

# Is Gluten Free for Me?

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# The “Rules”

- The slides are to spark discussion points.
- If I am not explaining something well, please stop me.
- There will be time for questions.

# Learning Objectives

- Understand how healthy carbohydrate digestion works.
- Define gluten, celiac disease, gluten intolerance and how they all relate.
- Discuss the gluten free diet in relation to other health issues.

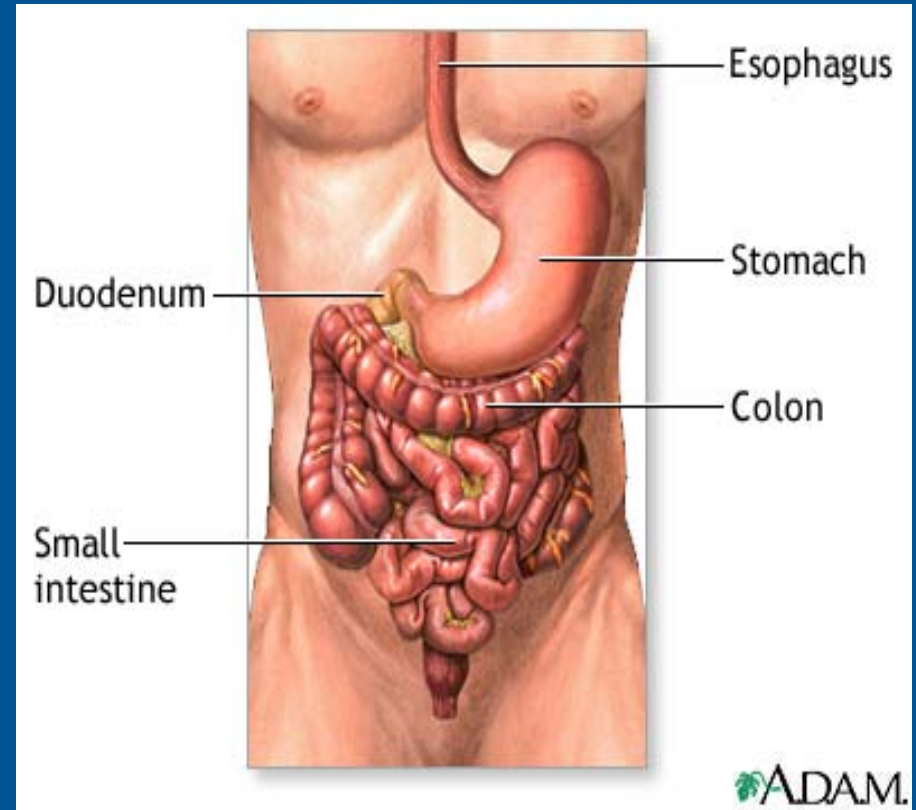
Basics of Digestion

# BACKGROUND

# Healthy Digestion

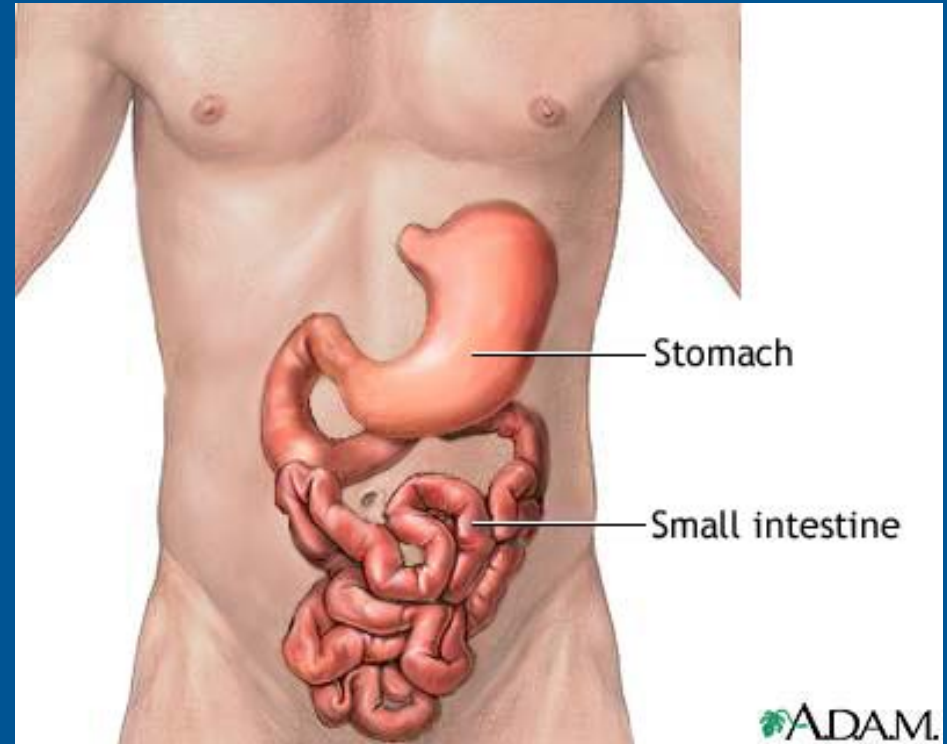
**Digestion:** breaking down food into chemical substances that can be absorbed by the body

**Motility:** the nerves and muscles that propel food through the digestive tract



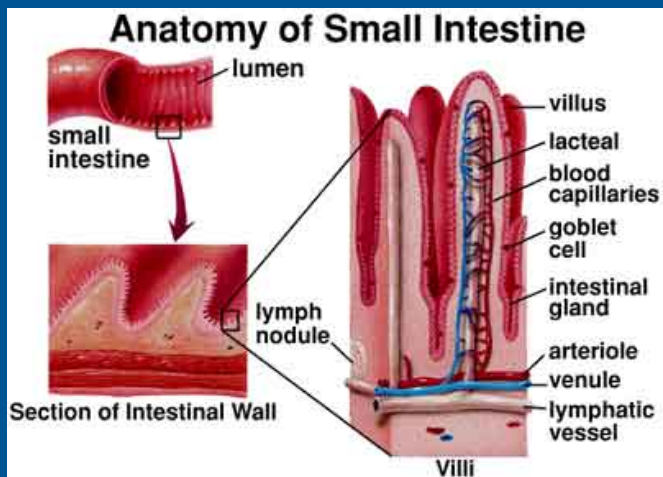
# Small Intestine

- Responsible for nutrient absorption
- Moves undigested particles to the colon
- Different areas absorb vitamins and minerals
- Cannot live without the small intestine



# Carbohydrate digestion

- Requires enzymes in the small intestine to chemically break down into simple sugars
- Enzymes sit on the surface of the small intestine. These are called the “villi”
- When carbohydrates are not properly digested, diarrhea, bloating, and gas can result





# WHAT IS GLUTEN? DEFINE CELIAC DISEASE

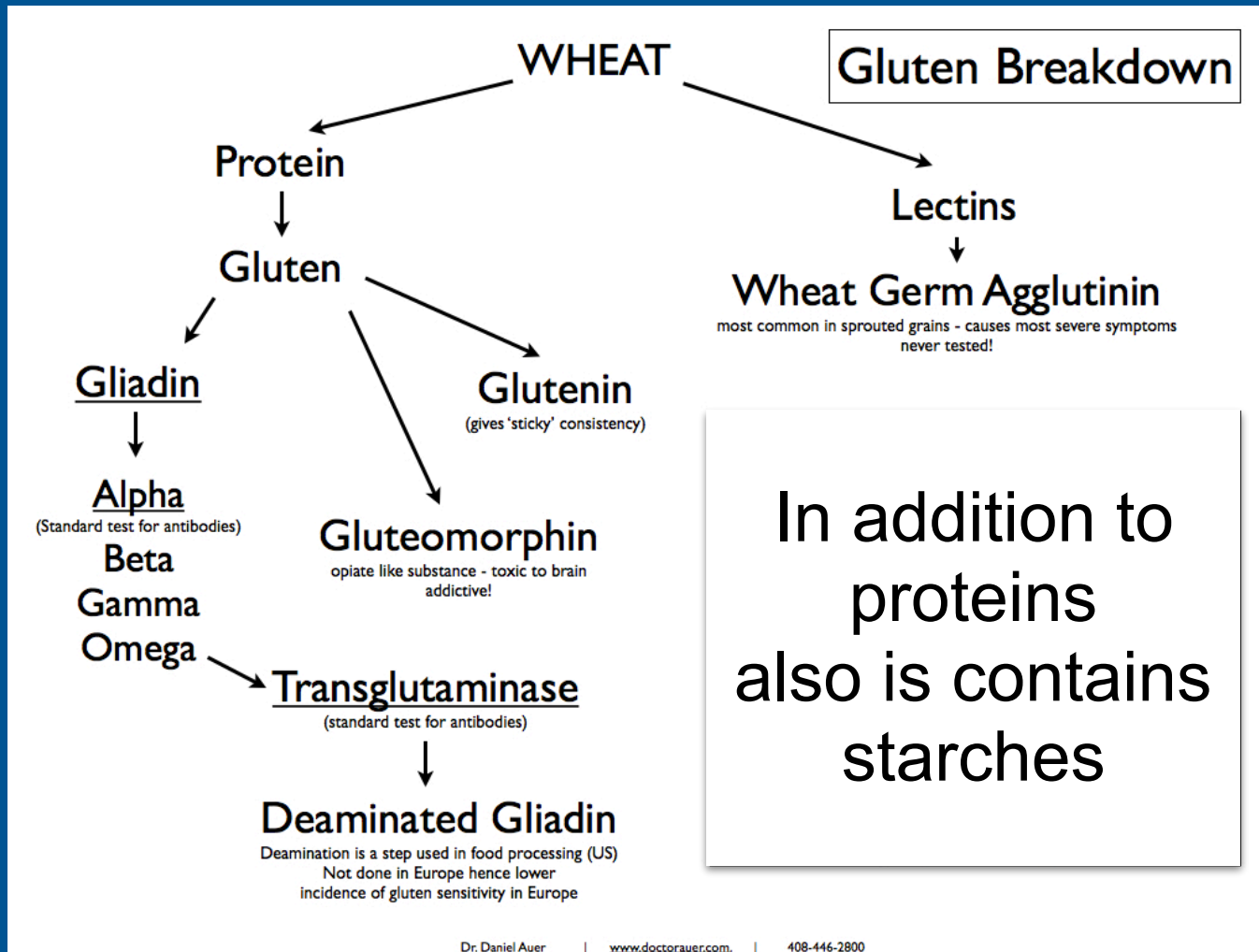


# Gluten

- A protein found in wheat, barley, and rye
- Helps bread dough rise and helps food stick together
- Added to foods to enhance protein content as well as to improve texture
- Not just in bread



# What is actually in wheat?



# Celiac Disease

- An autoimmune disease
  - Immune system attacks native organs
- Body reacts to gluten, attacking the small intestine
- 1 in 133 Americans
- 3 million Americans have celiac
- Often takes 4 years of symptoms prior to diagnosis being made

# What are the common symptoms of celiac disease?

- Disrupted bowel behavior
  - Diarrhea or constipation
- Abdominal pain
- Anemia
- Fatigue
- Weight loss



# Atypical Clinical Presentations of Celiac

## Nongastrointestinal nonmalignant symptoms of celiac disease

Infertility
Rheumatic disorders
Vitamin D and calcium deficiency
Osteomalacia
Osteoporosis
Neurologic disorders
Depression - 10.6 percent
Epilepsy - 3.5 percent
Migraine headaches - 3.2 percent
Anxiety - 2.6 percent
Suicidal tendency - 2.1 percent
Carpal tunnel syndrome - 1.8 percent
Myopathy - 1.5 percent

Data from: Holmes JKT. Non-malignant complications of coeliac disease. *Acta Paediatr* 1996; 412(Suppl):68.



# Many of the symptoms may indicate other health issues as well

- Irritable bowel syndrome
- Crohn's Disease
- Ulcerative colitis
- Gallbladder issues
- Liver or pancreas problems
- Thyroid disease

# DIAGNOSIS OF CELIAC DISEASE

# Celiac Disease- Diagnosis

- Testing needs to be performed on regular diet
  - Lab Tests
  - Samples (biopsies) of the small intestine by a procedure called an endoscopy



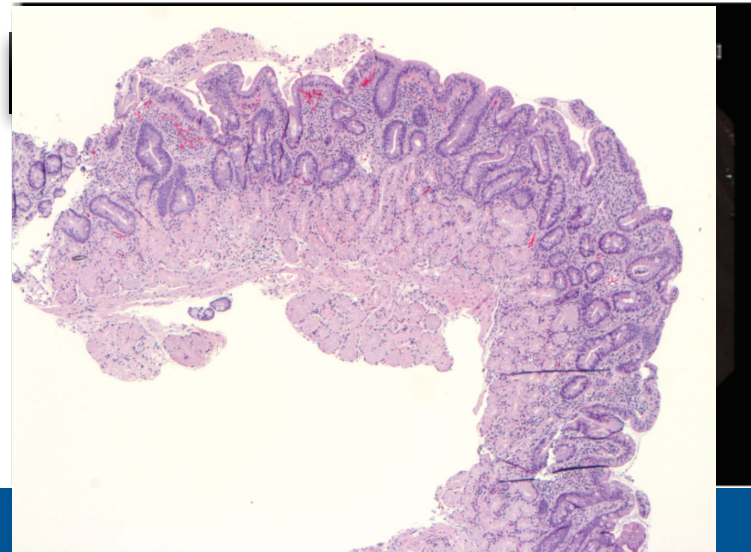
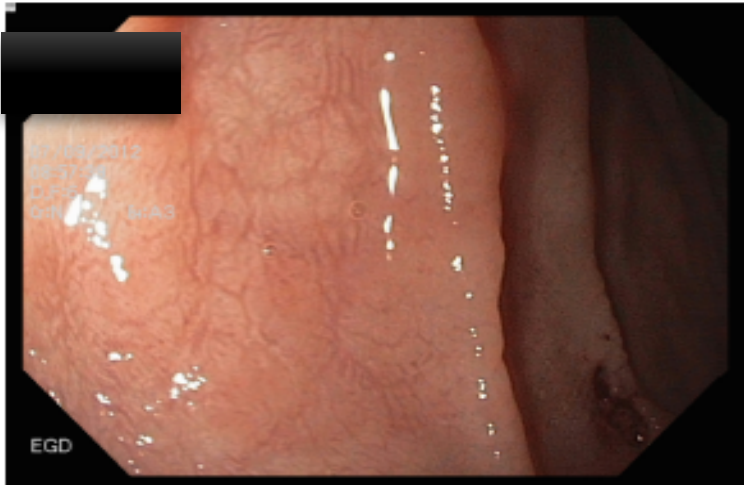
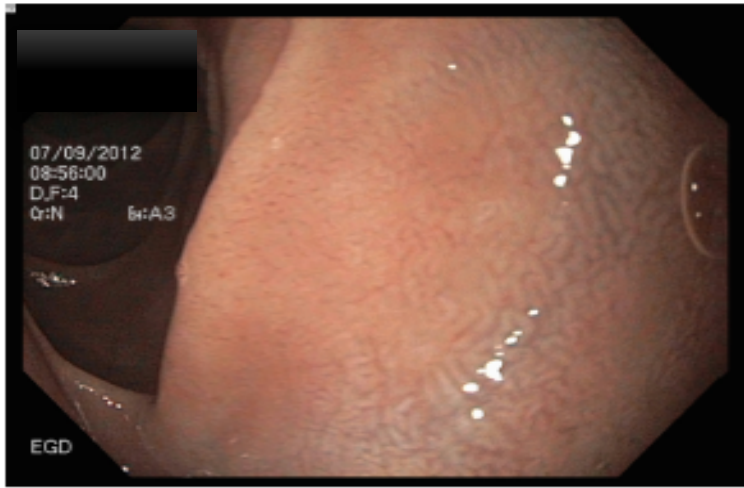
# Celiac Disease- Lab Tests

- Tissue transglutaminase (TTG)
  - Most accurate lab test
- Endomysium (EMA) and Gliadin Antibodies
  - Older Tests; less accurate

# Celiac Disease-Endoscopy and Biopsy

- Able to assess the damage to the intestines
- Confirms the diagnosis

# “Villous Atrophy”



# What if I am already on a gluten free diet?

- Both the biopsy and the labs rely on measuring the body's response to the gluten.
- Tests are inaccurate in patients on a gluten free diet.
- **Always consult with a physician prior to starting a gluten free diet for this reason.**

I tested negative, now what?

**GLUTEN INTOLERANCE OR “NON CELIAC WHEAT SENSITIVITY”**

# What is gluten intolerance?

- Symptoms from eating gluten or wheat in a person who tests negative for celiac disease.
- May be an issue with how the body tolerates certain carbohydrates.
- Evaluation for other digestive health disorders needs to be considered.
- 10% of the population reports sensitivity to gluten
- 1% have celiac disease

# Celiac vs Gluten Intolerance

Celiac Disease	Gluten Intolerance
Immune reaction causing destruction of the small intestine	Inability to digest certain carbohydrates. Lining of intestine is healthy
Causes severe GI distress and other symptoms	Causes severe GI distress and other symptoms
Diet must be 100% without gluten	Diet can contain some gluten as tolerated
Risk of nutritional problems	No nutritional risk as long as diet remains balanced
Risk of bone density issues	No risk of bone density issues
Small risks of cancer	No risk of cancer
Family members at risk of of the problem	Family members not at risk of the problem

**IS THERE A HEALTH BENEFIT TO BEING GLUTEN FREE**



# Is there a health benefit to going “gluten free”

- Not necessarily.
- Risk of low dietary fiber from the diet.
- Substitute foods contain more calories.
- Celebrities on the diet are eating more fruit and lean protein; less carbs; hence the weight loss.



# Celiac Disease

- Patient's with celiac disease must be on a gluten free diet, or risk complications.
- At present there is no other treatment.
- Drugs in the pipeline

# Irritable Bowel Syndrome

**Digestive condition of abdominal pain, bloating, cramps associated with disrupted bowel habits.**

**Diet and lifestyle are a cornerstone in management.**



# Studies on diets present challenges

- Analysis of over 200 diet trials on the topic.
- Most of the studies found gluten challenge to significantly increase symptom scores compared with placebo.
- However, only 38 of 231 NCGS patients (16%) showed gluten-specific symptoms.
- 40% of these subjects had a nocebo response (similar or increased symptoms in response to placebo).

# Other diets may be more useful for IBS

- High fiber
- Lactose free
- Low FODMAP diet
- Elimination style diet
- Although none with robust medical evidence that they help
  - Clinical trials on diets are difficult to perform

# Microscopic colitis

- Common cause of watery diarrhea especially in older patients
- Seen in many patients who have celiac disease
- Gluten free diet can help with this condition
- Eating gluten is NOT associated with causing the condition.

# Arthritis

## ● WHY?

- Celiac disease is associated with joint pains.
- Patients with celiac disease often report improvement in joint pains on gluten free diet.
- Is this well studied in patients with arthritis and no celiac disease?
  - Not really.
  - Diet trial on 27 patients with arthritis done in **1991** showed favorable results.

Controlled trial of fasting and one-year vegetarian diet in rheumatoid arthritis. The Lancet Volume 338, Issue 8772 12 October 1991 Pages 899-902

# Migraines

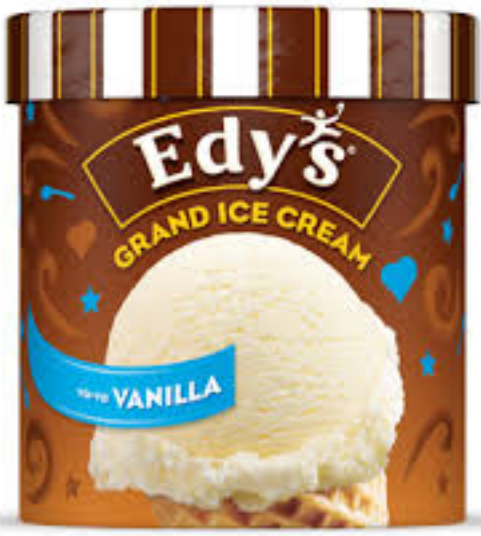
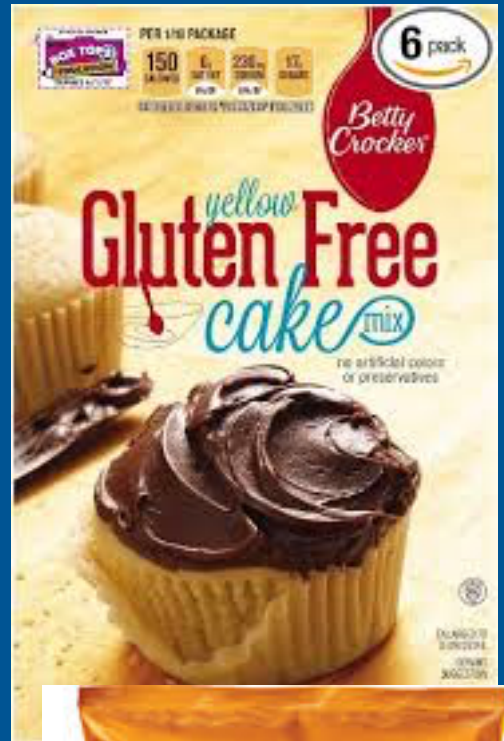
## ● WHY?

- Many patients with celiac disease have migraines headaches.
- Gluten free diet results in improvement in migraines
- Studied in small number of patients with celiac.
  - Four of 90 (4.4%) migraine patients were found to have celiac compared with 0.4% blood donor controls. During the 6 months of gluten free diet, one of the four patients had no migraine attacks, and the remaining three patients experienced an improvement in frequency, duration, and intensity of migraine.
- No trials on patients with migraine and no celiac disease.
- **As migraines seen in 4% of celiac patients, reasonable to be tested for celiac if you have migraines.**



# Weight Loss

- It's healthy, right?
- Some substitute foods have MORE calories
- Gluten free diet in a patient with celiac should result in weight gain
  - Intestines able to now absorb nutrients
  - Of patients compliant with a gluten-free diet, 81% had gained weight after 2 yr, including 82% of initially overweight patients



# Weight loss

- If the body uses more calories than it takes in, weight loss results.
- When we **restrict our diets**, we restrict the amount of foods available and hence weight loss.
- Mediterranean and low-carbohydrate diets may be effective alternatives to low-fat diets.



# Me versus the celiac at a party

## Dr. Kwiatt

Vegetables from veggie tray with the dip  
Fruit from fruit tray  
Cheese cubes with crackers  
Tortilla chips with taco dip  
people dipping the crackers in  
Beer

## Friend with celiac:

Vegetables from veggie tray (no dip)  
Fruit from fruit tray  
Cheese cubes  
Tortilla chips  
Glass of wine

Who ate more calories?

# Conclusions

- Celiac disease is a serious health condition and **formal testing should be discussed with a physician.**
- Many common health conditions can benefit from a healthy diet.
- Gluten free diets may be helpful for irritable bowel syndrome, but medical research on the diet in other health conditions is limited.

# My contact information

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