



## EVERYDAY IMMUNE RESILIENCE

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Hi, everyone. Today, I'm going to be talking about chronic gastrointestinal bloating. I'm going to go over some of the main concepts for the first 20 minutes and then I'll take questions as they come in. Let's start with the basic concept now. The first thing to really go over is, if you eat the standard American diet, which is basically high sugar, high carb, high storage processed foods, it is absolutely expected to have abdominal bloating and distension and maldigestion. Let's just start with that.

That's one of the key things. If someone is going out to a fast food place and eating a really ... Let's say you go out for a pizza and a beer. They go and get a huge thing of large fries and processed fast food. Lots of sugar in a soda, it's pretty normal to have a bad gut function. It's pretty normal to have bloating and distension. I really want to just start with focusing the rest of the time really on people that are eating a healthy diet and they still have chronic bloating and maldigestion. That's the key thing.

Thank you for everyone that's joining us and saying hi. I appreciate the thank you's. Also, just what country you're from. Thank you. All right. Now, when you're looking at people that are healthy and they have chronic or let's just say not healthy because that can be defined in many different ways. A person who's eating a reasonably healthy diet and they still have chronic bloating and chronic distension. They're not eating fast food every day. They're basically eating salads and vegetables and fruits and healthy meats and so forth.

They have chronic bloating and distension and so forth. Let's talk about those patients. That's really going to be my emphasis. With those patients, one of the things you have to realize is that whenever you look at the gastrointestinal tract, there's a saying that I always teach in my courses. You always have to clinically start north to south. What that means is, you have to first start with chewing and then swallowing and then going all the way down the gut. The first thing that happens is the food gets digested in the stomach.

A key part of that is hydrochloric acid release and then it moves down into the small intestine into the duodenum. You have to have pancreatic enzyme release to help digest the food. You have to have bile to help digest fat. You have to get proper absorption and then you have proper intestinal motility to move the food across. Dysfunction of releasing hydrochloric acid enzymes in the stomach or pancreatic enzymes or not having a healthy gallbladder or not having your intestinal tract have proper motility can all lead to chronic bloating and distension.

What I want to try to do in this Live Facebook talk is trying to help you differentiate what types of mechanisms may be causing chronic bloating and distension. If you're suffering from that and just to understand the basic concepts. One of the most common causes and the first place to really start is to look at digestive enzymes. As a basic rule, as a clinician, if I see a patient

come in and say, "Listen. One of the things I'm complaining about, I get bloated after I eat." I have several questions that I go through to try to figure out what may be causing it.

My first question is, do you notice certain foods that may be causing bloating for you? Is it all types of foods? Is it based on portion size? These help you differentiate what the mechanism of their maldigestion could be. If a person that has lots of bloating, distension and gas, predominantly when they eat a protein-rich meal like steak or eggs or just anything that's really rich in protein. The first thing to think about is that they may actually need hydrochloric acid digestive enzymes. Their stomach may not be producing hydrochloric acid.

We'll talk about reasons why in a second. We're just going to go through the list of things to think about when there's chronic bloating and distension. Now, other people who may not have issues with the protein that cause them to have chronic bloating but for them, it's starches. For these people, it would be anything that is like plant fibers. They had a big salad. They can get really bloated and distended. That's more of a pancreatic enzyme issue. For other people, it's fat.

If they have anything with olive oil on it, if they have anything fried, they get really bloated and distended. Those are related to the gallbladder. If everything they eat, no matter what they eat causes bloating and distension, that's typically an indication of small intestinal bacterial overgrowth. If it's a portion size, like the amount of food they have to eat that causes bloating and distension, then you're starting to think about dysautonomia.

Those are the basic fundamental things to really think about if you're trying to figure out what's causing chronic bloating. If it's protein-rich meals, then it could just be any hydrochloric acid. If it's starches, then it's pancreatic enzymes. If it's maldigestion caused by eating anything that has fat, like olive oil or fried greasy foods, it's gallbladder. If it's all foods, then it could be something called small intestinal bacterial overgrowth.

If it's portion size, then we're looking at dysautonomia or dysfunctions in how the gut is processing food throughout the intestines. Those are the basic concept thing. A person could actually have more than one mechanism. They could have all the mechanisms all at once. All types of things do happen. Let's talk about one of the most common ones, which is the need for hydrochloric acid. One of the things to understand about hydrochloric acid is as food gets into the stomach, the most important step of digestion is to actually produce hydrochloric acid.

As human species, as we get older or a production of hydrochloric acid levels do drop a certain percentage every year. We do know as we get older, our bone density can be impacted. Our skin tone can be impacted. It is our digestive enzyme output. It's really common, especially as we get older to have an inability to produce enough hydrochloric acid. Now, other things can cause hydrochloric acid imbalances, too. For example, degeneration of the gut can do that. That can be a key factor. Infections with bacteria called *H. pylori* can do that.

The key thing is let's talk about hydrochloric acid. As food goes into your stomach, your body, your gastrointestinal tract releases hydrochloric acid. That's important for a few things. It's important for the process of breaking down protein. Because you need that acid to break down

protein. Even more than that, it's really involved with also triggering reflexes in the small intestine. You can release pancreatic enzymes. You can also initiate gallbladder contraction. There has to be a change in pH from your food content going from your stomach into your small intestine.

It triggers that pH of the acid released from hydrochloric acid to then trigger your gallbladder to release bile to break down fats and pancreatic enzymes. If we do see a patient that just has an intolerance to digesting all fats, we usually start with hydrochloric acid as a digestive enzyme supplement to see if it can really help them support their overall GI tract.

Now, hydrochloric acid in addition to breaking down protein and then triggering in the reflex in the small intestine to release pancreatic bile enzymes, pancreatic enzymes and bile from the gallbladder is also really important to neutralize the small intestine. You don't have any kind of bacterial overgrowth. Also is really important for optimizing the pH of the gut to get healthy amounts of microbiome diversity. It's one of the most essential steps of digestion. When this system is not working, it's really, really hard to get any change.

Now, people that also have hypochlorhydria tend to have really bad breath that comes along with the proteins. If they're not digested, they putrefy and they cause this really protein petrification breath, which is terrible. A lot of times also when they can't digest protein, they also may get reflux or burning symptoms. Because when the proteins aren't digesting, they putrefy. They actually create more of an acidic environment that causes symptoms of sometimes gastric ulcers. A lot of this is just really hydrochloric acid.

If you're having issues with just a healthy digestion, one of the first places to really start is just looking at hydrochloric acid. Now hydrochloric acid, there's a digestive supplement anyone could find on Amazon and health food store. You can also even consider things like apple cider vinegar. Apple cider vinegar helps acidify the stomach. It helps digestive proteins. It's not going to be as strong as taking hydrochloric acid. That's the first thing to really think about when you're seeing chronic bloating.

You just need to take some hydrochloric acid supplements. If you decide to consider that for yourself, you start with one capsule. Whichever manufacturer you use and then you build up to see if you find the right dose that gets rid of the bloating. Some people will start with one capsule and go up to two or three. That really what's worked best for them to get rid of the bloating. You have to personalize your dosage for that. Now for other people, if they take hydrochloric acid or even apple cider vinegar, they get extreme burning.

That's a clue that you have an underlying gastric ulcer. If you have that, you definitely need to see your physician and get tested for things like H. pylori, which is a bacterial infection that can cause ongoing ulcers in the stomach. The H. pylori organism also furrows into the stomach lining and prevents hydrochloric acid release. That's the key things that you really want to understand when you're looking at hydrochloric acid issues.

Now, people that have pancreatic enzyme issues, they're the ones that can't digest fiber and really just feel full if they eat anything that contains a lot of starch or fiber. They get lots of

nausea. They get lots of mucus in their stool. Pancreatic enzyme deficiencies are very common. Many of them are just secondary to not having enough hydrochloric acid. Because remember, hydrochloric acid acidifies the small intestine, which then triggers the reflux to release pancreatic enzymes. Pancreatic enzymes are things like pepsin, Bromelain, peptidases, lactases.

In the health food store, they're listed under pancreatic enzymes. Now, if you're looking at digestive enzyme supplements, some will contain Hcl. Some will only contain pancreatic enzymes. Some will contain both. A lot of times, when people have hydrochloric acid deficiency or hydrochloric acid need, they get a multi-enzyme product. They have just a little bit of Hcl. Not enough to really make a difference for them and a lot of pancreatic enzymes that doesn't work. Sometimes, you just need to start with a high amount of hydrochloric acid first.

Find the dose that works for you. If you still have lingering symptoms, you may want to add in some pancreatic enzymes to see if that gets rid of any other symptoms that's there. Now, the third most common cause of bloating and the most overlooked, or people especially females that have gallbladder issues, when we think of gallbladder issues, most people are just thinking of gallstones and gallstone obstruction. That's not really the main problem. The main problem is a phenomenon that's actually called sludge formation.

You can see this in an ultrasound. If you ever had your gallbladder recessed, if you have lots of gallbladder symptoms. People that have gallbladder symptoms are really suffering from inability to tolerate fats and greasy foods. They have lots of burping. They can't handle things like fish oils. They just have this constant distension all the time. Sometimes, the distension isn't always associated with their food intake. Because it may take two or three hours after you eat to really get bloated and distended when you have a gallbladder issue.

People that have gallbladder issues also tend to have referral pain when the gallbladder is contracting and under a lot of stress. Where they can have some upper back tightness right in between their shoulder blades. They also can have stool that floats. People that have pancreatic issues or gallbladder issues can sometimes have floating stool. Those are all key factors where they may actually be a gallbladder issue. It's not a gallstone. It's just gallbladder sludge. The gallbladder releases bile and then bile is used to break down fats.

Under various physiological conditions, there tends to be this thickening of the bile. It leaves it to the sludge formation. There isn't an efficient amount of bile released in the gallbladder to digest fats. That sludge formation can eventually turn into gallstones. Those gallstones may eventually cause the gallbladder obstruction, which then will cause immediate, acute symptoms that probably want to go and get checked out at the hospital. For a lot of people, they never actually developed gallstone obstruction.

They just get this thick, bile-y substance that's there. Long term hypothyroidism can cause gallstone formation. People that come from Middle Eastern, African descent, Hispanic descent have a higher risk. Females have high risk. Any type of metabolic syndrome, obesity increases gallbladder stone formation. Also, they've also found sedentary lifestyles really promote gallbladder dysfunction as well. When you're looking at a common cause for just chronic bloating, it's really people that have these underlying sludge gallbladder formations.

They're usually missed in the healthcare system, because in the conventional health care model, they're really concerned about a gallstone obstruction. Not really this so-called sludge formation that's taking place. Some studies, when they look at the epidemiological prevalence of gallbladder disease and gallstones, they found about 20% of American have some degree of gallstone issue. It's pretty similar in other countries. In Europe, it's also in the 20% of the population as well. Okay.

Now, if you have gallstone issues and gallbladder issues, then hydrochloric acid may have some benefit. Pancreatic enzyme may have some benefit. You really may need to do things to thin the bile. By the way, if you have a gallbladder issue, you have to go off fats for an extended period of time. You've got to consider taking things like bile salts. you can find those over the counter. You're going to be very careful with taking bile salts. Bile salts help thin out the sludge. If you take too much, it can cause increased bowel movements and diarrhea.

That can be a major problem. You got to be very careful with that. Things like beet root extract have been shown to help thin the bile. Things like milk thistle, botanical dandelion root have been shown to thin the bile. Usually, taking a combination of those things are really important. They've also found coffee consumption really has a huge impact on thinning out the bile as well, too. Coffee has been shown to be very effective in filling and thinning out this gallbladder sludge.

Those are the key things to think about when you're looking at maldigestion causing chronic bloating as far as digestive enzymes. Hydrochloric acid being the first one with protein intolerance. Pancreatic enzyme being the second one with inability to handle starches and fibers. Gallbladder issues really being a key issue with fats. Again, you can have a person that has all three of them.

They may benefit from taking digestive enzymes that include hydrochloric acid, pancreatic enzymes and then having to take things like lipase and compounds to help digest or to thin out their thick bile in the gallbladder. Those are the most common ones. Then you get into more chronic ones. The next degree of difficulty or chronicity is involved with chronic bloating and distension. People that suffer from something called SIBO, or small intestinal bacterial overgrowth. For these people, they just noticed whatever they eat, they really just get bloating distension.

What's actually happening in many of these patients is they have a condition called small intestinal bacterial overgrowth. What happens in this mechanism is that bacteria that's found in the large intestine moves into the small intestine inappropriately. They call this one bacterial translocation. That pattern can cause all this bacteria that is in the small intestine that shouldn't be there. When they get exposed to any kind of starch or sugar or compound, they end up getting significantly bloated and distended.

Since there's a small amount of monosaccharides or fructo saccharides in most meals people eat, they're so sensitive they get severe distension and bloating. Small intestinal bacterial overgrowth can be tested with what's called a breath test. Methane hydrogen breath test where they can measure your breath levels of hydrogen methane and see if you have bacteria

in your small intestine that are producing these gases. It's not 100% accurate test because some of the bacteria in the small intestine release other gases besides methane and hydrogen.

There's also something called the FODMAP diet. F-O-D-M-A-P. FODMAP diet that was developed for people to have SIBO, which really removes all types of the sugar and starch compounds that really feed this bacteria that shouldn't be in the small intestine. If you google FODMAP diet, you'll see it's pretty standard. A lot of times, if you have chronic bloating and distension, you may want to just go on a FODMAP diet for a couple weeks and see if it helps you with your overall symptoms. If it does, then you may actually have something called small intestinal bacterial overgrowth.

Now the question is, why do you have it? One of the things that we understand is the small intestinal bacterial overgrowth happens when the valve between the small and large intestine isn't working well and when the intestinal muscles are not contracting. This can happen for a lot of reasons. One of the most common reasons is chronic inflammation in the gut from a chronic inflammatory bowel disease or Celiac disease actually starts to degenerate the gastrointestinal nerve plexus. This leads to for many people, a permanent dysfunction in the gastrointestinal tract.

The other thing to understand is just as the brain degenerates, the nerve plexus in the gut degenerate, too. When you have someone who's having severe inflammation in their gastrointestinal tract or have lots of risk factors for neurodegeneration, the gut nerve plexus called the enteric nervous system also degenerates. That can also lead into this chronic small intestinal bacterial overgrowth issue. The other thing that's related to this as it comes to this bloating and distension issue is dysautonomia.

Some patients sometimes have traumatic brain injuries that then catch up with them a few years later. They lose this brain-gut access integration. They have a really hard time with getting those smooth muscles in the bowels to work well. Bacteria easily comes over to the gut and it causes SIBO. They have some issues with the brain-gut access actually causing release of enzymes as well. Some people really have to treat the brain to really improve chronic bloating and distension and improve their health. These are the basic concepts of maldigestion.

Now of course, you should know any kind of food sensitivity you get exposed to can cause bloating and distension. Unrelated digested enzymes. Most common food sensitivities in US and Europe are gluten. Milk protein, albumin, egg albumin and soy and soy protein. Those are the most common triggers for people. Be aware of those food sensitivities. A lot of times, food sensitivities turn on as you get older. You lose your immune tolerance. By the way, I've written lots of information about immune tolerance and food sensitivities on my website, Drknews.

D-R-K-N-E-W-S.com. I also have an online program that teaches you how to improve your immune tolerance and what to do if you have lots of food sensitivities as well. If you want to check that out, please go to Dr. K News and you can check out my information there. There are people that as they get older, they lose their immune tolerance. They start reacting to lots of food proteins. At that point, you have to improve your immune tolerance. Basically, try to remove these foods until you can actually not react to them as seriously. Sometimes, you can't.

Sometimes, people just have ongoing Celiac disease. Their Celiac disease turns on. You just have to be gluten-free to get rid of chronic bloating and distension. There's also people that have chronic intestinal autoimmunity. They may not know it. If you have one autoimmune disease, if you already have Hashimoto's, if you have rheumatoid arthritis, it's very likely you may also have autoimmunity happening in the gut. When you have autoimmunity in the gut, that also shows to destroy the nerve plexus. You can end up with things like SIBO and intestinal motility issues.

Those are unfortunately the realities of what's out there. You're trying to figure out what you can do with the mechanism of the chronic cause of gas and bloating are. Those are some of the most common things to think about. Now, I would also say if you do have a motility issue or a brain-gut access issue, one of the biggest red flags that's happening in a clinical setting is if you're having difficulty swallowing foods. Sometimes, I'll have patients come to my office.

They'll say, "Please don't give me any limitary supplements or if I can use a powder or oil as a nutraceutical, that'd be great. Because I really don't do well swallowing capsules." That's especially important if they used to be able to swallow capsules. Now, they can't do it as the years have gone by. That's a major clue that the brain-gut access or the intestinal motility system is not working. Those are key factors. Now, if someone eats really, really bad, they can also change the intestinal microbiome.

They have more of these bacteria that tend to ferment and cause gas that lead to bloating and distension as well. A diet very high in fiber, a diet rich in multiple fiber sources that help diversify the gut can also be key factors to get rid of bloating and distension. Now, I could also tell you that probably the least effective thing that helps get rid of bloating and distension are probiotics. Because probiotics don't really address the underlying issue. They only have limited effects. What you really do is either increase your fiber intake or improve your enzyme physiology.

Look at your intestinal motility and so forth. Those are all the biggest factors. I think I went over the first 20 minutes. The key points of bloating and distension, the most common mechanisms. There's obviously lots of other mechanisms. You can always dig deeper to why someone has a gallbladder issue or hydrochloric acid need. I think for what we can accomplish in a Live Facebook, those are some really key concepts. What I'd like to do is try to take some questions here.

My wonderful wife is helping me because I tend to not read questions accurately as I am trying to get my thoughts together. It's been really nice to have her help. Yeah.

Okay. Dede.

By the way, my wife is Dr. Reyes. She's actually a doctor. She is very competent in all these skills. Sometimes, she won't pick questions. By the way, it's really hard for us to answer questions where it's like, "Help me manage my case." It's really impossible to manage a case when you only have two sentences explaining it. It's not optimal. If we're not able to get to your

question, it could also be we can't answer a case study question. We can only answer general concepts. Okay. Dr. Reyes.

Okay, Dr. Kharrazian. Okay. Dede. Does supplementing with HCl cause you to produce less HCl?

**Does supplementing with HCl cause you to produce less HCl?**

Yeah.

This is an ongoing debate. If you take HCl, your body doesn't make as much. If it's working well and you're healthy, if you have HCl, it's just going to register. You don't need as much acidity release. You're not going to make as much. The concept of having your parietal cells complete atrophy if you take HCl I think is a little too forced, stretched. I don't think it's going to be much of an issue for most people. Sometimes, if you're constantly taking HCl and then you stop, you may have a day or a meal or two where your body has to catch up with it.

It's not going to be an ongoing thing or cause atrophy of your gut if you're just taking some digestive enzymes. Sometimes, you may want to increase your HCl dosage, too if you're traveling. I know when our family travels and we go to a new culture, a new environment, we'll sometimes just take HCl because it helps acidify the gut, which helps neutralize pathogens, too. Bacterias in our guts who are not used to, even though they're tolerable by people in the region that they're used to eating it.

For us going to new regions, some of those bacterial species may have their impact on us. We also take HCl just when we travel all the time to help support it. I don't think taking HCl is going to cause any significant physiological loss where you can't make your own. Okay, next.

**Katya. I took HCl in the past and it caused burning.**

Yes.

**Does this mean I don't need it?**

If you took HCl in the past and it caused burning, it means you have a gastric ulcer. You have thinning of your gastrointestinal tract. You shouldn't have any burning taking HCl unless you have some thinning of the gastrointestinal lining. The amount of HCl you're taking with the supplement should never lead to burning. You may have some inflammatory issues in your stomach lining already. You may want to heal your stomach lining.

One of the most effective compounds to heal stomach lining with some pretty good research behind it is DGL, Deglycyrrhizinated licorice. When you take licorice, licorice has flavonoids that really help the healing of the gut. They also have a compound called Glycyrrhiza, which can increase your blood pressure. They made a version of licorice called Deglycyrrhizinated licorice, DGL that can just help you with the lining of the stomach.

If you really do have intolerance to hydrochloric acid because it causes burning, I really suggest that you may actually have some gastric lining thinning or maybe some gastric ulcers. You should definitely be checked out for H. pylori infections. is the most common infection

worldwide. When you get it, it can start irritating causing inflammation in the gut. The ones that are most at risk for the complications of it and the risk factors for it, which is gastric cancer. Actually, another key thing with chronic is also cardiovascular disease.

There's several thousand papers that show pathogens in the gut furrow into the vascular that they'll even cause destruction. is a bacteria that has been shown clearly to cause blood vessel disease. These are most concerning for people that have no symptoms of gastric ulcers. It usually doesn't show up until they take some HCl. If you have burning taking hydrochloric acid, you should definitely look at taking things like Deglycyrrhizinated licorice. Healing your gut, checking for and going down that route. Okay. Next question.

Okay. Cindy. **How much apple cider vinegar should you take and when?**

If you want to see if apple cider vinegar helps your digestion because it helps acidify your stomach, you can start with two tablespoons and go up to a quarter of a cup and see how it works for you. If you are concerned about having burning reflux, you may just want to start with two tablespoons and see if that works. For some people, they'll need to drink more than that. Maybe a quarter of a cup to really get the best digestive effects from it.

If you notice that the apple cider vinegar does help you digest but you want to do something more, then the next step would be to step up from apple cider vinegar to actual hydrochloric acid supplementation.

Okay.

Okay. Next question.

From Joan. **The best time to take HCl. Before, during or after meals.**

That's a good question. The question that comes up is what's the best time to take HCl? Is it before, during or after meals? You can also say that with any pancreatic enzymes as well. What I found working with patients from my practice is to let them experiment. Because people have different transit times or different motility times. You can try taking HCl a few minutes before your meal comes, before you eat. You can try taking it during your meal. You can try taking it five or 10 minutes after you eat. You can determine which is the best one for you.

For most people, taking with their meals is the easiest way to do it. It seems to work great. You may notice a better response to it if you take it slightly before you eat or a few minutes, 10 to 15 minutes after you eat. There is some uniqueness and individuality with that. All of them will work. They will all help you acidify your gut and digest your food. You can just experiment and see what works best for you. Okay.

Okay. Monica. **Do you treat SIBO first or mold toxicity first? If positive on a Microtox test.**

The question is if a person has SIBO and mold reaction with mycotoxins, which do you treat first? This is really the battle when it comes to novice with an experienced clinician. Because if you go see a functional medicine practitioner or someone who looks at these different types of mechanisms, lifestyle, diet and nutrition mechanisms, if you get enough testing done, you're

going to come up with a whole list of things that's wrong. That's just the fact. The question is which one do you treat in order?

That is where really the skillset comes in between someone that is experienced in clinical practice to someone that isn't. People that aren't experienced in clinical practice will say things like, "Let's treat the gut first." That might not be the best approach. For some people and for many people, that's not the best approach. Sometimes, there are things that actually are causing the gut imbalance. You have to look at those mechanisms. I can't tell you which you should treat first because it's not a rule.

There are lots of many other variables that are involved with where you start. For example, if you're living in a building that's chronically making you sick, chronically making you inflamed, you might need to get out of that environment to have a chance to actually reduce your inflammation so you can fix your gut. On the other hand, your gut imbalance may be causing you to lose your tolerance, which now makes you much more reactive to the mold environment you're in. You may do a combination approach.

There isn't a set rule. That's really the best way I could try to answer your question in a setting like this.

Okay.

Next question.

**I'm listening. I'm not sure. Okay. If the SIBO breath test is not accurate, which test is? Which food allergy test is recommended? Cyrex or Alcat?**

Okay. First question. If the SIBO breath test is not accurate, then which one is? The SIBO breath test is accurate if you are producing bacteria that produces methane or hydrogen. For the most part, the specific sensitivity is good. It's not perfect but it's good. It is a good test. It's just there are some people that have small intestinal bacterial overgrowth that the bacterial species in their gut are releasing gases beyond methane and hydrogen. That's where you can have some diagnoses missed.

This is why sometimes, just doing a FODMAP diet for two weeks will really be a big clue to you if you actually are suffering from this SIBO pattern. Second part of that question was what kind of food sensitivity do I recommend best?

What food allergy test is recommended? Cyrex? Alcat?

Cyrex or Alcat. Of course, I personally love Cyrex. I use them on my practice. I work with them. I consult with them. I like them because they do ELISA gold standard testing. They do duplicate testing. That's my preference. As a commercial lab, I use Cyrex. More important than commercial lab preference, there's a big difference between Alcat testing and what everyone else is doing. The gold standard test to measure food sensitivity test is really called ELISA, enzyme-linked immunosorbent assay.

The other form of testing like Alcat are doing what's called the cell-mediated test. The cell-mediated tests are terrible. They have very little specificity. They have very little sensitivity. Their reproducibility is not good. It's actually banned as a test in many states. Everyone in the world, immunology not lab marketing are just in shock that people are using it. What the cell-mediated test will do, like things like Alcat, which is cell-mediated test is they basically take antigen presenting cell to see if food protein causes the swell.

If it does, then they suggest that's a food sensitivity. That is such an inaccurate way to look at a reaction for food. You really need to see the clear antibody. When they've actually looked at studies comparing cell-mediated testing to ELISA, there's no comparison. I think a lot of the labs are doing cell-mediated testing with food sensitivity. Really doing a really fantastic marketing campaign but they're not following what's the gold standard, which is ELISA testing, which is very, very high specificity, sensitivity and reproducibility.

In my immune tolerance program, I actually have a whole section on all the different mechanisms. I go into much detail about how these different lab tests work. That's also something that's included in the immune tolerance program if you're interested in that. Okay. Next question.

Okay. Prejathka. That's a pretty name. **Is the baking soda test accurate to determine low stomach acid?**

Is the baking soda test accurate to determine low stomach acid?

Yeah.

I'm not sure if any studies that have ever been done with the baking soda test. It's one of the things that people do where you alkalize the gut and then you see how quickly you could get responsive again. Now if you did a gastric polymer test where you swallow a capsule and then take a neutralizing soda like baking soda. They can actually measure your pH response against it. That is the gold standard.

That is very, very accurate. Not many people swallow a capsule that then measures pH and then take baking soda to determine their acidity. That is the gold standard test. In that version, it's very accurate.

Someone asked about that gastric polymer test.

Yeah.

Okay. Phil. **What's your take on celery juice?**

Phil. What's my take on celery juice? My take on celery juice is wow. It's become really popular. I haven't read the source of celery juice. I have a family friend that just tells me that they're doing it. If you're doing it, good for you. Celery juice has lots of antioxidants. If you're on it, if you're doing it especially in a long term fasting state, it can really help change your microbiome. I don't know if it's as impressive as any other type of vegetable to be juicing. I know there's some theories behind it. It's not a bad thing.

If you want to juice with celery juice and fast while you're juicing with celery juice, I think you have some nice health benefits from it. That's as far as I can answer that question. Yeah.

**Pia. What is always in your protocol for dysautonomia?**

What is always my protocol for dysautonomia? Nothing. There's nothing always in my protocol for any condition. Dysautonomia is a complex condition. Dysautonomia may give a difference between sympathetic and parasympathetic can be caused by many different pathways. For me, if I have a dysautonomia patient, it will literally take me three and a half hours neurological exam. I'm not even talking about the basic physical exam to try to pinpoint what areas of the brain are involved causing dysautonomia.

Any injury to the brain, the different regions can fire into autonomic centers and cause dysregulation. Another question is what's causing that. There is no conventional or there's no treatment approach for dysautonomia I can say I always do. Now, that's as far as trying to treat dysautonomia. The side effects of dysautonomia, there's some general things you can do. For the side effects of dysautonomia, for example, if you can't control your autonomic function where you're more in a sympathetic response which means your heart rate is up. Your eyes are dilated.

Your heart rate goes all over the place. That's more dominant in your parasympathetic response like digesting and producing enzymes. Until it's figured out or treated and sometimes, the injuries are so significant. You can't treat it. You probably should take digestive enzymes to compensate for your dysautonomia. You should probably take things like probiotics and things like short chain fatty acids and things like butyrate to really help your microbiome environment.

If you have true dysautonomia, you're going to have gall digestive issues and enzyme release issues and motility issues. You're just going to have to do whatever you can to improve your digestive function. Even though you won't be able to fix your digestion until your dysautonomia gets treated. In some sense, you're just going to at least do some general approaches to deal with the side effects of having a dysautonomic pattern by improving gut function best you can. Okay. Next question.

**Okay. Ciora. She's saying the capsules are so big to swallow. She wants to make a chocolate probiotic for her kids using EnteroVite. Is the EnteroVite heat sensitive? If she breaks the capsule and puts it into melted chocolate. Is it cooling down it harden?**

To be honest with you, I don't know if short chain fatty acids are heat sensitive. I don't know if you melt it EnteroVite to chocolate it would work. I don't know.

This is my question.

I can't answer it.

Okay.

You're going to have to let us know.

Okay. **What's the biggest difference between SIBO and candida?**

What's the difference between SIBO and candida? SIBO is a bacterial overgrowth that takes place when bacteria from the large intestine moves to the small intestine. Candida overgrowth is different. Candida overgrowth is a yeast overgrowth itself. Not a bacterial translocation. Candida is a normal part of our gastrointestinal tract. If you do what's called a gastrointestinal mycology test, they can measure the growth or the amount of candida. You can see these overgrowth patterns of candida.

Those happen when there's something really impacting the gastrointestinal immune system. When the gastrointestinal immune system is not healthy, if you have a diet very high in sugar and starch or if you've been on high doses of antibiotics for a very long time, that's wiped out the healthy bacteria in the gut than then compromised immune system then you can get these yeast candida patterns that take place.

Candida patterns are a combination of something that compromises the gut microbiome, which then impacts gut immunity like heavy antibiotics, bad diet, heavy stress, a combination of all things at once. When the candida species has an overgrowth in the gut, any time you have too much sugar or starch, they feed off that and cause bloating and distension and lots of other diverse symptoms. In those cases, you just basically have to go off all sugar and starch and fruit. Take some natural antifungal compounds. Grapeseed extract is one of them. You can take olive leaf extract.

You can take lots of various antibacterial natural anti yeast compounds to deal with them as you work on your diet. Now, SIBO is totally different. Intestinal motility system is not working and the valve causes bacterial overgrowth. Some people get a combination of both. That's the difference between those two.

Okay. Jonalyn. **How does butyrate help the gut?**

How does butyrate help the gut? Butyrate, which is a short chain fatty acid helps the gut in multiple ways. Butyrate is something you can take as a digestive supplement. You can eat fiber, which gets converted into butyrate. If you have a high fibrous diet, like lots of different vegetables in your diet, you actually will make your own butyrate. Some people actually need to take butyrate to really get the benefits. The way butyrate works is that butyrate is a fuel source to healthy bacteria in the gut to help them grow.

It's basically a primary fuel for the gut. Butyrate also binds to receptors in the gut called G coupled proteins. They control blood sugar management, which is fascinating in the diabetes research. Butyrate also activates regulatory T-cells in the gut. They've actually shown to help calm down intestinal inflammation and even systemic autoimmune responses in some studies. Butyrate is one of the few things that's actually been shown to help regenerate the tight junctions of the intestinal tract. We talk about all these things in the immune tolerance program.

Because one of the most important things to do when you have lots of food sensitivities and a bad gut is to really improve your gut immune tolerance. People that have chronic candida overgrowth for example, they really need to improve their immune tolerance to calm that whole thing down. One of the key things we talked about in that program is taking butyrate. It's essential to make a big change there. Okay.

**On that same vein. Meg asks then do SIBO and candida protocols overlap?**

SIBO and candida protocols overlap in the sense that you have to give up sugars and starches. With an actual candida issue, you probably have to take natural anti yeast compounds to really get it under control.

Okay. **What is the test for candida?**

There's different types of tests for candida. You can measure candida in a stool, digestive stool analysis. They have an area of the test, which they call mycology. Mycology checks for the amount of bacterial yeast species that they find in the stool sample. That's the way you check for it as far as what's actually happening in the gut. Candida can actually get into the blood stream especially if you have intestinal permeability and have the tight junctions that break down. That is a whole different beast. That could be measured with antibodies in the blood.

Even your conventional labs like Quest and LabCorp do measure that. There's a difference between candida, too. You could have an unhealthy gut environment, have some candida overgrowth patterns, which then make you very sensitive to sugar and starches to get bloating and distended. If your tight junctions are also broken, then you can get candida levels in the bloodstream. Those candida levels in the blood stream create an inflammatory reaction throughout the body. That's when people with the condition really have a problem.

In those cases, you can remove the candida, you got to improve the tight junctions. You got to improve immune tolerance of the gut and really go down that route.

Okay.

Next question.

Sure. Sorry. No, no, no. I'm sorry. From Sean. **How can one determine if they have permanent parietal cell damage from years of undiagnosed Celiac disease? Will these individuals require Betaine HCl forever?**

How can you determine if you have chronic parietal cell damage?

Parietal cell damage, yeah.

Okay. There really isn't a standard test to use to determine if your gut plexus is destroyed if your parietal cells aren't working. You can do a thing like a gastric Hoesenberg test to see which degree of hydrochloric protection is. Your biggest clue is that you've had a chronic inflammatory condition for many, many years. Your gut's not working. They do have motility

studies that are used in conventional medicine. That's probably your best accurate test. You have to have severe loss of intestinal tract plexus to show that.

Your gastroenterologist can order intestinal motility test to determine if you have some compromise of the nerve plexus of your gut. Compare you to a normal population for your age group and determine if there's some issues there. You can actually do a gastric Heivenberg test to get a clue of what's happening with your parietal cell function or you swallow a capsule and then they gave you an alkalinizing solution to see how long it takes for your stomach to get acidic enough. Those would be the two standard tests to evaluate those.

Okay. Nancy. **In Type II diabetic patients, what can I offer to support gut motility which is often ... I think it's an issue. Type II diabetic patients. What can I offer to support their gut motility, which is often an issue?**

With Type II diabetes patients, if their gut motility is an issue, you got to be really concerned. Because Type II diabetes, especially uncontrolled Type II diabetes, we have elevated HbA1c especially if low or above 7.4. When you have these elevated blood sugar levels, they end up becoming glycosylated end products, which are these free radicals. If you can't get your glucose into your cells, free radicals attack them. They make them that much more reactive free radical, which then destroys most commonly neurons.

Everyone's used to understanding that neurons can cause diabetic neuropathies when they get really extreme. They could also cause degeneration of enteric nerve plexus. If you're working with a lot of diabetic patients, you could be dealing with intestinal degeneration from those advanced glycosylated end products. There is literature that shows diabetics do have some damage and injury to their nerve plexus in their gut. At the end of the day, you're going to try to calm down their diabetes.

Get their HbA1c levels down so you could stop that progression. You might need to give enzymes and things to improve their gut function at the time. One of the things I talk about in my brain book, I wrote a book on the brain called Why Isn't My Brain Working and have a chapter on the brain-gut access and the gut-brain access. I talk about sometimes, you'll have to do exercises to activate the vagus. Gargling with water where you take water, just gargle with it activates the palatini muscles that fires into your gut to get the vagal system moving.

There's lots of other things in the book that we talked about. This is the most common, easy approach to use to support that pathway. You want to control the diabetes. Give them enzymes for their microbiome and their overall health and things like butyrate to improve their immune tolerance of their gut. Do some vagal gargling exercises to see if you can activate those smooth muscles in the gut through that exercise.

Okay. Jonalyn. **Can GERD cause SIBO?**

Yes. Can GERD cause SIBO? GERD being gastroesophageal reflux disease. Gastroesophageal reflux disease is typically associated with low hydrochloric acid. Low hydrochloric acid is a mechanism that can cause SIBO. It's not a common one but it can. People that have

gastroesophageal reflux disease have burning in their stomach. They have this acid reflux up their esophagus, which causes that severe burning. That's not necessarily from being low in hydrochloric acid.

That's typically from having protein petrification causing that increased burning and symptoms. For those patients, what you may want to do is just take some apple cider vinegar and see if it doesn't burn you. If it doesn't burn you, you may get rid of your reflux and your SIBO just by taking some hydrochloric acid. If it does burn you, you may need to heal your stomach lining with things like DGL and go on an anti-ulcer diet. Go off pro inflammatory foods for your diet like wheat, dairy, gluten, soy, eggs. Really see if you can heal your stomach lining.

If you can heal your stomach lining and then take HCl, you should be able to get rid of the side effect, which can be SIBO. You can get bacterial overgrowth that goes from the large intestine to the small intestine. Not just from destruction of the plexal nerves. You can get it if you can't neutralize your small intestine through your hydrochloric release from the stomach.

Okay. Phil asks.

Okay.

Sorry. **Is it okay to drink caffeine on a daily basis?**

Is it okay to drink caffeine on a daily basis?

Yes.

Yes.

Yes.

Listen. Caffeine has lots of health benefits. The flavonoids in coffee have very profitable neuro protective effects. The flavonoids in coffee can really help with just general inflammation. You definitely cannot take coffee, which is a stimulant if you can't handle stimulants. For example, your physiological adrenal function is really low, a stimulant will be too much for you. Slow metabolizers or caffeine, if they drink caffeine, they get water. They can't take it. There's people that have high blood pressure, hypertension. They can't drink coffee.

If you don't have those issues with stimulants and you don't have high blood pressure, studies have actually shown that if you look at population where that are coffee consumers, they have decreased risk of Parkinson's disease. They have decreased risks of Alzheimer's disease and has a very powerful neuro protection response. The benefits of people that drink tea daily, the antioxidants and flavonoids in tea are very protective when they're done regularly and taken regularly.

Okay. Joan. **What helps regenerate the nerves in the gut? Stem cells problem.**

Okay. What helps regenerate the nerve lines? You may not be able to regenerate the nerves that are totally injured. What you can do is nerves that are still healthy, they can branch over

dead ones. They can grow. The key thing with the nervous system is you can get plasticity. The only way you can get plasticity in the gut is to really activate the gut by doing vagal exercises. Gargling is one of the most common ones. Another one you can use is you can do a coffee enema.

The coffee enema is not there to detox or anything like that when you're trying to support the nerve activity in the gut. You basically want to get the caffeine into the colon, the large intestine. The caffeine is a stimulant to what I call acetylcholine nicotinic receptors in the smooth muscles of the gut. They cause those muscles in the gut to contract. When they contract, if you've ever done a coffee enema, you'll have the sense of having to have a bowel movement.

The key thing is to activate this brain-gut access is to actually hold that content for as long as you can. I call it bowel planking. You're planking. You should be shaking like you're planking. That type of activity actually fires your brain pontine vagal pathway to suppress smooth muscle reflexes that are being triggered by the caffeine. That can help get that reflexes going. Gargling and doing coffee enemas with suppression of bowel movement are ways to help get those nerve fibers in the gut to develop plasticity.

Get some connectivity and function back. As far as stem cells go, stem cells have a lot of research that needs to be conducted. I don't know if any of the current stem cells strategies would have any significant impact in changing gut plexus function.

Okay. Tilly asks. **Could brain neurodegeneration be the cause of low saliva production? How would you treat that?** Thanks.

Could brain degeneration be a cause of low saliva?

Production.

Production. Yes. When people start to produce less saliva, there's two main things you're thinking about. Autoimmunity and neurodegeneration. When you look at the brain stem, you have a group of nuclei called branchial arch derivatives. These branchial arch derivatives are cranial nerves VII, IX and X. Cranial nerve VII is involved with tearing and nasal secretions and saliva production. IX is involved with saliva production and X is involved with swallowing. This area of the brain stem tends to degenerate together.

When one part of this nuclei loses its function. The other one loses function because they're with what they call in neurology a phylogenetic homolog that they have connections to each other. That they integrate into each other. Sometimes, people develop things like Parkinson's disease or Alzheimer's disease where they have protein aggregates like tau protein that builds up in these brain stem centers. They lose their ability to produce saliva. They have a hard time swallowing. They have chronic constipation and bloating.

That's a neurodegenerative disease. Those are all progressive unfortunately. Now, another common reason that people have a lot of saliva issues is they have an autoimmune response. There are specific autoimmune reactions. Again, saliva glands that then cause them to produce

saliva, you see this with some of the connective tissue diseases like Scheuermann's disease or lupus. They have these specific autoimmune reactions against these glands. They haven't been able to find the serum antibody marker to identify that in the lab test.

They just know when they look at the tissues and the histology studies that there's an autoimmune reaction happening there. They're common in autoimmunity. The way to distinguish those two apart is that if it's neurodegeneration, you're going to see symptoms associated with neurodegeneration with it like cognitive decline or stiffness rigidity with Parkinson's. Not only do they have issues with saliva production but they have the actual problem of swallowing and have constant constipation.

If you see constant constipation and swallowing issues, it's more likely the brain. If they have a history of autoimmunity and they just can't produce saliva but they can digest fine and have normal bowel movements, then it's most likely not immune response against the salivary glands.

Okay. Dede. **Does diverticulitis play a part in bloating and distension?**

Yes. Diverticulitis will definitely play a role in bloating and distension. Because it's an inflammatory condition of the gut. If you have diverticulitis, you really need to improve your gut environment and your gut health, which involves having proper digestion. Having healthy microbiome, having healthy tight junction and getting rid of any inflammatory food protein triggers that you may have a unique reaction to.

Okay. Marian. **Is there a relationship between increase in zinc in the body to help increase HCl. Dr. Albert Mensah mentioned low zinc is the reason for low HCl.**

Yeah. I've heard that, too. The thing is if you have low HCl and zinc, that's a theoretical thing. I can tell you 20 years of practice, I've never seen HCl levels go up giving anyone zinc. It looks good on textbook. If you're not actually really clinically practiced, I don't think you can make that assumption. I've never just given any patient zinc and see their HCl symptoms go away. I think it's more complicated than that. I've seen HCl issues go away when people are gluten sensitive and they go off gluten.

I've seen HCl symptoms go away with people with infection and they got treated. I've seen HCl symptoms go away when people start to overall improve their diet and health so they're not constantly trying to neutralize the gut with acid. I don't know. I think it's one of those folklore theoretical things in the world of nutrition. Because if you look at a book, you see zinc is involved with it. It's pretty rare. We just take zinc. You have to fix the HCl.

Okay. Jonalyn. **Can someone with acid reflux take HCl?**

Can someone with acid reflux take HCl? Yes and no. If you have an acid reflux, what you probably should do is just take a tablespoon or two of apple cider vinegar and see if it causes burning. If it doesn't cause burning, you may then try HCl and that may get rid of your reflux altogether. Because you just may not be able to digest proteins well. That causes the symptoms of acid reflux. However, if it does cause burning, definitely don't take HCl.

You're going to need to heal your stomach lining first and go under that pathway.

Okay. Shauna. **What do you think of peptide therapy for the gut?**

What do I think about peptide therapy for the gut? There's different peptides that can be used. I think it's hit or miss. I don't think that everyone responds to peptide therapy. You definitely can also assure people to have an adverse reaction. I don't have a strong feeling for or against it.

Okay. Sean. **What are the three top reasons for low stomach acid? All treated the same way.**

Top three reasons for low stomach acid. Okay. This is a good question to end our hour with. Okay.

Okay.

Number one. Number one reason why people have low hydrochloric acid is that they have an infection. It's the most common bacterial infection in the world. It's common cause of it because the bacteria lining comes in and furrows into the lining of the stomach. You can't get rid of it. The number two reason people have low HCl is really because they're constantly eating foods that are inflammatory. Hydrochloric acid also gets triggered during inflammatory conditions and helps neutralize the abnormal pH that inflammatory reactions cause.

A lot of times, you have people who have HCl, they take it. They get rid of their bloating and distension. They are confident. They take it. They're finding though, "You know what? I can't do milk." They actually get off milk. They have no more need for HCl. Sometimes, it's just an inflammatory food protein. The third cause for chronic HCl need for some people, it really is just aging. Especially in the elderly population, we end up having some degeneration of our cells as we get older. Parietal cells are a common one.

Once you start to get past age 60, 70, you're going to not have as many parietal cells just by how our system doesn't regenerate tissues as much as we age. Aging would be the third most common one. Okay. Thank you, everyone for joining the session on some of the key concepts with bloating and distension. If I didn't get to your question, I'm sorry. Hope you found something valuable and hope to have you join us for our next talk. Thank you.

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