins and measure the amount of antibody in the sample.		Put blood to the food proteins and measure the amount of antibody in the sample.		Light particles are released when an antigen binds to its specific antibody. Quantification of light particles are proportional to antigen levels in blood.		Place food proteins on the chip to react and measure the amount of antibody in the sample.		Determine the reactivity to food antigens by measuring the cell size change from a blood sample.		Use specific instrument to analyze the blood sample.		Singleplex biochip technology to measure allergen-specific IgE antibodies.		Multiplex biochip technology to measure allergen-specific IgE antibodies.	
																
Allergy Type	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)
Blood Amount	2 drops	1 drop	1 drop	1 drop	2 drops	0 drops	1 drop	1 drop	0 drops	3 drops	3 drops	0 drops	2 drops	0 drops	1 drop	0 drops
Test Items	280 Foods	280 Foods	40 Foods	40 Foods	19 Foods	0 Foods	200 Foods	200 Foods	0 Foods	200 Foods & 100 Other items	40 Foods	0 Foods	1 Allergen at a time	0 Foods	>100 Foods	0 Foods
Advantages	<ul style="list-style-type: none"> High stability, accuracy and sensitivity High consistency for repeated testing³ Only few drops of blood to test the delayed reactions Tests raw materials of food³ The most common method 		<ul style="list-style-type: none"> Knowing the result within half an hour Low amount of blood 		<ul style="list-style-type: none"> Extremely sensitive Lower detection threshold and wide dynamic measuring range⁷ Minimize false positives in IgE assays FDA approved 		<ul style="list-style-type: none"> High stability Only requires very low amount blood sample Tests raw materials of food 		<ul style="list-style-type: none"> Related to various inflammations Test for the immune reactions Able to test various kind of allergens 		<ul style="list-style-type: none"> Non-invasive 		<ul style="list-style-type: none"> Extremely sensitive⁶ Single analytical step No interference from IgG antibodies⁶ Used worldwide 		<ul style="list-style-type: none"> Cost efficient Highly Sensitive Test for a greater amount of allergens at once Very small blood sample required⁸ 	
Limitations	<ul style="list-style-type: none"> Take 2 -3 weeks to analyze 		<ul style="list-style-type: none"> Only indicate positive or negative reactions Some of the test items are in categories only, they do not breakdown into individual items 		<ul style="list-style-type: none"> Expensive Take 2 -3 weeks to analyze Limited test panel⁷ 		<ul style="list-style-type: none"> Expensive Take 2 -3 weeks to analyze The technology is still maturing¹ Complexity of reporting and analysis² Hard to process quality control⁵ Low sensitivity⁵ 		<ul style="list-style-type: none"> Low repeatability and accuracy^{3,4} Specific antibody which triggers the allergic reactions cannot be identified due to the ALCAT analysis is made upon the group of analytes. Lack of scientific and clinical evidence⁴ 		<ul style="list-style-type: none"> Expensive Tests are categorized; do not breakdown into individual items Has gradually been replaced by other tests Involve radioactive materials 		<ul style="list-style-type: none"> Fewer allergens available for testing⁶ High cost if multiple test are needed⁶ Higher amounts of serum⁶ 		<ul style="list-style-type: none"> IgG interference in test⁶ Broad sensitization result profile⁶ Used less frequently Semi-quantitative 	

Skin Tests				Other Tests								
Technique	Skin Prick Test		Skin Patch Test		Elimination/ Challenge Diets		Controlled Oral Food Challenges		Food Diary		Bioresonance	
Test Theory	Several allergens drop skin, and observe the skin condition to determine the allergy level.		Place allergen extracts patch on skin, wait for few days to observe skin condition.		Follow a strict diet for 4-6 weeks. Reactive foods are eliminated, then periodically reintroduced to observe reactions.		Food is eaten gradually in a controlled environment under medical supervision. If symptoms occur the test is stopped and food allergies are identified.		Food and drink consumed over a period of time is recorded and analyzed for at least 2 weeks. Symptoms present, if any, are also recorded alongside meals.		Electromagnetic waves emitted by the body were compared to the waves emitted by different food samples. Differences in emission frequency imply allergic reaction.	
Allergy Type												
Test Items	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)	Immediate (IgE)	Delayed (IgG)
	✓	✗	✓	✗	✓	✓	✓	✗	✓	✓	✓	✓
	20 Foods or Inhalants		20 Foods or Inhalants		1 Item at a time	1 Item at a time	1 Food at a time				> 600 foods	
Advantages	<ul style="list-style-type: none"> Fast, the condition can be observed in 15 – 20 mins Widely adopted by medical professional for years 		<ul style="list-style-type: none"> Without the pain of needling 		<ul style="list-style-type: none"> Less expensive Effectiveness clinically proven⁹ Pinpoint sensitivities and intolerances 		<ul style="list-style-type: none"> Inexpensive Extremely accurate⁸ Allergies are identified immediately 		<ul style="list-style-type: none"> Inexpensive Detailed log of meals directly causing adverse reactions can be observed Helpful for both immediate and delayed reactions 		<ul style="list-style-type: none"> Non-invasive, chemical-free and no side effects Detailed feedbacks from one single session 	
Limitations	<ul style="list-style-type: none"> Results are affected by the allergens stability and other factors Cause swelling and itching after test Depend on the integrity of the skin Place a certain risk as there's contact of skin and allergens 		<ul style="list-style-type: none"> Sweating, bathing and sport needed to be avoided during test period in order to prevent the patch from peeling off Cause swelling and itching after test Depend on the integrity of the skin Place a certain risk as there's contact of skin and allergens 		<ul style="list-style-type: none"> Commitment for minimum of 4-6 weeks Cheating diet can ruin validity of results Time consuming Results may be inconclusive 		<ul style="list-style-type: none"> Potentially experience unwanted allergic symptoms Possibility of adverse reaction to food Only Immediate allergy testing Test only 1 food at a time Must be conducted by allergist in medical facility 		<ul style="list-style-type: none"> Difficult to pinpoint exactly which food caused reaction Time consuming to log all food and drinks Incomplete log may cause biased results 		<ul style="list-style-type: none"> Expensive Lack of scientific researches concerning with its accuracy in detecting allergy or food intolerance¹⁰ Inconsistent results may be produced 	

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