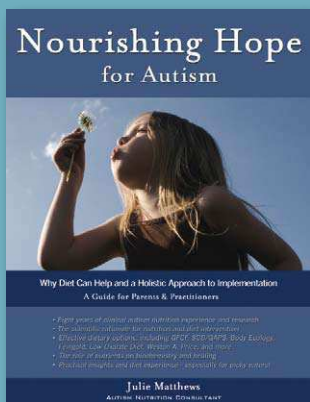




JULIE MATTHEWS, CNC  
AUTISM NUTRITION SPECIALIST

Julie Matthews is a leading biomedical autism diet expert. She works with parents from around the world to help children recover from the symptoms of autism through diet intervention. Julie presents at the leading autism conferences in the US and abroad, including the Defeat Autism Now (DAN!) Conference.

Julie has created two helpful autism diet intervention tools for parents. Her book, *Nourishing Hope for Autism*, and her autism nutrition education and cooking DVD, *Cooking to Heal*, are available at Julie's website [www.NourishingHope.com](http://www.NourishingHope.com).



# Diet for Autism



## Food Allergens, Sensitivities, & Substitutes

**A** diets involve many restrictions due to children having sensitivities or allergies to a variety of foods. Typically, one begins with gluten-free and casein-free, then often branches out into soy-, corn-, and/or egg-free, as well. All this restriction can cause feelings of overwhelm in many parents, as options can become limited. This article will discuss when, why, and how to avoid food allergies/sensitivities.

Food allergies and sensitivities (and their accompanying symptoms) are common in children with autism. According to Dr. Kenneth Bock in *Healing the New Childhood Epidemics*, "Food allergies have increased by approximately 700 percent in just the last ten years." A food allergy (IgE reaction) is an *immediate* immune response that includes symptoms such as a rash, hives, sneezing, or anaphylaxis. A food sensitivity (IgG reaction) is a *delayed* immune response that includes chronic symptoms in the areas of inflammation/pain, digestion, and energy/mood such as headaches, GI inflammation, gut pain, diarrhea, constipation, hyperactivity, or anxiety.

Food sensitivities can also trigger asthma attacks, migraine headaches, and eczema.

Because food allergies and sensitivities affect so many bodily systems, reducing them can make a significant difference in how a child feels and behaves. Doris Rapp, MD has been studying and treating children with allergies for many years. In her book, *Is This Your Child?*, Rapp describes possible symptoms of allergy (and sensitivity) reactions

in toddlers: red ears and cheeks, dark eye circles and bags, glassy and glazed eyes, bloating, belching, diarrhea and/or constipation, headaches, runny nose, whining, screaming, hyperactivity, fatigue, aggression, depression, and refusal to be touched.

Parents of children with autism routinely report that when they remove certain problematic foods common symptoms improve, such as diarrhea and hyperactivity, and that children feel better and have greater capacity to pay attention. Cleared of these immune system reactions, they often make big gains in language and other areas of learning, behavior, and overall health. This can mean profound improvement for children with autism.



## SOURCES OF GLUTEN TO AVOID

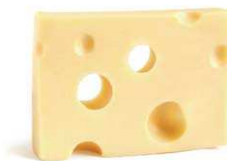
- Wheat
- Rye
- Barley
- Spelt
- Kamut
- Triticale
- Oats (*commercial*)
- Semolina
- Hydrolysed Vegetable Proteins
- MSG
- Dextrin
- Malt
- Citric acid
- Artificial flavors & coloring \*
- "Spices" \*
- Soy sauce (*unless wheat-free*)\*
- Potato chips/fries \*
- Sauces and gravies \*
- Bologna and hot dogs \*



\* unless specified  
gluten-free

## SOURCES OF CASEIN TO AVOID

- All animal milk products (*cow, goat, sheep*)
- Cheese
- Yogurt
- Butter
- Buttermilk
- Ice cream
- Kefir
- Cream
- Sour cream
- Whey
- Galactose
- Casein, Caseinate
- Lactose in seasoning
- Lactalbumin as natural flavor
- Lactic acid
- Sherbet
- Canned tuna
- Cool Whip
- Artificial butter flavor
- Milk chocolate
- Wax on some fruits and vegetables
- Seasoned potato chips
- Hot dogs and bologna (*may contain*)



## How to Avoid the Most Problematic Foods: Gluten, Casein, Soy, Corn, and Eggs

Parents in the autism community are becoming familiar with the restriction of gluten and casein, two of the most problematic substances in foods. Gluten is the protein in wheat, rye, barley, spelt, kamut, and commercial oats, and casein is the protein in dairy. Wheat and dairy sensitivities are commonplace today -- and not just with autism. Nine million people have gluten intolerance in the US.

*There are a lot of hidden sources for allergies. For a thorough list of hidden sources, ask your allergist or other health care professional. This is not meant as medical advice, but intended to help those with food sensitivities (and certain allergies) to provide ideas for substitutions.*

Removal of gluten and casein—the gluten-free and casein-free (GF/CF) diet—is one of the most beneficial dietary interventions for autism.

When following a GF/CF diet, people

commonly over-substitute corn and soy in the place of gluten and casein. Soy and corn are also very common food sensitivities, and removal of these foods, as well, can make a remarkable difference on health, behavior, and attention for certain individuals.

**Soy** is broken down by the same enzyme as gluten and casein. It is common for parents to substitute soy for dairy. Soy is inflammatory to the gut (the digestive tract); it's known to inhibit thyroid function, contains strong estrogen compounds, and decreases absorption of calcium, magnesium, zinc, and other minerals. Because casein and soy are so inflammatory and broken down by the same enzyme, it's best to avoid both. For these and more reasons, I do not recommend the use of soy.



Soy is in soymilk, soy yogurt, soy cheese, soy nut butter, tofu, tempeh, edemame (fresh, boiled soybeans), as well as the condiments

soy sauce and miso. Soy is also in soy protein powders, high protein bars, many gluten-free pretzels, soy lecithin, soybean oil, and vitamin E.

There are a variety of soy substitutes. For milk, (depending on the diet and food restrictions) you can use: rice milk, almond milk, hazelnut milk, hemp milk, potato milk, coconut milk, and homemade nut/seed milk blends. For yogurt, there is homemade nut/seed milk yogurt and homemade and commercial coconut yogurt.

**Corn** is also a common allergen and sensitivity. Corn is often substituted in place of wheat and used in many gluten-free foods and snacks such as cold cereals, tortilla chips, popcorn, cornstarch, pasta (corn-quinoa), and other snack foods that use corn or corn flour.

Corn is one of the most mass-produced plants on the planet. Corn is grown industrially for hundreds of products such as alcohol, vinegar, high fructose

corn sweetener, maltodextrin, and cellulose. Genetically modified (GM) corn contains the gene for a bacteria (Bt) toxin and is untested on humans and the environment. GM corn appears to be particularly inflammatory to the gut. Even if you are not allergic/sensitive to corn, avoid genetically modified corn. The only way to know if corn is not genetically modified is to buy organic, because organic laws do not allow this modification.

Sources of corn include corn syrup, high fructose corn syrup, cornstarch, popcorn, corn chips, other foods made with corn, dextrose, xanthan gum, xylitol, vitamin C (certain manufacturers of ascorbic acid), caramel color, citric acid, and natural flavor.

Depending on their level of sensitivity, people may avoid all corn and corn-



## SUBSTITUTIONS FOR GLUTEN GLUTEN-FREE & CORN-FREE

- Rice
- Millet
- Quinoa
- Amaranth
- Buckwheat
- Wild rice
- Montina
- Teff
- Sorghum
- Tapioca
- Nut flours
- Seed flours
- Coconut flour
- Chestnut flour
- Bean flours
- Roots (taro, yam)
- Yucca/casava
- Non-gluten pasta (*rice, soba noodles-100% buckwheat*)
- Non-gluten bread (*millet, rice bread*)
- Mochi (*chewy rice baked item*)

### Thickeners

- Agar
- Guar gum
- Gelatin
- Kudzu powder
- Tapioca
- Sweet rice flour
- Xanthan gum – *derived from corn but often not reactive unless highly sensitive*
- Arrowroot

## SUBSTITUTIONS FOR DAIRY CASEIN-FREE & SOY-FREE

### Milk & Yogurts

- Rice milk
- Almond, hazelnut or hemp milk
- Homemade nut milk
- Coconut milk
- Potato milk (*Vance's DariFree*)

### Oil/Butter

- Coconut oil
- Ghee
- Lard or tallow
- Earth Balance
- Olive, grapeseed and vegetable oils

### Cheeses

- Rice (Galaxy Foods) – *one version is casein-free*

### Ice Cream

- Sorbets w/o milk
- Non-dairy ice cream (rice or nut milk)
- Coconut ice cream (Coconut Bliss)
- Fruit popsicles

### Chocolate

- GFCF chocolate (*may contain soy lecithin*)



*Identifying and removing food sensitivities can improve digestion, behavior, sleep, rashes and headaches (to name a few symptoms) in children with autism.*

Some people will need to avoid eggs all together. Others are intolerant to chicken eggs, but may tolerate duck or quail eggs. People sensitive to chicken eggs should be very cautious when trying duck or quail eggs. Do not try *any* eggs when there is a strong allergenic (IgE) response to chicken eggs—this could be dangerous with anaphylactic response.

Food rotation is an option for those with mild to moderate sensitivities, as it gives the system a break from the offending food often allowing foods to be consumed on a limited basis without reaction. Individuals with mild egg sensitivities may be able to rotate chicken eggs once every three or four days; or rotate duck, chicken, and quail eggs for further reduced consumption of chicken eggs. Some people avoid chicken eggs all together, and rotate duck or quail eggs every four days.

When using quail eggs, substitute them at a 5-to-1 ratio for large chicken eggs.

Eggs can be used as binding agents, leavening agents, and moisteners. To determine what eggs are being used for in the recipe, first look at the type of food—fluffy baked goods such as cakes and pancakes contain eggs as leaveners, while dense meatballs use eggs as binders. In muffins that can be dense or fluffy, eggs may be used as binding, moistening or leavening. Also, look at the other ingredients in the recipe—if there is little liquid in the recipe, then the egg is most likely a moistener or binder. If only one egg is called for, it may also be for binding. If there is no baking powder or baking soda in a

derived products. In other cases where the desire is to limit GM corn or the sensitivity is minor, individuals may choose only organic corn and limit or rotate corn-based foods and ingredients. Xanthan gum is a common substance that helps improve the texture of gluten-free baked goods. While xanthan gum is derived from corn, the protein fraction is absent from xanthan gum, and most individuals with mild to moderate sensitivities to corn can tolerate this ingredient. However, be aware, highly sensitive/allergic people may react and want to avoid xanthan gum.

Corn syrup and high fructose corn sweetener are two of the most ubiquitous ingredients in processed food

today. While most natural sweeteners do not contain corn (100% pure honey, agave nectar, maple syrup, and cane sugar), be sure to read labels thoroughly. Many products use corn as a sweetener, including artificial maple syrup (found at most restaurants), ketchup, baked goods, candy, jelly, and more.

When a thickener is needed, arrowroot is a great substitute for cornstarch.

### Eggs

Many people are sensitive or allergic to eggs. This can make cooking, especially baking, a bit challenging.



baked good, then the egg is being used as a leavening agent.

If the recipe uses more than three eggs, it may be difficult to get egg substitutes, especially baking soda, to work. In those cases, you may be better off using a different recipe or more than one type of egg substitute.

It also helps to use an electric mixer to beat extra air into the dough and create air pockets to trap the leavening gases from baking soda and other leavening agents.

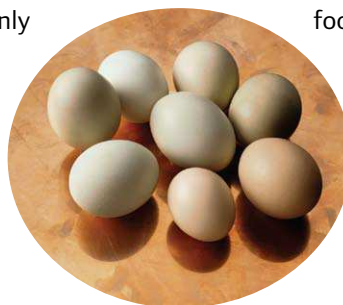
If eggs are not tolerated, try some of the substitutions in the chart below for leavening agents and binding agents.

Identifying and removing food sensitivities can improve digestion, behavior, sleep, rashes, and headaches (to name a few symptoms) in children with autism. If you have not started any dietary intervention for a child with autism, start with gluten-free and casein-free. If you have the basics of GF/CF handled, consider removing soy and limiting or avoiding corn (and using

only organic corn). Eggs only need to be avoided if a child has a problem with eggs.

If you are unsure of whether a food sensitivity exists, try dietary elimination and provocation. For determination of allergies, see a physician for allergy testing. For food sensitivities, remove a suspected food or foods for a few weeks and then reintroduce them one at a time. If you observe a positive response upon removal and worsening of symptoms upon reintroduction, you most likely are dealing with a food intolerance. While a few week trial is typically sufficient to determine a corn, soy, or egg sensitivity, you will want to give gluten and casein more time to get the antibodies out of the system. Try the GF/CF diet for 3-6 months to determine whether it is helpful.

Once you have determined which



foods are not tolerated, you can begin to see if total elimination is necessary or if rotation is sufficient. For children who seem to be sensitive to "everything," rotation is helpful. Even when eggs or corn seem tolerated, rotation can help prevent sensitivities from developing due to overexposure to the food. Even a one or two day break per week from a food can be helpful.

Dietary intervention for autism requires development over time, and removing food sensitivities is a beneficial step. When reactions/regressions seem to come and go, removing these common food sensitivities often results in a new level of consistency that allows you to see where you are and what is left to address with diet. You may be pleasantly surprised how well the whole family feels when you refine the consumption of foods in your diet.

### IF EGGS ARE NOT TOLERATED, TRY SOME OF THE FOLLOWING EGG SUBSTITUTIONS FOR LEAVENING AGENTS AND BINDING AGENTS:

#### Eggs as Leavening Agents

The following helps with recipes such as baked goods such as pancakes or cakes that need to rise.

#### Egg Replacer by Ener-G Foods:

Contains processed ingredients and not allowed on certain diets. 1½ tablespoons Egg Replacer + 2 tablespoons water mixed well = 1 egg

#### No Egg by Orgran

Similar to Egg Replacer

#### Baking soda and water:

Good for most diets. However, it's a bit tricky and doesn't work with all recipes, especially where a large number of eggs are needed.

1½ TBL water

1½ TBL oil

1 tsp baking soda

½ tsp vinegar (optional)

= 1 egg

Whisk above ingredients together in a cup and pour into mixture that calls for an egg.

**Acidic agents** such as lemon juice and vinegar help boost the leavening process.

**Baking powder and extra oil** can also function as a leavener: 1 heaping tablespoon baking powder, 1½ tablespoon water, plus 1½ tablespoons oil. Where corn-free baking powder is needed, use Featherweight Baking Powder.



#### Eggs as Binding Agents

The following helps with recipes that need eggs to help ingredients stick together, as in a muffin, meatball, etc.

#### Flax seed and water:

1 tablespoon flax seed with 3 tablespoons water. Blend in blender = 1 egg

#### Pureed fruit or vegetable:

Cooked and pureed squash or banana, or many other vegetables like cauliflower, 1 cup = 1 egg

#### Gelatin:

Mix one envelope of unflavored gelatine with 1 cup of boiling water.

One envelope should be ½ ounce; you can also use 2 teaspoons of Bernard Jensen's gelatine (*Radiant Life catalogue*).

3 tablespoons of liquid replaces one egg (*Refrigerate leftover portion. Then, melt before using.*)

**Arrowroot powder** can also be used as a binding agent. 2 tablespoons arrowroot with a bit of liquid added to a recipe for one egg.