

Healthy Eating on the Gluten-Free Diet

Key Point

- While eating gluten-free is the number one priority for those with celiac disease (CD), it is also important not to forget about nutrition. A standard gluten-free diet (GFD) may fall short in certain nutrients, such as fiber, iron, calcium, Vitamin D, and B vitamins. The good news is that many naturally gluten-free foods are healthy choices. Consuming more of these foods can go a long way in closing any nutritional gaps for those with CD.

Why is this important?

A healthy diet is full of nutrients that are needed for many important functions, including sustaining life, maintaining your energy (calorie) needs, and reducing your risk of chronic conditions such as diabetes, heart disease, and certain cancers. Both the Mediterranean Diet and vegetarian diets can also easily be adapted to be gluten-free. Visit celiacnow.org under Educational Materials to review both of these diets.

What should you include in your healthy GFD?

- Fruits and vegetables
- Legumes
- Low-fat dairy, if tolerated. If not, include other sources of calcium and Vitamin D.
- Gluten-free whole grains (be sure to select only those specifically labeled gluten-free)
- Lean protein
- Nuts and seeds
- Healthy fats

Guidelines for a Healthy and Balanced GFD

It's important to remember that no one food or food group is better than another. However, you can get more nutrition in each bite by choosing "nutrient-dense" foods most of the time. Here are some general ideas to remember.

- Eat more foods rich in vitamins, minerals, and/or phytonutrients. Phytonutrients are natural chemicals or compounds produced by plants. They can help support a healthy body.

- Eat fewer foods with higher amounts of sodium (salt), saturated fat, added sugars, and refined grains. Thankfully, the FDA's ban on artificial trans fats took effect in 2018, so these harmful fats have effectively been removed from the U.S. food supply.
- Ease up on the processed gluten-free foods, such as muffins, cookies, and cakes. These may be higher in calories, fat, sodium, and sugar, but also lower in fiber, vitamins, and minerals.
- Make your GFD heart-healthy by reducing fat and sodium, eating a variety of fruits and vegetables, including lean protein such as chicken, fish, beans, and legumes, eating less red meat, and choosing healthy fats such as olive oil.
- Select labeled gluten-free whole grains such as amaranth, millet, quinoa, and brown rice (note: white and brown rice do not need to be labeled gluten-free).
- The Mediterranean diet is based on many of these principles and is also easily adapted to be GF.
- Balance your calorie intake with your physical activity to manage your weight. Click [here](#) for activity guidelines for all age groups.

Fruits and Vegetables

- Eat a variety of fruits and vegetables to get enough vitamins, minerals, fiber, and antioxidants. Fruits and vegetables are rich in Vitamins A, C, K, folate, fiber, magnesium, and potassium.
- Choose a variety of colors of both fruits and vegetables. Select fruits and vegetables in their whole form, including fresh and frozen. Select canned fruits in their own juice or no-salt-added varieties of canned vegetables. Limit 100% fruit juice to $\frac{1}{2}$ cup per day.
- Adults should eat about nine servings of fruits and vegetables or about $4 \frac{1}{2}$ cups per day. This may vary based on your specific calorie needs.

What is a serving of fruit?

- 1 medium-sized piece of fruit (about the size of a tennis ball)
- 1/2 cup fruit
- 1/4 cup dried fruit
- 3/4 cup (6 oz.) of 100% fruit or vegetable juice
- 2 cups leafy vegetables (i.e., spinach, lettuce leaves)
- 1 cup cooked or raw vegetables
- While the vast majority of fruits and vegetables are naturally gluten-free, check the labels of vegetables served in sauces, gravy, and seasonings. Check the labels of fruits in sauces or pie fillings, as well as dried fruit, such as dates that are sometimes rolled in oat flour.

Grains

Giving up gluten often means that people with CD don't eat the recommended number of servings (6-11 per day) of grains. The number of servings of grains per day varies from person-to-person depending on calorie needs. Visit [MyPlatePlan](#) to estimate your own calorie needs.

- Not eating enough grains can lead to shortfalls in fiber, iron, and B-vitamins, so eat at least half of your gluten-free grains from whole grain sources. Whenever possible, choose products made from labeled gluten-free whole grains and flours, such as teff, millet, brown rice, amaranth, buckwheat, and quinoa.
- Choose enriched and/or fortified gluten-free products instead of refined or unenriched versions whenever you can. Enriched gluten-free grains such as bread, cereal, and baking mixes have defined amounts of B-vitamins, including thiamin, riboflavin, niacin, and folic acid. They also typically contain more iron.
- Gluten-free grains are also a significant source of fiber in the diet. Fiber is required for proper digestion and may improve blood sugar and cholesterol levels. Your fiber needs vary based on your gender, age, and medical conditions. Discuss your specific fiber needs with your registered dietitian or doctor. Generally, the goal for fiber is 14 grams of dietary fiber per 1,000 calories. For example, someone who requires 2000 calories per day should aim for a goal of 28 grams of dietary fiber per day.
- Click [here](#) for more specific guidelines on fiber, depending on gender and age.
- If you are not used to eating a lot of fiber, slowly increase your intake of gluten-free whole grains (in $\frac{1}{2}$ cup cooked portions), and other high fiber foods. Drink plenty of water as you add fiber to your diet.

Protein

Protein serves many important functions in the body, including helping to heal the lining of the small intestine that can be damaged from untreated CD.

Most adults get plenty of protein in their diet. An average adult's protein needs are about 0.36 grams per pound. For example, a 150# person would require about 54 grams protein each day (150# x 0.36).

What do 54 grams of protein look like?

Protein adds up more quickly than most people think!

Breakfast = 1 egg (6 grams) and $\frac{1}{2}$ cup Greek yogurt (8 grams)

Lunch = 1/2 cup of tuna (13 grams)

Snack = 23 almonds (6 grams)

Dinner = 3 oz of chicken (21 grams)

- Some populations have increased needs for protein, including endurance athletes, growing children and teenagers, pregnant women, people with malabsorption concerns, those on hemodialysis, or those with healing wounds. Check with your registered dietitian to help determine your individual protein needs.
- Try to eat protein with each meal and snack to help meet your nutritional needs and to make snacks more satisfying. Choose a variety of protein sources, including those from animals (i.e., fish, chicken, beef, pork, eggs, and dairy) and plant-based sources (i.e., beans, nuts and seeds, and soy).

What is a serving of lean protein?

1.5 oz grilled or baked chicken, turkey, fish, pork, or lean beef.

1 cup low-fat yogurt

1/2 cup low-fat cottage cheese

1 cup non-fat or low-fat milk, or soy milk (labeled gluten-free).

1/2 cup cooked dried beans or lentils

- Vegetarians, just like other healthy adults, get plenty of protein in their diets. Many protein sources are naturally gluten-free. Always check the labels of specialty vegetarian items such as vegetarian burgers, hot dogs, and tempeh, as these often contain sources of gluten.

Fats

- Reduce saturated fats by choosing lean cuts of beef, pork, fish, poultry, fat-free, and non-fat dairy products. Try to consume less than 10% of your daily calories from saturated fats.
- Avoid artificial trans-fats completely. These were removed from the U.S. food supply in 2018.
- Eat heart-healthy sources of fat most of the time. Omega-3 polyunsaturated fatty acids are essential for brain development and are beneficial for the prevention of coronary heart disease. They are mainly found in fish, especially salmon, tuna, and sardines. They are also found in nuts and seeds, and healthy oils such as canola, soybean, and flaxseed oils.
- Some types of fish (tilefish, swordfish, shark, and king mackerel) may contain increased levels of mercury. Women of childbearing age and children should limit their intake of these types of fish. For more on the safety of seafood, click [here](#).
- Vegetarians can get omega-3 fatty acids from good sources such as walnuts, chia seeds, flaxseeds, flaxseed oil, walnut oil, and canola oil. Make sure nuts and seeds are labeled gluten-free.

- While the vast majority of sources of omega-3 fatty acids are gluten-free, check the labels of marinated or commercially treated and preserved fish or shellfish. Avoid breaded or battered fish unless specifically labeled gluten-free and prepared in a dedicated gluten-free fryer.
- If you don't want to eat fish or are having difficulty getting omega-3 fatty acids in your diet, ask your registered dietitian about what omega-3 fatty acid supplement may be appropriate for you.

Water/Fluid Intake

- Staying healthy also requires staying hydrated, so make sure you drink enough water. A general recommendation is 6-8 (8 oz) glasses of water or other beverage that is low in sugar, such as tea, coffee, milk, or lactose-free beverage such as gluten-free rice, soy or almond milk (labeled gluten-free).
- Water needs vary for each person and are based on many factors, including the weather, activity levels, medical conditions, fiber intake, and certain medications or supplements. Check with your doctor or registered dietitian to determine the right amount of water/fluid intake for you.

Important Nutrients on the GFD

A healthy, balanced diet provides all of the nutrients needed for a healthy body. However, those with CD should pay special attention to specific nutrients that may be lacking, or to help correct deficiencies that may be occurring. The biggest nutrients of concern are fiber (discussed above), iron, calcium, Vitamin D, and B-vitamins.

Iron

- Iron is needed to produce red blood cells, to protect against damage to our cells and for many other functions in the body. It is important to get enough, but not excessive amounts, of iron in the diet.
- How much iron do you need?
The recommended intake of iron for adult males and women over the age of 50 is 8 mg/day.
The recommended intake of iron for women ages 19-50 is 18 mg/day.
- There are two kinds of dietary iron.
- Heme-iron is found in animal products - red meat, fish, and chicken. It is the most readily absorbed version of iron.

- Non-heme iron is found in some vegetables and fruit, dried beans, and gluten-free whole grains. These sources are less well absorbed than heme iron.
- To increase your absorption of non-heme iron, pair foods high in Vitamin C, such as citrus fruit (oranges, lemons), strawberries, and bell peppers with iron-rich foods in the same meal.

Pumping up the Iron in your GFD

- Beef, pork, lamb (choose lean red meats)
- Turkey, chicken, egg yolks
- Green leafy vegetables such as spinach, asparagus, broccoli, collard greens, mustard greens, and turnip greens, parsley, and cabbage.
- Fortified foods including rice, corn grits, labeled gluten-free oatmeal, and fortified, labeled gluten-free cereals.
- Salmon, shrimp, tuna, oysters, clams, and most other kinds of seafood.
- Most legumes including lima, kidney, navy, pinto, and soybeans, chickpeas, lentils and black-eyed peas.*
- Grains such as labeled gluten-free teff, amaranth, and quinoa
- Nuts and seeds, such as plain almonds, cashews, walnuts, sunflower seeds, sesame seeds or tahini, and pumpkin seeds. Look for nuts and seeds labeled gluten-free.
- Dried fruits such as apricots, raisins, dates (not rolled in flour), prunes, and figs.

* Legumes (such as dried beans, peas, and lentils) are naturally gluten-free but can be easily contaminated with wheat, rye or barley. Choose legumes labeled gluten-free when possible; rinse canned legumes under running water. Pour dry legumes onto a cookie sheet, sort through them, and then rinse well.

B-Vitamins

Adequate B-vitamins (thiamin, riboflavin, niacin, B-6, folic acid, B-12) can be obtained by eating gluten-free whole grains, enriched and/or fortified bread, pasta, baking mixes, and fortified cereals, as well as non-grain sources. As discussed previously, all grains (with the exception of plain rice) and flours should be specifically labeled gluten-free.

Thiamin (B1)

- Millet, teff, brown rice, enriched or fortified gluten-free grains and flours, lean pork, legumes (garbanzo beans, lentils, pinto beans, soybeans, and black beans), nuts, cantaloupe, honeydew, and orange juice.

Riboflavin (B2)

- Quinoa, millet, enriched or fortified grains (such as enriched yellow corn grits), meat, eggs, low-fat dairy products, legumes, nuts, green leafy vegetables (spinach, kale, collard or mustard greens, asparagus, and cabbage), mushrooms.

Niacin (B3)

- Brown rice, buckwheat groats, millet, wild rice, enriched or fortified gluten-free grains and flours, lean pork, beef, poultry, fish, legumes, seeds (i.e., sunflower, pumpkin, or sesame seeds)

Pyridoxine Hydrochloride (B6)

- Meat, fish, poultry, bananas, avocado, potato, sunflower seeds

Folate (B9)

- Amaranth, buckwheat groats, yellow enriched corn grits, legumes, fruit juices, and green leafy vegetables.

Cobalamin (B12)

- Fish, shellfish, meat, poultry, eggs, dairy products, fortified gluten-free cereals, fortified gluten-free soy milk (labeled gluten-free).

Calcium and Vitamin D

Damage to the small intestine from CD may interfere with the absorption of calcium and Vitamin D. These may lead to the weakening of bones over time and increase the risk of fractures.

- Although individual needs vary, adults with CD should consume about 1200 mg (milligrams) of calcium and 1000 IU (international units) or 25 mcg of Vitamin D each day from diet and supplements combined. The primary sources of calcium in the diet are dairy products such as milk, yogurt, cheese, and cottage cheese.
- A basic rule of thumb is to consume three servings of low-fat or non-fat gluten-free dairy foods or non-dairy alternatives each day. Three servings will provide about 900 mg of calcium. The rest will be made up of smaller amounts of calcium found in other foods. If you have difficulty consuming enough calcium, talk to your doctor or registered dietitian about possible gluten-free supplements that may be needed.

Vitamin D is most commonly found in dairy products, particularly milk. However, there are few other foods, other than fortified milk, that contain Vitamin D in significant amounts. It is often difficult for people to get their Vitamin D from food sources alone.

- A basic rule of thumb for keeping track of your Vitamin D intake is to count up your dietary sources and add in any Vitamin D found in your gluten-free multivitamin/multimineral supplement, or any other supplement that contains Vitamin D.
- If you are not able to meet your needs, talk to your doctor or registered dietitian about starting a Vitamin D supplement or a calcium supplement with Vitamin D.

- Some people with CD cannot tolerate dairy products due to lactose intolerance. There are a variety of low-lactose, lactose-free, or non-dairy sources of calcium available. See CeliacNow for chart of calcium and Vitamin D-rich food sources from dairy products and non-dairy sources.
- The updated Nutrition Facts panel now lists specific amounts of calcium and Vitamin D in foods, so it is easier to keep track.

Can't I just take a supplement?

Gluten-free multivitamin/multi-mineral supplements, as well as calcium, Vitamin D, omega-3, and other supplements, are often an important part of the nutritional therapy for someone with CD. These may be recommended by your doctor or registered dietitian based on your age, gender, lab values, current diet, and past medical history. Discuss what, if any, supplements are most appropriate for you with your doctor or registered dietitian.

Limit your intake of sweets and salt

There is no end to the variety of gluten-free candies, cookies, pies, sweets, sodas, and drinks with added sugar available. Try to fill most of your diet with healthy, nutrient-dense foods and keep calorie-dense sweets to a minimum. This can help avoid unwanted weight gain.

- Keep your salt/sodium intake reasonable by flavoring home-cooking with herbs and spices which do not contain salt. Try to choose lower sodium items when dining out.
- Keep your salt intake at about 2,300 mg/day or less. If you are African American or have diabetes, high blood pressure, or chronic kidney disease, or if you are over the age of 50, try to lower your sodium intake further to 1,500 mg/day. You can find the exact amounts of sodium in foods by looking at the Nutrition Facts panel.

Take-Home Messages:

- Avoiding gluten is the most important first step toward health for someone with CD. A balanced heart-healthy GFD can improve overall health and reduce the risk for chronic disease.
- Consult with a registered dietitian skilled in CD to be sure that your new diet contains appropriate amounts of required vitamins, minerals, and nutrients, specifically iron, calcium, vitamin D, B vitamins, and fiber.
- Extra gluten-free vitamin and mineral supplements may be needed. Follow your physician or registered dietitian's advice.