

Sulfates & sulfation (Feingold)

Low plasma sulfate/sulphate levels & high phenol/salicylate food list

If you are low in plasma sulfate, then you need to supplement it in order to increase your sulfate levels. There are several ways in which to do this:

- **Epsom salt baths** (Epsom salt is magnesium sulfate) – 2 tablespoons to 2 cups per bath. (Magnesium can cause vasodilation and induce fainting on rare occasions, so start off low and see how much you tolerate).
- **Magnesium sulfate** cream – see recipe at this [site](#), or order from Kirkman's).
- **Epsom salts orally**, 1/4 to 1/2 tsp. in a little water several times a day (tastes horrible for some people, so it can be put in empty capsules instead).
- **Glucosamine sulfate** 1 to 2 grams per day.
- **NB:** Do not take any sulfate containing supplements at the same time as calcium supplements as they will form insoluble precipitates.

High Phenol / Salicylate Foods to Avoid (if you are low sulfate).

The **Feingold** diet is used to limit foods that are high in **salicylates and also phenols**, and thus require sulfation in the diet. These foods need to be sulfated in the **liver phase 2 pathways**. The reason for avoiding foods that require sulfation, when you are low sulfate, is to conserve the little sulfate that you do have and thereby prevent them from 'backing up' in the liver, waiting to be processed and cause problems. Remember, some of the phenols are produced in your own body! Yeasts in your own gut can produce phenols, thus correcting gut dysbiosis (altered gut ecology) is vital and that would entail the use of good probiotics and antifungals e.g. oregano oil and grapefruit seed extract (GSE) to eliminate phenol-producing organisms.

What are Salicylates?

A salicylate is a **natural chemical made by many plants, and is chemically related to aspirin**, which is a derivative of salicylic acid. It is believed the plant uses it as protection from insects. Although natural salicylates are found in wholesome foods, some individuals have difficulty tolerating even small amounts of them. The reaction to a natural salicylate can be as severe as that to synthetic additives if a person is highly sensitive. **Some people are troubled by only one or two, while others are sensitive to all of them.**

What are Phenols?

"A group of **natural and synthetic compounds** that are ingested or produced to varying degrees by the body or by microbes in the intestine contain a *benzene ring* with one or more hydroxyl (OH) groups attached to it. When this attachment occurs, they become *phenolic compounds*. These compounds possess unique chemical properties. They are **very soluble both in organic solvents (like alcohol, ether, and the fatty components of the body) and in water (aqueous solution), where they are strongly acidic.** They exert toxic effects in the brain, where normally certain *enzymes* prevent their accumulation. The Feingold Program is a diet regimen which **eliminates many dietary sources of phenolic compounds.** Similarly, **antifungal medications eliminate microbes (yeasts and other fungi) in the intestine which produce a wide variety of phenolic compounds.** **[Source – Feingold Association]** Hence the importance of getting your gut ecology healthy. A good probiotic is the first place to start.

almonds
apple cider
apples
apricots

aspirin
artificial flavors
benzoic acid
BHA
BHT
blackberries
blueberries
boysenberries
cherries
cider vinegar
cloves
coffee
cranberries
cucumbers
currants
food coloring
grape juice
grapes
huckleberries
logan berries
maraschino cherries
mulberries
nectarines
oil of wintergreen
oranges
paprika
peaches
peppers (other than black or white peppercorns)
pickles
plums
prunes
raisins
raspberries
strawberries
sodium benzoate
tangerines
tea
THBQ
tomatoes
wine
wine vinegar

As a general rule always think of berries when considering this list.

The next step is to work towards removing sulfites (e.g. in red wines and a preservative used on dried fruits) and nitrites (e.g. sodium nitrate in cold meats)

He also says, "Molybdenum supplementation may help the body make more endogenous sulfate." [Amalgam Illness – pg. 111].

In post on the **Autism-Mercury List (message #57707)**, he says, "In cases where cysteine is much higher than sulfate, there is an apparent failure of the molybdenum enzyme sulfite oxidase to function and this may be improved with molybdenum supplementation. Molybdenum is also useful for other enzymes so this is a marker as well as a direct indication." Molybdenum can be safely supplemented at 1000mcg per day.

There is some excellent information compiled about sulfation at Onibasus.

Dr Cutler also notes that, "Cruciferous vegetables increase many phase 2 rates and can be used if **sulfur food exclusion** is not required" [**Amalgam Illness – pg. 110**].

High sulfur foods safe on the Feingold diet

High sulfur foods can cause lots of problems for many mercury-toxic people. Andy Cutler has mentioned that 33-50% of mercury-toxic people will have a sulfur food issue. So it is essential that you check this out with a **sulfur food trial elimination diet**. If you react to high sulfur foods also, you will need to eliminate them also whilst on the Feingold diet.