



# **LRA by ELISA/ACT<sup>®</sup>**

## **Test Results For:**

**Patient, Sample**  
June 18, 2009

**Your test results include:**

- **Strong Reactions**
- **Moderate Reactions**
- **Non-Reactive Items**
- **Detailed Description of Reactive Items**
- **Laminated Wallet Card with Results**

## STRONG REACTIONS

- Sugar, Cane
- Penicillium notatum
- Tea, Black
- Aluminum

*Avoid for at least 6 months.*

- Safflower Oil
- Xylitol

## MODERATE REACTIONS

- Chicken
- Grapefruit
- Vinyl Chloride
- Tomato
- Pepper, Chili, Red
- Cis-Dichloroethylene (1, 2-Dichloroethylene)

*Avoid for at least 3 months.*

- Basil
- Benzene
- Petroleum By-Products & Solvents

## MODERATE FOOD GROUP(S):

### • NIGHTSHADES

- Eggplant
- Pepper, Cayenne
- Pepper, Chili
- Bell Pepper, All Colors
- Potato, White
- Tobacco
- Tomato
- Paprika
- Pimiento

**Thus of the 313 substances tested, reaction is noted to 15 items and 1 food group(s).**

While both strong and moderate reactions are equally burdensome to your immune defense and repair systems, we have found that it takes about half as long to restore tolerance of moderate reactions as compared to the strong ones.

# ELISA/ACT<sup>®</sup> LRA RESULTS

## NON-REACTIVE ITEMS

- 1, 2 Dichlorobenzene
- 2-Methyl Pentane
- 2, 4, 5 T
- 2,4-D
- 3-Methyl Pentane
- Aldrin
- Almond
- Alternaria alternata
- Amaranth
- Annatto
- Antimony
- Apple
- Apricot
- Arsenic
- Asparagus
- Aspartame/Nutrasweet
- Aspergillus Fumigatus
- Aspergillus niger
- Aspergillus oryzae
- Avocado
- Baker's Yeast (*Geotrichum*)
- Banana
- Barium Sulfate
- Barley
- Bay Leaf
- Bean, Kidney
- Bean, Lima
- Bean, Mung
- Bean, Pinto/Frijole
- Bean, Soya
- Bean, String/Wax
- Beef/Veal
- Beet
- Benzaldehyde
- Benzopyrene
- Benzyl Acetate
- Beryllium Oxide
- BHA
- BHT
- Blueberry
- Botrytis cinerea
- Brilliant Black
- Broccoli
- Buckwheat/Kasha
- Butter, Whole
- Cabbage/Brussels Sprouts
- Cadmium
- Caffeine
- Calcium Propionate
- Candida albicans
- Cantaloupe/Honeydew
- Carbamates
- Carbon Disulfide
- Carbon Tetrachloride
- Carmine/Cochineal
- Carmoisine
- Carob
- Carrot
- Casein
- Cashew
- Cauliflower
- Celery
- Chamomile
- Cheese, Brick (Cow)
- Cheese, Cottage (Cow)
- Cheese, Parmesan (Cow)
- Cheese, Processed (Cow)
- Cheese, Romano (Sheep)
- Cheese/Milk (Goat)
- Cherry
- Chestnut
- Chive
- Chlordane
- Chloroform
- Chocolate/Cocoa
- Cilantro
- Cinnamon
- Cladosporium cladosporioides
- Cladosporium herbarum
- Clam
- Clove
- Coconut
- Cod Liver Oil
- Codfish
- Coffee, Decaf & Reg
- Cola
- Collard Greens
- Corn (Maize)
- Cottonseed Oil
- Crab
- Cranberry
- Cucumber
- Cumin
- Currant
- Curry
- Cyclohexylamine
- D & C Green #5
- D & C Orange #5
- D & C Red #33
- D & C Violet #2
- DBCP (1,2 Dibromo-3-chloropropane)
- DDT
- DEET
- Detergent (Synthetic)
- Diacetyl (2,3-Butanedione)
- Dibutyl Phthalate
- Dieldrin
- Dill
- Egg White (Chicken)
- Egg Yolk (Chicken)
- Endrin
- Epidermophyton floccosum
- Ethyl Acetate
- Ethyl Acetoacetate
- Ethyl Butyrate
- Ethylene Dibromide
- FD&C Blue #1
- FD&C Blue #2
- FD&C Green #3
- FD&C Orange #4
- FD&C Red #2
- FD&C Red #3
- FD&C Red #40
- FD&C Yellow #10
- FD&C Yellow #5
- FD&C Yellow #6
- Fig
- Flaxseed/Linseed Oil
- Formaldehyde

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## NON-REACTIVE ITEMS, CONT'D

- Fusarium vasinfectum
- Garlic
- Ginger
- Gliadin
- Gluten
- Gold
- Grape/Raisin, Green
- Grape/Raisin, Red
- Gum, Acacia
- Gum, Agar
- Gum, Carrageenan
- Gum, Guar
- Gum, Locust Bean
- Gum, Tragacanth
- Gum, Xanthan
- Haddock
- Halogenated Biocide
- Helminthosporium halodes
- Helminthosporium sativum
- Heptachlor
- Hexachlorocyclohexane
- Honey
- Hops
- Isopropyl Ether
- Kale
- Kamut
- Kiwi
- Lactalbumin
- Lamb/Mutton
- Latex
- Lead
- Lemon
- Lentils, Red, Green
- Lettuce, Iceberg
- Lettuce, Red Leaf
- Lettuce, Romaine
- Lime
- Lobster
- Maleic Anhydride
- Malt
- Mango
- Mercury
- Metallic Catalysts
- Methoxychlor
- Methylene Chloride (Dichloromethane)
- Milk, Pasteurized (Cow)
- Millet
- Molasses
- Morpholine
- MSG (Monosodium Glutamate)
- Mucor mucedo
- Mucor racemosus
- Mushroom
- Mustard Greens, Spice
- Nickel (II) Chloride
- Nitrates/Nitrites
- Nitrosamine Mix
- Nutmeg
- Oats
- Olive
- Onion, Yellow
- Orange
- Oregano
- Organophosphates
- Oyster
- Papaya
- Parsley
- Pea, Green, Snow
- Peach
- Peanut
- Pear
- Pecan/Pine
- Penicillium chrysogenum
- Penicillium frequentans
- Penicillium roqueforti
- Pentachlorophenol (PCP)
- Pepper, Black
- Peppermint
- Phenol
- Phthalates
- Pineapple
- Pinene
- Plum/Prune
- Polysorbate 60
- Polysorbate 80
- Polyvinylpyrrolidone
- Ponceau 2R
- Ponceau 4R
- Pork/Bacon/Ham
- Potassium Bromate
- Potato, Sweet/Yam
- Propyl Gallate
- Propylene Glycol (1,2-Propanediol)
- Pullularia pullulans
- Pumpkin
- Pyrene
- Quinoa
- Raspberry
- Rhizopus nigricans
- Rhizopus stolonifer
- Rhodotorula
- Rice, Brown
- Rice, White
- Rice, Wild
- Rosemary
- Rye
- Saccharine
- Sage
- Salicylate
- Salmon/Lox
- Scallop
- Selenium Sulfide
- Sesame/Tahini
- Shrimp
- Silicates
- Silicone
- Silver
- Snapper
- Soap (SDS/SLS)
- Sodium Benzoate
- Sodium Fluoride
- Sodium Propionate
- Sole/Flounder/Halibut
- Sorbitol
- Spelt
- Spinach
- Squash
- Strawberry
- Sucanat

# ELISA/ACT<sup>®</sup> LRA RESULTS

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## NON-REACTIVE ITEMS, CONT'D

- Sugar, Beet
- Sugar, Corn
- Sugar, Maple
- Sulfite/Metabisulfite
- Sunflower
- Swordfish
- Tapioca
- Tarragon
- Tert-Butyl-Ethyl Ether (TBEE)
- Tert-Butyl-Methyl Ether (TBME)
- Tetrachloroethylene
- Thricothecium roseum
- Thyme
- Tin/Stannous Chloride
- Titanium Dioxide
- Tofu
- Toluene
- Trichloroethylene (TCE)
- Trichophyton
- Trichophyton mentagrophytes goetzii
- Trichophyton mentagrophytes interdigit
- Trichophyton rubrum
- Trichophyton schoenleinii
- Triticale
- Trout
- Tuna
- Turbot/Whitefish
- Turkey
- Vanilla
- Walnut Oil, Black
- Watermelon
- Wheat
- Xylene
- Yeast, Brewer's (Torula)
- Yogurt (Cow)

## Interpretation of ELISA/ACT<sup>®</sup> LRA Test Results

Lymphocytes exposed to antigens to which they have become sensitized in the body ("recall antigens") activate when they react with these substances under controlled laboratory conditions. Lymphocytes react to antigen-specific, complement-activating antibodies (IgA, IgM, and IgG), Ig-M-anti-IgG immune complexes, and cell-mediated direct lymphocyte antigen recognition. Briefly, mixed cell cultures in patient autologous plasma are exposed to the foreign antigen in pre-coated incubation plates cultured under ex-vivo conditions, and lymphocytes are observed for reactivity. Reaction indicates loss of tolerance and development of hypersensitivity.

- **Strong reaction means that > 50% of cultured lymphocytes react.**
- **Moderate reaction means that 5-50% of cultured lymphocytes react.**

Avoidance of **strong** reactors for **six (6) months** and **moderate** reactors for **three (3) months** can reduce the load on the immune system. The goal of avoidance of reactive substances is to allow immune mechanisms to reset. This can restore tolerance, enhance repair, and reduce the autoimmune and immune dysregulation load on the body's defense systems.

Only if you reacted to a food group(s), it will be displayed on the test result summary sheet. A complete food group is noted when two or more foods in that group are reactive. The only exception to this is dairy because it is commonly found to be cross-allergenic. Therefore, the dairy group will appear in bold if even one item in that group is reactive. **It is recommended to avoid all items in a food group if it is in bold.** Please see your health professional for more information.

Reactive items are an adverse load on your body's immune defenses. This means a reduced ability to respond to new or chronic infections. Reactive items also decrease immune activities needed to repair your body. This can provoke inflammation and self-attack ("autoimmunity"). Avoiding reactive items can break the cycle of impaired defense and repair, allowing your body to start the recovery and repair process.

Immediate reactions (IgE linked) are usually detected by routine skin tests or RAST tests.

Protective memory (non-reactive IgG) antibodies do not provoke symptoms and are not affected by ELISA/ACT<sup>®</sup> LRA tests. This is an advantage of lymphocyte response assays in detecting only the items that provoke reactions.

Cross-reaction between intestinal pathogens and items tested can occur. It is possible to react to an item that is not eaten. Improved digestive health can replace these pathogens with healthy organisms, reducing this source of reactivity.

Occasionally, people have metabolic (non-immune) reactions. ELISA/ACT LRA tests measure only immune delayed hypersensitivity.

  
Lab Director

MD, Ph.D., FASCP, FACAAI, FACN

<u>Name</u>	<u>Amount</u>	<u>Times</u>	<u>Action/Use</u>	<u>Special Comment</u>
<b><u>Priority Supplements:</u></b>				
Multivitamin multimineral/ transporter and energy enhanced w/o iron	One tabsule	Once a day with meal of choice. Total of 1	Provides essential vitamins and minerals in the most bio-absorbable and bio-available forms for optimal metabolic functioning .	Energizing and alkalizing formula : enhances and protects the immune system
Ascorbate (buffered Vitamin C) Powder or tablets	Depends on amount body will absorb (determined by the Ascorbate calibration protocol)	Four or more times a day	Central regulator of cell metabolism, a stimulant to structural connective protein synthesis, & is vital to repair	Refer to the Ascorbate (Vitamin C) Calibration protocol that will help determine the body's need for Vitamin C . This is also on Page 29( Appendix 9) in The Alkaline Way Guide
1000mg Quercetin dihydrate with 10mg of (OPC soluble) Proanthocyanidins + 60mg pomegranate juice powder	3 tabsules	4 times a day : total of 12	Unique flavonoid /flavanol combination that has very high antioxidant and anti- inflammatory action. Stimulates repair. Also improves utilization of ascorbate	Highest ORAC protection ; Best taken in conjunction with ascorbate.
Lactobacillus, Bifidobacterium species and S. Thermophilus (Synergy of 10 beneficial probiotics)	1-2 capsules 1-2 capsules 1 capsule	With all meals: for 1month With breakfast&dinne r : for 2 months With breakfast only, after 3 months	Rebuilds healthy digestive flora in the intestinal tract. Inhibits the growth of pathogens . Promotes better overall digestion	After 6 months from start of therapy a stool culture of microflora (intestinal bugs) is recommended. Please see your healthcare professional to obtain further information.
Essential Fats Omega 3,6,9 : EPA and DHA + CLA and GLA	2 softgels	Twice a day : Total of 4	Omega 3 reduces plaque formation. Omega 6 decreases inflammation Omega 9 enhances membrane fluidity.	Essential Fatty Acids in the right proportions for improved health
L-Glutamine + Pyridoxyl- Alphaketoglutarate ("PAK")	3 capsules	Twice a day	Gives body energy, supports mental sharpness, helps regenerate the intestinal surface cells.PAK recycles L -glutamine and prevents glutamate build up.	Take on empty stomach, i.e 1/2 hour before a meal / 2 hours after meals or at bedtime

Patient, Sample		Nutritional Recommendations		
<u>Name</u>	<u>Amount</u>	<u>Times</u>	<u>Action/Use</u>	<u>Special Comment</u>
<b><i>Specific supplements that may be helpful:</i></b>				
Natural Prostate Support: Saw Palmetto, Lycopene, Pygeum, Nettle (Urtica dioica), Zinc & Selenium	3-4 softgels	Once a day : Best taken in the evening with dinner	Helps repair, strengthen, and shrink an enlarged prostate gland for better function, more complete bladder emptying and easier urination.	While best taken with dinner, may be taken with breakfast or lunch for convenience.
Nature's comprehensive stress relief : Rhodiola, Magnolia and Phellodendron	2 soft gels	Once a day	Neutralizes stress, balances cortisol and rebuilds hormone function	Store product below 70°F.
D-Phenylalanine	500 mg.	Twice daily	For pain control.	Take "D" form only. Take on empty stomach 1/2 hour before meals or 2 hours after meals.
American Ginseng	2 Capsules(250 mg each) or 20 drops (liquid extract)	Upon rising & before bed.	Increases HDL cholesterol, reduces cardiovascular risk, and serves as anabolic stimulant.	If you have high blood pressure, hypoglycemia or diabetes, please check with your health care practitioner.



Learn new patterns of consumption. You may want to read Diet for a Small Planet by Frances Moore Luppe, Diet and Nutrition by Rudolph Ballantine, MD., Minding the Body, Mending the Mind by Joan Borysenko, PhD., and Acid and Alkaline by Herman Aihara.

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Take balanced and fully active nutritional supplements as recommended in this report. Your health professional, or the sources cited in this report, can provide ordering information.

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Demonstrate your commitment to your health as an essential part of your life by performing each and every part of this report as recommended by your physician with full attention.

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Learn abdominal breathing and practice it for a few minutes once or more each day. Abdominal breathing means actively filling the abdomen as though it were a balloon being filled. Next allow the balloon to slowly passively deflate. Repeat for the full five minutes twice daily.

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Discuss the meditation technique that is best for you with your doctor. Active Meditation: the Western Tradition by Robert R Leichtman, MD and Carl Japikse is an example of a non-sectarian, non-denominational approach to evoking your healing response, and is distinctly helpful.

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Combine foods according to Food Combining for Better Digestion in order get the most efficient assimilation of nutrients from the foods you eat. This is Page 24 ( Appendix 4) in the Alkaline Way Guide.

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Exercise using the rebounder-type trampoline for 15 minutes twice a day . Rebounder-type trampolines can be purchased at your local sporting goods store. Refer to Distress Busting: Central Health Promoting Actions - Rebounder Trampoline : Page 28 ( Appendix 8) in The Alkaline Way Guide

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Take a daily salt and soda bath. The Epsom salt ( Magnesium Sulfate) electrolyte improves the electrical conductivity of the skin and the alkaline baking soda helps rid the skin of acid residue deep in the pores. Put one half cup each of Epsom salts and baking soda in a tub of warm (not hot) water. Soak for 10-15 minutes and shower thereafter, gently rubbing the skin with a loofa. Refer to Distress Busting: Central Health Promoting Actions - Salt and Soda Baths for more information : Page 28 ( Appendix 8) in The Alkaline Way Guide

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## Sugar, Cane

History/Discussion: Sweeteners and the many forms of sugar represent the number one food additive in this country. Cane sugar is perhaps the most commonly used of all the sweeteners on the market.

Sources of Exposure: If a label says sugar or sucrose, avoid it as it is likely to contain some cane sugar.

Substitutes: Any of the non-reactive sweeteners.

## Tea, Black

History/Discussion: Tea contains 1-5% caffeine. If you are reactive to black tea or caffeine we recommend that you avoid all commercial tea blends.

Sources of Exposure: This includes all iced teas, English teas, Chinese green tea from which black tea is made, Oolong tea, Bancha (twig) tea, Sencha tea, and Calli tea.

Substitutions: Herb teas are a good alternative, unless one is sensitive to any of the herbs

## Safflower Oil

History /Discussion : Safflower, *Carthamus tinctorius* L. is a member of the family Compositae or Asteraceae, cultivated mainly for its seeds from which edible oil is expressed

Sources of Exposure: Safflower oil and foods cooked or fried in safflower oil.

Substitutions: Other oils like sunflower, grape seed, peanut, sesame, or canola, assuming that you do not react to them.

## ***Penicillium notatum***

Item Tested: *Penicillium* is a very large genus of fungi. *Penicillium notatum* is one species within this genus.

History/Discussion: The genus *Penicillium* is a very large group of fungi containing anywhere from 150 to 227 different species, depending on the reference. *Penicillium* is a part of the soil microflora and a common air spore. The common types of *Penicillium* are often present indoors as well as outdoors. *Penicillium* is a very common air contaminant and appears to grow in many different habitats. Some 35 species of *Penicillium* have been found in the air. More than ten species have been isolated in indoor air. One indoor *Penicillium* mold is the blue-green mold found on stale bread, citrus fruit and apples. Other *Penicillium* species are known to grow on stored grains, other foods, textiles, and leather. As a whole, *Penicillium* has the ability to grow on a variety of substrates and thus is widely distributed in the environment. Yang reports frequently finding 2 or 3 species of *Penicillium* in one small area. Outdoors, *Penicillium* is found in the soil, grass, citrus, vineyards and decaying vegetables. Various species of *Penicillium* have been reported from dead or living vegetation, cereal, grains, seeds, fruit, and animals. Yang has also reported finding *Penicillium* growing on wet asbestos-containing insulation wraps, carpets, fiberglass liners, water damaged sheetrock and on damp latex paint on water-damaged cellulose-containing materials. Peak concentrations of *Penicillium* are reached in the winter and spring. *P. notatum* has been detected in both the soil and indoor air. In the soil it has been found to help biodegrade insecticides. *P. notatum* is a strain can be used to make penicillin drugs. Sensitivity to *P. notatum*, however, does not necessarily indicate sensitivity to the drug penicillin.

Sources of Exposure: Exposure can come from the soil, air, and dead and living vegetation as detailed above. It is also possible that these species can be found on water-damaged household and building materials.

Recommendations for those hypersensitive to *Penicillium notatum*: All foods should be properly stored, refrigerated as necessary, washed thoroughly before consuming and eaten while still fresh. The more healthy the plant, the more resistant its fruit will be to premature rot and spoilage. The use of biodynamically grown, organic foods is highly recommended. Freshly made fruit juices and homemade fruit smoothies help limit mold exposure from commercial fruit juices. Careful cleaning, drying and ventilation of bathrooms, kitchens, and other moist areas is also important. Control of household humidity is also essential. A relative humidity of 50-60% is desirable. Exposure to airborne indoor mold spores can be greatly reduced by careful air filtration along with adequate ventilation in general. Such filtration could include all house HEPA filters, HEPA filters put on the cooling or heating systems, and single room HEPA filters with ionizers to collect particulate matter. Clean fruits and vegetables well before consumption. Monitor ripening fruits and vegetables for any signs of white to blue or green discoloration in spots.

# Aluminum

Item Tested: Aluminum is an element abundant in the earth's crust. It is always found combined with other elements in the earth. Aluminum metal is silver-white and flexible.

History/Discussion: Aluminum can be absorbed from the gut and accumulate in the brain among other tissues. It may also enter the brain via direct uptake from the absorptive surfaces of the nose and mouth. Once in the body, aluminum inhibits the production of an essential cofactor (tetrahydrobiopterin) in the formation of brain neurotransmitters. This inhibitive action may be the major mechanism by which aluminum contributes to Alzheimer's disease. (tetrahydrobiopterin levels are significantly lower in Alzheimer's patients). Elevated tissue aluminum levels have been associated with memory loss, learning disorders, encephalopathy (brain degeneration), and organic mental disorders. Aluminum also can affect calcium and phosphorus metabolism, and the resultant negative calcium balance can contribute to osteomalacia (softening of the bones) and osteoporosis. A diet low in calcium and high in phosphorus (as is the typical American diet) facilitates aluminum absorption. A diet/supplement program high in fiber, calcium and vitamin C reduces aluminum absorption.

Sources of Exposure: Aluminum is used in several forms including: aluminum calcium silicate used in table salt and vanilla powder; aluminum oxide and aluminum hydroxide used in antacids; aluminum ammonium sulfate used to treat drinking water, in baking powder and as a neutralizing and buffering agent in milling; aluminum hydroxide used in antiperspirants and as a leavening agent in baked goods; aluminum phosphide used as a fumigant in brewer's corn grits, Brewer's malt and Brewer's rice; aluminum potassium sulfate used in the production of sweet and dill pickles, cereals, flours, bleached flours and cheese; aluminum sulfate, known as cake aluminum used in producing sweet and dill pickles, and as a modifier for starch, in packaging materials, pickle relish, potatoes and shrimp packs; and aluminum stearates used as a chewing gum base and a defoamer component used in processing beet sugar and yeast. Although aluminum is used as a defoamer in the processing of yeast and beet sugar, no residual aluminum is found in yeasted bread or beet sugar. Major sources of aluminum exposure include aluminum-containing antacids (aluminum hydroxide), aluminum-containing underarm deodorants, aluminum cans, baking powders, food additives, aluminosilicates from aerosol contaminants, aluminum cookware and utensils, and buffered aspirin. Drinking water near waste sites of manufacturing plants using aluminum can also contain it. Recently, a number of infant milk formulas have been found to contain significant levels of aluminum. As discussed in the "Suggestions" section below, non-aluminum-containing products are now available that are just as effective.

Suggestions: Aluminum-free pharmaceutical antacids include various calcium carbonate formulas like Citralac. Aloe vera juice is also an excellent antacid as is the citrus pectin and Norwegian dolomite formula called "Frutin". A variety of deodorants found in health food stores are free of aluminum. Baking powder without aluminum can be found in health food stores. Aluminum can be avoided by using glass, stainless steel, enamel or cast iron cookware instead of aluminum.

## Xylitol

Items Tested: Xylitol is a sugar alcohol used as an artificial sweetener.

History/Discussion: Xylitol can be made from a variety of natural substances, including berries, birchwood chips, leaves, and mushrooms. Currently most of it is made from waste products from the pulp industry. Equal solutions of xylitol and sucrose by weight have been shown to have the same sweet intensity, but xylitol is lower in calories. Proponents of xylitol claim that it prevents dental cavities because oral microorganisms that typically use sucrose, glucose and fructose do not use xylitol as efficiently. Xylitol has been listed as a safe product by the Food and Drug Administration since 1963, and has been used in chewing gum since that time. Although no adverse symptoms have been noted with limited exposure, studies in animals have demonstrated a possible cancer-inducing effect. Further work will be required to demonstrate a causal relationship.

Sources of Exposure: Xylitol is used in gum, toffee, mints and as an artificial sweetener in other processed foods.

## Chicken

Item Tested: Chicken is a member of the poultry family.

Sources of Exposure: Whole or processed foods, soups, stocks and salads (check labels).

Substitutions: Goose, duck and turkey (assuming you do not react to them ). Cornish game hens must be avoided.

**Note:** Avoidance of specific foods to which you react is sufficient. There is no added benefit in avoiding a complete food family unless specifically directed to.

## Tomato

History/Discussion:

Tomato (*Lycopersicon esculentum* L.) is a member of the *Solanaceae* ( Nightshade) family. Tomatoes originated on the dry west coast of tropical South America, extending from Ecuador to Chile between the Andes and the sea

Plants in the Nightshade family contain, to varying degrees, chemical compounds (alkaloids called solanins) with pharmacological and toxic effects. This family contains some toxic, as well as some food plants. Also included in the nightshade family is poison sumac. All nightshade foods contain some solanins; sumac contains the most. Some of the common members of this group include potatoes, peppers, eggplant and tobacco.

Sources of Exposure: Tomatoes are widely used in every kind of cuisine the world over. They can be an integral part of pasta and chili sauces, pickles, condiments, and relishes, salads, mixed juices, soups and gravies. The use of tomato can also be hidden under the label of "natural flavorings and spices".

If you are reactive to two or more items in the nightshade family we recommend you avoid all the items in this family because the chance of cross-reactivity and/or developing new sensitivities is great.

Substitutes: Any of the non-reactive vegetables.

## Basil

History/Discussion: Basil is an herb in the *Lamiaceae* (mint) family.

Sources of Exposure: Certain processed and ready to eat foods (check labels).

Substitutions: Other herbs like oregano and thyme (assuming you do not react to them)

**Note:** Avoidance of specific foods to which you react is sufficient. There is no added benefit in avoiding a complete food family unless specifically directed to.

## Grapefruit

Sources of Exposure: Take care to check for fruit sweeteners and natural fruit flavorings in beverages, baked goods, jams, jellies and candies.

Substitutions: Any non-reactive citrus or other fruit.

## Pepper, Chili, Red

History/Discussion: Plants in the Nightshade family contain, to varying degrees, chemical compounds (alkaloids called solanins) with pharmacological and toxic effects. This family contains some toxic, as well as some food plants. Also included in the nightshade family is poison sumac. All nightshade foods contain some solanins; sumac contains the most.

Sources of Exposure: Chili pepper and foods with chili pepper added as a spice.

If you are reactive to two or more items in the nightshade family we recommend you avoid all the items in this family because the chance of cross-reactivity and/or developing new sensitivities is great.

Substitutes: Any of the non-reactive spices.

## Benzene

Items Tested: Benzene belongs to the class of solvents known as aromatic hydrocarbon solvents (named because of distinctive aromas given off). Benzene is a naturally-occurring substance produced by volcanoes and forest fires and present in small amounts in some foods. Most importantly, however, benzene is released into the environment from the use of gasoline and oil and from its uses as a major industrial chemical made from coal, oil and gasoline. As a pure chemical, benzene is a clear, colorless liquid. In industry, benzene is used to make other chemicals, as well as some types of plastics, detergents, and pesticides.

History/Discussion: Benzene was first extracted from coal tar in 1849 and has had a very important role to play in industry for a long time. Benzene is not available in household solvents, but is still an important solvent in the chemical industry. Although steps have been taken to control the exposure of people who work around it, some exposure still occurs and toxicity (especially long term effects) can still be seen. Benzene is absorbed through skin, but the most significant means of entry into our bodies is through breathing it. Immediate toxic signs are seen in the brain and nerves. Hodgkin's disease and lymphomas have been shown to be related to benzene exposure and benzene is considered a human carcinogen. However, because benzene has so many important uses, its employment and contaminating presence will be around for a long time. Stringent controls of its discharge are needed.

Sources of Exposure: Occupational exposure to benzene can occur in the rubber industry, oil refineries, chemical plants, the shoe manufacturing industry, gasoline storage, shipment and retail stations. In addition, benzene is used to make chemicals for Styrofoam, plastics, resins, nylon and other synthetic fibers, and some types of lubricants, dyes, detergents, drugs and pesticides. It is found in gasoline, and as a by-product of combustion of many sorts. For example, benzene is found in automobile exhaust and can be measured in the interior of cars as well as outside them, as well as in cigarette smoke, and in smoke from burning buildings and incinerators. The high benzene content in some commercial eggs is thought to be from both impaired ability of commercial chickens to detoxify benzene and similar compounds, as well as the benzene content of non-organically grown and certified chicken feed. Given the possibility of a high benzene content in commercial eggs, the use of organic eggs is highly recommended. A typical person is thought to have an average daily benzene exposure or ingestion through the diet of 0.25 mg. For the average person, half their total benzene exposure is breathed (with passive tobacco smoke and combustion products accounting for the bulk of this) and the remainder is consumed in the diet.

Suggestions for those hypersensitive to Benzene: Consume pure water. Drink pure spring, filtered or purified water and bathe with filtered water. For bathing purposes you can obtain either a "whole house" water filtration system or a simple carbon filter that attaches to your shower head. Consume organic foods which are free of pesticides and solvents. Filter your home and/or work place air as necessary with a HEPA filter. Avoid solvents and use them only as necessary in well ventilated areas. Avoid exposure to gasoline fumes and exhaust.

## Vinyl Chloride

Item Tested: Vinyl chloride is a man-made chemical that does not occur naturally. It is a colorless gas at room temperature but is normally stored under pressure and used as a liquid. It has a mild, sweet odor that can be detected at 300 parts per million, which is too high to provide adequate warning of danger. Vinyl chloride is soluble in fats and organic solvents, and is only slightly soluble in water.

History/Discussion: Most of the vinyl chloride produced in the United States is used to make polyvinyl chloride (PVC). The vinyl chlorides are strong irritants, and cause slowing of brain function and intoxication similar to alcohol.

Sources of Exposure: A majority of people are exposed to vinyl chlorides since they are produced in great quantities in this country. They are widely used and likely ubiquitous in most urban air. Vinyl chloride can be found in the air from its use in aerosol sprays, as an intermediate in the production of many chemical compounds including poly vinyl chloride, from vinyl chloride production plants themselves, volatilization from new plastic parts and upholstery in car interiors, the burning of PVC products and other plastics, and in small amounts from tobacco smoke. Many consumer goods including foods and beverages are packaged in various forms of vinyl chloride. Small amounts of residual vinyl chloride can migrate into the packaged contents and be consumed. Both soft and hard plastics containing vinyl are known to leach into the substances with which they come in contact. This leaching is especially true of the softer container, such as wrappings for foods and intravenous containers as well as drinking water containers. Plastic cooking bags and the heating of plastic food containers in microwave ovens allow of the release of even more unwanted chemicals. It is estimated that from 70 to 80 percent of all food is packaged in various polymers, some of which contain potential cancer-causing agents. Its sweet, pleasant smell is the main component in what people call "new car smell", as the interiors of most cars use large amounts of plastic derived from vinyl chloride. Residual monomers can also be leached into the drinking water from new PVC piping. Ground water can also be contaminated with vinyl chloride. Vinyl chloride may remain in the ground water for months or years. Vinyl chloride has been found in 133 of the 1177 waste sites on the National Priorities List.

Suggestions for those hypersensitive to Vinyl Chloride: Consume pure water. Drink pure spring, filtered or purified water and bathe with filtered water. Buy and store water in glass containers. Consume organic foods which are free of pesticides and solvents. The popularity and availability of organic foods is growing daily with increased public awareness about the importance of pure, nutrient-dense food. Many large grocery stores now carry organic foods. Also, check your area for local health food stores, food cooperatives and organic farm cooperatives. Store food in glass or enameled containers. Avoid contact of your food with plastic containers or food wraps. Use wax paper in direct contact with food as an alternative. Filter your home and/or work place air as necessary with a HEPA filter. Avoid exposure to aerosol sprays, tobacco smoke, plastic food and water containers and food wraps, plastic shower curtains, etc. Ventilate areas containing items made of plastic and vinyl.



## Cis-Dichloroethylene

Item Tested: Cis-dichloroethylene is a halogenated hydrocarbon used as a solvent, refrigerant and in various manufacturing processes.

History/Discussion: Cis-dichloroethylene enters the body primarily through inhalation. If it comes in contact with eyes and skin, it is an irritant. The effect on the body is similar to that of narcotics, causing a slowing down of brain function along with symptoms of dizziness, nausea and vomiting. Damage which might occur to the liver is usually permanent, while damage occurring to kidneys is probably temporary. This compound was used as an anesthetic in the 1800's but was discontinued in that capacity because of its flammability.

Sources of Exposure: Today it is used as a solvent for waxes, resins, phenols, lacquers, as a refrigerant, in the manufacture of pharmaceuticals and artificial pearls, and in the extraction of rubber and certain oils and fats from fish, meat, coffee and perfumes. It can contaminate drinking water and is not removed by public water purification systems.

Suggestions for those hypersensitive to Cis-Dichloroethylene: Consume pure water. Drink pure spring, filtered or purified water and bathe with filtered water. For bathing purposes you can obtain either a "whole house" water filtration system or a simple carbon filter that attaches to your shower head. Consume organic foods which are free of pesticides and solvents. The popularity and availability of organic foods is growing daily with increased public awareness about the importance of pure, nutrient-dense food. Many large grocery stores now carry organic foods. Also, check your area for local health food stores, food cooperatives and organic farm cooperatives. Filter your home and/or work place air as necessary with a HEPA filter.

## Petroleum By-Products and Solvents: Benzene, Petroleum Ether, Styrene, Toluene, Xylene

Items Tested: Petroleum by-products represent a major portion of a large class of organic chemicals called hydrocarbons. They comprise many toxic compounds, some of which are among the most carcinogenic chemicals known.

History/Discussion: Chronic exposure to a number of these petrochemical compounds often leads to cancer and neurological disorders.

Sources of Exposure: Petroleum products include gasoline, kerosene, naphtha, benzene and benzene compounds, styrene, xylene and toluene, which are commonly used as solvents, thinners and cleansers and in the manufacture of rubber, paints, lacquers, and printing inks, resins, polyesters, plastics and polystyrene-based disposable cups. Also included are the by-products of incomplete organic combustion from petroleum, coal, gasoline and diesel exhaust.

Solvents such as those used in

- Lubricating oils and greases for automobile engines and other machinery
- Petroleum (or paraffin) wax used in candy making, packaging, candles, matches, and polishes
- Petrolatum (petroleum jelly) sometimes blended with paraffin wax in medical products and toiletries
- Asphalt used to pave roads and airfields, to surface canals and reservoirs, and to make roofing materials and floor coverings
- Petroleum coke used as a raw material for many carbon and graphite products, including furnace electrodes and liners, and the anodes used in the production of aluminum.
- Petroleum Feedstocks used as chemical feedstock derived from petroleum principally for the manufacture of chemicals, synthetic rubber, and a variety of plastics. Exposure to these chemicals occurs most frequently through inhalation, topical contact and drinking solvent contaminated water. For example, it is estimated that a leak of one gallon of gasoline can contaminate a drinking supply for 50,000 people. They also enter our environment through industrial waste, evaporation of solvents and the burning of organic compounds, especially as gasoline and diesel exhaust.

Suggestions for those hypersensitive to Petroleum By-Products and Solvents: Consume pure water. Drink pure spring, filtered or purified water and bathe with filtered water. For bathing purposes you can obtain either a "whole house" water filtration system or a simple carbon filter that attaches to your shower head. Consume organic foods which are free of pesticides and solvents. The popularity and availability of organic foods is growing daily with increased public awareness about the importance of pure, nutrient-dense food. Many large grocery stores now carry organic foods. Also, check your area for local health food stores, food cooperatives and organic farm cooperatives. Filter your home and/or work place air as necessary with a HEPA filter. Avoid solvents and use as necessary only in well-ventilated areas. Avoid exposure to mineral oil, gasoline fumes, vapors and petrochemical products, in general.

## NIGHTSHADES

Items Tested: There is a family of plants called the Solanaceae family or nightshades. Eggplant, bell peppers, paprika, white potato, tobacco, and tomato are members of this nightshade family tested.

History/Discussion:

Plants in this family contain, to varying degrees, chemical compounds (alkaloids called solanins) with pharmacologic and toxic effects. This family contains some toxic, as well as some food plants. Also included in the nightshade family is poison sumac. All nightshades contain some solanin; sumac contains the most.

Sources of Exposure:

Potatoes, tomatoes and bell peppers are foods widely distributed in the U.S. diet. Many sources of exposure to these foods are obvious, potatoes can be an unexpected filler or thickener (as in soups), while tomatoes and peppers can be hidden under the label of "natural flavorings and spices". Eggplant and tobacco generally easy to identify.

If you are reactive to two or more items in the nightshade family we recommend you avoid all the items in this family because the chance of cross-reactivity and/or developing new sensitivities is great. All peppers (green, yellow, red, sweet, hot, etc.) should be avoided, as well as all potatoes (except sweet potatoes or yams) and items containing potato starch and/or flour should be avoided.

Substitutions: Any of the non-reactive vegetables.

**ELISA/ACT LRA RESULTS**

**Patient, Sample**

61010 6/18/2009

*Expected Re-Test Date is 12/20/2009*

**STRONG REACTIONS**

Sugar, Cane	Tea, Black	Safflower Oil
Penicillium notatum	Aluminum	Xylitol

**MODERATE REACTIONS**

Chicken	Tomato	Basil
Grapefruit	Pepper, Chili, Red	Benzene
Vinyl Chloride	Cis-Dichloroethylene (1, 2-Dichloroethylene)	Petroleum By-Products & Solvents

**MODERATE FOOD GROUP(S):**

**NIGHTSHADES**