



Alcat
Food and Chemical Sensitivity Test
Results Guide

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Contents:

Introduction	3
The Difference between an Allergy and Intolerance	3
Understanding Your Results	4
Results Guide	4
Rotation Diet	4-5
Food to Avoid	6
Possible Side Effects of the Detoxification Program	6
Candida Albicans Information	7
Gluten /Gliadin Information	8-9
Casein Information	9-10
General Food and Nutritional Guidelines	11
What Is A Balanced Diet?	11
Three Essential Nutrition Groups	11-12
General Advice to Improve Your Diet	12
Preparation of Food	12
How Cooking Affects Nutrients	13
How Preserving Affects Nutrients	13
Information on Foods and Their Derivatives	13
Reintroducing Foods into Your Diet	13
Frequently Asked Questions	14-15
Reference Description of:	
• Food Additives & Colorings	16-17
• Molds	17-19
• Environmental Chemicals	19
• Pharmacoactive Agents	20-21
Useful Books	22
References	23

Congratulations!

You have made a positive step towards improving your health with the ALCAT Food and Chemical Sensitivity Test.

Now that you have utilized the most sophisticated laboratory technology to identify your sensitivities, you can begin to take a fresh look towards improving your health. Your ALCAT test results will help you select an interesting and varied eating program based on foods that are compatible with your unique biochemical makeup. To gain the most benefit, study this booklet carefully. It contains information and advice on how to safely change your diet and lifestyle while still maintaining a balanced nutritional intake.

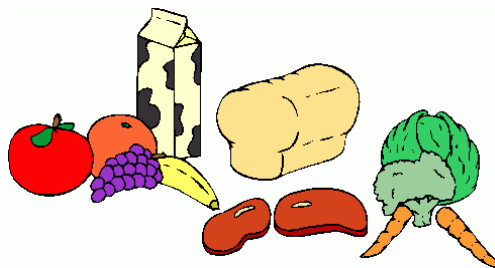
First a note of Caution...

The Difference between Food Allergy and Sensitivity (Intolerance)

The ALCAT Test® is a highly sensitive objective test for assessing which foods you may be intolerant or sensitive to. Our bodies react to foods and chemicals in many different ways. One such way is in the form of an immediate allergic reaction. The ALCAT test does not specifically test for this type of classic or “true” food allergy. Therefore, if you already know that you have a Type 1 or IgE mediated allergy then you must continue to avoid those items.

The Alcat Test will not identify immediate food allergies. If you have immediate or IgE mediated food allergies please continue to avoid these items even if they appear on your green or “acceptable” foods list.

If you are in any doubt, or have any questions regarding IgE/classic food allergies please consult with your physician who can assist in identifying these types of “true” food allergies. It is rare that foods cause this type of classic allergy, typically less than 5% of the population. The ALCAT test identifies food and chemical sensitivities where the symptom onset is longer (several hours to days) and varied (typical in chronic conditions). These types of sensitivities or intolerances affect nearly everyone.



Did you know?

Food Sensitivities or Intolerances affect over 80% of the population while less than 5% of us actually have an IgE or “true” Food Allergy.....

Understanding Your Test Results

Results Guide

Food sensitivity is not always a straightforward yes or no. There can be different degrees of intolerance, which can be altered through change of eating habits, stress levels, medical conditions, nutritional status, hormone levels, change of season and other factors that affect the body's immune system.

Your test results are divided into four distinct colored areas.

RED - These foods indicate a severe reaction and should be avoided at all costs for a minimum of 3 to 6 months.

ORANGE - These foods indicate a strong reaction and should be strictly avoided for a minimum of 3 months.

YELLOW - These foods indicate a mild reaction and should be avoided if possible, especially if there are few red and orange foods. If eaten, these should only be eaten on one day in four to prevent increased reactivity.

GREEN - These foods recorded no intolerant reaction and can be eaten freely. We recommend that they be eaten on a rotation basis.

BLUE BOXES

This section has been divided into 3 distinct boxes.

BOX 1 - Shows reactions (if any) to Candida Albicans. The report will automatically remove other foods from the rotation meal plan and place them in this box, if they are known to exacerbate the Candida condition. Although you may not be intolerant to these foods it is recommended to avoid them due to their association with Candidiasis, suggested by the Candida sensitivity. Please see additional notes on Candida Albicans.

BOX 2 - Shows reactions (if any) to Gluten or Gliadin. The report will automatically remove other grain products that contain the proteins gluten/gliadin, such as wheat, oats, barley and rye. Although you may not be intolerant to these other grains it is advisable to avoid them because of their close association. A positive gluten or gliadin reaction result with negative wheat, rye, oat etc. responses can occur when the isolated protein is tested in its more concentrated form.

BOX 3 - Shows reactions (if any) to Casein or Whey. The report will automatically remove other dairy products containing casein or whey from the "acceptable" foods list. Although technically you may not be intolerant to these other products listed it is advisable to avoid them because they contain the proteins found in casein or whey.

Rotation Diet Guide

Now that the ALCAT test has identified the foods to which you appear to be sensitive, you can begin the process of improving your health. In order to achieve this, it is very important to eliminate any foods and ingredients which the Alcat Test has identified as sensitive. The idea of the rotation diet is to help you cope successfully and pleasantly with a restricted eating plan, so that you are well nourished and satisfied.

To make this task easier we have organized the foods you are not sensitive to into families on a four-day rotation plan.

Understanding your Test Results-Continued

By eating foods in a particular family one day and then omitting them for at least three days you avoid a cumulative sensitizing effect. This period of time allows the particular food molecules to 'clear' from your system so they do not cause an overload. This is the basic principle of the Rotation plan in that it provides a healthy dietary option.

However, this does not work for food you are already sensitive to, as a three-day rest may actually cause symptoms next time you eat it! You need to avoid all foods you are already sensitive to, for at least twelve to twenty four weeks, after which you may be able to reintroduce them successfully into your Rotation diet, one by one.

Try looking at just one day at a time, and starting with breakfast go down the list selecting a food or foods from the different family groups. How about a fruit salad with yogurt, or a baked potato on a cold morning? As you can see, your meals may change during the period of the diet! A very adequate lunch might be carrot and coriander soup followed by peppers stuffed with rice, sweet corn, cashew nuts, a dressed salad and a cup of chamomile tea? Pistachios (without red dye) make a good snack. Dinner might be baked trout sprinkled with ginger and garlic, a baked potato, cooked carrots, steamed artichoke hearts and a mango for dessert.



The list of foods for each day gives you an opportunity to be somewhat creative with your menu. Although you may find that the health benefits are likely to outweigh even the gourmet quality of your meals!

Take note of any possible cross reactivity. For example, apple cross-reacts with birch pollen. If you are aware of sensitivity to latex you should be wary of kiwi and/or bananas because they cross-react too. Chamomile and cantaloupe cross-react with ragweed.

Try to use the same plan for about a month before making changes. Once you have finished eating for a day you must move to the next day's food selections. Freeze or save any unused foods if you want to. However, it is generally best to discard any uneaten cooked vegetables. They may become moldy and will lose most of their nutritional value upon storage over the three days.

When you finish eating on Day 4 return to Day 1 of your plan...

You do not have to eat everything listed under each day of your Rotation Meal Plan! You also do not need to limit any food to only a single consumption. If you want potatoes with breakfast, lunch and dinner on Day 1, that's fine. Attempt to avoid as much processed food, additives and preservatives as possible. Even prepared foods like casseroles, spreads, loaves and soups may contain ingredients you should avoid. Eat simple, whole, identifiable foods, organic wherever available. Thoroughly wash all non-organic fruits and vegetables. Keep an eye on food labels, especially if the packaging or price changes, because formulations can sometimes change without warning.

Variety in the diet is important. The human digestive system is not designed to breakdown the same foods day after day, and is more suited to coping with a seasonal diet.

Healthy bodies cope much better with variety and intermittent challenges, than with unrelenting exposure to only a very few food types. As mentioned earlier, there are family relationships between similar foods so that sensitivity to one member of the family is likely to be aroused by its relatives. If you are vulnerable and eat the same food family repeatedly, you risk becoming sensitive to it at some point. Symptoms may be masked initially because of your body's effort to adapt, but this is tiring and makes you subtly dependent on the offending food family. After some time the adaptation will be exhausted and you begin to experience obvious symptoms.

Understanding your Test Results-Continued

Do not use the Rotation Meal Plan in place of a medical check up or diagnosis if you are experiencing symptoms.

Do not assume all symptoms are food sensitivity related. If you have any symptoms please be sure to consult your doctor to rule out serious diseases. If you decide to eat an intolerant food during the 12 to 24 week elimination period keep in mind your total allergy load.

Foods to Avoid List

The ALCAT Test determines your food sensitivities using a pure extract of each item tested. Most foods however are not pure and come in prepared dishes and can be found in foods you wouldn't expect. It is important to study the ingredients labels carefully as recipes change and foods can be listed under several different names. The "foods to avoid list" can guide you when choosing what foods are available to you. It will help you locate and avoid your problem foods.

Possible Side Effects of the Detoxification Program

Each person will react differently to the new eating regime. The main goal for the first eight weeks of the program is to achieve detoxification and healing of the body. It is possible that for the first few days you may not feel well. You may feel as though you are going through a withdrawal process. Symptoms may include a dull headache, joint pain, and sinus discomfort or even back pain. Some doctors speculate that this is due to temporary excess of antibodies while antigens are being withdrawn, thus creating something resembling 'serum sickness' or the bodies tissues are dumping toxins which temporarily induce lethargy, aches, etc.

These withdrawal symptoms may start as little as 2 hours after stopping the foods (particularly coffee or tea) but will rarely last longer than 4 to 5 days. In extreme cases they can last up to 7 to 10 days. If any (or all) of these symptoms affects you, we recommend that you increase your fluid intake: in severe cases a painkiller should alleviate those flu like symptoms.



Candida Albicans

Treatment 1 - Starve Candida

If your ALCAT test indicates sensitivity to Candida you may find it helpful to restrict intake of:

Yeast- Bread, pizza and savory spreads like Marmite, gravy mixes and stock cubes. There are two common yeasts used in food and drink manufacturing - Bakers yeast and Brewers yeast. Avoid processed foods as this will cut down a lot of the sources of yeast.

Sugar- Avoid sweets, cakes, biscuits, pastries, canned foods and anything with added sucrose, fructose, glucose, dextrose, lactose, maltose, honey and molasses.

Refined Grains- Avoid white rice, white flour (bread, pasta, etc.), and modified starch.

Alcohol- Avoid all alcoholic drinks. Instead concentrate on whole fresh foods, raw and lightly cooked. Using your ALCAT results as a guide, the following foods may be helpful: Potatoes, whole grains, rice, soy, chickpea (and all flours made from them), vegetables (especially carrots), butter, poultry, eggs, shellfish, fish, split peas, rhubarb, pears, rice milk, tomato juice and garlic.

Treatment 2 - Stop the Over-Production of Yeast

This can be achieved by the use of herbal Candida remedy products, which are freely available through good health food shops. There are a number of natural anti fungal agents found in certain foods which can be used in conjunction with your anti Candida diet, such as:

Garlic- This is the simplest and in some ways the best. Eat it raw. If you do not like the taste, use small cloves and swallow them whole. Garlic acts against bacteria and viruses as well as against Candida in both its yeast and fungal forms

Caprylic Acid- This is a very helpful natural anti yeast, anti fungal which is a fatty acid found in coconut oil.

Berberine- This is a natural anti-microbial agent. Berberine is found naturally in plants such as goldenseal.

Grapefruit seed extract- Many people find grapefruit seed extract an important part of their anti Candida regime.

Bitter herbs- Traditional Chinese medicine uses these for anti fungal effects.

Please Note:

If you want to try one of these natural anti yeast, anti fungal treatments that the source of that product is not listed as an intolerance food, i.e. make sure it is not found on either the yellow, orange or red list of your ALCAT test.

Treatment 3 - Replace Yeast

Approximately 3 weeks after avoiding the foods that feed Candida, and after taking any other measures, we recommend you replace the natural correct balance of micro organisms back into the body. There are a number of products helpful in this regard known as probiotics that can assist in repopulating your digestive tract with friendly bacteria. Depending on your Alcat test results it may be necessary to get a yeast and dairy free probiotic. Contact your health care practitioner for any advice on choosing a good quality supplement.

Gluten/Gliadin

What are Gluten and Gliadin?

Gluten and Gliadin are complex protein structures found in grains such as wheat, rye, oats and barley. The main benefit of gluten in the bread making industry is its glue-like property, which helps bread to rise, and create a light sponge structure. Unfortunately it is this same property, which can result in problems in some individuals as the gluten clogs up the intestinal tract and can lead to digestive upsets or in some cases difficulty in nutrient absorption. It can also cause a potent and debilitating immune reaction in the gut. Wheat contains the greatest concentrations, which is what makes it such a popular grain in the western diet but if an individual is sensitive to gluten or gliadin they may also be sensitive to the other grains mentioned above.



When using the ALCAT test to check for gluten/gliadin sensitivity, a concentration is used that is greater than that normally found in natural grains and foods. As such it is possible to react to gluten/gliadin and not to the grains themselves. This can be taken as an early warning so it may be prudent to reduce any over reliance on these grains in the diet to ease potential stress on the body. In other cases, you may show a reaction to one or more of the grains, but not to gluten/gliadin. This can happen if you have no sensitivity to gluten/gliadin, but have sensitivity to another component of the grain.

Gluten and gliadin are extremely difficult to digest and may encourage the growth of undesirable bacteria or fungi in the intestinal tract, which may contribute to diarrhea, bloating, wind, constipation and irritable bowel syndrome. Someone suffering from such symptoms may feel tired, irritable, or depressed after consuming gluten/gliadin-containing products. Avoidance and elimination of these products from the diet are recommended before these symptoms may be alleviated effectively.

If you show a reaction to Gluten/Gliadin your ALCAT Result Guide will have taken out the gluten/gliadin containing grains from the green section. They are wheat, rye, barley, malt and oat.

However, gluten/gliadin can be found in many foods, not just the obvious ones like bread and pasta, but also manufactured foods to which wheat flour is added, for example sausages and sauces. Therefore, it is particularly important to be vigilant and follow a varied rotation diet to reduce the consumption of gluten/gliadin overall.

It is often difficult to adjust to a 'lower grain and gluten/gliadin containing' diet but, whether or not you are actually intolerant to gluten/gliadin or wheat, a good first step is to reduce your consumption to only one serving a day. This will help to reduce any overloading of the system while you improve the overall health of the digestive tract.



Foods to Avoid if Sensitive to Gluten or Gliadin

Wheat- Wheat flour, whole wheat, wheat gluten, gluten, wheat germ, wheat bran, whole wheat flour, bleached or unbleached flour, white or enriched flour, millers bran, bulger, pasta, and many prepared foods. Also avoid enriched flour, MSG (Mono-Sodium Glutamate), pasta, puffed wheat, shredded wheat, soy sauce, triticale, wheat berries, wheat bran, wheat germ, whole wheat flour, all-purpose flour, bread products, bulgur, crackers & cream of wheat.

Rye- Avoid rye bread and rye crackers, multi-grain breads, some granolas, gin, vodka and Whiskey.

Gluten/Gliadin-Continued

Barley and Malt- Malt is made from sprouted barley and from the hydrolyzed starch of other grains. This thick syrup is sweet in taste and is added to foods to improve taste. It can be dried into malt extract, a powder, and added to an array of food and beverages. Malt is found in: ales, barley, corn, beer, breakfast cereals, canned and dried soup mixes, caramel flavoring, caramel coloring, colas of all kinds, condiments, salad dressings, most canned prepared foods (T.V. dinners), lagers, malted milk, Ovaltine, processed meats, bourbon and whisky.

Oat- Avoid oat bran; oat flour; porridge and oatmeal (an ingredient in haggis, oat cakes and the whisky drink Athol Brose), oat gum (used to prolong the shelf life of sweets, cream and butter, and used as a thickener and stabilizer in cream cheese and cheese spreads) roasted ranch oats and whole oats.

To supplement a Gluten/Gliadin free diet the following foods may be eaten if shown to be non-reactive: Millet - a gluten free grain, Fruit, Vegetables, Meat, Fish, Beans, Eggs, Cheese, Milk, Nuts, Gluten free flours - corn / maize flour, Soya flour, Tapioca, Sago, Buckwheat, Lentils.

Casein

What is Casein?

Casein is a protein found in milk products. It should not however, be confused with lactose “milk sugar”, as the two are quite different. Most people who have difficulty digesting milk are lactose intolerant, meaning that they produce too little of the enzyme lactase that breaks down milk sugar so bacteria flourish in their gut to finish the job. This is a different problem than reacting negatively to the protein casein; the ALCAT Test may show a non-reactive result to milk and/or casein in lactose intolerant patients. This disorder is due to a deficiency in the enzyme lactase, rather than specifically sensitivity to milk.



Sometimes an ALCAT Test result shows a positive reaction to milk but a negative reaction to other dairy products such as cheeses. In this situation, the component of the food where the reactivity occurred may be destroyed during the manufacturing process. This may make the dairy product “safe” while the original milk needs to be avoided.

Alternatively an individual may show sensitivity to cheese but not show reactivity to milk. This response is likely due to a new “antigenic determinant” which was introduced during the manufacturing process; this may be molds or fungi which are a part of the natural product, as in blue cheese.

About 75% of the proteins in milk can be classified casein's, which form a group of 12 - 15 different proteins. Interestingly body builders, weightlifters etc., often use Casein as a food supplement, since the casein fraction of milk is more than 90% pure protein.

To act partly as an early indicator of a potential problem, the casein used in the ALCAT test is more concentrated than that which is found naturally in foods such as cheese, yogurt and milk. This is why these foods may appear un-reactive, while casein in the test is reactive. It is also worth noting that there is less casein in skimmed milk than in either semi-skimmed or whole milk. Casein is also used to fortify processed cheese, breads and cereals. Casein is also used in the production of white wines and as a preservative against oxidation

Casein-Continued

Possible Symptoms of Casein Sensitivity

There are a number of symptoms that may be linked to casein intolerance such as: nasal congestion, headache, abdominal pain, muscle aches, bed-wetting, hyperactivity and attention deficit disorder.

Casein Related Products

Many commercially produced products contain casein, in some form. It is important to check all labels. Casein containing ingredients are listed below:

- Milk solids ("curds")
- Whey
- Casein (sodium caseinate, most commonly)
- Lactalbumin and other names that begin with lact, as these may still have some casein associated with them.
- Galactose (a lactose by-product) Most people with milk allergies will have no trouble with galactose, but you should be aware that it might cause problems in some people.
- "Natural Ingredients". Some of these may contain dairy products or by-products. Call the manufacturer for further information.

Additional foods to avoid if sensitive to Casein:

Milk, Goat's Milk, Butter, Ice Cream, Cheese, Goat's Cheese, Yogurt, Kefir

Be especially alert when obtaining the following, as milk products can be present in: Margarine, Hydrolyzed vegetable protein (for the unusually sensitive person) since the processing phase may utilize casein, Bread and "Non-dairy" anything. Non-dairy does not mean milk-free. It is a term that is often used to indicate less than ½ percent milk by weight, and therefore can still contain significant amounts of casein.

To supplement a Casein free diet the following foods may be eaten if shown to be non-reactive: Soy milk or soy butter, Tofu, Ghee, Fruit juices, Calcium rich foods such as broccoli, sardines and nuts.



General Food and Nutritional Guidelines

What is a Balanced Diet?

A balanced diet is one that provides the correct level of nutrients suiting each individual. It not only includes the essential nutrient groups as listed below, but also sufficient protein, carbohydrate, fat and water to maintain health and well being.

In your ALCAT results pack you will receive guidance on rotating your diet to either eliminate or reduce your reactive foods and maintain a balanced daily intake of each food group.



Essential Nutrition Groups- Vitamins, Minerals and Essential Fatty Acids

Vitamins are complex substances needed in small amounts by the body for normal functioning. There is a vast range of vitamins, found in varying amounts in different foods.

Vitamin A- plays essential roles in vision, growth, and development; the development and maintenance of healthy skin, hair, and mucous membranes; immune functions; and reproduction. Vitamin A can be found in Sweet Potato, Carrots, Mango, Turnip, Spinach, Red Bell pepper, Apricot, Milk and Eggs just to name a few.

The B Vitamins- collectively known as B Complex, promote healthy nerves, skin, eyes, hair, liver, gastrointestinal tract, and brain function. The B vitamins are also coenzymes involved in energy production. Vitamin B comes from a number of natural sources, including potatoes, bananas, lentils, chili peppers, turkey, and tuna. Nutritional yeast (or brewer's yeast) is an especially good source of Vitamin B.

Vitamin C- is required for the growth and repair of tissues in all parts of your body. It is necessary to form collagen, an important protein used to make skin, scar tissue, tendons, ligaments, and blood vessels. Vitamin C is essential for the healing of wounds, and for the repair and maintenance of cartilage, bones, and teeth. Vitamin C is also one of many antioxidants. Foods that tend to be the highest sources of vitamin C include green peppers, citrus fruits and juices, strawberries, tomatoes, broccoli, turnip greens and other leafy greens, sweet and white potatoes, and cantaloupe.

Vitamin D- helps the body absorb calcium. In addition to helping the body absorb calcium, vitamin D also helps the body keep the right amount of calcium and phosphorus in the blood. Vitamin D is found in the following foods: dairy products like cheese, butter, cream, fortified milk (all milk in the U.S. is fortified with vitamin D), fish, oysters, fortified cereals, margarine.

Vitamin E- is an antioxidant vitamin involved in the metabolism of all cells. It protects vitamin A and essential fatty acids from oxidation in the body cells and prevents breakdown of body tissues. Vitamin E is found in the following foods: wheat germ, corn, nuts, seeds, olives, spinach and other green leafy vegetables, asparagus and vegetable oils -- corn, sunflower, soybean and cottonseed.

Vitamin K- is found in green leafy vegetables like spinach, broccoli, asparagus, watercress, cabbage, cauliflower, green peas, beans, olives, canola, soybeans, meat, cereals, and dairy products. Cooking does not remove significant amounts of vitamin K from these foods. People who eat a balanced diet including these foods are likely ingesting enough vitamin K and do not require supplementation.

General Food and Nutritional Guidelines-Continued

Minerals -Whereas vitamins are organic substances (made by plants or animals), minerals are inorganic elements that come from the soil and water and are absorbed by plants or eaten by animals. Your body needs larger amounts of some minerals, such as calcium, to grow and stay healthy. Other minerals like chromium, copper, iodine, iron, selenium, and zinc are called trace minerals because you only need very small amounts of them each day.

Essential Fatty Acids-are necessary for the formation of healthy cell membranes as well as the proper development and functioning of the brain and nervous system. Almost all the polyunsaturated fat in the human diet is from EFA. Some of the food sources of ω -3 and ω -6 fatty acids are fish and shellfish, flaxseed (linseed), soya oil, canola (rapeseed) oil, hemp oil, pumpkin seeds, sunflower seeds, leafy vegetables, and walnuts.

General advice to improve your diet

It is important that you maintain a varied diet based upon the foods you are not sensitive to. Wherever feasible eat fresh whole foods, organic if possible. Attempt to avoid processed foods such as those found in bottles, tins, jars, and packaged goods. Be aware that manufacturers of processed foods do not always label every ingredient and source because they can contain many different foods grouped together. You may find it much easier to base your diet on simple whole foods.

The following points can dramatically improve your health and metabolism:

- It is recommended that you drink at least 4 pints of water daily. This should be filtered or bottled (preferably in glass) to limit the intake of chlorides and other additives in tap water.
- Avoid alcohol as it can contribute to leaky gut syndrome. This may allow particles of food to pass straight through the intestinal membrane, which is one of the major factors linked to food intolerance.
- Avoid adding salt to your food. Fresh food naturally contains enough salt for your nutritional requirements.
- Eat slowly, chew food well, and eat as much raw food as possible. Raw foods contain enzymes that begin assisting in digestion as soon as chewing begins. Don't eat on the run.
- Keep active. A healthy lifestyle even if based on only a little exercise each day will help improve your whole outlook and state of well-being whereas boredom can lead to comfort eating.
- Learn what foods are on your green list and make sure you have a good supply of those fresh foods available at all times.
- Try not to sit down to a late evening meal, especially a high fat or carbohydrate dish as you may find it hard to digest the food, which can affect your sleeping patterns.

Preparation of Food

An often-overlooked aspect of food preparation is the use of any oils in cooking. It is important to remember that if you are using oil to cook with, it must be derived from foods on your green list. Be aware some cooking oils have extra ingredients that may be listed on the label. If preparing a meal for other people it is important to cook any foods you are intolerant to separately, so that your meal is not contaminated in any way.



General Food and Nutritional Guidelines-Continued

How Cooking Affects Nutrients

Cooking food may destroy essential vitamins. It is therefore helpful to incorporate some raw foods and lightly cooked foods into your diet if possible. When you are cooking, choose methods such as steaming or stir-frying for vegetables, which help to maintain the nutrient content. Also, where possible, use any water that has been used for cooking vegetables for soups, casseroles and gravies as well as drinking as a vegetable juice in order to retain as many nutrients as possible. Using this liquid will reduce the loss of water-soluble vitamins such as those of the B vitamin family and vitamin C as well as many minerals. Fat-soluble vitamins such as vitamins A, D, E and K can be lost through cooking in oil. Be aware that prolonged heat can also affect the nutritional content of foods.

How Preserving Affects Nutrients

Freezing is the best method of storing food; frozen foods should be kept below -18°C (0°F) until required for use. Foods that are processed for storage in tins/cans or glass jars lose nutrients such as thiamin, folic acid and vitamin C as a result of the heat treatment. Other nutrients may be lost if a glass jar is stored in daylight. Finally, to achieve the least nutrient loss dried foods should be stored in sealed containers to exclude both oxygen and light.

Foods and Their Derivatives

Some of the foods tested have pure derivatives, which can also be eaten. Examples such as wheat include not only plain and self-raising flour but also 100% durum wheat pasta; couscous shredded wheat and puffed wheat. These are all 100% pure wheat products and as such all sources of wheat can be added to the diet to increase food choice and variety. Remember to read labels of packaged foods to ensure that all ingredients are on the green list of your result guide.

Re-introducing Foods into Your Diet

You may be able to eat the omitted foods after elimination for at least three months. For the first eight weeks following elimination you will be more sensitive, not less. Within the first few days you may have withdrawal symptoms, which disappear quickly. Many people continue to stay close to the Rotation Plan even after reintroducing foods, because they feel so much better. Others find it too difficult to continue because of very busy lives or, their inability to always be in control of their food selections. Three months should be a minimum time to stay on the diet – longer if you were severely reactive.

Always reintroduce foods one at a time. The best time to re-challenge a suspected or known allergic food is first thing in the morning on an empty stomach and only if you are symptom-free. Always test with a very pure form of the food, organic if available.

If you notice a reaction, wait a minimum of four days before testing a different food. If you react, omit the food for another three weeks before re-challenging. If you do not react, place the food with the other family members on your rotation. Remember that if you have reacted strongly to a certain food in the past you may not be able to reintroduce that item into your diet. Repeating the ALCAT test after a three or six-month elimination is another convenient way to see if previously test positive foods may now be tolerated.

If you have many sensitivities or food dislikes, it is probable that you will need nutritional supplementation to meet your nutritional needs. Please consult with your physician or a nutritionist if this is the case.

Frequently Asked Questions

What do the red, orange, yellow and green colors indicate?

The ALCAT diagnostic system is designed to electronically measure changes in cell size and volume when your blood is incubated with the test substances. These measurements are plotted on a graph and compared to a "Master Graph". The Master Graph is a chart plotted from the measurements obtained when a sample of your blood is treated identically but without being exposed to the test substances. The degree of difference between the cell size and volume of the sample incubated with the test substance, in comparison to the control, determines the range of reactivity.

- Foods and substances in the green range are considered "safe" unless you have had an immediate, immunological reaction to any of them. For example, if you have ever tested positive on a skin test or an IgE RAST test to a particular food or foods listed as negative on your ALCAT test, you may still react. You need to avoid those foods or substances.
- If you have not had a skin test or an IgE RAST test but have suffered a reaction (either within minutes or up to two hours after contact and may involved your skin, respiratory or gastrointestinal tract), you may have a classic allergy to that food or substance. Avoid that food or substance even if the ALCAT result is negative.
- Foods/substances in the yellow range did not react to a significant degree. However they did react and you may indeed experience symptoms, especially if consumed/contacted frequently or in great amounts. You may be asked to avoid these foods as well.
- Foods or substances that the computer has scored orange and red have significant potential for symptomatic reaction and should be avoided.

I know I am allergic to an item – why is it green (negative) on my ALCAT results?

As described previously, your reaction may be related to a specific immune system substance (immunoglobulin) called IgE. This is not measured by the ALCAT test. IgE reactions are usually apparent because they occur within a short time (usually within two hours or less) and the symptoms are dramatic and classic.

If your reaction fits this description it is a classic allergy. You should avoid the food/substance. Consult your doctor before trying to "re-challenge" this food.

Your doctor may advise you to only do this in the medical office in case of the need for emergency care. When you have been omitting a known allergic food/substance and then add it back, the reaction may be exaggerated. Depending upon the age at which you developed this allergy, as well as other factors, it may or may not be reversible. Some allergies are "fixed"; that is no matter how long you avoid contact, you will always react. Other allergies can be, "cyclical", meaning you may react for a period of time or certain months of the year and then lose the allergy temporarily or permanently.

If you tested positive on a previous ALCAT test, eliminated the item(s) for several months and are now testing negative you have most likely lost your sensitivity to that item. It is believed that using a rotation diet plan will prevent re-sensitization. Scientific studies comparing the ALCAT results to the Gold Standard, Double Blind Oral Challenge show the ALCAT to be 83.4% accurate. There is the small possibility of false negatives.

How can I be allergic to this - I don't even eat it or like it?

Eating or liking a particular food is certainly not a requirement for being sensitive to it! The wonderful human body perhaps even has its own wisdom which guides you away from that which may do harm! It is even possible that genes dictate reactivity to a certain degree. We really do not know what the specific causes are for the cells to react.

Do I really have to follow the rotation plan or can I just eliminate the foods I react to?

Dr. Herbert J. Rinkel developed the Rotary Diversified Diet (Rotation) in 1934. People prone to or with food/chemical sensitivities find this diet beneficial for a number of reasons:

- It greatly lessens the likelihood of developing new sensitivities.
- It allows the immune system to recover from the effects of a food before it is again consumed.
- It may help identify other undiagnosed food sensitivities.

Frequently Asked Questions-Continued

If you just eliminate or avoid the foods you are sensitive to, you may start eating the substitutes so often that your body begins to react to them! If you find the Rotation just too stressful, it may do more harm than good to attempt to follow it. Occasionally, you may find yourself in a social situation (or perhaps when traveling) where you are not always able to follow the plan closely. In such situations continue to try to avoid your sensitivities and return to your rotation plan as soon as you can.

Can I have one type of food all week long?

Even if you dislike tea, water and orange juice but you love coffee it is not wise to drink the coffee daily. Even if your test was negative to coffee you could develop the sensitivity to it.

Even a non-allergic person should strive for the most variety possible in the diet. No single food contains all the nutrients we need. The greater variety, the greater the opportunities to obtain many different nutrients, even ones we may not even know exist yet! Also, because our foods often contain pesticides, herbicides, hormones and the like, consumption on a very regular basis of any food may have detrimental effects due to overdose of any of these substances. Eating the same food two days in a row if need be, is not cause for concern. Eating it four or five days in a row or every day might be.

May I eat something on rotation I was not tested for?

If you were not tested for a particular food(s), there is no way to know whether or not you will react if you eat them. If you did test positive (especially orange or red) to one or more foods in a family, there is a greater likelihood of you testing positive to other foods in that same family. For example: if you tested positive to carrots, parsley, and/or celery and are eager to eat parsnip, you may want to think twice and do so cautiously. However, if you were negative to the first three members mentioned, the parsnips are less likely to be a problem.

How long do I stop eating these foods and when do I re-challenge and in what order?

It is believed that once an 'offender' food is removed from the diet, the body becomes hypersensitive to that food for about 8 weeks. For example, let's say you are red or orange sensitive to carrots and omit them. However, after 2 weeks if you happen to eat carrots...You may have an exaggerated set of symptoms that were never present when you ate carrots in the past. After the eight weeks, this hypersensitivity is thought to decline. Therefore, a three-month period of elimination is most often recommended.

On the other hand, if you have a yellow sensitive food that you chose to omit initially, and want to see if you can reintroduce it, probably three weeks is long enough to stay off. Lastly, if you want to add a food to your rotation diet for which you were not tested, you may want to omit this particular food, and all sources of it, for four to five days and then try it on the morning of the fifth or sixth day.

Caution: this reaction can be dramatic. We strongly suggest you discuss the re-challenge procedure with your health care practitioner.

Why are chemicals/additives not included in the rotation diet?

A Rotation Diet is a plan in which foods are distributed and grouped together based upon their biological and botanical similarities. Chemicals and additives are not usually grouped this way.

Ideally, only whole unprocessed, additive and chemical free foods should be consumed on the rotation diet. Practically, this is not always possible. Therefore, you should at the very least try to refrain from ingesting or coming into contact with the same additives or chemicals daily, especially if your test showed sensitivity.

Note: Remember that many of the colorings and chemicals are in cosmetics and personal care items.

How do vegetarians get adequate protein?

Sometimes deriving adequate protein on a daily basis can be difficult for a vegetarian with food sensitivities. Depending upon the degree of your conviction, in order to achieve optimal results (meaning improvement in your health) it may be necessary to broaden your intake of protein foods. Perhaps you might consider eating eggs (if you are not already an ovo-vegetarian), fish or even poultry or red meat. This may only be necessary on a temporary (at least three month) basis. A Nutritionist or Dietician will be able to advise you on maintaining a balanced diet.

Can I use a nutritional supplement if it is a derivative of a reactive food?

Absolutely Not! Many manufacturers are now making hypoallergenic supplements. Read all labels carefully. If you are sensitive to corn, be aware that it is the source for a lot of the vitamin C on the market. Vitamin E is often obtained from wheat germ oil or soy. Gelatin capsules are made from beef and/or pork. These are just a few examples. Be sure to check the source of all your supplements.

Reference Description Of Food Additives and Food Colorings

ASPARTAME- No calorie artificial sweetener aspartame, which is sold under the brand name NutraSweet in the United States and is used in more than 6,000 products. Aspartame may change levels of chemicals in the brain that affect behavior. May also cause Headaches/migraines, dizziness, seizures, nausea, numbness, muscle spasms, weight gain, rashes, depression, fatigue, irritability, tachycardia, insomnia, vision problems, hearing loss, heart palpitations, breathing difficulties, anxiety attacks, slurred speech, loss of taste, tinnitus, vertigo, memory loss, and joint pain.

BENZOIC ACID- A white, crystalline organic compound belonging to the family of carboxylic acids, widely used as a food preservative and in the manufacture of various cosmetics, dyes, plastics, and insect repellents. It can cause temporary distress through gastrointestinal irritation.

MSG- Monosodium glutamate (MSG) is used as a flavor enhancer in a variety of foods prepared at home, in restaurants, and by food processors. Its use has become controversial in the past 30 years because of reports of adverse reactions in people who've eaten foods that contain MSG. Research on the role of glutamate—a group of chemicals that includes MSG—in the nervous system also has raised questions about the chemical's safety.

POLYSORBATE 80 - (Commercially also known as Tween® 80 is a nonionic detergent and emulsifier derived from polyoxylated sorbitol and oleic acid, and is often used in foods. Polysorbate 80 is often used in ice cream to prevent milk proteins from completely coating the fat droplets. This allows them to join together in chains and nets, to hold air in the mixture, and provide a firmer texture, holding its shape as the ice cream melts. Polysorbate 80 is also used in commercial pickle products.

POTASSIUM NITRATE- Used as a fertilizer, in model rocket propellant, and in several fireworks such as smoke bombs, in which a mixture with sugar produces a smoke cloud of 600 times their own volume. In the process of food preservation, potassium nitrate is a common ingredient of salted meat. Potassium Nitrate is also the main component (usually about 98%) of tree stump remover; it accelerates the natural decomposition of the stump. It has also been used in the manufacture of ice cream and can be found in some toothpaste for sensitive teeth.

POTASSIUM NITRITE- Used as a food additive, also is used as a preservative in a manner similar to that of sodium nitrite. Potassium nitrite is a strong oxidizer and contact with skin or clothing, as well as inhalation and ingestion, should be avoided. Potassium nitrite is also used in the manufacturing of heat transfer salts.

SACCHARINE- Saccharin is typically used as a sweetener in low calorie soft drinks, dietetic ice cream, and other low calorie foods. Saccharin is best known in the pink packet form of Sweet 'N Low.

SORBIC ACID- Its mineral salts, such as sodium sorbate, potassium sorbate and calcium sorbate, are antimicrobial agents often used as preservatives in food and drinks to prevent the growth of mold, yeast and fungi.

SODIUM METABISULFITE- Used as a food additive, mainly as a preservative and is sometimes identified as E223. As an additive, it may cause allergic reactions, particularly skin irritation, gastric irritation and asthma. It is not recommended for consumption by children. It is commonly used in homebrewing preparations to sanitize equipment. It is also used to remove chloramine from drinking water after treatment.

SODIUM SULFITE- Used as a preservative to prevent dried fruit from discoloring, and for preserving meats. Also used for reducing chlorine levels in pools. It can cause a decrease in vitamin B1 or destruction of thiamine in the body and can cause asthmatic reactions

ACID ORANGE- A reddish-brown dye which is used in foods, drugs, and cosmetics (FD & C Orange #8). It is restricted to casings and surfaces of frankfurters and sausages

BLUE #1 (Patent Blue) - This blue dye is a derivative of coal-tar and it is used in bottled soft drinks, ice cream, ices, dry drink powders, candy, baked products, cereals, and puddings. It is also found in face powders, other cosmetics, and hair colorings. This dye has been a suspect of many allergic reactions.

BLUE #2 (Indigo Carmine) - This is a dark-blue powder which is a derivative of coal-tar. This dye is used in such food products as bottled soft drinks, bakery goods, cereals, candy, confections, and dry drink powders. It is also employed in mint-flavored jelly and frozen desserts. It is recognized as a sensitizer in allergic patients.

Reference Description Of Food Additives and Food Colorings-Continued

BRILLIANT BLACK- Used as a food dye in decorations, coatings, desserts, sweets, ice cream, mustard, red fruit jams, soft drinks, flavored milk drinks, fish paste, and other foods. It appears to cause allergic or intolerance reactions, particularly amongst those with aspirin intolerance. It is a histamine liberator, and may worsen the symptoms of asthma.

GREEN #3 (Fast Green) - This dye is used in foods, drug, and cosmetics except in products which are used in the area around the eye. It is used in coloring in mint-flavored jelly, frozen desserts, gelatin desserts, candy, confections, baked goods, and cereals. Green #3 has been a suspect as a sensitizer in allergic patients.

RED #1 (Crystal Ponceau) - This dye is used in dyeing wool. It may be used in foods, drugs, and cosmetics; as a special note, it has been de-listed by the FDA from further production in foods, drugs or cosmetics.

RED #3 (Erythrosine B) -It is used as a food dye, in printing inks, as a biological stain, a dental plaque disclosing agent and a radiopaque medium. It can cause photosensitivity (sensitivity to light) and it may be carcinogenic. It, and some other synthetic food colorings have been implicated in ADHD, but the evidence on this point is still inconclusive.

RED #40 (Allura red)-In the United States, Allura Red AC is approved by the Food and Drug Administration for use in cosmetics, drugs, and food. It is used in some tattoo inks and is used in many products, such as orange soda.

YELLOW #5 (Tartrazine) -The most widely used color additives in foods (candy, desserts, cereals, soft drinks and dairy products), drugs and cosmetics. Tartrazine appears to cause the most allergic and intolerance reactions of all the azo dyes, particularly amongst those with an aspirin intolerance and asthmatics. Reactions can include anxiety, migraine, clinical depression, blurred vision, itching, rhinitis, urticaria, general weakness, palpitations, and sleep disturbance.

YELLOW #6 (Sunset Yellow)-It may be found in orange squash, orange jelly, marzipan, Swiss roll, apricot jam, citrus marmalade, lemon curd, sweets, hot chocolate mix and packet soups, trifle mix, breadcrumbs and cheese sauce mix and soft drinks. It appears to cause allergic or intolerance reactions, particularly amongst those with aspirin intolerance. Other reactions can include gastric upset, diarrhea, vomiting, a rash similar to nettle rash and skin swelling.

Reference Description of Molds

ALTERNARIA- Often found in carpets, textiles and on horizontal surfaces in building interiors. Often found on window frames. Outdoors it may be isolated from samples of soil, seeds and plants. It is commonly found in outdoor samples.

ASPERGILLUS- Comes in many varieties (species). Many of the varieties produce toxic substances. It may be associated with symptoms such as sinusitis, allergic bronchiopulmonary aspergillosis, and other allergic symptoms. Inhalation of conidia and mycelium of Aspergillus can lead to several diseases, the severity of which depends on the host's immune response. It is found in soils, leaf, and plant litter, decaying vegetable and roots, bird droppings, tobacco, and stored sweet potatoes.

BOTRYTIS- This world wide mold predominantly occurs in humid and sub-tropical regions. It is seen as the gray mold on cabbage, red clover, lettuce, sugar beet, beans, barley, wheat, onion, and tomato. It is especially seen in connection with soft fruits like strawberries and grapes. In the wine industry, the growth of botrytis on wine grapes has been known to give an added effect to the bouquet of certain wines.

CANDIDA ALBICANS- Is a yeast infestation, from a parasite that thrives in warm-blooded animals. In the allopathic world of medicine it is referred as a fungus. This fungus can cause thrush and vaginal infections and spread to any part of the body that is weakened. We all have intestinal Candida and when in balance it helps maintain and aid our immune system by controlling the unfriendly organisms. However, Candida Albicans takes advantage of circumstances in the body. This single cell fungi multiplies and develops toxins which circulate in the blood stream which cause an array of maladies.

Reference Description of Molds-Continued

CEPHALOSPORIUM- Is a mold found in decomposing vegetation, and it is a soil inhabitant. It is also found in dust from textile plants, soil when gardening, bathrooms, and damp old houses. A gray/green color, it is also occasionally found in patients sensitive to *Candida Albicans*.

CLADOSPORIUM- This is a mold which is found most commonly on dying and dead plant substrates, especially on leaves and stems of ferns, mosses, and desert and aquatic plants. It is found in various soil types and on food items such as cereals, cucumbers, tomatoes, and peaches. It has also been found in fuel tanks, face creams, paints, and textiles.

CURVULARIA SPECIFERA-This mold is dark brown in color with a velvety appearance. It is allergenic and can be found in interior building materials, soil, castor beans, cotton, rice, barley, wheat, and corn. It seems to thrive well in most tropical countries. It may cause hay fever, asthma, fungal sinusitis.

EPICOCCUM NIGRUM- *Epicoccum pupurascens* (synonym *Epicoccum nigrum*) is a saprophyte of worldwide distribution. It is a very common invader of many different plant types, also infecting seeds from barley, oats, wheat, and corn. Moldy paper discoloration is frequently caused by *Epicoccum*.

FUSARIUM- Is a large genus of filamentous fungi widely distributed in soil and in association with plants. Most species are harmless saprobes and are relatively abundant members of the soil microbial community. Some species produce toxins in cereal crops that can affect human and animal health if it enters the food chain.

HELMINTHOSPORIUM -This mold occurs seasonally and spores are released on dry, hot days. It is a parasite of cereals and grasses. Frequently found on grains, grasses, sugar cane, soil, and textiles.

HORMODENDRUM (Cladosporium) - Most commonly identified outdoor fungus. The outdoor numbers are reduced in the winter. The numbers are often high in the summer. Often found indoors in numbers less than outdoor numbers. It is a common allergen. Indoor *Cladosporium* may be different than the species identified outdoors. It is commonly found on the surface of fiberglass duct liners in the interior of supply ducts. A wide variety of plants are food sources for this fungus. It is found on dead plants, woody plants, food, straw, soil, paint, and textiles

MUCOR RACEMOSUS- This mold has worldwide distribution and is primarily a soil fungus but has been found in horse manure, plant remains, grains, vegetables, and nuts. In the tropics it is found at higher altitudes and often seen on soft fruit, fruit juice and marmalade.

PENICILLIUM- It has a fruity odor, suggesting apples or pineapples. It is found in the soil of citrus plantations and has been isolated from decaying cabbage and barley plants, stored seeds of cereals, grapes, nuts, dried fruits, and fruit juices. It is one of the most dominant and important house molds; the indoor mold can be readily seen on stale bread, citrus fruits, and apples. It is frequently found in wine cellars. It is the source of several antibiotics significantly penicillin.

PHOMA HERBARUM- This mold is commonly found in different soils, dead plant tissues, and potatoes. It grows indoors in association with bio-deterioration of wall paints, and produces pink or purple colored spots. This mold has also been isolated from moldy shower curtains.

PULLULARIA- This yeast-like fungus is commonly found on caulk or damp window frames in bathrooms. *Aureobasidium* (*Pullularia*) may be pink or black in color. Although it seldom causes infections, it can be allergenic. This is one type of mold that is a type of mildew. It will grow in cooler climates and along with *Cladosporium* is commonly found growing on siding.

RHIZOPUS NIGRICAN - Frequently found in house dust, soil, fruits, nuts, and seeds. *Rhizopus* often grows in fruit and vegetable garbage, or in forgotten leftover food. Exposure to large numbers of *rhizopus* spores has reportedly caused respiratory complications. *Rhizopus* can be an allergen and opportunistic pathogen for immune-compromised individuals, especially those with diabetic ketoacidosis, malnutrition, severe burns, or in some cases, the common cold.

RHODOTORULA (Rubra) - Reddish yeast typically found in moist environments such as carpeting, cooling coils, and drain pans. In some countries it is the most common yeast genus identified in indoor air. This yeast has been reported to be allergenic. Positive skin tests have been reported. It has colonized terminally ill patients.

SPONDYLOCLADIUM- This is a mold which is found in moist and damp environment. They are found on plants and around window sills and air conditioning ducts. They are indoors and outdoors.

SPOROBOLOMYCES- A yeast commonly isolated from environmental sources, such as air, tree leaves, and orange peels. The natural habitats are humans, mammals, birds, the environment, and plants. Sporobolomyces may cause infections, particularly in immuno-suppressed patients.

T.O.E. MIXTURE- This is a mixture of three molds; Trichophyton (Rubrum & Interdigitale), Odeomyces (Monilia Albicans), and Epidermophyton (Inguinale). These molds are found on skin surfaces.

TRICHODERMA- Is commonly found in soil, dead trees, pine needles, paper, and unglazed ceramics. It often will grow on other fungi. It produces antibiotics that are toxic to humans. It has been reported to be allergenic. It readily degrades cellulose.

Reference Description of Environmental Chemicals

AMMONIUM CHLORIDE- Uses include a feed supplement for cattle, in hair shampoo, in textile printing, in the glue that bonds plywood, as an ingredient in nutritive media for yeast, in cleaning products, and as cough medicine. It is the active ingredient in many antiperspirants, usually used in aerosol antiperspirants.

BENZENE- Is a colorless and flammable liquid with a sweet smell and a relatively high melting point. It is carcinogenic and its use as additive in gasoline is now limited, but it is an important industrial solvent and precursor in the production of drugs, plastics, synthetic rubber, and dyes. May cause drunken behavior, light headaches, disorientation, fatigue, and loss of appetite.

CHLORINE- Drinking water, bleach, and disinfectants contain chlorine. It induces pain and inflammation of mouth, throat, and stomach. It can also cause confusion, delirium, respiratory tract irritation, pulmonary edema, skin eruptions, and vomiting. Exposure to chlorine has been linked to an increase in blood pressure, diabetes, anemia's, heart disease, gastrointestinal and urinary tract cancer, and asthma.

ETHYLENE GLYCOL- Used in anti-freeze, in heating and cooling systems, and in paint and plastic solvents. It is also found in ink pads, ink for ball point pens, and is used as a softening agent for cellophane, stabilizer for soybean foam, and to extinguish oil and gasoline fires. It is also used in the synthesis of elastomers, plasticizers, and synthetic fibers and waxes.

FLUORIDE- Is commonly found in toothpaste and water. Clinical studies have shown that fluoride contributes to osteoporosis and long-term exposure produces osteosclerosis.

FORMALDEHYDE- Is found in household detergents and cleaners, and is also used in photographic chemicals, paint and rubber production, textile finishes and conditioners, pesticides and vermicides, diesel exhaust, toilet, burning charcoal and cigarette smoke. It may produce such symptoms as irritability, disorientation and depression.

NICKEL SULFATE- An alloy ingredient in precious metals. Found in costume jewelry, eyeglass frames, silver and white gold jewelry, hairpins, braces, chairs, knives, forks, coins, and medical instruments. It may also be included in bleaching agents, dyes for hair, mineral oil products, and chemical fertilizers

ORRIS ROOT- Once important in western herbal medicine, it is now used mainly as a fixative and base note in perfumery, as well as an ingredient in many brands of gin. This is also the substance left out of products that are labeled hypo-allergenic.

PHENOL- Phenol is used primarily in the production of phenolic resins and in the manufacture of nylon and other synthetic fibers. It is also used in slimicides (chemicals that kill bacteria and fungi in slimes), as a disinfectant and antiseptic, and in medicinal preparations such as mouthwash and sore throat lozenges. Short-term exposure to phenol in the air can cause respiratory irritation, headaches, and burning eyes. People who had skin exposure to high amounts of phenol had skin burns, liver damage, dark urine and irregular heart beat.

TOLUENE- Toluene is a common solvent, able to dissolve: paints, paint thinners, many chemical reactants, rubber, printing ink, adhesives (glues), lacquers, leather tanners, and disinfectants. Inhalation of toluene fumes can be intoxicating, but in larger doses nausea-inducing.

Reference Description of Pharmacoeactive Agents

ACETALDEHYDE- Occurs naturally in ripe fruit, coffee, and fresh bread and is produced by plants as part of their normal metabolism. It is probably best known as the chemical that causes "hangovers". In the chemical industry, acetaldehyde is used as an intermediate in the production of acetic acid, certain esters, and a number of other chemicals.

AFLATOXINS- are naturally occurring mycotoxins that are produced by many species of *Aspergillus*, a fungus, most notably *Aspergillus flavus* and *Aspergillus parasiticus*. Aflatoxins are toxic and carcinogenic. High-level aflatoxin exposure produces an acute necrosis, cirrhosis, and carcinoma of the liver exhibited by hemorrhage, acute liver damage and edema, alteration in digestion, and absorption and/or metabolism of nutrients.

CAFFEIC ACID- is a naturally occurring phenolic compound, (formerly called a carboxylic acid), which is found in many fruits, vegetables, and herbs, including coffee, although varying in amounts depending on the plant. Caffeic acid has been shown to act as a carcinogenic inhibitor.

CHLOROGENIC ACID – An ester of caffeic acid and quinic acid is a major phenolic compound in coffee, isolated from the leaves and fruits of dicotyledonous plants. This compound, long known as an antioxidant, also slows the release of glucose into the bloodstream after a meal.

COUMARIN- Is a chemical compound found in many plants, notably in high concentration in the tonka bean, woodruff, and bison grass. It has a sweet scent, readily recognized as the scent of newly-mown hay. It has clinical value as the precursor for several anticoagulants, notably warfarin.

DOPAMINE- Is a chemical naturally produced by the human body. In the brain, dopamine functions as a neurotransmitter, activating the five types of dopamine receptor - D1, D2, D3, D4 and D5, and their variants. Dopamine is produced in several areas of the brain, including the substantia nigra. Dopamine has many functions in the brain.

DI-PHENYLALANINE- Is a naturally occurring amino acid, a precursor of other chemicals such as dopamine, and melanin. Patients with phenylketonuria are usually treated by low phenylalanine diet. This chemical which is ubiquitous, found in barley, cocoa, codfish, egg, gelatin, grape, hops, potato and yeast mix.

GALLIC ACID- Has been used as an intestinal astringent. It is used to manufacture inks, to develop photographs, and in tanning and dyeing. The esters are used as an antioxidant. It is found in fruits, beans, milk, egg, hops, olive, potato, and yeast mix.

HISTAMINE- This is a potent vasodilator found in normal tissues and blood. It stimulates the secretion of pepsin in the stomach. Eating stimulates the release of histamine from gastric mucosa. It has been used as a diagnostic aid (gastric secretion, pheochromocytoma) and for hypo-sensitization therapy. Naturally occurring in beer, black bass, catfish, chicken, cocoa, codfish, flounder, halibut, cow's milk, lobster, oyster, salmon, trout, tuna, turkey, and yeast mix.

MALVIN- is a naturally occurring chemical of the Anthocyanidin family in a variety of common foods like Tomato, Potato, Green Pea, Olive, Onion, Eggplant, Carrot, Walnut, Cashew, Watermelon, Strawberry, Peach, Pear, Crabmeat, Cow's milk, cheese and many others. Malvin is not dangerous to ingest unless one develops an allergy toward it. An allergy to malvin may result in constipation, severe gas, vomiting or diarrhea when foods containing it are ingested in large amounts.

NICOTINE- Nicotine is an alkaloid found in the nightshade family of plants (*Solanaceae*), predominantly in tobacco, and in lower quantities in tomato, potato, eggplant and green pepper. Nicotine has also been used insecticides and fumigants. Symptoms of nicotine toxicity include extreme nausea, vomiting, convulsions, mental confusion, and twitching. It produces vasoconstriction and slight central nervous system depression.

OCTOPAMINE-This pharmacoeactive agent is found in ham, lobster, cow's milk, mutton, and pork.

PIPERONAL- is an aromatic aldehyde that comes as a white powder and has a floral odor. It is used as flavoring and in perfume. It can be obtained by oxidation of piperonyl alcohol. It is also a minor natural component of the extract of vanilla. It can be found in cinnamon, clove, cucumber, honey, cow's milk, mustard, peach, pineapple, walnut, and yeast mix.

PYRIDINE- This chemical is a nitrogen analog of benzene. It can be derived from tobacco and various other organic matters. It is a weak basic liquid which is often used in histology as a solvent and to extract lipids from tissue.

Reference Description of Pharmacoeactive Agents-Continued

PHENYLETHYLAMINE- Is an alkaloid and monoamine. In the human brain, it is believed to function as a neuromodulator or neurotransmitter. It is found in many foods such as chocolate, especially after microbial fermentation. It has been suggested that phenethylamine from food may have psychoactive effects in sufficient quantities.

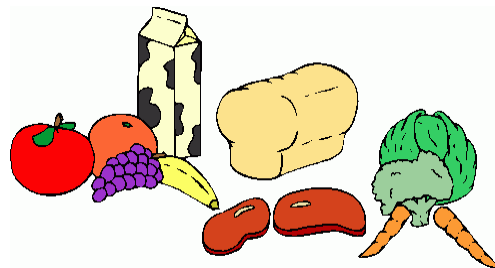
RUTIN- The flavonoid rutin is a flavonol glycoside comprised of the flavonol and the disaccharide rutinose. Rutin is found in many plants, especially the buckwheat plant *Fagopyrum esculentum* Moench, the flour of which is used to make pancakes. Other rich dietary sources of rutin include black tea and apple peels. Rutin may be useful in the management of venous edema. It may help strengthen capillaries, protect against some toxins and have anti-inflammatory effects, as well as some anti-cancer effects. It may also help prevent the oxidation of vitamin C and have some positive lipid effects.

SEROTONIN- In the central nervous system, serotonin is believed to play an important role in the regulation of anger, aggression, body temperature, mood, sleep, vomiting, sexuality, and appetite. Low levels of serotonin have been associated with several disorders, namely increase in aggressive and angry behaviors, clinical depression, Obsessive-compulsive disorder (OCD), migraine, irritable bowel syndrome, tinnitus, fibromyalgia, bipolar disorder, and anxiety disorders.

SOLANINE- Is a glycoalkaloid poison found in species of the nightshade family. It can occur naturally in any part of the plant, including the leaves, fruit, and tubers. It is very toxic even in small quantities. Solanine has both fungicidal and pesticidal properties, and it is one of the plant's natural defenses. Solanine poisoning is primarily displayed by gastrointestinal and neurological disorders. Symptoms include nausea, diarrhea, vomiting, stomach cramps, burning of the throat, heart arrhythmia, headache and dizziness. Hallucinations, loss of sensation, and paralysis, fever, jaundice, dilated pupils and hypothermia have been reported in more severe cases.

TRYPTOPHAN- Is an amino acid which is essential in human nutrition. It is one of the 20 amino acids encoded by the genetic code. Tryptophan, found as a component of dietary protein, is particularly plentiful in oats, bananas, dried dates, milk, yogurt, cottage cheese, red meat, eggs, fish, poultry, sesame, chickpeas, sunflower seeds, and peanuts.

TYRAMINE -Occurs widely in plants and animals and is metabolized by the enzyme monoamine oxidase. In foods, it is often produced by the decarboxylation of tyrosine during fermentation or decay. Foods containing considerable amounts of tyramine include fish, chocolate, alcoholic beverages, and fermented foods such as cheese, soy sauce and soy bean condiments, sauerkraut, and processed meat. Tyramine plays a significant part in causing hangovers and their headaches. It occurs in particularly high levels in red wine.



Additional Information

Useful Books

- Food Allergies and Intolerance**
by Jonathan Brostoff and Linda Gamlin
- The Complete Guide to Food Allergy & Intolerance**
J. Brostoff and L. Gamlin
- Was It Something You Ate?**
John Emsley and Peter Fell
- Your Hidden Food Allergies are making you Fat**
R. Rivera and R. Deutsch
- E for Additives**
Maurice Hanssen and Jill Marsden
- What the Label Doesn't Tell You**
Sue Dibb
- Gluten-Free Cooking**
Anne Sheasby
- Allergy-Free Cooking**
Michelle Berriedale-Johnson
- Cooking Without**
Barbara Cousins
- The Complete Guide to Wheat-Free Cooking**
Phyllis L. Potts
- The Gluten-Free Gourmet: Living Well Without Wheat**
Bette Hagman
- The Gluten-Free Gourmet Bakes Bread**
Bette Hagman
- Wheat-Free Recipes and Menus**
Carol Fenster
- Special Diet Celebrations: No Wheat, Gluten, Dairy or Eggs**
Carol Fenster
- Special Diet Solutions: Healthy Cooking without Wheat, Gluten, Dairy, Eggs, Yeast or Refined Sugar**
Carol Fenster
- The Allergy Self Help Cookbook: Over 325 Natural Food Recipes, Free of Wheat, Milk, Eggs, Corn, Yeast, Sugar and Other Common Food Allergens**
Rodale Press
- Allergy Cooking With Ease: The No Wheat, Milk, Eggs, Corn, Soy, Yeast, Sugar, Grain, and Gluten Cookbook**
Nicolette M. Dumke
- The Uncheese Cookbook: Creating Amazing Dairy-Free Cheese Substitutes and Classic 'Uncheese' Dishes**
Joanne Stepaniak
- The Milk-Free Kitchen: Living Well Without Dairy Products**
Beth Kidder
- 366 Simply Delicious Dairy-Free Recipes**
Robin Robertson
- Bakin' Without Eggs: Delicious Egg-Free Recipes from the Heart and Kitchen of a Food Allergic Family**
Rosemarie Emro
- Vegetarian Cooking for People with Allergies**
Rafael Rettner
- Erica White's Beat Candida Cookbook**
Erica White
- Recipes for Health: Candida Albicans: Over 100 Yeast-Free and Sugar-Free Recipes**
Shirley Trickett
- The Yeast Connection Handbook**
William G. Crook
- The False Fat Diet: The Revolutionary 21-day Program for Losing the Weight You Think is Fat**
Elson Haas
- Living Without (magazine) Lifestyle guide for people with gluten and gliadin sensitivities**

References

- A Comparison of the ALCAT Test for Food Reactions amongst 2 Population Sub Groups.**
Douglas H Sandberg, M.D.; Mark J. Pasula, PH.D.
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Douglas H. Sandberg, M.D.
Mark J. Pasula, Ph.D.
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Harris Steinman, MD,
- Reproducibility of the Antigen Leucocyte Cellular Antibody Test (ALCAT)**
WML Neetling PhD, F.A.C.A.
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