



Allergy Baking Reference Guide

At Cake4Kids, we accept requests for youths with all types of dietary restrictions. For each request, carefully review the Food Allergies listed and ensure you are equipped to bake for the restriction.

There are 3 key steps to allergy baking:

1. Prevent cross-contact in your kitchen
2. Avoid all ingredients containing allergen
3. Avoid all ingredients with possible cross-contact with allergen

Cross-Contact

Avoiding Cross-Contact

Cross-contact happens when one food comes into contact with another food and their proteins mix. As a result, each food then contains small amounts of the other food. These amounts are so small that they usually can't be seen.

Even this tiny amount of food protein has caused reactions in people with food allergies! The term "cross-contact" is fairly new, and many people may incorrectly call this "cross-contamination" or use the terms interchangeably.

The Difference Between Cross-Contact and Cross-Contamination

Cross-contact occurs when an allergen is inadvertently transferred from a food containing an allergen to a food that does not contain the allergen. Cooking does not reduce or eliminate the chances of a person with a food allergy having a reaction to the food eaten.

Cross-contamination is a common factor in the cause of foodborne illness. Microorganisms such as bacteria and viruses from different sources can contaminate foods during preparation and storage. Proper cooking of the contaminated food in most cases will reduce or eliminate the chances of a foodborne illness.

Examples of Cross-Contact and How to Avoid It

Say a knife that has been used to spread peanut butter is only wiped off before being used to spread jelly. There could be enough peanut protein remaining on the knife to cause a reaction in a person who has a peanut allergy. All equipment and utensils must be cleaned with hot, soapy water before being used to prepare allergen-free food. Even a trace of food on a spoon, spatula, or measuring cup that is invisible to us can cause an allergic reaction.

Questions to ask yourself about cross-contact

Before baking a cake for a child/person with an allergy, did I thoroughly sanitize all my utensils including my work surface?



Gluten

Gluten is found in wheat, rye, barley, and any foods made with these grains. Avoiding wheat can be especially hard because this means you should avoid all wheat-based flours and ingredients. Gluten-free flours can be readily bought in supermarkets and online.

Ingredients, Products, and Foods to Avoid

- All-purpose flour (white flour)
- Barley
- Bran
- Breadcrumbs
- Breads, unless labeled gluten-free
- Couscous
- Cracker meal
- Durum
- Einkorn
- Farro
- Flor
- Germ
- Gluten
- Graham flour
- Grass
- Hydrolyzed wheat
- Kamut
- Malt
- Many candies and chocolates
- Matzoh (matzo, matzah, matza)
- Modified food starch
- Oats (see next section: The Fuss About Oats)
- Pasta
- Protein
- Rye
- Sauces, which often use flour as a thickener
- Semolina
- Soy sauce
- Spelt
- Sprouted wheat
- Sprouts
- Starch (gelatinized starch, modified starch, modified food starch, vegetable starch)
- Surimi
- Triticale
- Vital wheat gluten
- Wheat bran
- Wheat germ and wheat germ oil
- Whole wheat berries
- Whole wheat flour



Check Your Labels!

There are also many additives and ingredients in packaged foods that may contain gluten. Always check labels and ingredient lists for these.

- Avoid products that are not labeled “gluten-free,” it is possible these ingredients could contain small amounts of the allergen
- Avoid products labeled “No gluten-containing ingredients.” Companies may use this term when they do not test for the presence of gluten in their product. Even if a product uses no gluten-containing ingredients, gluten may be in the final product from cross-contact with other products or ingredients during manufacturing
- Avoid grain-based products (rice, corn, and other cereal grains) that are labeled “may contain” or “made on shared equipment” with wheat/gluten that are not labeled “gluten-free”
- Remember that "wheat-free" does not automatically mean "gluten-free." While a product may not contain wheat, it can still contain rye or barley in some form
- Don't forget that ingredients in food products change frequently, so always check the label before buying packaged foods
- If you have any questions about whether a food contains gluten, contact the manufacturer directly.

For a more comprehensive list of gluten-containing ingredients, visit the Celiac Disease Foundation at <https://celiac.org/>.

The Fuss About Oats

Pure oats are a gluten-free food, but most commercially processed oats have been contaminated during the growing, harvesting, or processing stages. In the past, many experts recommended completely avoiding oats in addition to wheat, barley, and rye for those on a gluten-free diet. Now, some oats are grown and processed separately, and can be labeled "gluten-free."

Many people with celiac disease are still advised to avoid oats.

Rule of thumb is: avoid oats to err on the safe side!!

Milk / Lactose / Dairy

Ingredients, Products, and Foods to Avoid

- Cow's milk (all types), including condensed, evaporated, dry or powdered milk, cream, Lactaid, and acidophilus milk
- Goat's milk and milk from other animals. Goat's milk protein is similar to cow's milk protein and may cause a reaction
- Any baked goods made with milk
- Butter
- Butter flavor
- Buttermilk



- Casein
- Casein hydrolysate
- Caseinates (such as sodium caseinate, potassium caseinate, or calcium caseinate)
- Cheese (all types)
- Cream (all types)
- Custards and puddings
- Ghee
- Half-and-half
- Hot cocoa mix, breakfast drink mix, and cereals
- Ice cream and ice milk
- Milk solids
- Lactic acid
- Lactalbumin
- Lactose
- Lactoferrin
- Lactulose
- Margarine (unless vegan or specifically labeled non-dairy)
- Sherbet (some types) or frozen milk
- Sour cream
- Whey
- Whipped cream
- Yogurt

Check Your Labels!

Before getting started, check the label on every product, as milk products can be found in many unexpected places

- Some natural or artificial flavorings contain milk
- Even some products labeled “non-dairy” or “milk-free” can contain milk derivatives or milk proteins, so that’s why it’s always important to check the ingredients list

Substitutes for Butter and Margarine

- Vegan (dairy-free) products such as Earth Balance Soy Garden Natural Buttery Spread and Earth Balance Vegan Buttery Sticks
- Canola oil (however, keep in mind that if the recipe calls for beating the butter or margarine with sugar until fluffy, a straight substitute with oil won't obtain this texture result)

Substitutes for Milk

- Rice milk
- Soy milk (check the label to be sure it doesn't contain milk-based ingredients)
- Oat milk
- Almond milk
- Fruit juice can work (depending on the recipe, like in breads and muffins)



Substitutes for Yogurt or Sour Cream

- Soy-based yogurt (such as Silk brand). Check the label to be sure it doesn't contain milk-based ingredients
- Vegan sour cream substitutes, such as Yo-Soy and Tofutti Sour Supreme
 - The first four ingredients in Tofutti's Sour Supreme are partially hydrogenated soybean oil, isolated soy protein, maltodextrin, and tofu
- Soft or silken tofu, beaten or pureed until smooth

Substitutes for Cheese

- Look for vegan cheese alternatives in your supermarket or natural foods store - there are many options available these days!

Baker's Notes About Using Milk Substitutes

- The biggest difference when using these substitutes will be flavor, as the natural flavor of butter, sour cream, and cheese are difficult to reproduce
- If the recipe calls for beating the butter or margarine with sugar until fluffy, a straight substitute with oil won't obtain this texture result
- Vegan cheeses melt differently than dairy cheese

Eggs

People with egg allergies have to avoid all egg-based foods and dishes in addition to less obvious products and foods that surprisingly contain them. People may be allergic to the egg white, yolk, or both.

The Role of Eggs in Baking and Cooking

Eggs have several purposes in baking, including binding, leavening, browning, adding moisture, and adding flavor. Depending on the baked good, the primary purpose of eggs in that recipe differs. For example, a recipe that has a separate leavening agent such as baking powder or baking soda may be using the egg as a binding agent to bring fats and liquids together, while whipped egg whites create lift in a frosting. For recipes developed with eggs, it's possible to replace the eggs, but just keep in mind that the resulting baked good will not be exactly the same as a baked good made with eggs. However, some replacements can come very close!

Ingredients, Products, and Foods to Avoid

- Eggs (including whole eggs, egg whites, and egg yolks)
- Egg products, including dried eggs, powdered egg, and egg solids)
- Egg substitutes, which are usually made with egg whites
- Egg wash (commonly used on breads and sweet goods)
- Eggnog and egg creams
- Albumin and silici albuminate
- Apovitellin
- Baked goods like cakes, bagels, muffins, rolls, donuts, and cookies (unless homemade with



egg-free recipes using commercially available egg replacements or substitutions)

- Cake and brownie mixes (some types)
- Chocolates, marshmallows, and fondants
- Conalbumin
- Custards, puddings, Bavarian creams, cream puffs
- Edible cake decorations
- Frostings (pre-made or store-bought), as many contain egg products
- Globulin
- Ice cream
- Lecithin
- Livetin
- Lysozyme
- Mayonnaise
- Meringue and meringue powder
- Ovalbumin
- Oviglobulin
- Ovomucin
- Ovomuroid
- Ovotransferrin
- Ovovitelia
- Ovovitellin and vitellin
- Pancakes, waffles, and some pancake/waffle mixes
- Pies and pie fillings (some contain eggs or egg whites)
- Pretzels
- Simplesse, used as a fat substitute in low-calorie foods

Check Your Labels!

Before getting started, check the label on every product. Eggs and egg products can be found in surprising places!

- The following ingredient terms may indicate that egg protein is present: artificial and natural flavoring, lecithin, macaroni, marzipan, marshmallows, nougat, and pasta

Replacements for Eggs

Replacements for 1 whole egg or egg yolk:

- Commercial egg replacers such as Ener-G Egg Replacer and Bob's Red Mill Egg Replacer (usually made from potato starch and tapioca flour). Follow package instructions
- ¼ cup carbonated water
- 2 tablespoons water + 1 tablespoon oil + 2 teaspoons baking powder
- ¼ cup mashed potatoes, canned pumpkin or squash, or tomato sauce
- ¼ cup applesauce
- ¼ cup mashed bananas
- 1 tablespoon ground flaxseed + 3 tablespoons water—let sit 5 minutes to gel
- 1 tablespoon chia seeds + 1 cup water—let sit 15 minutes to gel
- ¼ cup soft or silken tofu, pureed in a food processor, mixer, or blender
- 2 tablespoons arrowroot powder, cornstarch, potato starch, or tapioca starch mixed with 3



tablespoons water

- Aquafaba (the slightly viscous liquid found in a can of garbanzo beans):
 - 1 whole egg = 3 tablespoons of aquafaba (add 1/16 tsp cream of tartar if whipping)
 - 1 egg yolk = 1 tablespoon aquafaba (add 1/32 tsp cream of tartar if whipping)
- *If whipping, use a stand mixer as it will take a long time to whip up!

Replacements for 1 egg white:

- 1 tablespoon plain agar powder dissolved in 1 tablespoon lukewarm water, whipped, chilled, and whipped again
- Aquafaba (the slightly viscous liquid found in a can of garbanzo beans):
 - 1 egg white = 2 tablespoons of aquafaba (add 1/32 tsp cream of tartar if whipping. When whipping, use a stand mixer as it will take a long time!)

Baker's Notes About Using Egg Replacers

Very few foods can whip up and incorporate air as well as egg whites, so using some of these egg replacers may not produce foods that are as light and fluffy in texture.

Nuts (Peanuts, Tree Nuts, Coconut, Sesame)

Nut Allergies Are Very Serious

With a peanut or tree nut allergy, even a tiny amount ingested or inhaled could cause an allergic reaction. Some of the places you find nuts, like nut butters, nut flours, and nut breads, are not surprising, but there are many unexpected sources that can cause an allergic reaction.

People with peanut allergies are quite often also allergic to tree nuts, coconut, and sesame. Therefore, if you are allergic to peanuts, you may need to avoid tree nuts like walnuts and almonds. Same goes if you're allergic to tree nuts -- you may need to avoid peanuts.

Foods that don't contain peanuts or tree nuts can get contaminated if they are prepared in the same place or using the same equipment. Foods sold in the U.S. must say this on the label.

Once you know what to look for, you can check labels carefully before you buy or use a product.

Ingredients, Products, and Foods to Avoid

- Almonds
- Arachis oil (another name for peanut oil)
- Artificial nuts, which may be made from peanuts with tree nut flavoring added
- Baked goods such as cookies, candy, pastries, pie crusts, and others
- Brazil nuts
- Bread crumbs
- Breads (multi-grain)
- Candy (especially chocolate candy)
- Cashews
- Cereal
- Chestnuts



- Chex Mix
- Chips and crackers
- Coconut
- Energy bars
- Filberts
- Flavor blends or spice blends, which may contain sesame
- Granola
- Hazelnuts
- Hickory nuts
- Honey
- Hydrolyzed plant or vegetable protein, as these can contain peanuts
- Lychee nuts
- Macadamia nuts
- Margarine
- Marzipan
- Muesli
- Nougat
- Nut butters, including almond, cashew, peanut, and others
- Nut extracts, like almond extract
- Nut oils, including peanut oil, sesame oil, whether cold-pressed or expressed
- Nut pastes, including products like marzipan, almond paste, and nougat
- Nutella
- Peanut flour
- Peanut protein hydrolysate
- Peanuts
- Pecans
- Pine nuts
- Pistachios
- Sesame
- Sesame oil
- Sesame salt
- Tahini
- Walnuts

Check Your Labels!

- Peanuts, peanut butter, tree nuts, sesame, and coconut are sometimes used as thickeners.
- Many snack foods such as pretzels, candy, Halvah, Japanese snack mix, and rice cakes contain nuts
- Beware of cross-contact when baking nut-free items at home
- Common phrases you may see on packaging to address cross-contact: “may contain nuts or “produced in a facility that also uses nuts” or “made on shared equipment that also processes nuts.” These must be avoided for nut-free baking!
- Check the label each time you buy a product, even if you have purchased the same product before! Manufacturers sometimes change recipes and a trigger food may be added over time.



Sugar

The Role of Sugar in Baking and Cooking

Regular or table sugar is known for its sweetness — and its calories and carbs. Sugar gets a bad rap and is blamed for many major health problems such as obesity and Type 2 diabetes. But all cooks and bakers know that sugar is an invaluable ingredient in helping to ensure foods not only taste good, but also have the right texture, color, and volume.

Sugar does more than just make foods and beverages taste good. In baked goods such as cakes, cookies, and brownies, sugar creates a light, tender product and adds volume. It also helps trap and hold moisture so that those chewy chocolate chip cookies don't immediately turn into hockey pucks. Sugar also helps with browning — picture a golden crust on a loaf of banana bread — and can crystalize to add crunch or texture to baked goods. If you're a bread baker, you probably know that sugar helps to feed the yeast that provides leavening. When sugar is heated, it caramelizes, forming the basis for caramel sauce or flan. And who doesn't appreciate the beauty of a flaming baked Alaska dessert or lemon meringue pie with its frosty white peaks, formed by egg whites beaten with...you guessed it...sugar!

Today, there are many options for sugar substitutes, but some are better than others when it comes to both health and suitability in baking. The sections below explain the best sugar substitutes to use in baking and the ones to avoid!

Best Sugar Substitutes for Baking

- **Sucralose:** Commonly known as Splenda, this sweetener is 600 times sweeter than sugar. Sucralose is heat stable and therefore great for baking. It's available in bulk, packets, and liquid form. Splenda's website provides helpful tips for baking and cooking with Splenda: <https://www.splenda.com/baking-tips/> and <https://www.splenda.com/baking-tips-for-splenda-original-sweeteners/>
- **Saccharin:** Commonly known as Sweet'N Low, this sweetener is 300 times sweeter than sugar. Sugar Twin is another brand of saccharin you may find in stores. Sweet'N Low is available in packets, in bulk, and in liquid form, while Sugar Twin is only available in packets. Saccharin is heat-stable, making it suitable for baking. Sweet'N Low provides a substitution chart on their website to help you determine the right amount of saccharin to use in a recipe: <http://www.sweetnlow.com/fag/cooking> (download the PDF on this page).
- **Stevia (steviol glycosides):** Common brands of stevia sweetener include Stevia In the Raw, Truvia, PureVia, SweetLeaf, and Zing. These sweeteners contain an extract from the stevia leaf called rebaudioside-A. The term "stevia" refers to the entire stevia plant, which is not the same as stevia-based sweeteners. Stevia by itself is 200 times sweeter than sugar, so most brands of stevia-based sweeteners blend stevia with other sugar alcohols and additives such as erythritol, maltodextrin or dextrose, to provide a taste, look, and feel that is similar to sugar. Stevia-based sweeteners are suitable for baking. All of the major brands provide conversion charts for sugar substitutions and baking tips on their websites.
- **Monk Fruit (Luo Han Guo):** Monk fruit sweeteners are the newest sugar substitute to become popular in the United States and are made with the extract of the monk fruit. Monk fruit has been used in China and Southeast Asia for hundreds of years. Monk fruit extract is



100-300 times sweeter than sugar (sources vary), so just like stevia, most brands of monk fruit sweeteners blend monk fruit extract with other sugar alcohols and additives such as erythritol or maltodextrin to provide a taste, look, and feel that is similar to sugar. Monk fruit sweeteners are stable at high temperatures, so are suitable for use in baking. Common brands of monk fruit sweetener include Monk Fruit in the Raw, Splenda, Lakanto, Health Garden, and SweetLeaf. Visit their websites for helpful tips on baking with monk fruit sweeteners.

Sugar Substitutes to AVOID

Some well-known “sugar substitutes” aren’t well-suited to baking or are not appropriate for sugar-free baking. Many “substitutes” for sugar touted online have the same effect on blood sugar as cane sugar and should not be used for sugar-free baking, especially for those who have diabetes.

Here are sugar “substitutes” to AVOID:

- Sugar blends: Many of the sugar substitute manufacturers also produce sugar blends, which combine a particular sugar substitute with sugar. Although it may be tempting to use these, as the resulting baked goods have a closer texture, volume, taste, and appearance as sugar, these are not sugar-free! Splenda, Pure Via, and Truvia make sugar blends, so when you are purchasing any of these brands, make sure you are getting the sugar substitute, not the blend!
- Agave nectar
- Aspartame: Commonly known as NutraSweet or Equal, this sugar substitute is 200 times sweeter than sugar and has been around for decades, but it is not recommended for use in baking as it is not heat-stable. Aspartame loses sweetness when heated over longer periods of time.
- Barley malt syrup
- Brown rice syrup
- Coconut syrup
- Corn syrup
- Date sugar
- Fruit, fruit juice, or fruit sugar
- Honey
- Maple syrup
- Molasses

Baker’s Notes About Using Sugar Substitutes in Cooking and Baking

Sugar substitutes can be used in both cooked items and baked goods, but it’s important to realize that the end result may not be identical to the same product made with sugar. Sugar substitutes, while very sweet, don’t have the same properties or chemical composition as table sugar.

For these reasons, be prepared for the following issues:

- **A lighter color.** Baked goods made with sugar substitutes tend to be light in color. Sugar substitutes don’t provide the same browning effect as sugar
- **Flatter products.** Cakes, quick breads, and muffins may not have the same volume when prepared with sugar substitutes
- **Texture differences.** Baked goods made with these sweeteners tend to be drier and denser



(almost like a biscuit) than those made with sugar because the sweeteners don't hold moisture. Besides being drier, products may become stale more quickly

- **Taste differences.** Sugar substitutes can impart an aftertaste; some people find this more noticeable than others
- **Cooking time.** You may need to adjust the time required to bake a cake or cookies made with sugar substitutes

Online Resources About Food Allergies

- U.S. Food and Drug Administration (FDA):
<https://www.fda.gov/food/food-labeling-nutrition/food-allergies>
- Centers for Disease Control and Prevention (CDC):
<https://www.cdc.gov/healthyschools/foodallergies/index.htm>
- National Institute of Allergy and Infectious Diseases (NIAID):
<https://www.niaid.nih.gov/diseases-conditions/food-allergy>
- Food Allergy Research & Education:
<https://www.foodallergy.org/>
- American College of Allergy, Asthma & Immunology:
<https://acaai.org/allergies/types/food-allergy>
- American Academy of Allergy, Asthma & Immunology:
<https://www.aaaai.org/conditions-and-treatments/allergies/food-allergies>
- Celiac Disease Foundation:
<https://celiac.org/>