

# Gluten-free diet

To follow a gluten-free diet, you must avoid wheat and some other grains while choosing substitutes that provide nutrients for a healthy diet.

[By Mayo Clinic Staff](#)

## Definition

A gluten-free diet is an eating plan that excludes foods containing gluten. Gluten is a protein found in wheat, barley, rye and triticale (a cross between wheat and rye).

## Purpose

A gluten-free diet is essential for managing signs and symptoms of celiac disease and other medical conditions associated with gluten.

A gluten-free diet is also popular among people who haven't been diagnosed with a gluten-related medical condition. The claimed benefits of the diet are improved health, weight loss and increased energy, but more research is needed.

- **Celiac disease** is a condition in which gluten triggers immune system activity that damages the lining of the small intestine. Over time this damage prevents the absorption of nutrients from food. Celiac disease is an autoimmune disorder.
- **Non-celiac gluten sensitivity** causes some signs and symptoms associated with celiac disease — including abdominal pain, bloating, diarrhea, constipation, "foggy brain," rash or headache — even though there is no damage to the tissues of the small intestine. Studies show that the immune system plays a role, but the process isn't well understood.
- **Gluten ataxia**, an autoimmune disorder, affects certain nerve tissues and causes problems with muscle control and voluntary muscle movement.
- **Wheat allergy**, like other food allergies, is the result of the immune system mistaking gluten or some other protein found in wheat as a disease-causing agent, such as a virus or bacterium. The immune system creates an antibody to the protein, prompting an immune system response that may result in congestion, breathing difficulties and other symptoms.

## Diet details

Following a gluten-free diet requires paying careful attention to food selections, the ingredients found in foods, and their nutritional content.

### Allowed fresh foods

Many naturally gluten-free foods can be a part of a healthy diet:

- Fruits and vegetables
- Beans, seeds, legumes and nuts in their natural, unprocessed forms

- Eggs
- Lean, nonprocessed meats, fish and poultry
- Most low-fat dairy products

Grains, starches or flours that can be part of a gluten-free diet include:

- Amaranth
- Arrowroot
- Buckwheat
- Corn — cornmeal, grits and polenta labeled gluten-free
- Flax
- Gluten-free flours — rice, soy, corn, potato and bean flours
- Hominy (corn)
- Millet
- Quinoa
- Rice, including wild rice
- Sorghum
- Soy
- Tapioca (cassava root)
- Teff

### **Grains not allowed**

Avoid all foods and drinks containing the following:

- Wheat
- Barley
- Rye
- Triticale — a cross between wheat and rye
- Oats, in some cases

While oats are naturally gluten-free, they may be contaminated during production with wheat, barley or rye. Oats and oat products labeled gluten-free have not been cross-contaminated. Some people with celiac disease, however, cannot tolerate the gluten-free-labeled oats.

### **Wheat terms to know**

There are different varieties of wheat, all of which contain wheat gluten:

- Durum
- Einkorn
- Emmer
- Kamut
- Spelt

Wheat flours have different names based on how the wheat is milled or the flour is processed. All of the following flours have gluten:

- Enriched flour with added vitamins and minerals
- Farina, milled wheat usually used in hot cereals
- Graham flour, a coarse whole-wheat flour
- Self-rising flour, also called phosphate flour
- Semolina, the part of milled wheat used in pasta and couscous

### **Gluten-free food labels**

When you are buying processed foods, you need to read labels to determine if they contain gluten. Foods that contain wheat, barley, rye or triticale — or an ingredient derived from them — must be labeled with the name of the grain in the label's content list.

Foods that are labeled gluten-free, according to the U.S. Food and Drug Administration rules, must have fewer than 20 parts per million of gluten. Foods with these labels may include:

- Naturally gluten-free food
- A prepared food that doesn't have a gluten-containing ingredient
- Food that has not been cross-contaminated with gluten-containing ingredients during production
- Food with a gluten-containing ingredient that has been processed to remove gluten

Alcoholic beverages made from naturally gluten-free ingredients, such as grapes or juniper berries, can be labeled gluten-free.

An alcoholic beverage made from a gluten-containing grain (wheat, barley, rye and hybrid grains such as triticale) can carry a label stating the beverage was "processed," "treated" or "crafted" to remove gluten. However, the label must state that gluten content cannot be determined and the beverage may contain some gluten. These beverages may not be labeled gluten-free.

### **Processed foods that often contain gluten**

In addition to foods in which wheat, barley and rye are likely ingredients, these grains are standard ingredients in a number of other products. Also, wheat or wheat gluten is added as a thickening or binding agent, flavoring, or coloring. It's important to read labels of processed foods to determine if they contain wheat, as well as barley and rye.

In general, avoid the following foods unless they're labeled as gluten-free or made with corn, rice, soy or other gluten-free grain:

- Beer, ale, porter, stout (usually contain barley)
- Breads
- Bulgur wheat
- Cakes and pies
- Candies
- Cereals

- Communion wafers
- Cookies and crackers
- Croutons
- French fries
- Gravies
- Imitation meat or seafood
- Malt, malt flavoring and other malt products (barley)
- Matzo
- Pastas
- Hot dogs and processed lunchmeats
- Salad dressings
- Sauces, including soy sauce (wheat)
- Seasoned rice mixes
- Seasoned snack foods, such as potato and tortilla chips
- Self-basting poultry
- Soups, bouillon or soup mixes
- Vegetables in sauce

### **Medications and supplements**

Prescription and over-the-counter medications may use wheat gluten as a binding agent. Talk to your doctor or pharmacist about the drugs you're taking. Dietary supplements that contain wheat gluten must have "wheat" stated on the label.

### **Eating gluten-free at home and in restaurants**

For people with celiac disease, in particular, it's important to avoid exposure to gluten. The following tips can help you prevent cross-contamination in your own food preparations at home and avoid gluten-containing food when you eat out:

- Store gluten-free and gluten-containing foods in different places.
- Keep cooking surfaces and food storage areas clean.
- Wash dishes and cooking equipment thoroughly.
- Toast bread in the oven — or consider separate toasters — to avoid cross-contamination.
- Read restaurant menus online ahead of time if possible to be sure there are options for you.
- Eat out early or late when a restaurant is less busy and better able to address your needs.

## **Results**

Keeping a strict gluten-free diet is a lifelong necessity for people with celiac disease. Following the diet and avoiding cross-contamination results in fewer symptoms and complications of the disease.

For some people with non-celiac gluten sensitivity, the condition may not be lifelong. Some research suggests that you may follow the diet for a certain period, such as one

or two years, and then retest your sensitivity to gluten. For other people with non-celiac gluten sensitivity, the diet may be a lifelong treatment.

Some clinical studies have looked at the benefits of the diet among people who do not have celiac disease or who have non-celiac gluten sensitivity. More research is needed to determine the accuracy of the following claims about the diet's results:

- Weight loss
- Overall improved health
- Improved gastrointestinal health
- Improved athletic performance

## **Risks**

The foods not included in a gluten-free diet provide important vitamins and other nutrients. For example, whole-grain breads and other products are natural or enriched sources of the following:

- Iron
- Calcium
- Fiber
- Thiamin
- Riboflavin
- Niacin
- Folate

Therefore, following a gluten-free diet will likely change your nutrient intake. Some gluten-free breads and cereals have significantly varied nutrient levels compared with the products they are replacing.

Some gluten-free foods also have higher fat and sugar contents than the gluten-containing food being replaced. It's important to read labels, not only for gluten content but also for overall nutrient levels, salt, calories from fats and calories from sugars.

You can talk to your doctor or dietitian about foods that would provide healthy, nutrient-rich alternatives.

## **Costs**

The costs of prepared gluten-free foods are generally higher than the cost of the foods being replaced. The expense of following a gluten-free diet can be substantial, especially if your diet includes foods that aren't naturally gluten-free.