



## SIBO SOS™ Podcast

### with Dr. Mark Pimentel and Shivan Sarna

I hope you also enjoy the transcript as a special goodie in celebration of this new project! (I took out the introduction and dove right into the content with the transcript to get you to the good stuff right away.)

Check out the new test for post-infectious IBS at [www.ibssmart.com](http://www.ibssmart.com). This is a test many of us have been waiting for - you will need a prescription from your doctor. All the information is on the site. You can find out if your anti-bodies are messing with your migrating motor complex once and for all!

Dr. Pimentel: The problem with SIBO is that it can be a catch all for everything because SIBO symptoms can be in the gut, beyond the gut. And the symptoms can be manifested as skin things. But mostly, the gut is the primary issue for which I see the patients.

But because of that, doctors are maybe overusing the term SIBO. And that causes some trouble for that term. And patients will encounter trouble because the doctor will say, “Well, everything is SIBO.” Well, not everything is SIBO.

And one of the things that we do at our centers when people come with a SIBO diagnosis or seeking that, I tell them, “My job is to prove that you *don't* have SIBO first. But if you do, then we need to prove why you have SIBO because I don't let it rest. I want to know, and I want to make sure that I know why. Because if I know why, number one, I know how to treat. And number two, I know you have SIBO because the why also implicates SIBO.”

But in the community, I think it's becoming very cliché, the term *SIBO*.

The second part of that question is that SIBO can be caused by a lot of things. If you have a bowel obstruction from a tumor, you can have bacterial overgrowth. And you don't ever want to rest on SIBO being a diagnosis.

SIBO is caused by something. Figure that out because if you're missing a critical issue like cancer or something like that, you're not really treating



SIBO, and that is not the answer. Treating the cause of the SIBO is the answer.

Dr. Pimentel: So, as you've said, Allison, one of the most common causes of SIBO is that the cleaning wave of the gut—otherwise known as the migrating motor complex, another term is *housekeeper wave*. They're all the same thing. But every 90 minutes, when you're not eating, there's a gurgling sound that you hear and somebody says, "Oh, you sound hungry" or you're embarrassed because you have that sound.

First of all, don't be embarrassed.

Shivan Sarna: Don't! It's like, "Yeah!"

Dr. Pimentel: Yes, it's like the greatest thing to have because it's...

Shivan Sarna: "My migrating motor complex is happening." [05:01]

Dr. Pimentel: It's the dishwasher. It's cleaning up your small bowel. So you need that so that the bacteria don't build up on those debris and slime from the last meal.

And so not having that wave has been known for decades that it can cause bacterial overgrowth because you're not cleaning. And so all that stuff is left there, and the bacteria start fermenting and growing, and they're very happy about that.

But the migrating motor complex can be measured. And one of the ways we measured it is with an antroduodenal manometry which is a tube through the nose all the way down into the small intestine under x-ray guidance. And then, you leave it there for six hours, and we measure it on a computer system.

Shivan Sarna: That does not sound like a fun test.

Dr. Pimentel: It is not a fun test which is why we reserve it for special patients who really need it. Eighty percent of the time, that's the cause of SIBO. So, we



don't need to do it all the time because, more than likely, that's the reason for most patients.

Dr. Pimentel:

Well, the association between IBS and SIBO is very clear. I would say probably 70% of IBS has SIBO. That, we've established. There's a lot of papers. I think that's very clear now. And then, that is from the migrating motor complex.

So, to go back a little bit, food poisoning we think is the one thing that damages the migrating motor complex. So if you got gastroenteritis on a trip somewhere, and that's when your IBS or SIBO started or your symptoms started, we see that association very clearly.

The problem with that association is that patients come to me and they've had 20 years of symptoms, they don't remember the first few days. They've had diarrhea all along on and off. But the first two days of diarrhea, the food poisoning, they don't remember. They don't remember what happened.

But for some patients, it was apocalyptic. They went on a trip. The whole trip was ruined. They had blood on their stool. They were admitted to the hospital and needed IV. You'll remember that. But some of the more milder cases which still triggered this event, they may not remember.

But in any case, food poisoning does this damage to the cleaning wave or the migrating motor complex. And then, you get the SIBO. And that's the most common cause.

But of course, if you've had surgery—let's say, for example, you've had tubal ligation or your gallbladder taken out—and then they've created scar tissue, that scar tissue can kink the bowel. That will probably be the second most common cause of SIBO that isn't easy to treat. They have these scar tissues and some bends or elbows in the bowels that...

Shivan Sarna:

Adhesions...?

Dr. Pimentel:

Yeah. When the adhesions pull on the bowel. It creates an elbow like a bent hose (you know, your hose for like hosing the lawn). And when it's



bent, the water doesn't come through. It's the same thing. You get this food kind of building up, and then the bacteria grow there.

And then, it starts to go to more obscure things. Ehlers-Danlos syndrome is now being recognized as a cause.

Shivan Sarna: Yeah, that's like my signature move.

Dr. Pimentel: See? So those are kinds of things that the bowel just doesn't move correctly because the physical structure of the bowel is impaired by the genetics of Ehlers-Danlos syndrome.

And then, tumors. And narcotics is a big—of course, right now, these days, narcotics is a big issue nationally. If you're on morphine, you'll have SIBO, guaranteed.

Dr. Pimentel: I just think that the diet for Methane needs to be different than the diet for the Hydrogen overgrowth.

Shivan Sarna: Okay. I just have to absorb that for just a second. Say it again in a different way, if you would.

Dr. Pimentel: Acid is Hydrogen. Hydrogen gas is Hydrogen. Acid is Hydrogen because, it has a Hydrogen donor and Hydrogen gas is Hydrogen. Methane can use either source to make Methane. So, the more acid you have, the more Hydrogen donation you have, the more you're gonna produce Methane. We saw that in the studies.

Shivan Sarna: Would you say that, if someone has stomach acid issues, to not take Hydrochloric Acid 'cause it could contribute to their SIBO?

Dr. Pimentel: I would say, at this moment, if you have Methane on your breath test, don't take those supplements because, it will make it worse. We do see that.

Shivan Sarna: Okay, what about dairy? People are really struggling with the whole dairy issue. I know that you had said that it's not good for SIBO patients. Could you just elaborate on that for a sec?



Dr. Pimentel: Yeah. Dairy, basically, has lactose. There's people who are true lactose intolerant, meaning they drink milk or eat milk, milk products, and they get bloating gas and distention. It means that they don't have enough enzymes in their gut to break lactose. Lactose is a two-sugar, what we call a disaccharide, meaning two sugars stuck together. Humans have an enzyme that breaks 'em into two pieces and you can absorb those two pieces very well.

But, if you're deficient in that enzyme, you're lactose intolerant. The problem is the word lactose intolerant. You drink milk. You get bloated. It doesn't mean you have an enzyme problem because, the reason you get bloated is because, if you don't have the enzyme, it all goes to the colon and the colon's fermenting the lactose and you get all this bloating. But, in overgrowth, the bacteria are coming up to the milk and no human on the planet can drink a gallon of milk without getting bloated because, we only have so much enzyme.

If you have bacterial overgrowth, you're going to get all this dairy exposed to, especially the lactose sugar, exposed to bacteria. However, if you drink lactose-free milk, you shouldn't have symptoms. There should be no concern. It's not the milk, it's the lactose in the milk, in general. Now, that's different from dairy allergies or milk allergies, where you're allergic to the protein in the milk. But, that's not relevant to SIBO.

Shivan Sarna: Okay. Good news, bad news. What about iron? People who have low Ferritin levels and people who have anemia.

Dr. Pimentel: Yeah. There's three main things that we can sometimes see with bacterial overgrowth. I'll list them in commonness. The most common vitamin change that you see with bacterial overgrowth is elevated Folate. Bacteria produce Folate. We know that more bacteria means more Folate in your bloodstream. That's okay. We need Folate. We don't need a lot of Folate, but we need Folate and bacteria help us get that. That's one of the vitamins bacteria are needed. But, bacteria use Vitamin B12 for their functions. So, sometimes you can get B12 deficiency.

Bacteria can also use iron to do their process, as well. The difference between the Iron and the B12 is that, the Iron can sometimes be, as the



bacteria break down, you get the Iron back. You don't lose the Iron as commonly. It's one of the lower, or less common, features of SIBO because, you gotta be careful. When it's Iron deficiency, often it means that you're losing blood somewhere. We often think of the intestinal tract as a loss of blood. If you had a small colon cancer that was leaking a drop of blood a day, your iron will continue to drop. You gotta be careful with Iron and not attribute it always to SIBO because, that one can be something serious, a cancer, or something bleeding in the gut.

Shivan Sarna: What about low Ferritin levels? Would that also be the same kind of concern?

Dr. Pimentel: Low Ferritin, the problem, Ferritin is a wacky protein. Let's say you got the flu. You didn't take your flu shot, you got the flu. While you're having the flu, the Ferritin just goes way up. It's what we call an acute reactive protein. The body for some reason, we don't know why does this with Ferritin particularly, but if you're stressed, Ferritin goes up. If you're malnourished, Ferritin goes down because, it's a protein. If you're not making enough proteins, all the proteins go down and Ferritin goes down. It's a very sensitive protein to a lot of different factors.

Therefore, it's hard to know what to make of a high or a low Ferritin, unless it's extremely high or extremely low. And so, I know I'm kinda dodging the question, but the reason we don't look at Ferritin that often is because, it's so quirky that way. Let's say you just had a UTI last week and you're all better now but the Ferritin can still be high. We look at Ferritin but, it's very difficult to know what's happening with it on a given moment, unless you see it's consistently low.

Shivan Sarna: Okay. All right. What about the MMC or Migrating Motor Complex and blood sugar?

Dr. Pimentel: That's a great question. The Migrating Motor Complex is the cleaning wave of the gut. For those of you who don't know on Facebook, if you wake up in the morning and you go to school or to work and you didn't eat breakfast and you hear this gurgling sound in your stomach and it lasts for 10 minutes and you're all embarrassed. You're just irritated by this thing making so much noise. Please, don't be irritated. Some people wish they had that. That's the cleaning wave of the gut.



At night, every 90 minutes, this gurgling is coming through and it's purposefully getting rid of all the debris. Think of it as the dishwasher. It's washing the dishes. Your small bowel is your plate, that's where all absorption and digestion occurs. You don't want a piece of lettuce sitting there, blocking absorption, just kind of laying on the surface of the bowel. All that needs to be swept out. That's the purpose of the MMC or cleaning wave.

Now, at the same time, if you get these MMCs and you have food in your stomach, you're gonna dump food. As you dump food, you could create fluctuations in blood sugar. Where the person is getting to and the question is, that we have published a paper that shows, if you're Hydrogen overgrowth, you tend to have hypoglycemia. We don't know that's it related to the MMC but, the Hydrogen overgrowth patients have low blood sugar. On the flip side, the Methane patients tend to have more hyperglycemia and more reactive glycemia.

And so, we've actually shown that Methane is associated with heavier body composition, more obesity, and that's very well published now. It causes weight gain, Methane.

Shivan Sarna: There's really not much we can do about it other than resolve the SIBO, right?

Dr. Pimentel: Yeah. Some people, when it comes to the weight gain part of Methane, I'll just describe one study. We looked at people who are already obese, this is a very impressive result. People who already had a BMI greater than 30, which is the definition of obesity, we looked at those in that category that were Methane and those that were not Methane. If you were Methane, you had almost 50 pounds more weight than the other obese patients, which is amazing when you think about it.

Now, if you have Methane and you undergo bariatric surgery like a gastric bypass, you are less likely to lose weight, as well. The Methane is holding on to calories or helping you hold on to calories. We think there's multiple mechanisms, one of which it slows the gut. The other is that it helps harvest nutrients from food you normally don't get calories from, et cetera.

But, the biggest question I get, okay I need to get rid of my Methane so I'll precipitously lose weight.

Unfortunately, once you gain the weight, you all know it's hard to come off. Even if you get rid of the Methane, it will make it easier to come off, but it's still work to get it back off.

Shivan Sarna: Understood. Okay, well, at least we know. Have you ever seen a genetic tendency or any genes associated with PEMT? That's just a specific one of course. Any genetic tendencies with SIBO?

Dr. Pimentel: Most of the genetic work that's been done so far is to IBS. Of course, we know that 60 to 70 percent of IBS is SIBO. I'll use that as a bridge. But, there's people who have looked at genetics of post-infectious IBS, which I think is the leading cause of SIBO here. There are some genetic changes in the immune system in some patients, this is male clinic studies and studies from the outbreak in Canada. There's a couple of cytokines that don't respond as well and they have genetic mutations.

If you think about the blood test that I mentioned at the beginning, the autoimmunity, there's something with the immune system's response to food poisoning that makes you susceptible. We do think there must be a genetic component. For example, if you infected 100 people with Campylobacter, only 10 get IBS and SIBO. Why? Because, they have something genetically that's predisposing them to that. It's gonna take some time to figure out, but there are some studies suggesting it's an immune issue.

Shivan Sarna: Okay, an immune versus genetic?

Dr. Pimentel: A genetic immune issue.

Shivan Sarna: A genetic immune issue, okay. All right. Okay. People are still confused about this SIBO breath test and the lactulose versus the glucose versus the blah blah blah. What do you say when people say, no the lactulose is the gold standard, no, no it isn't? Can you just help us clarify this controversy?

Dr. Pimentel: It's gonna be a little difficult to explain. You have to follow me carefully because, I wanna make sure that it's very well understood. We now have



data that shows that, if you're an IBS patient and your breath test is positive, meaning you have positive for Hydrogen because it's diarrhea IBS for Rifaximin treatments this was part of the Rifaximin trials. If your breath test was positive for Hydrogen, you had a much greater chance of responding to Rifaximin.

Now, the rate of response to Rifaximin, with a positive breath test, is in the 50 to 60 percent range, as opposed to 44 percent with no breath test at all. If your breath test becomes negative with Rifaximin, your chance of having responded to between 70 and 80 percent. The key is to get rid of the overgrowth and that's data we presented at the big GI meeting in Washington, DC in June. More data coming out next week.

The reason I'm saying all of this is because, think about it this way, if you did a glucose breath test, only 30 percent are positive on glucose and that's much lower than lactulose. If you did a glucose breath test, only 30 percent are positive because glucose gets absorbed too fast. And then, the bacteria in the last three quarters of the gut never see the glucose. If you had overgrowth in the second half of the gut, forget about it, glucose is not gonna pick it up.

So, why did I bring the Rifaximin? Because, if you had done glucose breath testing in this study, think about it. 55 percent benefited, but only 30 were positive on glucose. So, you just missed 25 people out of 100 that could have benefited from lactulose and a drug because, you did lactulose as opposed to glucose. The point is, I would rather know more people who could truly benefit, than know less people who could truly benefit. Now, if the drugs were toxic, then of course you wanna limit it to the absolute population you can. But, lactulose picks up more people and more people that could benefit, that's the punchline.

Shivan Sarna: Okay, there it is, guys. There it is.

Dr. Pimentel: That's it.

Shivan Sarna: Talk to us about the Hydrogen Sulfide test, of course that's another big question.



Dr. Pimentel: Hydrogen Sulfide is now a fully validated test. The entire study has been done and the test is validated. Now, of course, it has to get out there for people and that's happening. I will have a lot more to talk about later this year, but the path is coming. We're hoping that, in the probably second quarter of next year, maybe the middle of next year, you'll be able to do this test. The real important thing is Hydrogen never predicted a symptom.

Hydrogen was positive. You responded better to the antibiotics. It was a marker. But, think of Hydrogen as food. Hydrogen is food and it's food for the Methane bugs. So, the more Methane you produce, you get constipated. If that's your profile, you're the constipation type. If you're Hydrogen Sulfide, you're using Hydrogen food to make Hydrogen Sulfide and we now know Hydrogen Sulfide is the key to diarrhea. The more you produce of that, the more diarrhea you have.

And so, for the first time, we now know the whole picture and there are no other gases. That's it. It's those three and they're fighting for Hydrogen. It's like you have on source of food and you have two competing groups of individuals that are trying to eat that food and one always wins. Interestingly, Methane always wins if both are there. Methane trumps Hydrogen Sulfide when all three are there, but Hydrogen Sulfide, by itself, bad diarrhea.

So, we can now figure out the whole story and we're now the studies because, I know what your next question is. We are now doing the studies to see what's the best treatment for Hydrogen Sulfide and we're gonna have some information on that for DDW, which is in May of 2019. Stay tuned for more stuff.

Shivan Sarna: Okay, sounds good. The probiotic question, so what is up with- should we take probiotics with SIBO?

Dr. Pimentel: The answer to that is, there's too many probiotics to know the answer to that. We know Bifidobacteria has a lot of good properties. It's antiinflammatory. It may be prokinetic. There's a lot of things that these bugs have been shown to do. The problem is, if you go to your GNC or your nutrition store and you see 100 different probiotics, I can tell you



they haven't been studied in SIBO in a systematic, double-blind way for all of them.

We don't have enough information to know which one is the best. Is it the one in the refrigerator, which requires refrigeration or the lyophilized one or which cocktail works the best? That's the challenge. I don't say that probiotics don't work because, I haven't found the one that's been studied properly or that works the best. Can I say to you, honestly, that I've never seen a product help a patient with SIBO? No, because there are patients, anecdotally, who come in and swear that this was a miracle for them.

I can't deny a miracle and keep going. But, every time I've used it, I've noticed either it doesn't work or the bloating can get worse because, they produce gas, too. This is the challenge with probiotics but, also one more thing, the ultimate probiotic, equal transplant, a lot of double-blind data here. The answer is, in IBS, which we know a majority of which is SIBO, placebo is better than the FMT.

Shivan Sarna: Okay, say it again.

Dr. Pimentel: Out of the trials that have been done, the general conclusion we can make is, FMT did worse than placebo. So, two ways to interpret that, placebo is amazing, or FMT is making patients worse. I think it's, of course, is the later because, placebo doesn't do anything, specifically. The point is, FMT probably is gonna be bad for you if you have SIBO. Please don't do it. I've always advised that. I've suspected that was what was going to come of these studies. That's exactly what came of these studies.

Shivan Sarna: Okay. What about biofilms? That also is a really hot topic these days.

Dr. Pimentel: Yeah. I always have a vague answer to this, not because the science is vague. All humans have a biofilm because, there's a film of chemicals and bacteria along the gut. And so, think about it this way, you have various layers of protection against the outside world. Your skin on the outside of your body is very non-permeable, or limited permeability, to ward off things, infections and so forth. However, the gut is very special because, you want things. You're absorbing, it's a very absorbing surface.



You don't wanna absorb everything. You wanna be able to not absorb certain, toxins, certain things. We talk about patients with multiple chemical sensitivities and other factors, perhaps the barrier has broken down. One of the barriers is a biofilm. The biofilm is composed of mucus and other things, plus also, some bacteria. The way I answer the biofilm question is that, I think biofilms can be good or biofilms can be bad. Some people say you want to reduce the biofilm, but maybe there are two types of biofilms, good bacteria and good biofilms, and not so good biofilms that are producing chemicals that are harmful to you.

Isn't as simple as saying, get rid of your biofilm or reduce your biofilm. It's, ultimately, gonna be more complicated than that. I'm gonna stop there because, I don't know the answer except that, I think there are two types.

Shivan Sarna: Okay. We have one minute left. What else do you want everyone else to know about hope for SIBO?

Dr. Pimentel: The hope is, if you think about what we talked about today, a lot of things are coming. The new IBS Smart Test, the Hydrogen Sulfide is coming, new treatments for those patients. Stay tuned is all. There's a lot coming in the next year.

Shivan Sarna: Lots to look forward to, as always. We really appreciate you so much. Thank you so much, Dr. Pimentel. I know that you appreciate ending on time and so, that's what we're gonna do.

Dr. Pimentel: Sounds good, good talking to you today, Shivan.

Shivan Sarna: Thank you so much. Take care and we'll get the word out about all of this as much as possible. I'll reach out to the other SIBO and THOD Map Groups and make sure that everyone has access to this.

Dr. Pimentel: Perfect. Thanks everybody.

Shivan Sarna: Thanks. Bye.

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