

Nutrition Guideline: Gluten-free Diet

For Professional Reference Only

Applicable to: Nurses, Physicians, and Other Health Professionals

Recommendations

A strict gluten-free diet is important for individuals who have been diagnosed with celiac disease. Healthy eating on a gluten-free diet can be achieved by:

- Avoiding wheat, rye, barley, triticale, commercially prepared oats and all derivatives and hybrids of gluten-containing grains.
- Choosing a variety of gluten-free foods from Canada's Food Guide.
- Choosing a variety of gluten-free whole grains.
- Consuming no more than moderate amounts of pure and uncontaminated dry oats as follows:
 - adults ½ cup - ¾ cup dry oats per day (125-175 mL)
 - children ¼ cup dry oats per day (60 mL)
- Eating 3 regular meals and snacks throughout the day.
- Consuming the recommended amounts of fibre each day in the form of high-fibre, gluten-free whole grains, vegetables and fruits, dried beans, lentils, nuts and seeds.
- All individuals with celiac disease should have a consultation with a Registered Dietitian.

Health Benefits

Following a gluten-free diet for individuals with celiac disease:

- Promotes optimal growth and development in children and adolescents and prevents long-term health complications.
- Prevents nutrient malabsorption, including: calcium, iron, B-vitamins, Vitamin D and folic acid.¹ Minimizes gastrointestinal manifestations, such as diarrhea with failure to thrive, abdominal pain, vomiting, constipation and abdominal distention.²
- Minimizes non-gastrointestinal manifestations such as dental enamel hypoplasia, short stature, osteopenia/osteoporosis, delayed puberty, iron deficiency anemia, infertility, neurological disorders, intestinal lymphomas^{3,4,5} and other autoimmune diseases.

Key Questions

What is celiac disease?

Celiac disease is an autoimmune disease characterized by gluten-sensitive enteropathy.⁴ Anti-tissue transglutaminase (anti-TTG) is the main serologic test used to screen for celiac disease.^{2,6} An anti-TTG should be done in conjunction with an IgA level as individuals with IgA deficiency may have a falsely normal anti-TTG. For those individuals with an elevated serum anti-TTG, a referral to a gastroenterologist for an intestinal biopsy is warranted. The client must remain on a gluten-containing diet for the TTG and biopsy to be accurate. Small intestinal biopsy is the only definitive test for diagnosis of celiac disease.⁷

Celiac disease is prevalent in 1% of the North American population and occurs in genetically predisposed individuals.⁸

Individuals with celiac disease are intolerant to gluten, a storage protein found in wheat, rye, barley and hybrids, such as triticale.

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Common symptoms may include frequent, strong smelling stools that are pale and foamy (but may also include diarrhea and/or constipation), irritability, abdominal pain, gas and bloating, easy fatigue, pallor, weight loss, vomiting, and anemia.⁹

What is Dermatitis Herpetiformis?

Dermatitis herpetiformis (DH) is a chronic skin condition with a characteristic pattern of bilateral lesions, with intense itching and burning sensations.^{10,11} Management of DH is by following a gluten-free diet and possibly medication.

When should an individual initiate a gluten-free diet and for how long?

An individual should start a gluten-free diet only after an intestinal biopsy has confirmed a diagnosis of celiac disease.² In individuals who are suspected to have celiac disease, starting the gluten-free diet before an intestinal biopsy may produce false-negative results. Considering the long-term complications associated with untreated celiac disease, the extra costs and the difficult nature of the gluten-free diet, diagnosis should be definitive. Individuals diagnosed with celiac disease, must consume a strict gluten-free diet for life to manage their condition.⁷

Individuals also need to avoid gluten traces as gluten-traces may still result in damage to the small intestinal mucosa.¹²

Which grains and seeds are gluten-free?

The following grains, seeds, and legumes are gluten-free:¹³

Nut flours, such as almond and hazelnut flour can also be used.

- amaranth,
- amaranth flour
- arrowroot flour
- buckwheat
- buckwheat flour
- corn flour
- masa harina
- corn meal
- corn starch
- flax
- green pea flour
- legumes (black beans, chickpeas, garbanzo, green pea, peanuts, peas, soya)
- legume flours (black bean, chick pea, garbanzo, green pea, fava)
- millet
- millet flour
- mustard flour
- potato flour
- potato starch
- quinoa
- quinoa flour
- rice
- rice bran,
- rice flour
- rice starch
- sorghum
- soya flour
- tapioca flour
- teff
- teff flour
- tofu
- wild rice

Can oats be safely consumed on a gluten-free diet?

Oats do not contain gluten. However, most commercially available oats are contaminated with gluten and must be avoided by individuals with celiac disease.⁵ Extensive investigations have determined pure and uncontaminated oats may be safely consumed in moderate amounts by individuals with celiac disease.¹⁴ The manufacturer or the Canadian Celiac association can be contacted for more information about oat products. The introduction of oats may increase an individual's intake of iron, fibre, thiamine and zinc, and should be encouraged.¹⁵

The Professional Advisory Board of the Canadian Celiac Association, in conjunction with Health Canada, has determined pure and uncontaminated oats may be consumed by individuals with celiac disease in the following amounts:

- Adults: ½ to ¾ cup (125-175 mL) per day of dry rolled oats.
- Children: ¼ cup (60 mL) per day of dry rolled oats.

Although some individuals may experience an increase in gastrointestinal symptoms with the introduction of pure and uncontaminated oats, the symptoms may reflect an increase in fibre versus true intolerance. However, there is small percentage of individuals with celiac disease who may have sensitivity to oats unrelated to celiac disease.⁵

Which ingredients must be avoided on a gluten-free diet?

Foods labeled gluten-free or have the gluten-free symbol are safe choices. By law, all gluten containing ingredients must be listed on the food label. If the food is not labeled "gluten-free", it is important to always read the ingredient list and the "contains" or "may contain" statements on the food label. As food manufacturers continually change the ingredients of their products, it is important to read food labels every time.

Ingredients to avoid include: ¹³

- | | | |
|---|----------------|------------------|
| • atta | • durum | • matzoh (matzo) |
| • barley | • einkorn | • rye |
| • bulgur, | • emmer | • semolina |
| • commercial oat products including
oat gum and oat hull fibre | • farina | • spelt |
| • couscous | • farro (faro) | • tabouli |
| • dinkel | • graham flour | • triticale |
| | • kamut | • wheat |

"Wheat-free" products are not considered gluten-free, as these products may contain rye or barley.

Which other items must be checked on a gluten-free diet?

All prescriptions, over-the-counter medications including cough and cold medications and vitamin and mineral supplements should be checked to make sure they are gluten-free.

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What about cross-contamination?

It is important to make sure that all foods remain gluten-free, during preparation both at home and when eating out.

The risk of cross-contamination can be decreased by:¹⁶

- Storing all gluten-free foods separately from gluten-containing foods.
- Cooking gluten-free foods separately from gluten-containing foods.
- Using clean utensils for gluten-free food preparation.
- Using a separate toaster, as a shared toaster will be contaminated from gluten-containing bread.
- Using separate spread containers. Squeezable containers of condiments may decrease contamination.
- Avoiding wooden cutting boards and spoons previously used for gluten-containing foods, as they will have absorbed gluten when wet.
- Using a separate pasta strainer.

Cross-contamination may also occur when eating away from home. It is best to avoid buffets, pot-lucks and bulk bins as gluten-free foods can easily be contaminated by gluten-containing foods.

Foods processed in manufacturing plants that have gluten should also be avoided as there may be a risk of cross-contamination.¹⁶ The manufacturer or the Canadian Celiac association can be contacted for more information about specific products.

Do individuals with celiac disease have lactose intolerance?

Most newly diagnosed children and adults in the early stages of their disease can tolerate lactose, so routine restriction of lactose it is not necessary.² Some individuals, who have a severe villous atrophy, may experience temporary lactose intolerance. A low-lactose diet will be needed until the villi of the small intestine return to normal.

Is a gluten-free diet nutritionally complete?

Some gluten-free products such as breads, pastas and cold cereals are not enriched or fortified with B vitamins (niacin, thiamine, riboflavin, folic acid) and iron.¹⁷ As a result, the gluten-free diet may be low in these nutrients.¹⁸ Individuals with celiac disease should be encouraged to consume enriched gluten-free grain products as much as possible. Non-grain sources of folate and iron such as green vegetables and leafy vegetables, meats, beans, edamame beans, legumes and lentils should be encouraged. As per Canada's Food Guide, gluten-free whole grains should be recommended.

Serum iron and folate should be monitored in certain at-risk populations, such as pregnant woman, children and adolescents.

Refer to Guidelines: Iron; Vitamins and Minerals

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How should celiac disease and a gluten-free diet be managed in the long-term?

The National Institutes of Health (NIH) consensus panel stresses that consultation with a dietitian is essential for all clients with celiac disease. The dietitian should be the primary source of nutrition information.¹⁹ An individualized, team-based approach is best. The approach should include the person with celiac disease and his or her family, their physician, a dietitian, and a celiac support group.²⁰ Celiac disease and a gluten-free diet should be managed in the long-term by gastroenterologists and dietitians.

Where can gluten-free products be purchased?

Gluten-free products are available in most grocery stores and specialty stores. There are also many companies that provide on-line ordering. Gluten-free products are generally more expensive in comparison to gluten-containing foods. It may be helpful to compare prices.

For a more comprehensive listing of all the stores carrying gluten-free products and for more information on the gluten-free diet, cookbooks and local restaurant guides, check the Canadian Celiac Association website at www.celiac.ca. There are local chapters which have information on local stores and events.

Individuals diagnosed with celiac disease can ask for a physician's letter confirming their diagnosis and can make a medical income tax claim for the cost difference between a gluten containing product and a gluten-free product.

For more information, visit:

<http://www.cra-arc.gc.ca/tx/ndvds/tpcs/ncm-tx/rtrn/cmpltng/ddctns/lns300-350/330/clc-eng.html>

Are there any handouts on gluten-free diet or celiac disease I can use with my clients?

Refer to approved provincial Alberta Health Services nutrition handouts to support patient education. For more information, contact Nutrition.Resources@albertahealthservices.ca

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