

Meet Your Microbiome: Eating for Gut Health

Webinar Questions Answered by Mary Purdy, MS, RDN

- How is the microbiome is influenced by gestational age at birth?
 - *Premature babies may not have access to all of mom's microbial influence (breast milk etc.) and tend to have less developed immune systems which are influenced by mom's diet etc.*
- If the microbiota affect insulin sensitivity, is there a difference in how insulin is impacted (exogenous versus inherent insulin production) in the two different of diabetes (type 1 vs Type 2)?
 - *Insulin sensitivity is a general term about how the body responds to insulin, so yes, this can apply to both type 1 & 2*
- How is IL 10 a good inflammatory?
 - *There are certain chemicals (cytokines) that are part of the body's natural inflammatory & Anti-inflammatory processes which are fundamentally an important part of how we respond to insult and injury. This is one of the ones associated with positive or benefits. It is known to be an anti-inflammatory immunosuppressive cytokine*
- Can you discuss stool DNA testing and interpreting results or provide some references?
 - *I don't have access or experience around stool testing for DNA. Not sure if you mean genetic blood tests or stool testing for bacterial makeup/microbiome? There are many references in the power point that likely discuss testing.*
- If a person has GERD and requires proton pump inhibitors / antacids what type of supportive care are you referring too specifically?
 - *I like to suggest making dietary and lifestyle changes that may be helpful for addressing issues with GERD. Modifications in diet have been shown to be very beneficial. Being mindful of those foods that aggravate (citrus, alcohol, tomatoes, mint, coffee, chocolate) is pretty key if someone has classic GERD. Additionally, eating less processed foods, avoiding high fat/fried and not overeating can also be key. Getting in more vegetables in general is helpful. OTC - "Deglycerrated licorice" lozenges can be helpful for some. I've had great success with this with patients. It's not the answer, but it can be soothing. Hope this helps. <https://www.healthline.com/health/digestive-health/dql-for-acid-reflux#benefits> I have a podcast episode on this too which you are welcome to listen to: <https://marypurdy.co/natural-remedies-heartburn/>*
- Suggestions for reducing gas and painful bloating when increasing beans and legumes?
 - *I think I answered this on the webinar during Q & A as well so you are welcome to go back and listen.*
 - *1. Eat slowly and CHEW to really help with digestion. Are you rushed? Are you seated?*
 - *2. Try putting in a little ginger or parsley or cumin in your meals. Those herbs have natural gas dispelling properties. Or drink a ginger or mint tea before and after. Or chew on fennel seeds or a mint leaf.*
 - *3. Be mindful of overeating them which can lead to gas production.*
 - *4. What kind of beans? All? Are they canned? soaked? You may want to seek out "Eden Organic" canned beans which come with kombu seaweed which can help with gas. Or if you are soaking and then cooking, you may want to cook with a small strip of kombu seaweed. It really helps. (as does a bay leaf or cumin)*
 - *5. It may be about quantity of beans or other foods that seem to cause gas. See if you can moderate and keep track of the biggest triggers. Maybe you do great with 1/4 cup but not 3/4 cup.*
- Does Bean-O helpful or does it slow the probiotic transition?

- *I'm not sure what the "probiotic transition" is but bean-o (which It contains the enzyme alpha-galactosidase) can definitely be helpful to some.*
- Can explain what you mean by healthy soil?
 - *Yes! Healthy soil is soil that is nutrient rich and not depleted. It has a lot to do with how our current agricultural system works. A continued large amount of agri-chemicals (like fertilizer and pesticides) can have a negative impact on the quality of the soil. Additionally, regular tilling of the soil actually disrupts the ecosystem that exists in the soil. And growing the same monoculture crops in one area over and over again reduce the biodiversity of the soil and surrounding area. Also – when farmers use "cover crops" this means they are making sure that the ground stays covered in the "off seasons" which keeps the soil healthy and thriving.*
- Can you comment on if/how a healthy microbiome has protection from COVID-19?
 - *I cannot comment in any kind of definitive way, only that we know that our immune system is very dictated by our gut health and that those with weaker immune systems tend to have less favorable outcomes as it relates to COVID. Additionally, our microbiome is very connected to and plays a role in driving and/or mitigating inflammation. We know that COVID is characterized by high levels of inflammation so that may be a component as well. I imagine we will learn more over the next several years. Great article from Jan 2021 on this: <https://gut.bmj.com/content/early/2021/01/04/gutjnl-2020-323020>*
- What is a good brand of Probiotic that you recommend?
 - *Klaire Labs*
 - *Jarrow*
 - *Microbiome Labs*
- Is there a type of fiber that is better tolerated by someone with Irritable Bowel Syndrome?
 - *People with IBS do better with SOLUBLE fiber, in general. So being mindful of things with lots of peels can be helpful. It may also depend on how they are presenting (diarrhea vs constipation) but this seems to be thematic in my experience. I like this article from Today's Dietitian: <https://www.todaysdietitian.com/newarchives/0816p34.shtml>*
- What would you recommend for people who are already suffering from leaky gut syndrome, and who are very sensitive to high fiber foods and high lectin containing foods?
 - *This is tough to answer because I'd have to have more background on this person to make appropriate and personalized recommendations. But in general, I'd work on finding the foods they do tolerate and avoid those they don't and then guide them through a protocol that may help them to address permeability – supplements and digestive aids and then add back in foods slowly and be sure stress is low and food is chewed well and consumed slowly.*
- Fermented foods are excellent for gut health, but not if one has a candida overgrowth. Are vinegars used for making salad dressing problematic for people with candida overgrowth?
 - *It may be hard to say 100% and may depend on the person. Some claim that apple cider vinegar may actually help with Candida. There's a small amount of research to support this but not a lot of huge studies have been done. In general, it may be helpful to avoid vinegars in the short term when people have candida but again, it can be worth an experiment.*
- What prebiotics do you recommend for those who are sensitive to FODMAPS?
 - *Remember that FODMAPS sensitivity can be about threshold and that some pre-biotics in SMALL amounts may be tolerated by some. Unripe bananas are a good source! Resistant starches in cooled potatoes or other grains can act as prebiotics. Oats contain beta-glucans, a type of prebiotic fiber. So do mushrooms but tolerability may vary from person to person.*
- Do artificial sweeteners or stevia negatively impact our gut microbiome?
 - *There is good research to suggest that yes, artificial sweeteners do particularly sucralose and saccharine. The research seems less clear with Stevia although some preliminary evidence*

shows that it may disrupt bacterial communication, but some is in mice studies. I always suggest using these all in great moderation.

- Is there benefit to consuming cooked fermented foods such as miso soup or would benefits only be observed if the food is not heated?
 - *If miso isn't boiled, it still offers benefit. Very often the miso is added after the cooking and mixed into the soup.*
- Considering the FODMAP diet where beans, onion, garlic, high fiber veggies like cruciferous ones and most things you mentioned are considered high FODMAP and best to avoid or limit to ease symptoms of IBS and related gut issues. What are your thoughts on this?
 - See my answer above which is similar to this one:
 - *Remember that FODMAPS sensitivity can be about threshold and that some pre-biotics/fiber rich foods in SMALL amounts may be tolerated by some. The goal with FODMAPS, in my opinion, is to get to the root causes of why someone doesn't tolerate those foods and work to resolve that. No one should be on a LOW FODMAPS diet for life! In the meantime - Resistant starches in cooled potatoes or other grains can act as prebiotics. Oats contain beta-glucans, a type of prebiotic fiber. So do mushrooms but tolerability may vary from person to person.*
- Do chia, flax, hemp seeds need to be ground to be beneficial? Do you get as much benefit when they are consumed whole?
 - *Flax seeds do need to be ground. There are crackers out there which have been sprouted and if chewed well, can still offer great benefit. Chia generally does best when soaked so all its beneficial properties are made available. Hemp – not necessary.*
- How does the heat from cooking affect the good bacteria in foods?
 - *Bacteria don't survive high heat cooking. Best to be mindful about heating foods meant to be consumed raw or at room temp*
- Maple syrup as a prebiotic is new to me! any brands or types you recommend?
 - *Yes – Grade A or B. The goal is to have "pure" maple syrup which can be spendy. Oftentimes the commercial grade stuff (Log Cabin etc.) will be mixed with corn syrup which won't offer those benefits. I personally enjoy "Coombs Family Farms" brand. Seek out a local brand in your neck of the woods!*
- Has "high" intake of red and processed meats been defined?
 - *Good question. Processed meat has been classified by the WHO as a carcinogen, so any amount is not likely to be recommended, which means that getting to a "high" amount of that may be quite easy. According to the WHO 1.8 to 3.5 ounces of red meat consumed daily or approximately no more than 16 oz/week is what is recommended. Other orgs like the American Institute of Cancer Research recommends closer to 11oz/week. So if someone is having pork/beef daily at a couple meals it may be easy to double that in a week.*
- Is traditional durum wheat and semolina flour pasta considered "refined" carbohydrate? Quantity defined?
 - *Anything that hasn't had the germ and bran entirely removed isn't totally "refined", but flour, in general, is going to be less fibrous than say, a cup of wheat berries or sprouted whole grain bread and won't offer a lot to the microbiome.*
- How does plant based fat differ from animal-based fat?
 - *Plant based fats (from nuts, seeds, avocado etc.) tend to be higher in the monounsaturated and polyunsaturated fats while animal meats/milks tend to be higher in saturated fats.*
- Are there are pros and cons to eating red meat (high quality), how many times per week would we need to eat it to maximize the benefits while minimizing the negative effects of it?

- *This is so dependent on the person. For many, meat may be an easy source of protein and/or easily absorbed iron, or a culturally relevant or important part of the diet. Depending on how the animal is raised and fed, there may be other beneficial components like Omega 3's in a grass fed or pasture raised animal. I'm not sure it's a question of how much you need to eat to gain the benefits. I've never really thought of it that way and I've not really seen research on how much you need to eat to gain the benefits per se. And yes there are still cons to eating high amounts of even good quality red meat which in high amounts is associated with a variety of health and environmental issues. The recommendation from the WHO is to have less than 16oz/week so it may be about finding the right balance for a person to help them meet their protein needs while also ensuring that many other nutrient needs are met with a variety of different foods.*
- Does the keto diet fit into this?
 - *If someone is following the keto diet, it may mean a higher amount of fat and animal proteins and less fiber all factors which may have a negative impact on the microbiome. But it may also depend on what the individual's personal goals and medical issues are. It can be hard to meet fiber needs when carbs can only be 5-10% of the dietary Cals.*
- Do you know if other emulsifiers, other than carrageenan, also increase inflammation? I am thinking about the emulsifiers in almond milk with gellan gum for example.
 - *Yes, the research I've seen includes all the gums. Xanthan gum is one in particular that I've seen have an impact on people who already have GI issues, especially celiac. But as with many things, it may be about quantity.*
- Are all artificial sweeteners associated with dysbiosis or are there specific ones?
 - *There is good research to suggest that yes, artificial sweeteners are associated with dysbiosis, but also bacterial communication -particularly sucralose and saccharine. The research seems less clear with Stevia although some preliminary evidence shows that it may disrupt bacterial communication, but some is in mice studies. I always suggest using these all in great moderation*
- What is your recommendation for "natural" sweeteners such as agave, monk fruit or stevia? Are small amounts of these better than artificial or cane sugar?
 - *Some preliminary evidence shows that stevia may disrupt bacterial communication, but some is in mice studies. I haven't seen anything yet about monk fruit. The amount of these that are used is usually very minimal and I think as with many similar foods, it's great to use them minimally. I haven't seen much on agave but it's a bit different than stevia and monk fruit and likely has some other prebiotic properties. But it's high in fructose which may not be optimal for all individuals.*
- How about Renadyl for patients with chronic kidney disease?
 - *I'm not an expert on this topic so can't speak to it. My apologies!*
- Does grass fed beef mitigate concerns with TMAO?
 - *Unfortunately, as far as I know, no, because it's about the carnitine and choline in red meat that the bacteria convert into the precursor to TMAO (TMA). However, the Omega 3's found to be higher in grass fed beef may offer additional anti-inflammatory compounds that can support heart health.*
- Are pre and probiotics okay for children under the age of 1 and if so any recommendations for certain genus that are "more ideal"?
 - *There are probiotics designed for babies. B. longum and B. Infantis are both found in breast milk, I believe and are important for infant health. There are a number of products on the*

market. One is by Jarrow and has some good research behind it:

<https://www.jarrow.com/product/624/Jarro-Dophilus> I know less about prebiotics for baby.

- What is the minimal effective dose in CFUs, or does it depend on the condition? At least 2 billion?
 - Definitely depends on the condition and the tolerance of the person and the combination of species in the probiotic. I generally start off most people with 5 billion/day, but monitor for tolerance.
- What is your opinion of kombucha as a source of good bacteria?
 - Kombucha will definitely offer some good bacteria but there isn't strong evidence that it definitively and significantly alters the gut microbiome. But there may be more research coming out on this. Not all kombucha's are the same and some may offer more benefits than others. But for many, this is an easy add, so if they are willing and they have access and the bucks, I think it can be an easy way to get fermented "foods" in there. Pretty spendy, however. At \$3 a bottle, the person is better off buying a \$30 bottle of probiotics and taking that for 2 months.
- Can you give examples of safe digestive enzymes to take?
 - I have had good experiences with digestive enzymes that offer a few different ones to help support digestion of protein, fats and carbs. Brands I have used with success include Enzymedica, Natural Factors, NOW, and Pure Encapsulations. For something a little less intense, just using papain (papaya enzymes) may also be helpful.
- Do you advocate checking zinc level to determine zinc supplementation? I understand too much zinc can depress immune function.
 - Checking levels can be expensive so depending on who you are working with, I suggest doing a dietary assessment for zinc containing foods; monitoring for any impediments to optimal absorption (medications like acid blockers) and also looking at skin, wound healing and checking nails for white dots. Also – on a CBC panel, if alkaline phosphatase is high, that can also be a potential indicator of low zinc levels. A supplement can be in low dose like 15mgs so you don't risk overdoing it. I tend to shy away from supps that go over 25 mgs.
- Can drinking certain teas be beneficial for gut health?
 - Yes! Emerging data suggests that black tea, green tea and oolong tea extracts can all increase the growth of beneficial bacteria in the human intestine. Green tea has those polyphenols that have shown to be protective and have benefit. And oolong tea also has some nice research behind it around its anti-inflammatory compounds.
- What is the daily dosage for probiotic supplements that you recommend?
 - It completely depends on the person, their condition and their diet. I usually have started people off with 5-10 billion/day for dosaging and see how they tolerate. But often go up to 25 billion.
- Many of my clients ask me about pea protein. Is pea protein friendly to SCFA production?
 - According to the research in the Singh article, it appears that it is! Now, not all pea protein is the same, and when food is live (like actual peas!) it's likely that you may see more benefit. PAPER: Singh, R.K., Chang, H., Yan, D. et al. Influence of diet on the gut microbiome and implications for human health. *J Transl Med* 15, 73 (2017)
- Any comment on SIBO and pre/probiotics?
 - Many with SIBO do better on a low FODMAPS diet so some of these food sources may be less helpful for them. Resistant starch sources may work ok (cooled rice and potatoes) etc, and I did work with a patient where *S. Boulardi* was indicated by his Dr.
- Should omega threes be balanced with omega six's and omega nine's?
 - In an overall eating pattern, yes. All three are necessary and beneficial. With our current dietary patterns, most people come up short in the Omega 3's and Om 9's. If you are talking supplements, in my mind it's about looking at the whole diet. I rarely recommend a supplement

with all those fatty acids because most people can easily get Om 6's in diet and may be overconsuming, and can, with dietary shifts, get in more Om 9's (Monounsaturated) in Olive oil, avocado, almonds etc.

- Do food intolerances affect the gut microflora negatively? Such as a patient who has fructose intolerance and continues to eat foods high in fructose.
 - *In my experience and the reading/research I have done, anything that increases inflammation in the gut is not helpful for the gut bacteria. Inflammation is one of those processes that can have an impact on the lining of the gut wall which can cause issues.*
- In an individual without a colon following surgical resection, how would recommendations change?
 - This is likely out of my current scope of practice for the purposes of this educational webinar!
- How does coconut increase "bad" microbiota? Should I discourage coconut milk for clients?
 - *This is related to saturated fat content which in small amounts should not be an issue. Coconut milk is a wonderful food and very culturally important to many communities. This is really about how MUCH they are consuming. Sticking with < 20grams of saturated fat/day for most people is a good amount. This may be less for a smaller individual or someone with known cardiovascular issues or insulin resistance. 1/3 cup coconut MILK = 12 grams of sat fat*
- You mentioned FOS which can be a problem for those with IBS. Can you suggest what they should do?
 - *See answers above related to IBS and FODMAPS. Lots of other options.*
- Do sugar substitutes have a bad or good impact on the GI tract?
 - *Please see answers above*
- Does probiotic therapy help with diarrhea with enteral feeding?
 - *I don't have experience in this particular area, but seems likely that it would, especially if it's related to antibiotics. But even if not, numerous studies have shown that probiotics are helpful for addressing diarrhea.*
- My coworker and I work in an outpatient oncology center. We are still unclear on whether probiotics are safe for this population, do you have any information regarding this population?
 - *I think the thoughts may be shifting on this front but I always defer to the oncologist of the patient. I think it used to be advised to avoid probiotics because of the immune compromised nature of the patient undergoing treatment. It may also depend on what therapy the patient is getting. If someone is experiencing diarrhea as a side effect of treatment, it's possible that probiotics may help, but if they are severely immune compromised, I would tend to err on the side of caution.*