Gluten Facts

wha Gluten was not always a bad guy. In Europe most people can still tolerate him, but on this side of the ocean we just don't always get along with him, whether we know it or not.
what Gluten is a protein found in wheat, barley, and rye that's made up of gliadin and glutenin.
where Gliadin is what's causing the allergy in celiac and gluten sensitive people.Since wheat is a cheap filler, it's in unsuspecting foods, sauces and beverages and we are over-exposed.
when Wheat has evolved over the last several thousand years but likely became poorly tolerated over the last century when it was naturally hybridized and genetically modified.

Why It wasn't always a problem for us to eat but we weren't really meant to mass produce and consume it the way we do now.


## Are goun not toperating geuten?

IgE positive= wheat allergy. This can cause a range of symptoms up to anaphylaxis, but doesn't always mean the person has celiac disease. Celiac Disease= Auto-immune disease. A person is diagnosed with celiac disease after they've had labs and an intestinal biopsy to validate it. If positive, that person must avoid gluten ingestion and exposure for the rest of their lives. Symptoms of exposure range in severity and include diarrhea, abdominal pain, weight loss and malabsorption. Your functional doctor may also have access to more advanced labs to get you more information.

A person can have an IgG blood test to see if a reaction is noted, usually within a range of low to moderate to high. This test is not conclusive. One can show sensitivities but exhibit no change in lab values; conversely, one can also have no reaction on the test but exhibit physical symptoms to gluten. There is hope that future testing will be used reliably as researchers have observed intestinal damage and immune reactions to gluten in the absence of celiac disease. (1)

## What Gluten Does in The Gut



Dr. Alessio Fasano discovered that gluten exposure can release zonulin in the gut which is an enzyme that contributes to gut permeability or "leaky gut".(2) Leaky gut is an opening between intestinal cells which allow toxins, food proteins, and organisms to get into the bloodstream. Our immune system reacts to these foreign particles and this starts the cascade of slow disease progression. See the diagram for a great visual!

## Test gounsepf for gluten issues

Currently there are no widely used tests available to reveal a sensitivity to gluten. If you have severe reactions to eating wheat and suspect you have celiac disease, ask your doctor to order labs- this will include blood work and a biopsy to give the most conclusive result. There's a LOT of gray area when it comes to validating a gluten sensitivity. The easiest, cheapest, most accurate way is to find out is to do a good old elimination diet. Here's how:

Per the list on the next page, eliminate all foods from your diet that contain gluten. Remain gluten free at least 21 days; however some researchers feel it can take 6 weeks to 6 months before rid yourself of all gluten! For most people, 21 days is plenty.

When you're ready, pick a day to introduce a one-ingredient gluten food like pasta, sous cous, or barley. Eat 1-2 servings on day 1. Then wait 3-5 days to see if you have any reactions and take notes. Reactions can be digestive symptoms but are often unexpected ones like skin (psoriasis/eczema/rash), headache, sleep disturbance, brain fog, joint pain, fatigue, emotional reactions, etc.

If you had a poor reaction, your body is not tolerating gluten well and you should avoid it going forward. The degree to which you eliminate it us up to you and how you feel. Some people avoid $100 \%$ of the time, some people avoid it daily but find they can tolerate a little here and there- this is a personal choice. If you had no reaction you can lengthen your elimination diet or continue eating it. If you aren't sure, eliminate it for another week and retry it.

Note: If you don't suspect you have celiac disease, you don't need to worry about avoiding it as if it were a true allergy. Just do your best to avoid consuming from the "foods with gluten" list. This is usually enough avoidance to test your potential intolerance/allergy. Those with celiac disease will need to follow a much more detailed list of avoidance foods.

Faods without geuten


Foads with geuten


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[^0]:    1. Intestinal cell damage and systemic immune activation in individuals reporting sensitivity to wheat in the absence of coeliac disease Uhde $M$, et al. Gut 2016;0:1-8. doi:10.1136/gutjnl-2016-311964.
    2. Drago, S.; El Asmar, R.; Di Pierro, M.; Grazia Clemente, M.; Tripathi, A.; Sapone, A.; Thakar, M.; Iacono, G.; Carroccio, A.; D'Agate, C.; et al. Iiadin, zonulin and gut permeability: Effects on celiac and non-celiac intestinal mucosa and intestinal cell lines. Scand. J. Gastroenterol. 2006, 41, 408-419.
    3. Based on information from Institute of Functional Medicine Guide to Eating Gluten Free 2017
    iac Disease Foundation was another source of information used in this handout if you'd like to learn more
