

Celiac Disease

***Stuff you should
know, but didn't
know to ask.***



What is Celiac Disease?

- A genetic multi-system autoimmune disorder in which gluten triggers damage to the small intestine and other organs.

Wow - That's mouthful. Fear not...

Often times it's called a "wheat or gluten allergy".
Technically, it's not, but it's easy for people to understand it that way.

What is Celiac Disease?

A **genetic** multi-system autoimmune disorder in which gluten triggers damage to the small intestine and other organs.

- You get the genes from Mom and/or Dad.
- It runs in families - Parents, children, aunts, uncles, cousins.
- Having the genes only increases the risk factor of getting CD.
- The disease could be triggered at any time.
- Northern European peoples have high incidences. Finland, Norway, Ireland, Italy.
- Very recently, researchers are suspecting environment may trump genetics.

What is Celiac Disease?

A genetic **multi-system** autoimmune disorder in which gluten triggers damage to the small intestine and other organs.

- All systems of the body can be affected: Skeletal, Digestive, Muscular, Lymphatic, Endocrine, Nervous, Cardiovascular, Reproductive, Urinary.

What is Celiac Disease?

A genetic multi-system **autoimmune** disorder in which gluten triggers damage to the small intestine and other organs.

- Auto = Self. The body is attacking and damaging itself in the process of attacking the “invader”.
- CD is the most common autoimmune disease, yet 97% of those with CD go undiagnosed.
- Other autoimmune diseases: Type 1 Diabetes, Rheumatoid Arthritis, Hashimoto’s Thyroid, Lupus, Addison’s Disease.

What is Celiac Disease?

A genetic multi-system autoimmune disorder in which **gluten** triggers damage to the small intestine and other organs.

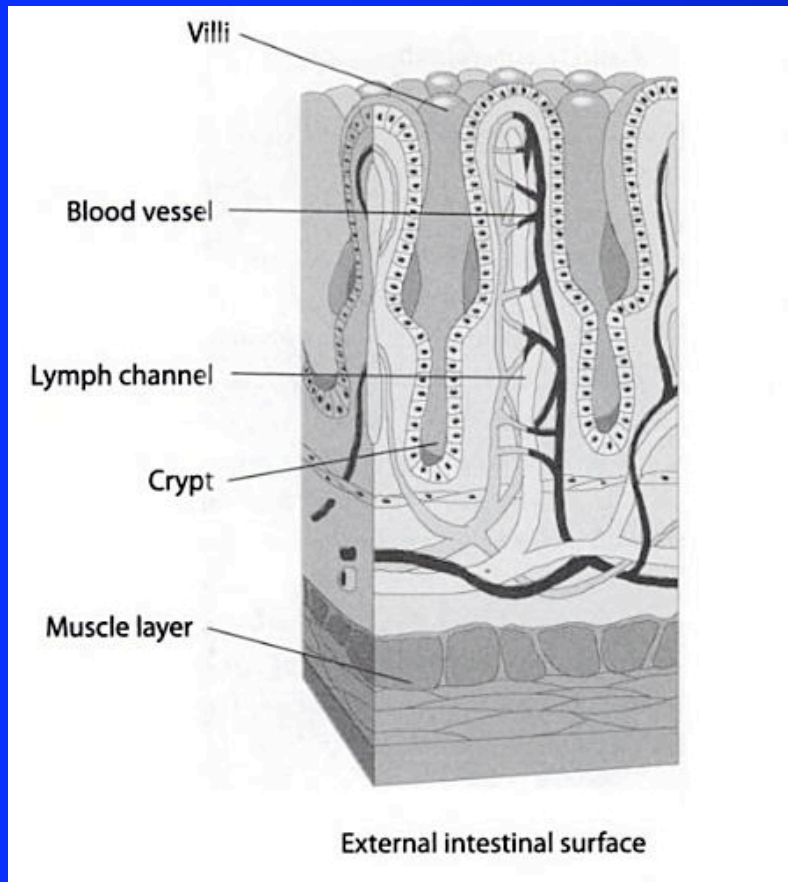
- Gluten is a generic term for protein storage.
- Wheat has glutenin and gliadin
- Barley has hordein
- Rye has secalin
- Oats have avenin. Some celiacs react to avenin, but commercial oats have gluten contamination issues
- These proteins can't be broken down and cause problems.

What is Celiac Disease?

A genetic multi-system autoimmune disorder in which gluten **triggers damage to the small intestine** and other organs.

- The body's immune system reacts to the gluten and damages finger-like structures in small intestines known as villi
- Villi are responsible for absorption of food.
- Malnutrition can occur. Vit. D, E, A, K, B12, Iron, Folate

What do villi look like?



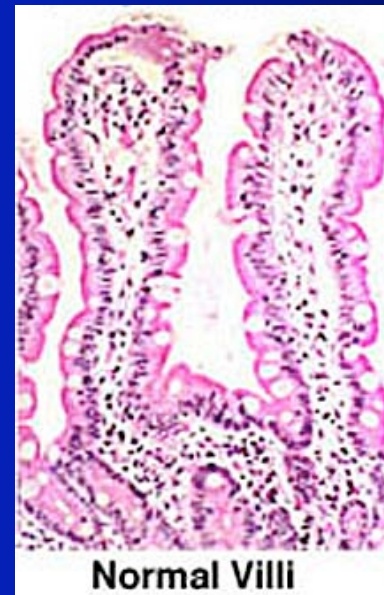
- Normal height .5 - 1mm
- Increase absorptive area
- Small intestine is the size of a tennis court.

What do villi look like?

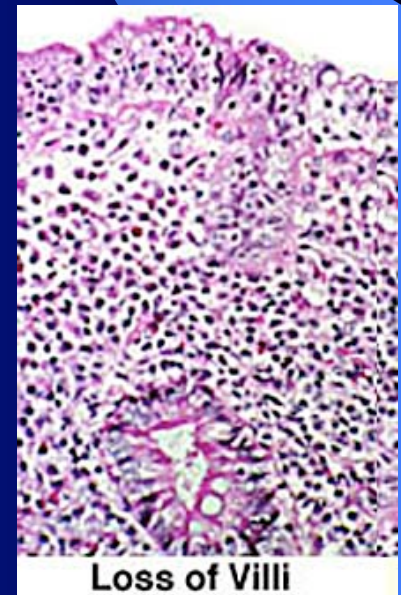


Normal

Damaged



Normal Villi



Loss of Villi

What is Celiac Disease?

A genetic multi-system autoimmune disorder in which gluten triggers damage to the small intestine and **other organs**.

- Gluten can affect the entire body, not just the gut.
 - Many medical professionals do not know this.

How long has CD been around?

- Since the introduction of agriculture - the Neolithic Period - 10,000 BCE
- For 2 million years, humans were hunter/gathers. Living on fruits, nuts, tubers, leaves, small animal flesh if lucky - all gluten-free. The human body evolved to process these foods.
- Only 10,000 years ago humans figured out how to cultivate & eat grains. This was the advent of agriculture.

How long has CD been around?

- Agriculture introduced new allergens to humans. Allergens our bodies hadn't evolved to handle.
- 80% of our immune system is located in our stomach.
- Some experts feel humans were never meant to eat wheat - period. Our bodies don't have the enzymes to break it down properly. This is when problems start.
- Wheat today is very different from ancient wheat. Bio-Engineered, much higher gluten content.

How long has CD been around?

- Greek physician, Aretaeus of Cappadocia living in the 1st century was the first to identify and name this condition.



How long has CD been around?

- Aretaeus wrote *“If the stomach be irretentive of food and if it pass through undigested and crude, and nothing ascends into the body, we call such persons coeliacs (celiacs)”*



How Common is Celiac Disease?

- Affects 1% of America's population.
- Non-Celiac Gluten Sensitivity is thought to affect 6% to 40%.
- In 2003, Dr. Alessio Fasano conducted a ground breaking study...
 - 1 in 133 of "normal, healthy" people
 - 1 in 56 of those with symptoms
 - 1 in 39 of those with a 2nd degree relative with CD (aunt, uncle, cousin)
 - 1 in 22 of those with a 1st degree relative with CD (parent, child, sibling)
- Previous to this study, it was thought to be 1 in 10,000.
 - Sadly, too many medical professionals still think it's this rare.

How Common is Celiac Disease?

- In 2009, Dr. Joseph Murray published a study of 9,133 patients after a 45 year follow up...
 - Incidences of CD have increased 4x since 1950's.
 - Those with CD have 4 fold risk increase risk of death.
- In 2010, Dr. Alessio Fasano published a study of 8,000 patients...
 - CD prevalence has doubled every 15 years since 1970
 - Can be triggered at any age.

How Common is Celiac Disease?

- Why is this happening?
 - Experts aren't really sure at this point.
 - Even though testing & awareness has increased, the methods of the studies ruled those factors out.
- Suspect it's environmental
 - Changes in our food: Highly processed, lots of additives, genetically modified, bio-engineered. Food today is very different than food 10 - 20 years ago.
 - Changes in intestinal bacteria.

What are the symptoms?

- There are 300+ symptoms associated with CD.
- Symptoms can vary from person to person.
 - Depends on age, amount of intestinal damage
- Can have any combination or no outward symptoms at all.
- Adults can present with different symptoms than kids.
 - Kids often present with digestive symptoms.
 - Adults often times present with little or no digestive sx.
 - Only about 1/3 have the classic diarrhea.
- Add lack of awareness = 4 years to diagnosis on average. Often times, it's longer.

What are the symptoms?

- Classic Adult Symptoms:
 - Recurring abdominal bloating/pain • Chronic diarrhea
 - Pale, foul smelling stools • Weight loss
 - Weakness/fatigue • Bone Pain & Muscle Cramps
 - Nutritional Deficiencies: Vit. B12, D, E, A, K, Folate, Iron
- Non-Classic Adult Symptoms:
 - Osteoporosis/Osteopenia • Dental enamel defects • Constipation
 - Numbness/Tingling • Depression • Migraines/Headaches
 - Unsteady gait • Anxiety • Dementia • Seizures • Infertility
 - Miscarriage • Itchy rash (Dermatitis Herpetiformis) • Anemia
 - Abnormal Liver function tests
- Child Symptoms:
 - Failure to thrive/low growth rate • Abdominal distention & pain • Diarrhea • Constipation. “Sick, Tired & Grumpy”.

Can I have a little bite of gluten?

- Define little. Medical studies find amounts vary with people. No evidence to suggest a single definitive threshold. 6 milligrams per day is unlikely to cause villi damage. Not to say there isn't symptoms. How much is 6 mg (20 ppm)?
- Some can't tolerate 5 parts per million or less. How much is 5 ppm?
- A slice of white bread contains about 3,515 mg of gluten.
- Practically speaking - No, you can't have a bite - ever.
- There is no balancing out gluten intake like with carbs/sugars on a diabetic diet. There's no cheating.
- Not only must products be free of gluten ingredients, it must also be free of any cross contact of gluten. Harvesting, Transporting, Storing, Processing, Packaging, Final Preparation.
- Gluten is found in many processed foods. It's very prevalent.
- Yes, eating outside of your own kitchen is a minefield and risky business!

What will happen if cheat?

- Malnutrition
 - Vit. & mineral deficiencies, osteoporosis, tooth enamel defects, anemia
- Neurological & Psychiatric conditions
 - Depression, schizophrenia, anxiety, neuropathy, seizures
 - Headaches, balance disorders.
- Pancreatic Disease
- Gall Bladder, liver and spleen problems.
- Increased risk for cancers - intestinal lymphoma.
- Triggering of associated auto-immune diseases.
- Miscarriages and fertility issues. Congenital defects in unborn.
- Short of stature for children.

- Celiac Disease is a life threatening disease if not treated.
 - Gluten-free diet is THE ONLY treatment option at this time.
- One of the few diseases that requires no medication.

What have we learned?

- Gluten causes problems because it can't be broken down.
- Celiac Disease and Non Celiac Gluten Sensitivity are very common, but not well known. Awareness is raising.
- “Just a little bit” of gluten **is not** OK.
- Gluten-free diet is the only treatment.