

The 5R Framework for Gut Restoration

A properly functioning digestive system is critical to good health. In fact, problems with the gastrointestinal (GI) tract can cause more than just stomach aches, gas and bloating or diarrhea. GI issues may underlie chronic health problems that seem unrelated to digestive health, including autoimmune diseases such as rheumatoid arthritis and type 1 diabetes, skin problems such as eczema and acne rosacea, and heart disease (just to name a few). So in the bigger picture, how can we deal with all that can go wrong “down there”? In Functional Medicine we use a program that goes by the simple acronym of the “5Rs”: remove, replace, reinoculate, repair, and rebalance. When applied to various chronic health issues, the 5R program can lead to dramatic improvement in symptoms, and sometimes even complete resolution. The elements of the 5R program are described briefly below.

1. Remove

Remove stressors: get rid of things that negatively affect the environment of the GI tract including allergic foods, parasites and potential problematic bacteria or yeast.

- ▣ This might involve using an allergy “elimination diet” to find out what foods are causing GI symptoms or it may involve taking medications or herbs to eradicate a particular bug

2. Replace

Replace digestive secretions: add back things like digestive enzymes, hydrochloric acid, and bile acids that are required for proper digestion and that may be compromised by diet, medications, diseases, aging, or other factors.

3. Reinoculate

Help beneficial bacteria flourish by ingesting **probiotic** foods or supplements that contain the “good” GI bacteria such as *bifidobacteria* and *lactobacillus* species, and by consuming the high soluble fiber foods that good bugs like to eat, called **prebiotics**.

- ▣ **Probiotics** are beneficial microorganisms found in the gut that are also called “friendly bacteria.” Use of antibiotics kills both good and bad bacteria. Probiotics in the form of supplements or food are often needed to help reestablish a balanced gut flora. Fermented foods, such as yogurt, miso, and tempeh are food sources of probiotics.
- ▣ **Prebiotics** are food ingredients that selectively stimulate the growth of beneficial microorganisms already in the colon. In other words, prebiotics feed probiotics. Prebiotics are available in many foods that contain a fiber called inulin, including artichokes, garlic, leeks, onion, chicory, tofu, and other soy products. Grains such as barley, flax, oats, and wheat are also good sources of prebiotics. Another good prebiotic source is a supplement called “fructo-oligosaccharide” or FOS.

4. Repair

Help the lining of the GI tract repair itself by supplying key nutrients that can often be in short supply in a compromised gut, such as zinc, antioxidants (e.g. vitamins A, C, and E), fish oil, and the amino acid glutamine.

5. Rebalance

It is important to pay attention to lifestyle choices. Sleep, exercise, and stress can all affect the GI tract. Balancing those activities is important to an optimal digestive tract.

Hidden Sources of Processed Free Glutamic Acid (MSG)

The MSG reaction is a reaction to free glutamic acid that occurs in food as a consequence of manufacture. MSG-sensitive people do not react to protein (which contains bound glutamic acid) or any of the minute amounts of free glutamic acid that might be found in unadulterated, unfermented food.

These ALWAYS contain MSG:

Glutamate	Glutamic acid	Gelatin
Monosodium glutamate	Calcium caseinate	Textured protein
Monopotassium glutamate	Sodium caseinate	Yeast nutrient
Yeast extract	Yeast food	Autolyzed yeast
Hydrolyzed protein (any protein that is hydrolyzed)	Hydrolyzed corn gluten	Sodium glutamate (sodium is Latin/German for sodium)

These OFTEN contain MSG or create MSG during processing:

Carrageenan	Maltodextrin	Malt extract
Natural pork flavoring	Citric acid	Malt flavoring
Bouillon and broth	Natural chicken flavoring	Soy protein isolate
Natural beef flavoring	Ultra-pasteurized	Soy sauce
Stock	Barley malt	Soy sauce extract
Whey protein concentrate	Pectin	Soy protein
Whey protein	Protease	Soy protein concentrate
Whey protein isolate	Protease enzymes	Anything protein fortified
Flavors(s) and flavoring(s)	Anything enzyme modified	Anything fermented
Natural flavor(s) and flavoring(s)	Enzymes anything	Seasonings (the word "seasonings")

In Addition ...

The new game is to label hydrolyzed proteins as pea protein, whey protein, corn protein, etc. If a pea, for example, were whole, it would be identified as a pea. Calling an ingredient pea *protein* indicates that the pea has been hydrolyzed, at least in part, and that processed MSG is present. Relatively new to the list are wheat protein and soy protein.

Disodium guanylate and disodium inosinate are expensive food additives that work synergistically with inexpensive MSG. Their use suggests that the product has MSG in it. They would probably not be used as food additives if there were no MSG present.

MSG reactions have been reported to soaps, shampoos, hair conditioners, and cosmetics, in which MSG is hidden in ingredients that include the words "hydrolyzed," "amino acids," and "protein."

Low-fat and no-fat milk products often include milk solids that contain MSG.

Drinks, candy, and chewing gum are potential sources of hidden MSG and of aspartame and neotame. Aspartic acid, found in neotame and aspartame (NutraSweet), ordinarily causes MSG-type reactions in MSG-sensitive people. Aspartame is found in some medications, including children's medications. Neotame is relatively new, and we have not yet seen it used widely. Check with your pharmacist.

Binders and fillers for medications, nutrients, and supplements, both prescription and nonprescription, enteral feeding materials, and some fluids administered intravenously in hospitals may contain MSG.

According to the manufacturer Merck, Varivax® chicken pox vaccine (Varicella Virus Vaccine Live) contains L-monosodium glutamate and hydrolyzed gelatin, both of which contain MSG, which causes brain lesions in young laboratory animals and endocrine disturbances such as obesity and reproductive disorders later in life. It would appear that most, if not all, live virus vaccines contain MSG.

Reactions to MSG are dose related, i.e., some people react to even very small amounts. MSG-induced reactions may occur immediately after ingestion or after as much as 48 hours.

Note: There are additional ingredients that appear to cause MSG reactions in *acutely* sensitive people. A list is available by request.

Remember: By FDA definition, all MSG is "naturally occurring." "Natural" doesn't mean "safe"; it only means that the ingredient started out in nature.