

CELIAC DISEASE

The Physical, Emotional, and Long-term Effects

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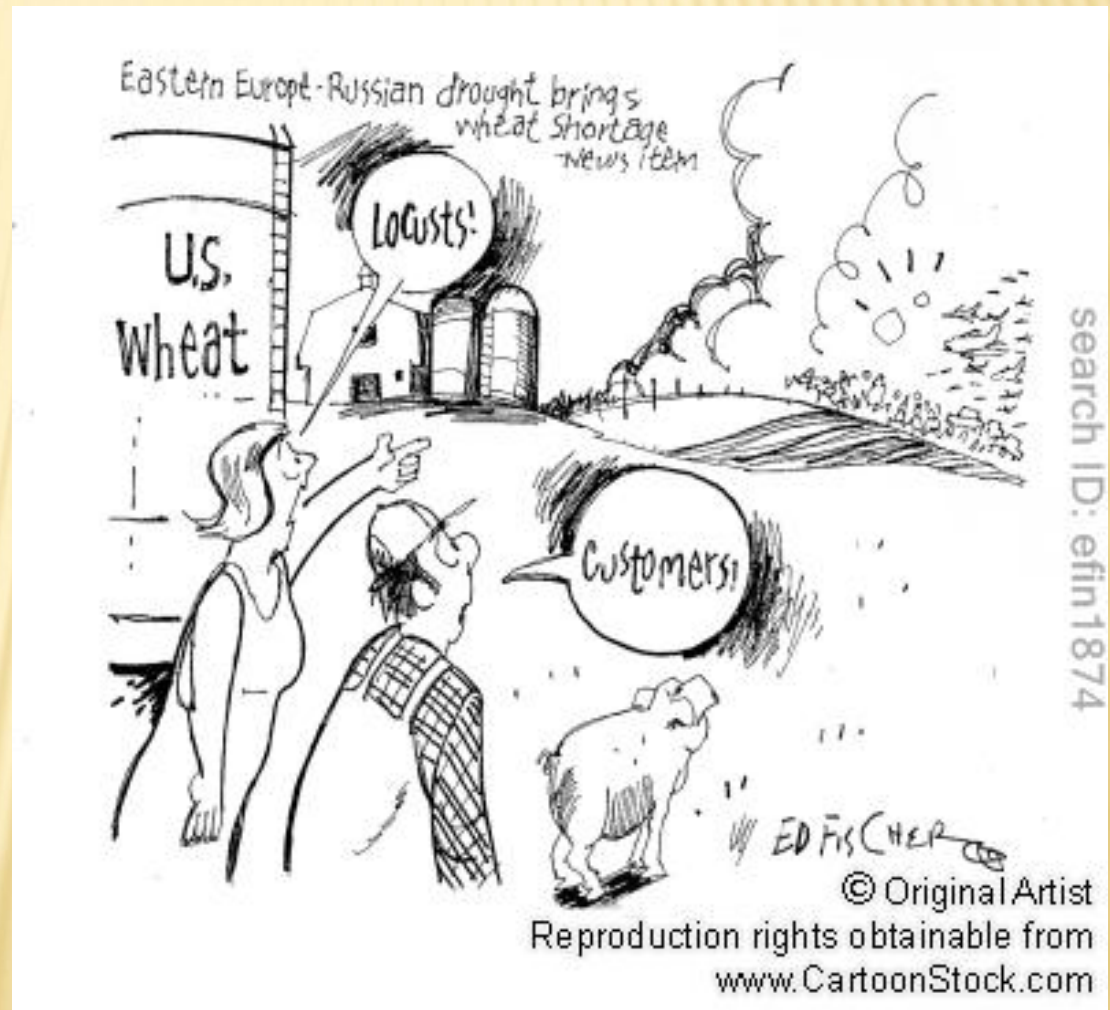


WHAT IS CELIAC DISEASE?



THE HISTORY

- ✖ 1 AC: Aretaeus de Cappadocia
- ✖ 1887: Samuel Gee “Celiac affection”
- ✖ 1953: Willem Dicke made the wheat connection



WHAT EXACTLY DOES IT MEAN?

- ✘ Celiac disease is defined as “a lifelong intolerance to gluten...the reaction to gluten leads to the typical appearance of chronic inflammation and atrophy of the small intestinal villi...[which] leads to malabsorption and loss of water and solids.”
- ✘ Kostopoulou O, Devereaux-Walsh C, Delaney B. Missing Celiac Disease in Family Medicine: The Importance of Hypothesis Generation. *Decision Making in Clinical Practice*. 2009; 29: 282-290.



...GLUTEN?



- ✗ is the general name of the prolamins found in wheat, rye, and barley.



SYMPTOMS

- ✖ Gastrointestinal symptoms include:
 - + Abdominal pain, bloating, gas, or indigestion
 - + Constipation
 - + Decreased appetite (may also be increased or unchanged)
 - + Diarrhea, either constant or off and on
 - + Lactose intolerance (common when the person is diagnosed, usually goes away after treatment)
 - + Nausea and vomiting
 - + Unexplained weight loss (although people can be overweight or of normal weight)



✗ Because the intestines do not absorb many important vitamins, minerals, and other parts of food, the following symptoms may start over time:

- + Bruising easily
- + Depression or anxiety
- + Fatigue
- + Growth delay in children
- + Hair loss
- + Itchy skin (dermatitis herpetiformis)
- + Missed menstrual periods
- + Mouth ulcers
- + Muscle cramps and joint pain
- + Nosebleeds
- + Seizures
- + Tingling or numbness in the hands or feet
- + Unexplained short height



DIAGNOSIS



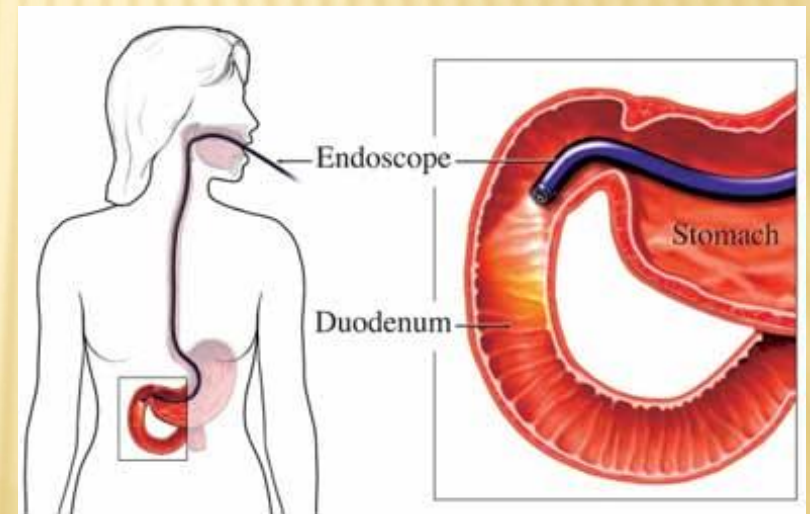
SEROLOGICAL TEST

- ✖ Common to have negative results.
- ✖ IgA-class antigliadin
- ✖ Antiendomysial antibodies
- ✖ IgA anti-tissue transglutaminase antibodies*



BIOPSY OF THE SMALL INTESTINE

- ✖ Flexible endoscope used to directly view mucosa
- ✖ “notching”, “scalloping”, or lesions
- ✖ 4 or 5 samples



METHODS



BLOOD TEST COMPARISON

✖ Normal/Healthy Results

tTG Ab,IgA	6
	Unit: U/mL
	Reference Range:
	NEGATIVE: <5
	EQUIVOCAL: 5-8
	POSITIVE: >8

IgA	124
	Reference range: 81 to 463
	Unit: mg/dL

Gliadin Ab IgA	8
	Unit: U/mL
	Reference Range:
	NEGATIVE: <11
	EQUIVOCAL: 11-17
	POSITIVE: >17

✖ Celiac Results

tTG Ab,IgA	37
	Unit: U/mL
	Reference Range:
	NEGATIVE: <5
	EQUIVOCAL: 5-8
	POSITIVE: >8

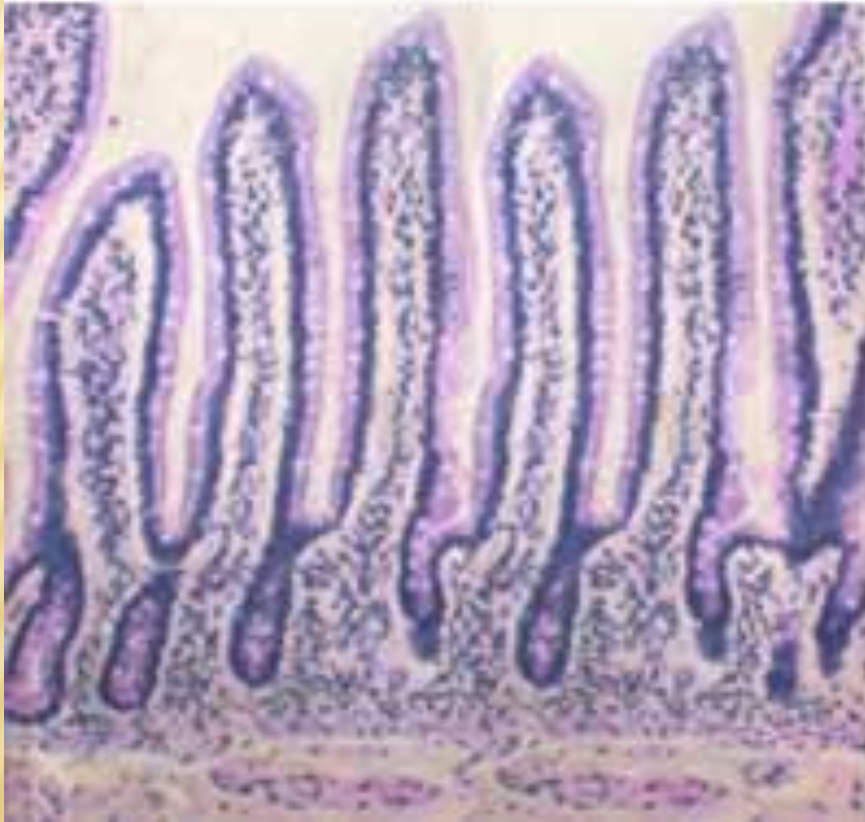
IgA	137
	Reference range: 81 to 463
	Unit: mg/dL

Gliadin Ab IgA	38
	Unit: U/mL
	Reference Range:
	NEGATIVE: <11
	EQUIVOCAL: 11-17
	POSITIVE: >17

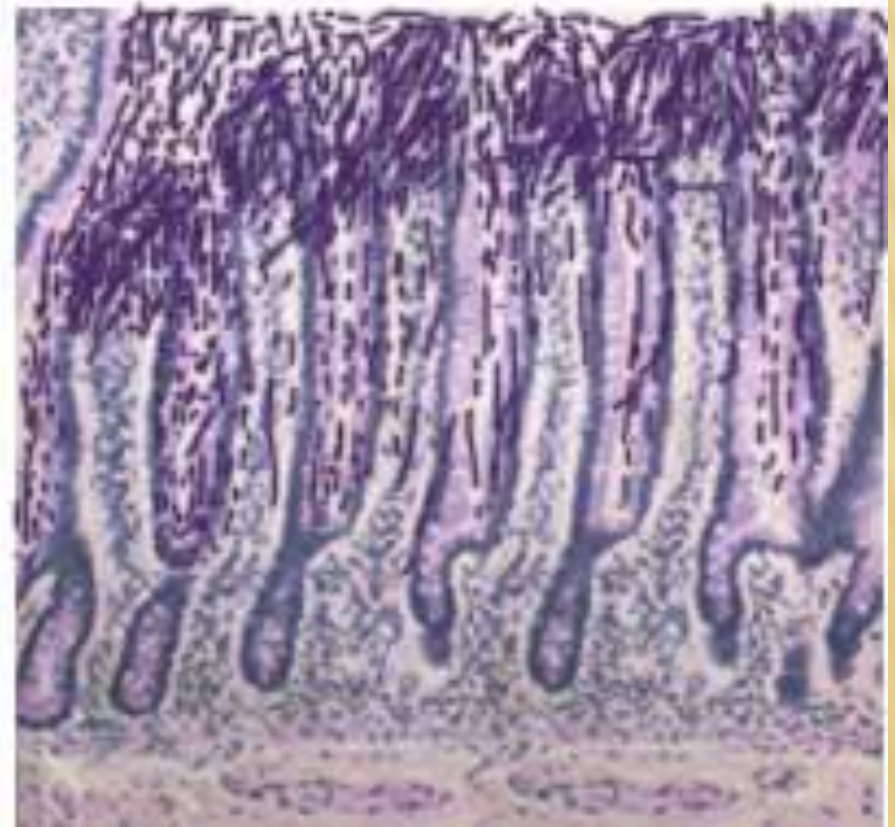


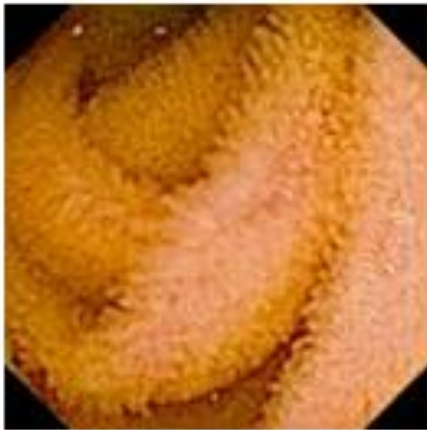
WHAT DOES IT LOOK LIKE?

Healthy normal villi of the small intestine(as seen under the microscope)



Damaged villi of the small intestine





Healthy Intestinal Villi



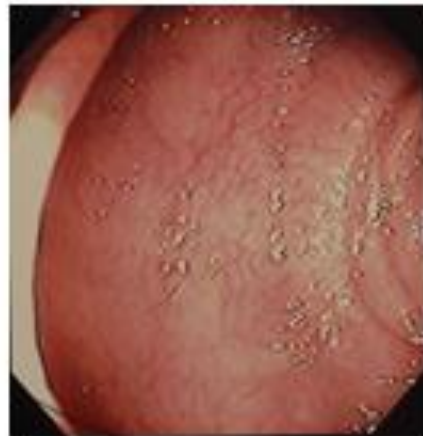
*Distance View of
Healthy Villi*



Normal Villi



*Moderate Celiac
Damage*



*Severe Celiac
Damage*



*Severe Celiac
Damage from a
Distance*



FREQUENCY



HERE ARE SOME NUMBERS



- ✗ Between 1%-3%
- ✗ 1 in 100
- ✗ For every diagnosed patient, 2-7 cases go undiagnosed.
- ✗ Women 2:1
- ✗ White populations vs. African-Americans and Southeast Asia



TREATMENT



GOALS

1. Relieve symptoms
2. Heal the intestine
3. Reverse the consequences of malabsorption

All while enabling the patient to maintain a healthy, interesting, practical gluten free diet.



WHERE IS GLUTEN FOUND?

- ✖ Flour, semolina, bread, pasta, pastries, cakes.
- ✖ Cold cuts, canned fish, yogurts, ice creams, jellies, chocolates, candies, and condiments.
- ✖ “In the Western world, 70% of manufactured food products may contain gluten.”
- ✖ Look for: “contains wheat,” “gluten free,” “modified food starch.”



- ✖ Garcia-Manzanares A, Lucendo A. Nutritional and Dietary Aspects of Celiac Disease. *Nutrition in Clinical Practice*. 2011; 26:163-173.



NONCOMPLIANCE

- ✗ 50-80%
- ✗ Reasons include:
 - + Poor adaptation to the disease
 - + Accidental consumption
 - + Difficulty making a life change
- ✗ Suggestions:
 - + Natural foods
 - + Avoid cross contamination
 - + Speak with managers
 - + Check pharmaceuticals
 - + If theres a doubt...do not use!



CELIAC AND PREGNANCY



FERTILITY

- ✗ More difficult to become pregnant
- ✗ Men also experience infertility
- ✗ Women almost 9 times more likely to have spontaneous abortions or miscarriages.
- ✗ Shortened reproductive period, delayed menarche, early menopause, and menstrual irregularities.
- ✗ Risk for RSA, IUGR, LBW.



Table 1 Pregnancy complications in untreated and treated celiac patients

	<i>Untreated celiacs</i>	<i>Treated celiacs (GFD)</i>
Miscarriage	17.8%	2.4%
	21%	4%
	18%	9%
IUGR/ SGA	8.3%	0%
LBW infants	12.3%	6%
	12.7%	2.4%

IUGR: intrauterine growth retardation.

LBW: low birth weight.

SGA: small for gestational age.



CELIAC AND EMOTIONS



COMMON EMOTIONS

- ✖ Stigma
- ✖ Awkwardness
- ✖ Inequality
- ✖ Embarrassment
- ✖ Anger
- ✖ Alienation
- ✖ Guilt
- ✖ Discrimination
- ✖ Social devaluation



COMMON QUOTES

- ✘ “The hard thing is not really the food. It’s just that you can’t be like everyone else, that’s just heavy.”
- ✘ “Sometimes, when I take my food, it’s as if everyone stares at me... ‘What kind of strange and disgusting food are you eating?’ Most likely, they don’t think so but that’s how I feel.”
- ✘ “Then, sometimes, if you can’t eat...or if you’re somewhere where you can’t find anything to eat, it feels like people [are thinking], ‘Well, why don’t you eat? Isn’t our food good enough for you?’”
- ✘ “I don’t want other people to feel sorry for me because I have celiac disease...they make such a big deal of it, those who feel sorry. It’s just a burden.”
- ✘ “I feel like everyone has to make sacrifices and buy other food, more expensive food. That I found hard...and you just can’t eat what you like...then you feel like a bother.”



NEW AND DEVELOPING THERAPIES



✘ Due to the “rapid expansion in the knowledge of the pathological mechanisms of the damage induced by gluten in celiac disease...the concept of the development of a pharmaceutical agent to treat celiac disease has become a reality” being explored.

✘ Tennyson C, Lewis S, Green P. New and Developing Therapies for Celiac Disease. *Therapeutic Advances in Gastroenterology*. 2009; 2(5): 303-309.



3 MAIN OBJECTIVES

1. Decrease gluten exposure
2. Modify intestinal permeability
3. Modulate immune activation

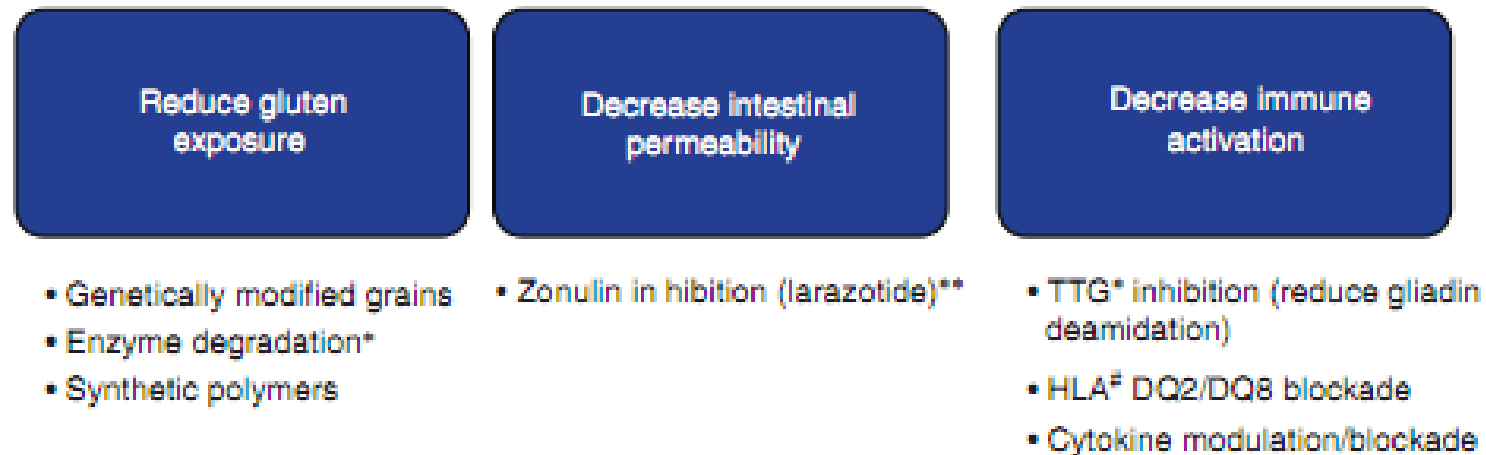


Figure 1. Developing celiac disease therapy. *TTG, tissue transglutaminase; **In human studies; [#]HLA, human leukocyte antigen.



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- ✖ Genetically engineering and modification
 - ✖ Decrease intestinal permeability to prevent migration across the intestinal epithelium
 - ✖ Decrease immune activation by inhibiting tissue transglutaminase.

 - ✖ Other methods
 - + Vaccine
 - + Hookworm infections



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- ✖ Tennyson C, Lewis S, Green P. New and Developing Therapies for Celiac Disease. *Therapeutic Advances in Gastroenterology*. 2009; 2(5): 303-309.

