

What is Celiac Disease?



Healthy family making gluten free cookies.

Celiac disease (CD) is one of the most common autoimmune diseases in which the absorptive surface of the small intestine is damaged by a protein called gluten. Gluten is found in wheat, rye, barley and their cross bred grains. In people with CD, gluten causes an immune response that damages the lining of the small intestine. This can cause a wide variety of symptoms and if left untreated more serious complications can occur (see below).

Dermatitis herpetiformis (DH) is celiac disease of the skin, and is characterized by blistering, intensely itchy skin. The rash has a symmetrical distribution and is most frequently found on elbows, knees, buttocks, back of the neck, scalp and upper back. People with dermatitis herpetiformis can have gastrointestinal damage without obvious symptoms.

Prevalence



CD affects approximately 1% of Canadians.

CD is one of the most common autoimmune disorders affecting approximately 1% (reported range of 0.7-2.9%) of the general population and spanning across all ages. In Canada, CD is common and has been reported as high as 2.4% (Freeman HJ et al, 2013). Further studies are needed to explain the rising incidence of CD worldwide, which is currently attributed to improved awareness and screening of celiac, lack of overt symptoms, higher consumption rates of gluten and unknown environmental triggers (King JA et al, 2023; Gattis S et al, 2024).

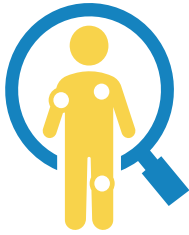
Genetics

CD is an inherited condition.



CD is an inherited condition and symptoms may develop at any age. First-degree relatives (parents, children and siblings) of individuals with CD are at the highest risk of having unrecognized CD (~5-15%). It is recommended that all first-degree relatives of individuals with CD get screened regularly.

Symptoms



CD can be difficult to recognize.

Symptoms of untreated CD can vary greatly from person to person. People with CD may experience digestive symptoms such as abdominal pain, bloating, constipation, diarrhea, etc. but many experience symptoms that are not related to the digestive symptoms such as anemia, low bone density, mouth ulcers, brain fog, fatigue, migraines, joint pain. Others are asymptomatic and don't experience any symptoms at all.

CD can be difficult to recognize since symptoms are often vague and nonspecific. Similarities between symptoms of CD and other conditions often lead to a misdiagnosis of irritable bowel syndrome, lactose intolerance, chronic fatigue syndrome or diverticulosis.

The following symptoms may occur individually or in combination in children or adults:

- Indigestion and nausea
- Swelling of ankles and hands
- Abdominal bloating, pain, cramping or gas
- Recurring/persistent diarrhea
- Headache, fatigue, anxiety, depression, & brain fog
- Constipation
- Lactose intolerance
- Weight loss
- Anemia – iron, folate or b12 deficiency
- Deficiency of vitamins a, d, e, and k
- Extreme weakness and fatigue
- Mouth ulcers/canker sores
- Migraine
- Depression
- Bone/joint pain
- Menstrual irregularities
- Infertility/miscarriages

Additional symptoms in children:

- Delayed growth
- Delayed puberty
- Irritability and behavioural changes
- Dental enamel abnormalities
- Vomiting
- Frequent mouth ulcers



Healthy family with no symptoms.

Associated Conditions



CD can be associated with other conditions.

CD often occurs with other diseases. If you have any of the following conditions, consider having your blood tested for CD.

- Family history of CD
- Type 1 diabetes
- Thyroid disease
- Arthritis
- Pancreatitis
- Autoimmune hepatitis
- Lymphoma
- Infertility
- Osteoporosis
- Down Syndrome
- Turner Syndrome
- Unexplained liver enzyme elevations



Family with associated conditions taking blood tests.

Diagnosis



CD diagnosis requires testing.

There are blood tests available to screen for CD in people with mild or atypical symptoms and those in high-risk groups. Such tests may suggest that a person has CD, but they do not replace the need for an intestinal biopsy.

Small intestinal biopsies are the ONLY definitive means of diagnosing CD. A gluten-free diet should not be started before the blood tests and biopsies are done, since it can interfere with making an accurate diagnosis.





Family discussing CD treatments.

Treatment



The only current treatment for CD is a strict gluten-free diet for life. This will enable recovery of the gut and may reduce the risk of developing other associated diseases and complications.

Patients should be referred to a registered dietitian with expertise in CD for a nutrition assessment, education and follow-up. Regular follow-up with your physician is also recommended.

Anyone with CD is encouraged to join their local Celiac Canada chapter for valuable, practical information and ongoing support. For more information on CD, contact the Celiac Canada or visit our **website: www.celiac.ca**

References:

1. Freeman HJ. Detection of adult celiac disease with duodenal screening biopsies over a 30-year period. *Can J Gastroenterol* 2013; 27:405-408.
2. King JA, Bakal JA, Li B, et al. Variation in testing for and incidence of celiac autoimmunity in Canada: A population-based study. *Gastroenterology*. 2023; 164:567-578.e7.
3. King JA, Jeong J, Underwood FE, et al. Incidence of celiac disease is increasing over time: A systematic review and meta-analysis. *Am J Gastroenterol*. 2020; 115:507-525.
4. Gatti S, Rubio-Tapia A, Makharia G, et al. Patient and community health global burden in a world with more celiac disease. *Gastroenterology*. 2024.



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