In which patients should I worry about celiac disease?
Patients with celiac disease may have classical or atypical presentations:

Classical	*Atypical*
• Toddlers	• School age, adolescents, occasionally infants
• Failure to thrive	• Normal weight or even overweight
• Diarrhea	• Diarrhea
• Abdominal distention	• Constipation
• Abdominal pain	• Chronic nausea, vomiting

Other patients may present only with the signs and symptoms of the complications of celiac disease:
- Dermatitis herpetiformis (a chronic, itchy rash on extensor surfaces)
- Iron-deficiency anemia
- Osteomalacia, rickets
- Elevated transaminases
- Dental enamel hypoplasia (of permanent teeth)
- Short stature
- Pubertal delay, delayed menarche

Which patients should I screen for celiac disease?
Any patient with a family history of celiac disease has an increased risk of having celiac disease in his or her lifetime. In addition, there are a number of medical conditions where patients have an increased risk of having celiac disease:
- Type 1 diabetes mellitus
- Down syndrome
- Turner syndrome
- Williams syndrome
- Serum IgA deficiency
- Autoimmune diseases (thyroiditis, Sjögren's)
- IgA nephropathy

What are the best screening tests?
Anti-tissue transglutaminase (ttG) and anti-endomysial antibodies (EMA) are highly sensitive and specific for celiac disease. However, ttG is not as reliable in children less than 2 years old. As celiac disease is associated with serum IgA deficiency, it is important to either obtain a concomitant serum IgA level or perform ttG-IgG and EMA-IgG, in order to avoid false negative results.

For an urgent consultation, call the Physician Direct Connect Line at (614) 355-0221 or (877) 355-0221. To make a referral, call (614) 722-6200 or (877) 722-6220, fax (614) 722-4000, or visit **NationwideChildrens.org/GI.**

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Gastroenterology, Hepatology and Nutrition

Celiac Disease in the Pediatric Patient

NATIONWIDE CHILDREN'S

When your child needs a hospital, everything matters.℠

What is celiac disease?
Celiac disease, a chronic condition mainly affecting the small intestine, is a permanent sensitivity to gluten. In affected individuals, eating food containing gluten leads to damage to the villi lining the small intestine.

Both the anti-tissue transglutaminase antibody (ttG) and the anti-endomysial antibody (EMA) tests are highly accurate and reliable but are insufficient to make a diagnosis. Celiac disease must be confirmed by finding certain changes to the villi that line the small intestine by performing an upper endoscopy with biopsy.

Treatment
Treatment of celiac disease consists of life-long avoidance of gluten-containing foods. Once gluten is removed from the diet, complete healing is expected. Although a total gluten-free diet seems overwhelming at first, families have been very successful with the diet. Dietitians and support groups help families adjust to this life-altering diet.

Evaluating Pediatric Celiac Disease
Celiac disease is an immune-mediated enteropathy triggered by the ingestion of gluten-containing grains (wheat, rye, barley) in genetically susceptible individuals. Patients may present with classical or atypical symptoms. In the case of asymptomatic patients undergoing screening, patients may have silent (screening and biopsy positive) or latent (screening positive, biopsy negative) disease. Strict adherence to a gluten-free diet is the only current therapy for celiac disease.

What to Expect at the Initial Gastroenterology Consultation
At the initial visit, we will perform a detailed history, physical examination, and review of the available laboratory and radiology studies. Celiac antibody testing may be repeated. If, in the opinion of the consulting gastroenterologist, the history, physical examination and/or prior studies are suspicious for celiac disease, a confirmatory upper endoscopy with biopsy likely will be scheduled.

Ongoing Care
Patients found to have celiac disease will have routine follow-up visits with their gastroenterologist, in order to assess compliance with the gluten-free diet, as well as monitor for complications stemming from non-adherence to the diet. Upon initial diagnosis, patients will be referred to a dietitian for intensive education on a gluten-free diet and lifestyle. Following this initial visit, patients are given the opportunity to participate in celiac disease support groups and a yearly celiac conference.

Leading Expertise in Gastroenterology
The Division of Gastroenterology, Hepatology and Nutrition at Nationwide Children's Hospital ranks among the best pediatric gastroenterology programs nationwide, providing comprehensive patient care for a broad range of gastrointestinal, liver and nutritional problems.

Diagnostic Capabilities
- Specialized colonoscopies and endoscopies for pediatric patients
- Double-balloon enteroscopy
- State-of-the-art imaging, including fluoroscopy, CT and MRI
- Interventional radiology services
- Non-invasive capsule endoscopy or "pill cam"