“Gluten Myths Busted: Separating Fact from Fiction”

Webinar Questions Answered by Jessica Lebovits, RD, CDN

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- Are researchers working on developing wheat varieties that are less allergenic and potentially more digestible?
    - Yes! There is plenty of research being done in this area, but “safer” commercially available wheat varieties are still some years away.
- Is there any evidence of going GF with PCOS?
    - While many women with PCOS report feeling better on the GFD, the evidence to support recommending a GFD for PCOS is limited. There is no direct evidence that gluten causes PCOS or worsens symptoms. The perceived benefits of going GF might be related to decreased intake of refined carbohydrates rather than the absence of gluten itself. Whole, unprocessed foods, high fiber intake, and lower glycemic foods are more likely to benefit those with PCOS than a GFD alone.
- Why is asafoetida/hing on the list of hidden sources of gluten? It is a spice made from ferula plants (not wheat, barley, or rye). Wouldn't this be considered low risk, like other spices?
    - Asafoetida/hing is gluten-free in its pure form, but many commercially available forms are mixed with fillers like wheat.
- Can you comment on Costco's GF oats? Have you had good experience with these?
    - Yes, many of my patients eat them, but as discussed in the presentation, tolerance to oats is different for each patient. So some patients may be fine with Costco oats and others may not be. The frequency that they eat them will also be an important factor.
- Are you familiar with “shellac” coating in lots of medications? Can it be derived from wheat, and can’t it be listed as multiple different names in inactive ingredients?
    - No, shellac coating in medications cannot be derived from wheat. Shellac is a natural resin secreted by the female lac bug. It is an insect product and does not naturally contain gluten.
- Any research on following a gluten-free diet for other autoimmune diseases like RA?
    - There are emerging studies on the benefit of a GFD for RA. The theories linking gluten to systemic inflammation and autoimmunity along with positive anecdotal reports, makes it a possible dietary consideration for some, especially if they also have signs of gluten sensitivity or other autoimmune conditions. As of now, there are no official guidelines recommending a GFD for all patients with RA, but if patients identify gluten as a trigger for their RA symptoms, then this may be considered.
- Is there any data or evidence you are familiar with regarding going gluten-free for psoriasis and other autoimmune diseases?
    - Likewise, there are some studies showing a potential benefit, but the evidence is not conclusive. A trial of a GFD may be considered in patients who: tested negative for celiac disease, but have elevated anti-gliadin antibodies; report digestive symptoms after having gluten; have a strong family history of celiac disease or autoimmune conditions; and/or are struggling to manage their psoriasis with conventional treatments.

- What about paper straws and gluten?
    - There is inadequate research on this, but based on the other studies, it seems that the amount of gluten that would be ingested from using a paper straw should be below 20ppm. However, there is a possibility that more research will show this can be a legitimate risk. Patients can be made aware that some paper straws may contain gluten as an adhesive or binder and they may choose to avoid them if they are unable to verify whether the straws are GF or not.
- In an acute care facility setting, if a patient says they have gluten sensitivity, should we educate them on the current research available, or should we just put them on a gluten-free diet?
    - I would suggest putting in the GFD order in the hospital as this is not the time to experiment or exacerbate any symptoms they may have. Using your clinical judgment, you can decide whether it feels appropriate to discuss the research on gluten sensitivity. I would also suggest referring them to specialists to be evaluated.
- Is there any research about making gluten-free pasta in a commercial kitchen steamer where gluten-containing pasta was previously made?
    - While there isn't published research specifically on commercial pasta steamers, the existing research on gluten cross-contact in shared cooking environments especially with pasta and steam, strongly indicates that it's a significant risk. Studies have shown that cooking GF pasta and gluten-containing pasta in shared water resulted in gluten levels above 20ppm.
- How common is brain fog in patients with celiac disease? Is this brain fog mainly related to nutritional deficiencies?
    - Brain fog is very common in celiac disease; some surveys showing 90% of those with celiac disease and NCGS reporting brain fog. While nutritional deficiencies play a role in brain fog, systemic inflammation, direct autoimmune effects on the brain, and the gut-brain axis dysfunction are likely more significant contributors.
- If heat denatures protein, and gluten being a protein, wouldn't it deactivate gluten's properties? Why is it so specific to the gluten molecule rather than its active components?
    - No, heat can denature gluten, but it doesn't break it down into its individual amino acids, which would make it harmless. The immune system in people with celiac disease reacts to the specific sequences of amino acids within the gluten protein (i.e. gliadin). Even if the overall structure of gluten is altered by heat, these amino acid sequences often remain intact and can still trigger an immune response. To truly break down gluten to the point where it's no longer immunogenic, the temperatures would need to be so high that the food itself would be completely charred and inedible, essentially reduced to ash.
- What do you say about autolyzed yeast extract?
    - If the product that has yeast extract is labeled GF then it should be fine. If the product is not labeled GF, then you should check with the manufacturer to find out if the source of the yeast extract is wheat or not.
- Do you have any research on following a gluten-free diet with thyroid disease? Any evidence of Hashimoto's and gluten?
    - While a GFD is essential for patients with Hashimoto's who also have celiac disease, the evidence for its benefit in Hashimoto's for patients without celiac disease is not yet conclusive. But, existing research, especially related to reduction in thyroid antibodies suggests that a subset of patients with Hashimoto's without celiac disease may benefit from a trial of a GFD. Celiac disease needs to be ruled out first.
- Does a gluten-free diet result in low levels of GABA?

    - There is no direct evidence suggesting that a GFD causes low GABA. For those with celiac disease, a GFD leads to gut healing, which is crucial for overall health and could potentially support healthy GABA production.
- Should you get your Celiac panel done yearly as a marker of compliance with the diet?
    - Yes
- Can someone develop gluten sensitivity and need GFD as an older adult—say >65 years old?
    - Yes, any age!
- Do you have insights into cross-reactive foods? Is there evidence to support their impact and/or the need to be eliminating those as well as gluten?
    - Generally, in practice this is not something I worry about or discuss with patients. While the concept of gluten cross-reactivity is supported by some in vitro studies and anecdotal reports, it is lacking strong scientific evidence to support elimination of these foods. For most patients, a GFD should be sufficient. If patients report ongoing symptoms, alternate triggers can be explored under the guidance of a specialized dietitian.
- Any evidence with skin/acne and gluten in someone without celiac?
    - While there's no definitive evidence that gluten causes acne in people without celiac disease or diagnosed NCGS, there is emerging evidence and strong theoretical reasons to suggest that for some people with undiagnosed gluten sensitivity, gluten could contribute to inflammatory skin conditions like acne.
- Can gluten “build up” in the system and cause high lab results if they eat many GF-labeled products?
    - I wouldn’t describe it as “building up.” But, it is possible if patients consume an excessive amount of GF packaged products and they are quite sensitive to gluten, the amount of gluten in their diet from packaged products could be enough to cause elevated lab results. I would say this is pretty uncommon. But, I do always try to recommend more of a naturally GFD as much as possible.
- If a person with celiac does not have any symptoms when ingesting gluten, how would you determine how strict to be? How would damage be assessed? More frequent biopsy? If yes, after what amount of time?
    - Symptoms are not a good indicator of gluten ingestion so they are not particularly helpful in assessing for intestinal damage for anyone with celiac disease. Following the patient’s improvement in antibody tests and overall improvement (for example: less symptoms overall, improved energy, weight regain) along with intestinal biopsy (~2 years after starting a GFD) can help determine their relative sensitivity. If their antibodies plateau or spike or their biopsy is not healed even with a strict GFD, then they may need to adopt stricter practices.
- Is the science "settled" that in Non-Celiac Gluten Sensitivity, there is no risk of gut damage or micronutrient deficiency when gluten is consumed? I'm hearing differing info from Dr Alessio Fasano and some other health "experts".
    - No, I don’t think it’s completely settled. Generally, NCGS is not celiac disease because there is no evidence of villous atrophy or damage in the small intestine. But, there is more research being done on what type of gut changes or damage may occur in NCGS. But again generally, there isn’t clear damage or malabsorption in NCGS compared to the way it presents in celiac disease.
- How accurate is 23 and me at predicting gluten sensitivity?
    - There are no biomarkers specifically for gluten sensitivity. 23 and me does test for celiac genetics, which is one piece of the puzzle in diagnosing celiac disease. However, if a patient only had half of a celiac disease gene, I believe 23 and me would not count that. But, half of a celiac disease gene is enough to develop celiac disease so I would recommend having genetics taken by a health care provider.

- The AND handout regarding gluten cross-contact recommends using designated gluten-free cooking utensils and food preparation tools for hard-to-clean surfaces. These may include cutting boards, non-stick pans, and colanders. What are your thoughts on using that type of equipment?
    - The rule of thumb with kitchenware is that as long as equipment can be sufficiently cleaned of gluten crumbs or residue, it is not necessary to have separate for gluten and GF. But, if any of the equipment is too difficult to sufficiently clean, then separate may be warranted. Personally, I feel that colanders may be difficult to clean at times, but it is unlikely that cutting boards or non-stick pans would need to be separate.
- I have heard that a person must eat the equivalent of 2 pieces of bread daily to have a positive antibody diagnosis. Is this true?
    - For celiac antibody tests to be positive/accurate, a patient with celiac disease must be eating gluten consistently, but the exact amount and duration is debated. Generally prior to testing or during a gluten challenge, we would recommend the equivalent of 2 pieces of bread daily at minimum. The time and amount needed will vary from patient to patient. But, ideally they are eating as much gluten as they can tolerate to ensure accurate testing.
- Can exposure to gluten for someone with celiac cause further allergies?
    - This is unlikely.
- Do the GI microvilli of a person with celiac disease become more damaged as a person ages?
    - No, and the villi should heal on a GFD no matter what age.
- Any suggestions on treating the GI villi with Aloe Vera juice to heal and improve absorption?
    - No, there is really no research on aloe vera juice helping to heal the intestine; the only thing that helps with this is the GFD for celiac disease.
- Is there any evidence that celiac or gluten sensitivity has increased due to the short wheat that we are growing?
    - Not really. The evidence that short wheat or modern breeding practices have made wheat more allergenic or have increased gluten sensitivity is largely inconclusive and in some cases points in the opposite direction (i.e. lower gliadin content).
- If someone is struggling with infertility, should they be tested for gluten sensitivity and/or Celiac? (and has no symptoms)
    - Yes, they should be tested for celiac disease as this is a potential cause for infertility. Gluten sensitivity has not been shown to be a risk factor for infertility.
- What are your thoughts about a gluten-free diet and diabetes?
    - I don't feel that a GFD is generally helpful for someone with diabetes without celiac disease/NCGS, especially since the carbohydrate content of many GF alternatives is higher. T1DM is associated with celiac disease because of a common genetic predisposition and shared immunity pathways.
- Any evidence that a gluten-free diet will help with mental disorders?
    - There is significant evidence that a GFD can improve mental health symptoms in patients diagnosed with celiac disease. Mental health can also improve in a subset of those with NCGS. But, there is no strong scientific evidence to support the use of a GFD to treat mental disorders in those without a gluten-related condition.
- Can you state again what we should request PCP to order? Just IgE antibodies for gluten?
    - Tissue Transglutaminase, IgA
    - Deamidated Gliadin Peptide, IgA
    - Deamidated Gliadin Peptide, IgG
    - Endomysial Antibodies, IgA
    - Immunoglobulin IgA
    - Celiac genetics

- Does Celiac disease occur mainly in specific groups? I heard that it occurs mainly in Celtic groups (Irish and Scottish
    - Yes, celiac disease does show a higher prevalence in certain groups, although it can affect people of all races and ethnicities worldwide. Historically, celiac disease has been known to affect people of Northern European ancestry. This is still largely true, with higher prevalence rates found in regions like Western Europe, Scandinavia, Ireland, and the United Kingdom.
- What symptoms might be a cause for celiac or gluten allergy evaluation? I have been recommending patients with years of intractable vomiting to get checked for gluten allergies, but I'm wondering if this is misguided.
    - Yes, vomiting may be a sign of celiac disease and prompt evaluation. One slide in my presentation reviewed many of the gastrointestinal, extraintestinal, and neurological manifestations of celiac disease to look for. There are over 200 symptoms that may be associated with celiac disease.
- How often do you see celiac disease presented with constipation vs diarrhea?
    - I see a fairly even mix of both!
- What are your thoughts on gluten from wheat in the US vs gluten from wheat in Italy where people report greater tolerance to breads and pasta? Should we assume gluten is gluten anywhere in the world regarding celiac?
    - Yes, gluten is gluten when it comes to celiac disease. Even if patients develop less symptoms from the wheat in Italy, the gluten can still have an immunogenic effect so those with celiac disease should avoid it. If those with gluten sensitivity can tolerate the wheat in Europe, then that would be acceptable as they are not triggering an immune response.
- Are you aware of a recipe for sourdough with gluten-free flours?
    - Yes, check out Cannelle et Vanille’s cookbook!

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