

Neutralization of Phenolic (Aromatic) Food Compounds in a Holistic General Practice

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In September, 1982, I attended the first symposium held at Brigham Young University on "The Immunotoxicity of Foodborne Phenolics and Airborne Pollutants."

The symposium was based on the findings of Dr. Robert Gardner, Ph.D., professor of Animal Science, Brigham Young University. Those practicing alternative medicine will recognize the medical breakthrough of Dr. Gardner's discovery and understand its overwhelming implications in the reversal of allergies and chronic degenerative diseases.

In 1979, Dr. Gardner, a very allergic person, hypothesized that his allergies were caused by a sensitivity to some aromatic compounds found naturally in all plant foods and pollens. He acquired some of these pure aromatic compounds, made dilutions, started sublingual tests and monitored changes in pulse rates upon applications. There were reactions to various extracts, and neutralizing doses were found for each compound. He found that neutralizing doses of these compounds would neutralize allergic reactions to specific foods. Months later, he had succeeded in neutralizing his own food allergies, and he was now able to eat most foods without reactions. He gained weight, lost during the years of sickness, and felt a remarkable improvement in his health.

These aromatic food compounds naturally occur in all foods and are of small molecular weight. These compounds are not considered antigens, but are likely haptens which probably become antigens after they gain entrance into the bodies of susceptible persons (McGovern et al., 1981).

Phenolic compounds color, flavor and preserve foods. They protect plants against pathogens, help in the dispersal and germination of seeds and attract flower pollinators.

Phenolics prolong the life and intensify cellular responses to catecholamines, causing cardiac stimulation and tachycardia. Peristalsis is increased in the intestine and distribution of blood is altered by these phenolics because of sensitizing smooth muscles to these catecholamines, and other physiological stimulants. There is also increased entry of potassium ions into the cell under the influence of epinephrine (Fair-bairn, 1959).

Once in the vascular system, phenolics may be conjugated in the liver and excreted back into the intestine via bile, or eliminated in the urine.

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TABLE I

CHEMICALS

ALLERGENS IN FOODS!

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Food Item	Caffeine	Camphor	Capsaicin	Cinnamaldehyde	Cinnamic Acid	Coumarin/Scopoletin	Eugenol	Folic Acid	Gallic Acid	Indole	Isoascorbic Acid	Malvin (Anthocyanidins)	Menadione (Naphthoquinones)	Niacin	Nicotine	Phenylalanine	Phenyl (Benzyl) Isothiocyanate	Phlorizin or Phloridzin	Piperine	Piperonal	Riboflavin	Rutin-Quercetin (Flavonol)	Saccharin	Thymine	Thymol	Uric Acid	Vanillin	Vanillylamine	Vitamin C	Vitamin E	Apiol	
Allspice																																
Almond																																
Anise																																
Apple																																
Apricot																																
Avocado																																
Banana																																
Barley																																
Bean, kidney																																
Bean, string																																
Beef																																
Beet																																
Beet sugar																																
BHT/BHT																																
Blueberry																																
Blue food color*																																
Broccoli																																
Buckwheat																																
Cabbage																																
Calif. Bay Laurel																																
Cane sugar																																
Cantaloupe																																
Carrot																																
Cashew																																
Celery																																
Cheese																																
Cherry																																
Chicken																																
Cinnamon																																
Cloves																																
Cocoa/chocolate																																
Corn																																
Cream of Tartar																																
Cucumber																																
Dill																																
Egg																																
Garlic																																
Gelatin																																
Ginger																																
Grape																																
Halibut																																
Honey, clover																																
Honey dew melon																																
Lamb																																
Lemon																																
Lettuce																																
Lime																																
Mace																																
Malt																																
Mango																																

NEUTRALIZATION OF PHENOLIC (AROMATIC) FOOD COMPOUNDS

TABLE I (cont.)

ALLERGENS IN FOODS!

by
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Brigham Young University

CHEMICALS

	Caffeine	Camphor	Capsaicin	Cinnamaldehyde	Cinnamic Acid	Coumarin/Scopoletin	Eugenol	Folic Acid	Gallic Acid	Indole	Isoascorbic Acid	Malvin (Anthocyanidins)	Menadione (Naphthoquinones)	Niacin	Nicotine	Phenylalanine	Phenyl (Benzyl) Isothiocyanate	Phlorizin or Phloridzin	Piperine	Piperonal	Riboflavin	Rutin-Quercetin (Flavonol)	Saccharin	Thymine	Thymol	Uric Acid	Vanillin	Vanillylamine	Vitamin C	Vitamin E	Apiol
Maple syrup																															
Milk (cow)			•		•		•		•			•			•		•		•			•						•			•
Milk (human)															•													•			•
Mints																										•					
Mustard																	•														
Nectarine																															
Nutmeg							•		•			•								•		•						•			•
Okra									•																			•			
Onion		•		•				•	•			•	•				•		•		•		•					•			
Orange				•	•		•	•	•			•						•		•		•		•				•			•
Parsnips				•	•			•	•			•						•		•		•		•				•			•
Peach								•	•																			•			
Pear								•	•																			•			
Pea					•	•	•	•	•			•	•				•		•		•		•					•			•
Peanut																	•		•		•		•					•			
Pecan									•			•																•			
Pepper, black					•		•	•	•			•					•		•		•		•					•			•
Pineapple					•			•	•			•																•			
Pork																															
Potato		•				•		•	•						•													•			
Pumpkin								•	•																						
Rabbit																															
Radish								•	•			•					•														
Raspberry								•	•			•	•																		
Red food color*								•	•																						
Rice							•																			•					
Sage																															
Salmon																															
Sassafras												•																			
Soybean							•	•			•						•	•	•									•			•
Spinach								•	•																			•			•
Squash								•	•			•									•		•								
Strawberry					•				•			•	•															•			
Sweet potato																		•													
Tapioca					•	•																				•					
Thyme																															
Tomato		•		•	•	•	•	•	•		•				•		•		•		•		•					•			•
Trout					•																										
Tuna																															
Turkey																															
Vanillin/vanilla									•																						
Venison																															
Walnut							•	•	•		•																•				
Watermelon								•	•		•																				
Wheat							•	•	•																						
Yam								•	•																						
Yeast						•		•	•						•		•	•	•									•			
Yellow food color*								•	•																						

Milk is also an excretory route of phenolics for lactating mammals. Cow's milk is ranked as one of the most allergenic foods in the human diet.

Dr. Darrell Weber, plant chemist at Brigham Young University, is identifying and quantifying these phenolics in foods (Table 1). He has found that cow's milk contains 13 different phenolics, tomato has 14, and soy has nine.

McGovern (1982) has shown evidence of immune suppression on exposure to testing doses of these phenolics.

There may be a drop in T-suppressor cells or total T-cell numbers. An over-abundance of B-cells was interpreted as a reflection of toxic damage to the immune system. An increase in helper cells, antibody formation, and elevation of some immunoglobulins was also noted.

Other findings on phenolic exposure have been depressed serotonin, elevated histamine and prostaglandins, abnormal complement and immune complex formation (McGovern et al., 1983).

Dr. Joseph J. McGovern, an allergist in Oakland, was the first clinician to investigate Dr. Gardner's findings. He has shown that these natural foodborne aromatics induce behavioral disturbances in children, including hyperkinesia (McGovern et al., 1982).

I began testing twenty-four phenolics in November, 1982, through August, 1983, and have tested many hundreds of patients. Progressive neutralization of these compounds has led to vast improvements in the majority of my patients.

Personally utilizing these compounds resulted in disappearance of arthritic pains, decreased abdominal bloating, improved bowel function, decrease of recurrent canker sores and less anxiety. I am now able to eat bread to which I was highly allergic. With both my sons, school performance improved noticeably, and this has been noted in most children treated.

The treatment has been particularly successful with infants and children, with excellent results in autism, mental retardation, hyperactivity, dyslexia, insomnia, enuresis, respiratory allergies, headaches, abdominal pains and asthma. There have been only two children to date who have not responded to this procedure.

Results with adults have been as exciting with remissions achieved in many chronic problems, including migraine, fatigue, depression, asthma, arthritis, colitis, hypertension, menstrual disorders, dermatological problems, chronic constipation and arrhythmias.

Normally, clinical ecologists test for sensitivities to these compounds by the sublingual neutralization technique. In this procedure, several drops of one percent solution of the compound are placed under the tongue, and the reaction is observed. A positive response occurs when there is a change of pulse, blood pressure, symptoms begin or are intensified, or changes in handwriting or sensorium are observed. If the one percent dilution gives a reaction, the #2 dilution is subsequently tested. #2 is made of one part of the #1 and four parts of water. Progressively, more dilute solutions are tested until the patient reaches the correct dilution which reverses the symptoms; this becomes the neutralizing dilution.

Because sublingual testing is such a laborious method, I have been using an electroacupuncture machine called the "Derma-tron". The machine and its application have been extensively described in the *American Journal of Acupuncture*.

Having studied with Dr. Peter Madil in Sebastopol, California and Dr. Willem Khoe of Las Vegas, Nevada, I gained expertise in the use of this machine.

This machine gives an electrical reading when a pencil-like device is applied to defined points on the fingers or toes. The patient holds a hand electrode which is connected to the machine. The dilution to be tested is placed on a chamber which connects to the machine. When the correct (neutralizing) dilution is placed on the chamber, the meter will demonstrate an electrical change.

The Advantages of Testing Via the Dermatron

- Ease of determination of neutralizing dilution
- Reduction of time required for testing all twenty-four phenolics - 30 minutes versus 20 to 30 hours with the sublingual technique
- High reliability with no false positives
- Ability to test infants, children, very sick and mentally incompetent patients

- Reduction in cost to patients, thus opening this treatment to all levels of society

The Disadvantages of Utilizing the Dermatron

- Professional skill required to operate the machine successfully (many have purchased the machine and failed to use it properly)
- Physical factors make testing difficult, i.e., eczema of hands, children's small fingers and sweaty palms
- False negatives - the possibility exists of missing a compound; however, subsequent testing will often reveal it
- Lack of acceptability by the allopathic medical community.

When my staff and I began using the phenolics, we started with progressive one to five dilutions and extended it immediately to the twentieth dilution. We tested one patient with chronic chest pain. He required the twentieth dilution to get complete relief, and we extended the testing to the thirtieth dilution of one to five. Soon, we found patients who required a number 28 or 29, and again extended the testing to the fortieth dilution. One compound, malvin, is found in many foods, and Dr. Gardner suspected its importance. Upon testing, it was occasionally found to be positive up to the fortieth dilution. Subsequently, we extended the testing beyond the fortieth dilution, but now we use one to ten and test to the sixtieth dilution. Invariably, patients will neutralize one of their compounds between the fortieth and sixtieth dilution. In retrospect, it may be more practical to use a one to five dilution up to the tenth and utilize a one to ten beyond the tenth dilution which will reduce the need to extend beyond the fortieth dilution.

Children were mostly found to neutralize on lower dilutions usually between one and twenty.

The patients return on a monthly basis and receive a 10 cc dropper bottle and are instructed to take two drops sublingually, three times a day after meals. Upon return, the patient is retested only on the compounds which proved positive, and a new neutralizing dilution is administered, which is always lower than the previous one. Improvements often occur immediately. The long range goal is to attain a number one dilution, and at this time, the patient becomes tolerant to

that particular phenolic. Upon reaching the number one dilution, they are instructed to take one dose three times a week in order to prevent a recurrence of the original symptoms.

Personally, after reaching a #1 dilution on coumarin and discontinuing the drops, there was a recurrence of symptoms within six weeks. Upon retesting the coumarin neutralization, it had increased to a #4 dilution. Consulting with Dr. Gardner, he advised a maintenance dose of the #1 dilution for all patients upon reaching the #1 dilution.

By gradual testing of these phenolic compounds, I have correlated many of them with specific disorders. With some of these compounds, findings have been a revelation with therapeutic and diagnostic consequences. They are discussed in the order in which they were tested.

FIRST SET

1. Apiol

This compound is found in approximately 20 foods, i.e., beef, cheese, chocolate, milk, orange, peas, black pepper, soybeans, and tomatoes. It appears to influence the Hypothalamic-Pituitary Axis as it was found to cure one case of chronic breast lactation and was able to regulate irregular menses as well as menopausal flushing. It tested positive in a case of temperature induced (cold) Cryoglobulinemia. Apiol correlates well with most cases of obesity. One case of chronic amenorrhea had the onset of normal menses four days after initiating Apiol neutralization.

This compound is also associated with the complaint of chronic fatigue and musculoskeletal involvement leading to elbow pain.

2. Ascorbic Acid

It is perplexing to those practicing the orthomolecular approach to realize that vitamin C is a phenolic compound. In a series of one-hundred patients, it was discovered that 20 percent reacted to ascorbic acid, and presently, there are no specific correlations. Patients are reluctantly asked to discontinue their ascorbate pills until they have reached a lower neutralizing dilution.

3. Cinnamic Acid

This compound is found in approximately twenty-two foods, especially fruits, cheese, lettuce and tomatoes.

It is commonly found

- in children and those who are accustomed to drinking apple, grape, orange, pineapple and tomato juices. It is also found in banana over-consumers
- with common dermatological problems including acne, eczema and psoriasis
- in bladder problems, especially enuresis and recurrent cystitis
- with chronic fatigue. This observation correlates well with our knowledge that patients suffering from hypoglycemia need to restrict their intake of fruit and especially fruit juices.

4. **Coumarin**

This compound is found in some 30 foods, including wheat, rice, barley, corn, soy, cheese, beef and eggs. It has been found to have a large effect on asthmatics who, almost one-hundred percent, have a coumarin intolerance. Neutralization of all the phenolics, but especially coumarin, has improved significantly 20 asthmatics treated. These asthmatics have avoided hospitalizations as well as progressively diminishing their medications. Coumarin contributes to arthritis and tested positive with 13 out of 18 arthritics. There is a direct correlation between coumarin and those complaining of low back and cervical neck pain. It contributes to digestive disturbances, including bloating. It is probably the major cause of nonspecific pruritus and is also a contributor to chronic fatigue.

5. **Eugenol**

This compound is found in some 20 foods, perfumes and in dental practice. No definite findings have yet been seen, but there is a strong suspicion that it is a major contributor to chronic urticaria.

6. **Gallic Acid**

This compound is found in some 70 percent of all foods, including food coloring agents and is, unquestionably, the most important of all phenolics. Neutralization of gallic acid is the basis of the Feingold Diet which eliminates salicylates. Instead of making a child's life miserable utilizing a restrictive diet, neutralization of gallic acid is less traumatic. Frequently, parents report a marked improvement in their children's school performance and normalization of hyperactivity. It neutralizes the craving for sweets so common in many of these dyslexic children.

Gallic acid has effects upon

- the musculoskeletal system (14 out of 18 arthritics)
- the lower back
- the main contributor to sciatica
- chronic severe chest pain which is non-cardiac and seems to originate within the thoracic wall. These patients have suffered for years with this chest pain which had no successful diagnosis and treatment. They are most grateful because of a permanent cure
- chronic nasal congestion and sinusitis
- chronic fatigue.

Dr. Jonathan Wright reported in one of the monthly newsletters of the American Holistic Medical Association that several cases of sleep apnea had been successfully treated by strict adherence to the Feingold Diet (salicylate avoidance). It is my feeling that equally good results would be obtained by neutralizing gallic acid.

7. **Indole**

This compound represents the amino acid tryptophane which can be transformed by bacterial degradation into tryptamine, skatole and indole. It is to be found in all complete proteins and especially affects milk drinkers and is one phenolic commonly found in children.

Tryptophane is prescribed in orthomolecular therapy in cases of insomnia, depression and obsessive-compulsive disorders. While some obtain relief using tryptophane, others do not, and these patients may be reacting adversely to tryptophane. Caution should be observed by the physician in prescribing tryptophane on a prolonged basis. After testing the patient for tryptophane intolerance, it may be considered for therapeutic use. The toxic effects of indole (tryptophane) are mainly in the large intestine causing bloating and constipation.

One eight month old breast-fed infant had a bowel movement once a week. Neutralization of indole led to daily bowel movements.

Indole aggravates asthma, (asthma has been long known to be aggravated by dairy products) promotes sinus congestion, and contributes to chronic fatigue.

8. **Menadione**

This compound is vitamin K found in fruits, vegetables and eggs and is associated with

hepato-biliary dysfunctions, including biliary cirrhosis, hepatitis, gallbladder disease, hemorrhoids and varicose veins. It is the main cause of chronic mucous colitis and chronic non-infectious diarrhea which arrests in a few days when the neutralizing dilution is given. The body's inability to metabolize vitamin K causes easy bruising (ecchymoses) and occasionally epistaxis. Both of these conditions will be relieved upon neutralization. It is associated with arthritis and has the predilection for the hands. It leads to fatigue, and its neutralization renews vitality.

9. Phenylalanine

This amino acid is found in all complete proteins and is a definite problem in those who over-consume beef. Most physicians are familiar with the newborn condition of Phenylketonuria. The possibility exists that many people have a mild subclinical form of this disease which goes unrecognized and predisposes them to other illnesses.

This amino acid has become available in health food stores, and many are using it indiscriminately for its reputed use to induce weight loss.

It is also being used to relieve chronic depression. Similar to tryptophane, it appears that caution is necessary in recommending phenylalanine without first ascertaining whether there is a problem in metabolizing this amino acid.

It is associated with:

- hypertension and its neutralization has a definite blood pressure lowering effect. We know that phenylalanine is eventually converted to the catecholamines, and the likelihood exists with hypertension patients that phenylalanine is forced to take aberrant metabolic pathways
- headaches
- respiratory congestion
- collagen diseases

10. Phenylisothiocyanate

This phenolic is found in approximately 20 foods, i.e., chicken, eggs, beef, cheese, lamb and peanuts.

This compound seems to affect

- the cardiovascular system and is always seen with chronic arrhythmias, hypertension and arteriosclerosis. As to the possibility of it being a cause of arteriosclerosis, it remains to be demonstrated

- migraine headaches (possibly by stimulating the vascular system)
- hyperthyroidism; its symptoms are brought under control by its neutralization
- shoulder bursitis.

It is possible that this compound over-stimulates the sympathetic nervous system, which consequently leads to migraines, hypertension and hyperthyroidism.

11. Phloridzin

This compound is found in some 20 foods, i.e., beef, cheese, sugar and soy. It is always found in

- diabetics, but whether only in association or as a cause, remains to be proven
- collagen diseases
- one-hundred percent of active cancer patients. It was documented in 24 out of a series of 100 consecutive patients. This, coincidentally, compares with national statistics of one in four people who eventually acquire cancer in their lifetime.

Finding phloridzin on testing may indicate the patient

- had cancer in the past. This finding of phloridzin in past cancer patients is often true, but others were discovered with a history of cancer and a negative test for phloridzin
- has active cancer
- has no clinically detectable cancer, but has increased the risk of contracting cancer. In these patients, vigorous preventive measures are vital, i.e., proper nutrition and immune system stimulation with nutrients. This compound has also been found in children, and its implications are disturbing.

Is it possible that phloridzin interferes not only with the endocrine function of the pancreas, but also with the enzymatic exocrine action? Is it this enzymatic dysfunction that predisposes patients to malignancy? Therefore, it seems prudent to use digestive enzymes with patients who test positive with phloridzin.

12. Rutin

This is a very common phenolic found in about 50 foods. It is a bioflavonoid and was tested to be a problem in 15 percent of patients.

No clinical associations have been made. Several elderly males with impotence required rutin neutralization.

SECOND SET OF TWELVE

PHENOLICS

1. Choline

This compound, which is transformed to acetylcholine, is found in eggs, lecithin and most multiple B complex vitamins.

It is an interesting fact that amongst the phenolic compounds are included thiamine, riboflavin, niacin, pyridoxine, folic acid, vitamin E, vitamin K, selenium and manganese.

Much has been written about choline and memory impairment.

It was associated with

- patients who tested positively on choline and admitted to having memory problems
- patients suffering from Parkinsonism who were on drugs and had excess salivation
- a case of drug induced dyskinesia.

It is obvious that a problem with choline will produce other areas of dysfunction as a result of parasympathetic nervous system impairment.

2. Dopamine

This compound, a neurotransmitter, was seen to be a problem in some patients with

- chronic anxiety — they had visible tremors or a severe sense of shakiness, especially in the limbs and chest
- Parkinsonism and one case of drug induced dyskinesia
- schizophrenia, dyslexia and autism
- chronic arrhythmia in one patient was relieved upon dopamine neutralization.

3. Histamine

This compound was found to react positively in all asthmatics and many allergic individuals, but its neutralization was not totally effective. The other allergic phenolics needed to be neutralized for relief to occur.

4. Malvin

This compound is found in some 35 foods, i.e., chicken, corn, eggs, milk, soybeans and many fruits and vegetables. It was tested positive with 40 percent of patients (significantly higher in children), and it is one of the most allergenic of these compounds, second to gallic acid.

It is associated with

- neurological diseases, i.e., multiple sclerosis, dyslexia, dyskinesia, autism, neuropathy and epilepsy
- arthritis
- asthma

- psoriasis.

5. Norepinephrine

This compound, a neurotransmitter, was a problem in several cases of chronic depression, hypertension and in all cases suffering from hyperhidrosis (excess sweating).

6. Pipeline

This compound is found in over 30 foods, i.e., beef, beet sugar, chicken, eggs, lamb, milk, tuna, turkey, yeast, as well as black pepper, potato and tomato, which have been categorized as the nightshades by Dr. Childers. He has correlated nightshade foods with arthritis. Expanding the nightshade theory as a cause of arthritis shows only some patients improving by eliminating the nightshades. Other phenolics must be neutralized, i.e., gallic, coumarin, vitamin K and malvin, but primarily piperine which tested positive in 90 percent of cases examined with rheumatoid arthritis.

7. Piperonal

This compound is found in some 30 foods and is associated with gastric problems of a non-specific nature.

8. Pyrrole

This compound represents porphyrin metabolism and is aptly described in a recent issue of the *Journal of Orthomolecular Psychiatry* by Dr. Donald McCabe (1983). This is the "mauve factor" described by Dr. Carl Pfeiffer which he found in five percent of normal people.

The mauve factor is a tetrapyrrole which is excreted in the urine as a coproporphyrin. Porphyria is not uncommon, and McCabe found a ten percent positive urine porphyrin test in subjects physically ill. The percentage increases among neurotics, alcoholics, schizophrenics and the retarded.

My findings show eight percent in a series of 100 patients, and its neutralization gave excellent relief from chronic abdominal discomfort accompanied by bloating and gas and relieved anxiety and depression.

The most surprising discovery was a positive test in three patients suffering from multiple sclerosis. In these patients with multiple sclerosis, the findings of porphyria may occur as a result of the illness or porphyria caused the neurological symptoms of multiple sclerosis to appear. This remains to be elucidated.

9. Serotonin (5-Hydroxytryptamine)

This important neurotransmitter is a phenolic compound found in approximately 25 foods, i.e., milk, cheese, orange, potato, soybean, and yeast.

It was associated with mental retardation, dyslexia, depression, obsessive compulsive behavior, but its greatest use was in relieving chronic insomnia.

10. Tyramine

This phenolic compound results from tyrosine metabolism. It was associated with some cases of migraine.

11. Uric Acid

Several patients tested positive on uric acid although their serum uric acid was within normal limits. On several occasions, its neutralization relieved chronic non-specific foot pain.

It was also used to relieve patients with clinical gout. Total relief of their symptoms required neutralization of other phenolics.

12. Vanillylamine

This compound is found in some 35 foods and tested positive in only a few cases with no obvious clinical correlation.

Also tested, but not routinely, are the phenolics formalin and nicotine. Nicotine is not only found in tobacco, but is also present in beef, potato, tomato and banana.

Conclusion

The observations and clinical applications of a busy holistic general practice have contri-

buted knowledge to the expansion of Dr. Gardner's original findings. The observations are exciting as they create a multitude of possible avenues for further research.

Having tested over 800 patients and applied the sublingual drops, it is evident that phenolic compound neutralization will revolutionize the reversal of many chronic degenerative diseases.

Hopefully, this paper will stimulate others to familiarize themselves with Dr. Gardner's epoch-making discovery and initiate research with these phenolic compounds.

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