LOW SALICYLATE DIET

WHAT ARE SALICYLATES?

Salicylates are a type of phenol (chemical compound) which naturally occur in most food plants—in varying amounts. Used by the plant as a protective mechanism, salicylates protect the plant against disease, insects, fungi, and harmful bacteria.

WHY ARE SALICYLATES PROBLEMATIC FOR SOME INDIVIDUALS?

In a healthy body with good levels of sulfates and liver enzymes, phenols like salicylates are easily metabolized. The body utilizes what it needs and disposes of the rest through the bowels. However, for a small percentage of children and adults—who have difficulty processing phenolic compounds, even small amounts of salicylates can cause adverse reactions. This is called a "Salicylate Sensitivity" or "Salicylate Intolerance" and is dose-dependent.

The following factors can influence the body's ability to handle salicylates:

• **Low sulfate**: A biochemical process called sulfation is required for salicylate/phenol processing. Insufficient sulfate may result from: lack of amino acids in the diet, poor absorption of amino acids, inhibited conversion of amino acids into sulfate form, low sulfur intake, pathogens in the gut (which interfere with sulfur), poor kidney recycling, and poor methylation.

• **Low PST (phenol-sulfotransferase) enzyme activity**: This important Phase II liver enzyme attaches sulfate to phenol compounds. If it's not working properly, the liver will have trouble eliminating the phenols in food. Research has shown PST is underactive in the majority of autistic children.

• **Yeast or bacterial overgrowth**: Yeast and fungi in the intestines can produce phenolics, adding to the body burden. Anaerobic bacteria in the gut can convert sulfate into sulfide, making sulfate unavailable.

• **Micronutrient deficiencies**: Magnesium is needed for the proper function of the PST enzyme. (Note: Too much B6—without magnesium–can suppress PST). Sulfites are converted to sulfates by the SUOX enzyme, which uses Vitamin B12 and molybdenum in the reaction. Vitamin D is needed for the kidneys to regulate sulfate.

• **Low thyroid function**: Low thyroid causes more salicylate intolerance and salicylates can worsen thyroid function.

• **Estrogen excess/dominance**: Estrogen requires sulfation and places a burden on a poor sulfation system.

• **Genetic mutations**: Mutations in the SULT1a family (PST genes) can impact phenol processing, and mutations in CBS and SUOX can affect how the body handles sulfur and converts sulfites to sulfates.

HOW CAN A LOW SALICYLATE DIET HELP?

For individuals with poor sulfation, reducing the amount of salicylates in their diet can help. A Low Salicylate Diet is **not** meant to be a lifetime diet (salicylate foods are rich in nutrients, so it is beneficial to include them in the diet - once function in the body has been improved and they are tolerated). It is a short-term or moderate-term diet with temporary restrictions to relieve the burden on the biochemical processes and alleviate symptoms while causative factors are addressed. Typically, after 3-12 months, once work has been done to eliminate gut dysbiosis, heal the gut, correct nutritional deficiencies, and support biochemical pathways and detoxification, salicylate/phenol foods should be better tolerated and can be added back.

Functional Diagnostic Nutrition®

SALICYLATE SENSITIVITY SYMPTOMS:

In children, hyperactivity and other behavioral issues are the most common symptoms, whereas in adults, fatigue and headaches are more common.

Common symptoms include:

- Hyperactivity
- Red cheeks & ears
- Dark circles under the eyes
- Irritability
- Aggression / Defiant behavior
- Sleep issues
- Bedwetting & urinary incontinence
- Skin rashes / Itchy skin / Hives
- Swelling of the hands, feet, eyelids, face, and/or lips
- Sore / itchy / burning eyes
- Respiratory issues / Asthma
- Persistent cough
- Sinusitis
- Diarrhea
- Headaches
- Poor concentration / Memory loss
- Tinnitus (ringing of the ears)
- Fatigue
- Depression
- Stomach pain / nausea
- Joint pain

LOW SALICYLATE DIET LIST

- There is **no diagnostic test** for salicylate sensitivity, so the best way to determine whether salicylates are an issue is to try a low salicylate diet and see if reducing the amount of salicylates consumed improves symptoms. It is possible to have withdrawal symptoms during the first couple weeks of a Low Salicylate Diet, however.
- Two popular, well-studied Low Salicylate Diets are the **Feingold Diet** (*www.feingold.org)* and the **Failsafe Diet** (*www.failsafediet.com*). The Failsafe Diet is more restrictive than the Feingold; it includes a larger list of salicylates to avoid and also eliminates other phenols such as amines and glutamates.
- **Peeling** fruits and vegetables decreases salicylates. **Vine/tree ripened** produce is lower is salicylates.
- Those with salicylate sensitivity should avoid exposure to skin care and cleaning products that contain even moderate concentrations of **salicylic acid** (aspirin, pain medications, acne products, etc.)
- **Potentially helpful supplements/therapies to consider:**

- No-Fenol (Houston Enzymes) or Phenol Assist (Kirkman Labs): These digestive enzyme products (primarily consisting of xylanase) help the body remove carbohydrates from phenolic compounds and may make it easier for the liver to remove these phenolic compounds. By taking these enzymes with meals, some "phenol-sensitive" individuals may be able to ingest phenolic foods without complications.

- **Epsom Salt Baths**: Epsom salts (magnesium sulfate) can supply sulfate to aid sulfation biochemistry (possibly increasing tolerance). Use 1-2 cups in hot bath water and soak about 15 minutes. [Epsom salt baths are usually preferred to sulfur-containing amino acids (cysteine, taurine) or supplements (MSM) because some individuals do not convert the sulfur to the needed sulfate form. The form of sulfur in Epsom salts is already sulfate and does not need to be converted, so it is readily available to the body.] Magnesium sulfate creams are also available.

- **Fish Oil**: A study on adults with disabling salicylate intolerance found that 10 grams per day of fish oil for 6-8 weeks caused complete or nearly complete resolution of symptoms.

LOW SALICYLATES	MEDIUM SALICYLATES	HIGH SALICYLATES
- Asparagus - Bok Choy - Butternut Squash - Carrots - Green/String beans - Rutabaga - Turnip - Potatoes (white/peeled) - Beets - Brussels sprouts - Cabbage - Celery - Lettuce - Sweet potatoes	- Corn (on cob) - Kale - Peas (snap & snow) - Potatoes (red skin) - Zucchini (peeled) - Cucumber (peeled) - Parsnip - Pumpkin - Summer Squash	- Cucumbers/Pickles - Peppers (bell & chili) - Spinach - Zucchini (with peel) - Endive - Radish - Tomato sauce
- Apples (Golden Delicious/peeled) - Bananas - Pears (peeled) *(Note: Bananas are low salicylate but high in other phenols/amines)*	- Apples (Red/Golden Delicious with skin) - Kiwi - Pears (with skin) - Persimmon - Watermelon	- Apples - Berries - Cantaloupe - Currants - Grapes/Raisins - Oranges - Pineapple - Raspberries - Apricots - Blueberries - Cherries - Dates - Nectarines - Peaches - Plums/Prunes - Strawberries
- Cashews	- Raw, unroasted nuts	- Almonds - Peanuts
- Most meats, grains, beans/legumes	- Basmati & Jasmine rice	-Corn Flour / Polenta
- Chives - Garlic (small amount) - Green onion/scallions - Parsley (sprinkle) - Salt - Shallots - Vanilla		- Most Herbs & Spices *(except those marked low)* - Basil - Cloves - Mustard - Rosemary - Cinnamon - Curry Powder - Paprika - Thyme - Chili Powder - Mint - Pepper - Turmeric - Wine & cider vinegar - Wine, Coffee, Tea - Honey

This chart is based on information from Julie Matthews (www.nourishinghope.com)