

New Horizons for Whole Grains and the Gluten-Free Diet

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The National Institutes of Health (NIH) state that 1:100 or 3 million Americans have celiac disease, an autoimmune disorder where gluten inhibits the absorption of nutrients from food. The only treatment is a strict lifelong, gluten-free diet. People who are allergic or intolerant to gluten must also avoid it. Gluten is the general name for specific proteins found in the grains wheat, spelt, kamut, rye, triticale, and barley.



What are Whole Grains?

Gluten-free grains (also called cereals) are the seeds of plants and include brown rice, corn, flax, Montana™ (Indiana ricegrass), millet, oats (pure, uncontaminated), sorghum, teff, and wild rice—as well as the pseudo-grains of amaranth, buckwheat, and quinoa. A grain is “whole” when it is consumed in a form that includes the bran (outer layer and primary source of fiber), germ (the part that sprouts into a new plant), and endosperm (the bulk of the seed).

The Scoop on Oats

Until recently, oats were not allowed in the gluten-free diet because the protein in oats was thought to trigger the same toxic reaction as wheat and other gluten-containing grains. New research in Europe and the US over the past 14 years has revealed that consumption of moderate amounts of oats is safe for the majority of children and adults with celiac disease. Most of these studies used pure, uncontaminated oats, but it should be noted that a very small number of persons with celiac disease may not even tolerate pure oats. The mechanism causing this intolerance has yet to be established.

Based on this new research, a growing number of celiac organizations and health professionals around the world now allow consumption of moderate amounts of pure, uncontaminated oat products in diet. An extensive technical review on the safety of oats was recently published on Health Canada’s website. http://www.hc-sc.gc.ca/fn-an/securit/allerg/cel-coe/oats_cd-avoine_e.html

Unfortunately, the majority of commercial oats products on the market are cross-contaminated with wheat, barley, or rye which occurs during harvesting, transporting, storing, milling, processing, and packaging. The good news is that there are companies in the US, Canada, and Europe who produce pure, uncontaminated specialty oat products. The North American companies are Bob’s Red Mill, Cream Hill Estates, FarmPure Foods (Only Oats™), Gifts of Nature, and Gluten-Free Oats.

Health Benefits of Whole Grains in a Gluten-Free Diet

People who regularly eat whole grains have a lower risk of obesity, lower cholesterol levels, and a reduced risk of heart disease, stroke, type 2 diabetes, and cancer. The USDA and the Whole Grains Council recommend 3 to 5 servings of whole grains per day. Look for the yellow Whole Grains Stamp (<http://wholegrainscouncil.org/WholeGrainStamp.html>). Eating three whole grain food products labeled “100% Whole Grain”—or six products bearing ANY Whole Grain Stamp—satisfies the need for 3 to 5 servings per day.

Culinary Benefits and Ways to Add Whole Grains to a Gluten-Free Diet

Whole grains add chewy texture, intriguing flavor, visual appeal, and greater variety to gluten-free meals. They can be an extra ingredient... or a replacement...or stand alone, as shown below:

- Add cooked buckwheat, oat groats, steel-cut oats, quinoa, sorghum, or wild rice to rice pilaf
- Enrich soups with cooked brown rice, buckwheat, oat groats, quinoa, sorghum, or wild rice
- Boost nutritional content of brownies, cakes, and cookies with 1/4 cup cooked amaranth or teff
- Sprinkle cooked whole grains over mixed green salads
- Toss cooked whole grains with gluten-free pasta
- Cook whole grains in a slow-cooker overnight for a hearty breakfast (see page 5)
- Dress cold cooked whole grains with pesto or a zesty salad dressing for tabbouleh (see page 4)
- Blend cooked oat groats or brown rice with black beans or pinto beans in Southwestern dishes
- Extend hamburger patties or meat loaf with gluten-free rolled oats or cooked brown rice, quinoa, amaranth, or teff
- Replace 1/4 of the cornmeal with teff grains for a cornmeal-teff polenta
- Add cooked amaranth, quinoa, or teff to puddings for interesting texture
- Cook hot cereal for breakfast from *Altiplano Gold* quinoa cereals, *Ancient Harvest* quinoa flakes, *Bob's Red Mill* Mighty Tasty GF Hot Cereal, or *The Birkett Mills'* buckwheat flakes
- Use quinoa flakes or gluten-free cold cereals and granolas to top fruit crisps
- Choose pasta that is made with added rice bran (e.g., *Tinkyada*) or with quinoa (e.g. Ancient Harvest, NorQuin)
- Choose baking flours such as amaranth, brown rice, buckwheat, *Montina*[™], quinoa, sorghum, teff, or wild rice because they are ground from the whole grain
- Sprinkle ground flax or flax meal on yogurt or hot cereal
- Add cream of buckwheat cereal, ground flax or flax meal , or rice bran to homemade breads
- Enjoy popcorn as a nutritious snack
- Choose whole grain crackers such as *Mary's Gone Crackers*

Nutrient Composition of Gluten-Free Whole Grains Compared to Whole Grain Wheat

Raw Grain (1 cup)	Thiamin mg	Riboflavin mg	Niacin mg	Folate mcg	Calcium mg	Iron mg	Magnesium mg	Zinc mg	Protein g	Fiber g
Amaranth	0.16	0.41	2.5	96	298	14.8	519	6.2	28.2	18.1
Brown Rice	0.74	0.17	9.4	37	43	2.7	265	3.7	14.7	6.5
Buckwheat Groats	0.37	0.44	8.4	69	28	4.1	362	4.0	19.2	16.9
Corn Grits (yellow, enriched)	0.99	0.59	7.7	320	3	6.1	42	0.6	13.7	2.5
Millet	0.84	0.58	9.4	170	16	6.0	228	3.4	22.0	17.0
Oat Groats*	1.19	0.22	1.5	87	84	7.4	276	6.2	26.4	16.5
Quinoa	0.34	0.67	5.0	83	102	15.7	357	5.6	22.3	10.0
Sorghum	0.46	0.27	5.6	38	54	8.5	365	3.0	21.7	12.1
Teff	0.70	0.20	2.7	135	331	12.1	342	8.8	21.8	11.2
Wild Rice	0.18	0.42	10.8	152	34	3.1	283	9.5	23.6	9.9
Bulgur (quick cooking whole wheat)	0.32	0.16	7.16	38	49	3.4	230	2.7	17.2	25.6

* choose pure, uncontaminated oat groats

Nutrient composition data from:

1. **Gluten-Free Diet: A Comprehensive Resource Guide** –Revised and Expanded Edition, 2008 by Shelley Case, RD. www.glutenfreediet.ca (Amaranth, brown rice, buckwheat, millet, quinoa, sorghum, teff and wild rice)

2. **USDA National Nutrient Database for Standard Reference** at www.nal.usda.gov/fnic/foodcomp/search/ (Corn grits, oat groats, and bulgur)

How to Cook Whole Grains

From *1000 Gluten-Free Recipes* by Carol Fenster, PhD (Wiley, 2008)

(Cooking times may vary by altitude and manufacturer. Season to taste with salt, pepper, or your favorite herbs and spices.)

Grain (1 cup)	Boiling Water or Broth	Approximate Cooking Time
Amaranth ¹	2 cups	20-25 minutes
Brown rice	2 1/2 cups	50-55 minutes
Buckwheat ²	2 cups	15-20 minutes
Oat Groats ³	2 cups	40-45 minutes
Millet Grits/Meal ⁴	3 cups	10-15 minutes
Polenta (Corn) Grits	4 cups	10 minutes
Quinoa ⁵	2 cups	15-20 minutes
Sorghum ⁶ (soak overnight)	2 cups	45-60 minutes
Steel-Cut Oats ⁷	4 cups	10-15 minutes (rinse with hot water)
Teff ⁸	3 cups	10-15 minutes
Wild Rice	4 cups	40 minutes

These whole grains are available at health food stores or online from various specialty companies such as:

1. www.nuworldamaranth.com
2. www.bobsredmill.com, www.thebirkettmills.com
3. www.bobsredmill.com, www.creamhillestates.com, www.onlyoats.com
4. www.bobsredmill.com
5. www.bobsredmill.com, www.quinoa.com, www.quinoa.net
6. www.twinvalleymills.com
7. www.bobsredmill.com, www.creamhillestates.com, www.onlyoats.com
8. www.bobsredmill.com, www.teffco.com

Quinoa Tabbouleh

(Adapted from *1000 Gluten-Free Recipes* by Carol Fenster, PhD, Wiley, 2008)

Most of the quinoa we buy today has already been rinsed to rid it of the bitter saponin coating, particularly if it is from www.quinoa.com, www.quinoa.net or imported through Inca Organics. If you're not sure about the source, rinse it in a sieve until the water runs clear. Saponin, a natural coating that wards off birds and insects, won't hurt humans but the quinoa tastes better without it.

To cook quinoa

1 teaspoon canola oil
1 cup uncooked quinoa, rinsed twice
1/2 teaspoon table salt
1 can (14.5 ounces) or 1 3/4 cups gluten-free, low-sodium chicken broth, **Swanson's Natural Goodness**
3/4 cup water

Tabbouleh

1/4 cup shelled raw pumpkin seeds
1 English (hothouse) cucumber, unpeeled and finely diced
3 green onions, thinly sliced
1 small red bell pepper, cored, seeded, and finely diced
1 small yellow bell pepper, cored, seeded, and finely diced
1/2 cup chopped fresh parsley
1/2 cup chopped fresh cilantro
1/4 cup chopped fresh mint
1/4 cup crumbled feta cheese (optional)

Dressing and Garnish

3 tablespoons fresh lemon juice
2 tablespoons extra-virgin olive oil
1 tablespoon white wine vinegar or rice vinegar
1/4 teaspoon table salt
1/8 teaspoon white pepper
Fresh mint or parsley sprigs for garnish

1. Heat the oil in a medium saucepan over medium heat and toast the quinoa about 4 minutes, shaking the skillet occasionally, until the seeds are light golden brown.
2. Add the chicken broth and water, reduce the heat to low, and cook 15 to 20 minutes, covered, or until the quinoa is tender. Remove from heat and cool 10 minutes. Drain the quinoa well.
3. Combine the cooked quinoa and remaining tabbouleh ingredients except feta cheese in a large serving bowl.
4. Combine the dressing ingredients (except fresh mint or parsley) in screw-top jar and shake vigorously to blend. Pour over quinoa mixture and toss until all the ingredients are thoroughly coated. Cover the bowl and refrigerate 4 hours. Let stand at room temperature 20 minutes before serving. Toss with the feta cheese just before serving. Garnish with fresh mint or parsley. Serves 6.

Shelley Case's High-Fiber Hot Cereal

(From *Gluten-Free Diet: A Comprehensive Resource Guide*

by Shelley Case, RD, Case Nutrition Consulting Inc., Revised and Expanded Edition, 2008)

This quick, heart-healthy breakfast is packed with fiber and omega-3 fatty acids. Add a spoonful of brown sugar, chopped nuts and/or dried apricots or raisins for more flavor and extra nutrients

3 tablespoons flax seed meal (ground flax)*
3 tablespoons Cream of Brown Rice Hot Cereal
1 1/3 cups water
Dash of vanilla

1. Combine the first 3 ingredients in a medium-to-large glass bowl.
2. Cook on high in a microwave for 3 to 4 minutes, or until thick and creamy. Stir in vanilla. Serve with brown sugar, nuts and/or dried fruits

* As flax is very high in fiber, it is important to gradually introduce it in small portions until tolerated. Start with 5 tablespoons hot cereal and 1 to 3 teaspoons of ground flax initially and then gradually work up to 3 tbsp. flax and 3 tbsp. hot cereal.

Variations:

Substitute Creamy Buckwheat Hot Cereal or Bob's Red Mill Mighty Tasty Gluten-Free Hot Cereal™ for the Brown Rice Hot Cereal.

Nutritional Analysis: 1 serving = 1 cup

Brown Rice Hot Cereal		Creamy Buckwheat Hot Cereal	Bob's Red Mill Mighty Tasty Hot Cereal
Calories (kcal)	225	217	225
Carbohydrates (g)	30	29	29
Dietary Fiber (g)	7	8	9
Fat (g)	10	10	10
Protein (g)	6	8	7
Iron (mg)	1.2	1.2	1.2
Calcium (mg)	60	60	60
Sodium (mg)	16	13	16

Slow Cooker Whole Grain Porridge

(from *Gluten-Free Quick & Easy* by Carol Fenster, PhD, (Avery, 2007)

Cooked whole grains are an excellent way to start the day, but if you don't have time in the morning to cook whole grains on the stovetop, use your slow cooker to make porridge overnight. Coat the liner with cooking spray, use a ratio of 1 cup grain to 3 1/2 to 4 cups water or broth, and cook on Low overnight for 8 to 12 hours. Serve with dried fruit, nuts, and honey, cinnamon, maple syrup, and agave nectar or your favorite sweetener.

Providers of Gluten-Free Whole Grains

www.altiplanogold.com
www.amazinggrains.com
www.arrowheadmills.com
www.bobsredmill.com
www.thebirkettmills.com
www.creamhillestates.com
www.giftsofnature.net
www.glutenfree.com
www.glutenfreemail.com
www.glutenfreeoats.com
www.glutensolutions.com
www.lundberg.com
www.onlyoats.com
www.quinoa.com
www.quinoa.net
www.nuworldamaranth.com
www.teffco.com
www.twinvalleymills.com

For More Information about Using Whole Grains in the Gluten-Free Diet

1000 Gluten-Free Recipes by Carol Fenster, PhD (Wiley 2008)
Gluten-Free Quick & Easy by Carol Fenster, PhD (Avery, 2007)
The Wheat-Free Cook by Jacqueline Mallorca (William Morrow, 2007)
Complete Gluten-Free Cookbook by Donna Washburn and Heather Butt (Robert Rose, 2007)
Gluten-Free Diet: A Comprehensive Resource Guide by Shelley Case, RD (Case Nutrition Consulting Inc., Revised and Expanded Edition, 2008)
Gluten-Free 101 by Carol Fenster, PhD (Savory Palate, 2006)
Cooking Free by Carol Fenster, PhD (Avery, Penguin Group, 2005)
Best Gluten-Free Family Cookbook by Donna Washburn and Heather Butt (Robert Rose, 2005)
Wheat-Free Recipes & Menus by Carol Fenster, PhD (Avery, Penguin Group, 2004)
Food Allergy Survival Guide by Vesanto Melina, MS, RD, Jo Stepaniak, MEd, Dina Aronson, MS, RD (Healthy Living Publications, 2004)
Gluten-Free Friends by Nancy Patin Falini, RD (Savory Palate, 2003) -for kids

For More Information on Whole Grains

www.wholegrainscouncil.org
www.mypyramid.gov
www.healthierus.gov/dietaryguidelines