Celiac disease affects 1 out of every 100 Americans, including kids!

- Inability to concentrate
- Learning disabilities
- Mood disturbance
- Irritability
- Depression
- Anxiety
- Sensory integration issues
- Headaches
- Fatigue
- Abdominal pain or other digestive problems
What are the Symptoms of Celiac Disease?

Symptoms in children depend upon the age at which the disease occurs. Younger kids tend to have more gut issues, but older kids may present with anemia, dental enamel defects, poor performance in school, behavioral disturbances, headaches, etc. There are over 300 symptoms that have been reported, below are just a few:

- **Gastrointestinal** (classic gut symptoms occur in only 10% of celiacs)
  - diarrhea (mild to severe)
  - constipation
  - intermittent constipation/diarrhea
  - chronic abdominal pain
  - nausea or vomiting
  - gastroesophageal reflux
  - abdominal bloating and gas
  - smelly, pale grey, floating stools (fat malabsorption)

*As children age, the less gut symptoms predominate (Guandalini, 2007):*
  - Under 15 months of age: 100%
  - 16-36 months of age: 80%
  - 4-7 years of age: 50%
  - Over 8 years of age: 30%

- **Appetite changes** (hungry all the time)
- **Short stature** (growth failure seen in some kids) or failure to thrive in infants
- **Weight loss, unexplained** (30% are actually overweight at the time of diagnosis)

- **Obstetric/Gynecology issues**
  - delayed menarche, menstrual irregularities, or early menopause
  - infertility in men and women (6 of every 100 women have infertility due to CD, Guandalini, 2007)
  - spontaneous abortions
  - poorer pregnancy outcome, higher risk of preterm labor
  - smaller babies and higher perinatal mortality
  - shorter duration of breast feeding

- **Neurological problems** - affects 8-10% of celiacs
  - peripheral neuropathy (numbness, tingling, pressure or pain-or lack of perception of pain in hands, feet, face, or tongue) 10% of people with no obvious cause for peripheral neuropathy have celiac disease. EMG studies may be normal.
  - ataxia (a balance disturbance) 9 to 15% of people with ataxia of unknown origin have CD
  - migraines (headaches are the most common neurological symptom in children and teens. In one study 4% of adults with migraines had CD)
  - epileptic seizures, especially in children
  - brain atrophy and dementia
  - Cognitive Problems:
    - Irritability, mood changes
    - lack of concentration or attention, memory loss
  - learning difficulties
  - anxiety
  - depression

- **Dental enamel defects**
  - white or brown spots on teeth, ridges or malformed teeth
  - defects are often bilateral and symmetrical

- **Skin issues**
  - dermatitis herpetiformis (DH): itchy, blistery rash often appearing in clusters on buttocks, elbows, feet, knees, neck, scalp, shoulders, face, neck, and sacral area of the body. 10% of celiacs have this condition. 90% of those with DH have no gut symptoms, only 75% will have a positive small bowel biopsy.
  - urticaria (eruption of wheals/hives on skin)
  - psoriasis (type of dermatitis)
  - aphthous stomatitis (canker sores in the mouth, usually last 5-10 days and return in a couple of weeks)
  - easy bruising and bleeding of the skin (due to Vit. K or Vit. C deficiency or ITP - idiopathic thrombocytopenia purpura)
  - alopecia areata (hair loss)

- **Poorly controlled blood sugars in diabetics**
  - recurrent episodes of low blood sugars
  - ping pong blood sugar levels

- **Hypoglycemia** (low blood sugar) in non-diabetics

- **Bone issues**
  - osteomalacia/osteoporosis
  - About 75% of newly diagnosed celiacs have some degree of bone loss, 35% have established osteoporosis
  - multiple bone fractures

- **Joint Pain** (3% of celiacs present with joint pain as their initial health problem)
- **Muscle cramping** (hands and legs)
- **Fatigue**
- **Iron deficiency** with or without anemia, often not responsive to oral iron supplements
  - This is the most common mode of CD detection in adults
  - This type of deficiency is uncommon in postmenopausal women and should signal a sign of either gastrointestinal bleeding or malabsorption

- **Folate deficiency anemia**
- **Vitamin B12 deficiency anemia**
Celiac Disease & Children

What is celiac disease?
- It is a genetically linked, autoimmune disease affecting both adults & children.
- Proteins from the grains wheat, rye, and barley (collectively called gluten) damage the small intestine. Nutrients from food can no longer be well absorbed leading to many complications.
- The only treatment is a life-long gluten-free diet.
- It is estimated that 1 out of every 100 people worldwide have celiac disease, but in America only 5-10% of people are diagnosed. The National Institute of Health is trying to raise awareness of this disease.

Symptoms:
- Variable, symptoms in children depend upon the age at which the disease occurs.
- Younger children tend to have more gut issues.
- Older children may present with: anemia, dental enamel defects, headaches, anxiety, inability to concentrate, learning disabilities, depression, mood & behavioral issues.

How is celiac disease diagnosed?
- The child should visit a physician who is knowledgeable about the disease.
- A celiac blood panel screening test can be done
- Diagnosis is confirmed by small bowel biopsies.
- In order for both of these tests to be accurate, the child needs to eat the gluten equivalent of 4 slices of bread a day for 3 months.

Children at high risk for celiac disease:
- Family history of autoimmune disorders, especially: thyroid disease, rheumatoid arthritis, celiac disease (4.5% incidence in 1st degree relatives), and type 1 diabetes (4-12% incidence).

For more information on celiac disease:
- Celiac Sprue Association: www.csaceliacs.org
- Children’s Digestive Health and Nutrition Foundation: www.celiachealth.org
- Raising Our Celiac Kids (ROCK): www.celiackids.com,
- twincitiesrock.org

Journals of Interest:
- “Celiac disease should be included in the list of diseases associated with ADHD-like symptomatology.
- “All patients with ADHD-like symptoms should be tested for celiac disease”.
- “Neurological dysfunction and psychiatric symptoms are common in celiac disease”.

- “It is recommended that all children with neuro-developmental disorders be assessed for nutritional deficiency and malabsorption syndromes”.

- Undiagnosed celiac children grew up to be less likely to go to college (5% vs. 23%) & less likely to have professional and managerial careers (28% vs. 45%) compared to a healthy control group.