

# Phenolics in Foods

---

Frances A. Taylor, MA, CHom

## Abstract

Phenolics, sometimes called phenolic food compounds, occur naturally in foods, both plant and animal. These compounds are characterized by a benzene ring with one or more hydroxide groups attached directly to the ring. People can be allergic both to whole foods as well as the phenolic food compounds they contain. Because most foods contain more than one phenolic food compound and these compounds repeat from food to food, treating for these compounds will help with allergies to many foods. Many severely food allergic people do not receive total resolution of their food allergies unless they are treated both for whole foods as well as phenolics. NAET may be utilized to treat allergies to both whole foods and phenolic food compounds.

## Introduction

Phenolics are ubiquitous and occur naturally in humans, plants, and animals. Phenolics are aromatic compounds containing a benzene ring with one or more hydroxyl groups attached directly to the benzene ring. Some of these compounds have other functional derivatives or chemical groups attached, causing them to be classified into different chemical families, but the compounds are still basically phenolics. Phenolics are classified according to their structural complexity and biosynthetic origin (Harborne and Baxter, 1993; Shahidi and Naczki, 2004). Those that occur in foods are called phenolic food compounds.

Phenolics can cause allergic type reactions. They are probably not a true allergen, but with their strong affinity for protein may act as a hapten, a substance that becomes an antigen after entering the body of a susceptible person (Ber, 1985). Phenolic compounds are detoxified in the body through conjugation reactions with the enzyme, phenol sulfotransferase. They are slowly detoxified and can overload a detoxification system (Krohn and Taylor, 2001). Phenolics affect catecholamine metabolism, have a high affinity for blood vessels, are cardiac stimulators, affect mood, and are

important activators in the synthesis of eicosanoids from which prostaglandins are produced (Gardner, 1994).

There are about 8000 naturally occurring plant phenolics, and most plants normally contain more than one of these compounds (Harborne and Baxter, 1993). Phenolics serve a protective purpose in the plant, helping to protect the plant against fungi and insects, as well as making the plant distasteful to animal predators who might eat them (Gardner, 1994). They also have an antioxidant function to aid in repairing injuries in cases of insect damage or chemical injury to the plant (Shahidi and Naczki, 2004). Some phenolics attract insect pollinators to the plant, as well as seed dispersal agents (Krohn and Taylor, 2000). Phenolics give the plant its smell, taste, and in some cases its color (Shahidi and Naczki, 2004).

All plant foods contain phenolic food compounds in varying amounts. Animal foods also contain phenolics. Beef, milk, fish, chicken, eggs, pork, shellfish, lamb, turkey, and yeast are among the animal foods in which phenolic food compounds are found. Phenolics frequently give spices their flavor (Shahidi and Naczki, 2004). They also give food its odor and taste, both desirable and undesirable (Ho, *et al*, 1992 and Huang, *et al*, 1992). Americans eat about 1.5 grams of phenolics a day, which is 10,000 times more than they eat of synthetic pesticide residues (Gardner, 1994).

Although most phenolics occur naturally in foods, some have been added by man. Phenolics are the reactive agent in food additives that artificially preserve, color, flavor, and sweeten foods (Gardner, 1994). In addition, people also encounter phenolics in other places besides in foods they eat. Phenolics are in supplements and drugs; chemicals, perfumes, and pesticides; many dental materials and products; and pollens, dust, and mold. These numerous exposures make it important that people tolerate phenolics well.

Most foods contain more than one phenolic food compound, and they repeat from food to food. Phenolics can play a large role in food allergy and may be one of the problems when patients treated for the NAET basics (Nambudripad, 2003a) are still having symptoms to foods. The patients will be better and may even be using dietary manipulation, but still have some symptoms after eating. Any symptoms after meals, such as headaches, postnasal drip, mucus production, sleepiness, arthritis and joint pain, nausea, eczema, or many other symptoms signal that testing and treatment with phenolics should be considered.

It has been our clinical experience that while patients will improve with treatment for whole foods only, or with treatment for phenolic food compounds only, they do not receive total relief unless both are treated. For example, eczema patients will improve significantly with treatment for allergy to whole foods. However, the eczema generally will not totally clear unless they are treated for both whole foods and phenolic food compounds.

### Procedures

NAET is an excellent treatment modality (Nambudripad, 2003b) for treating both whole foods and phenolic food compounds. Most patients can be treated with whole food mixes. Some patients may clear or pass treatment with a phenolics vial that is a mixture of phenolics. Others will require treatment with the individual phenolics, or with very small mixtures of phenolics. NST (Neuromuscular Sensitivity Testing), a modified form of muscle testing, or EAV (electroacupuncture according to Voll) testing with an instrument that measures galvanic skin response can be used to determine the number of phenolics that can be included in a treatment.

Patients should always be treated for the NAET basics first (Nambudripad, 2003a), any other problem foods, and then screened and treated for gallic acid, coumarin, rutin, and quercetin if they are positive to them. These are major phenolics that occur in many, many different foods. For example, gallic acid is in 70 to 80% of food, perhaps even 90% of food. Coumarin is in all grains and grasses. Rutin and quercetin occur together in nature and are in 85% of foods. (Krohn and Taylor, 2001). If patients continue to have symptoms related to food consumption, then they will have to be screened and treated for any other phenolic food compound(s) to which they are positive.

The particular case studies presented illustrate two different situations that occur with phenolics. In the first, treating with the major phenolic food compounds helped, but did not totally eliminate the patient's problems. Further testing and treatments with phenolic food compounds was necessary. In the second, because of the repetition of phenolic food compounds from food to food, treating for a particular compound resolved the patient's problem with several foods.

Both patients were treated with NAET for the basics. NST and EAV testing were used to determine whether they

passed the treatment substance. They were also checked to be certain they had cleared 100% on all three levels. (JNECM, Vol. 1, 2005). After being treated for the basics, patients were treated for other problematic whole foods and for the major phenolic food compounds to which they tested positive. Other phenolic food compounds were tested and treated as needed and are indicated in the case studies.

#### Case Study #1

A woman who is now 58 years old presented several years ago with food, chemical, pollen, mold, and dust/dust mite allergies. She also had *Candida*, hormone intolerances, and tinnitus. Although all of her allergies and health problems were treated with NAET, only the details of the food treatments will be considered here. Her symptoms to foods included headache, runny nose, postnasal drip, stomachache, upset stomach, sore throat, sleep problems, fatigue, mental foginess, joint aches, dizziness, and low-grade depression.

At one point she and her husband were able to eat out at only one "natural food" restaurant in the town where they live. When they went on vacation, they carried food and a microwave oven with them. These eating restrictions were difficult for this woman, not only because of the symptoms eating the foods triggered, but because she was unable to accept dinner invitations. She is a church musician and received many invitations from church members to come to their homes for a meal.

This patient was treated for the NAET basics as well as NAET Spice Mixes 1 and 2, Nut Mixes 1 and 2, Animal and Vegetable Fat Mix, Amino Acid Mixes 1 and 2, Tomato Mix, Cheese Mix, and Fruit Mix. She was also treated for chocolate, black pepper, caffeine, olive oil, black olive, potato, nightshades, rice, and avocado. NAET Food Additive Mix, Food Color, and Fruit Chemicals, most of which contain phenolics, were treated in addition.

After completing the basics and the above foods and food chemicals, this patient was initially treated for the phenolic food compounds gallic acid, rutin, and coumarin. Although she had improved immensely with the NAET treatments for foods and these phenolic food compounds, she continued to have some symptoms when she ate certain foods. These included an occasional headache, sleepiness, bloating, scratchy throat, problems focusing, and itching of the inner canthus of the eye, an indication of food allergy (Krohn, Taylor, and Larson, 2000).

She was then screened for other phenolic food compounds with EAV. She also studied a dot chart (a chart that allows easy identification of allergenic compounds in foods, Krohn and Taylor, 2001) to determine what phenolic food compounds were in foods that seemed to continue to bother her. She was subsequently treated for quercetin, malvin, apiole, indole, benzoic acid, cinnamic acid, asparagine, tyramine, and vanillylamine, resulting in much improvement in her symptoms and ability to comfortably eat. Cineole is the next phenolic for which she will be treated.

Although treating for whole foods and major phenolic food compounds was of considerable value for this woman, it was not until additional phenolics were treated that she began to be symptom free. She did not tolerate treatment with phenolic mixes and usually had to be treated with individual phenolic vials. At times, depending on the phenolics involved, she was able to pass treatment with two phenolics at a time. Many food allergic patients will not be able to eat freely and without symptoms unless they are treated for both whole foods and phenolic food compounds. This patient is a prime example.

#### Case Study #2

NAET treatments were begun on a baby boy when he was a little over a month old. He was breast-fed and had prolific mucus production that affected his esophagus. It interfered with his breathing and swallowing, and his mother said that he gagged on the mucus when he burped. He passed globules of mucus in his bowel movements as well as having green mucus in his stools. He also frequently had constipation, and did not have a bowel movement without the help of a suppository. His mother realized that the foods she ate appeared in her breast milk within 2 to 6 hours, but was not always cognizant of what was in the mixes she continued to eat.

This baby was treated with the NAET basics, using the mother as a surrogate (JNECM, Vol. 1, 2005), and he improved with each treatment. He was then treated for apples, broccoli, beans, carrots, our cheese mix, celery, chocolate, coconut, cooking oil, cucumbers, pears, peas, potatoes, spinach, tomatoes, and turkey. He was also treated for NAET Pepper Mix, Spice Mix, Gum Mix, Food Additive Mix, Food Coloring Mix, and Melon Mix. The esophageal mucus symptoms subsided during these treatments and the mother stated that his remaining occasional symptoms were now only gastrointestinal gas and bloating.

The mother complained that this baby had difficulty eating fruit, particularly berries. He was screened for them and was indeed sensitive to black berries, blue berries, boysenberries, cherries, cranberries, raspberries, and strawberries. He was also positive to apricots. Although he had previously been treated for gallic acid, coumarin, rutin, and quercetin, it was decided to treat this baby for malvin because he tested positive to it and it is in all of these fruits. Malvin is in all blue, purple, and red foods. It may also be in foods of other colors, depending on the pH of the food (Krohn and Taylor, 2001).

After the malvin treatment this baby tested negative for these fruits. In this case, the malvin proved to be a time and treatment saver, in that the one treatment for malvin cleared the allergies to these many fruits. There are other circumstances under which treating a phenolic food compound will allow this benefit.

### Conclusion

For many patients with food allergies, particularly those with severe food allergies, treatment with both whole foods and phenolic food compounds is necessary to afford them complete relief. Because of the repetition of phenolic food compounds from food to food, treatment for them helps give them relief for allergy to many different foods. Phenolics also occur in spices; food additives such as artificial coloring, flavoring, and sweetening, and preservatives; and many other substances to which patients are exposed numerous times in their every-day lives, making treatment and tolerance for phenolics imperative. NAET is the ideal modality for treating both whole foods and phenolics.

### Acknowledgements

The author would like to express her gratitude to Dr. Robert Gardner who first utilized phenolic food compounds in the treatment of food allergy and to Judy Storms who introduced our office to phenolics.

### References

Ber, Abram. "Neutralization of phenolic (aromatic) food compounds in the holistic general practice." *The Journal of Orthomolecular Psychiatry*. Volume 12 (4): 283-291, 1983.

Gardner, Robert W. *Chemical Intolerance*. Boca Raton, FL: CRC Press, 1994.

Harborne, Jeffrey B., and Herbert Baxter, Editors. *Phytochemical Dictionary – A Handbook of Bioactive Compounds from Plants*. Washington, DC: Taylor and Francis, 1993.

Ho, Chi-Tang; Chang Y. Lee; and Mou-Tuan Huang, Editors. *Phenolic Compounds in Food and Their Effects on Health I*. Washington, D.C.: American Chemical Society, 1992.

Huang, Mou-Tuan; Chi-Tang Ho; and Chang Y. Lee, Editors. *Phenolic Compounds in Food and Their Effects on Health II*. Washington, D.C.: American Chemical Society, 1992.

Krohn, Jacqueline; Frances Taylor; and Erla Mae Larson. *Allergy Relief and Prevention*, Third Edition. Port Roberts, WA: Hartley and Marks, 2000.

Krohn, Jacqueline, and Frances Taylor. *Natural Detoxification*, Second Edition. Port Roberts, WA: Hartley and Marks, 2000.

Krohn, Jacqueline, and Frances Taylor. *Phenolics and Other Allergens*. Los Alamos, NM: K and T Books, 2001.

Nambudripad, Devi. *The NAET Guide Book*, Sixth Edition. Buena Park, CA: Delta Publishing Company, 2003a.

Nambudripad, Devi. *Say Good-bye to Your Allergies*. Buena Park, CA: Delta Publishing Company, 2003b.

Nambudripad, Devi, Editor-in-Chief. *Journal of NAET Energetics and Complimentary Medicine*, Volume 1, 2005.

Shahidi, Fereidoon, and Marian Naczka. *Phenolics in Food and Nutraceuticals*. Boca Raton, FL: CRC Press, 2004.

For Reprints

Frances A. Taylor, MA, CHom

Los Alamos Medical Center, Suite 136

3917 West Road

Los Alamos, NM 87544

E-mail FTallergy@aol.com