



Advanced Clinical Focus: Digestion and GI Health Transcript – Class 4 Part 1

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Irritable Bowel Syndrome, often called IBS, affects many, many people. And it is usually a catchphrase term that is given to digestive issues that we just don't know what diagnosis is, or we just can't figure out exactly what's going on. It's a functional disorder. In other words, it's it has to do with function, and there's no damaged tissue. So if I go in with a scope from the top, or going with the scope from the bottom, I can't find anything. There's no red tissue, there's no bleeding, there's no ulceration. So it makes it a very difficult condition for the medical community to diagnose, and even harder for them to treat. But let's look at it in a bit more detail so we can understand it.

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So firstly, typically, there might be five people diagnosed with IBS that go into their doctor; five completely different people with five completely different cases. And each one might have different causes for IBS, which we will discuss in a moment. One person, it might be mental/emotional, one person, it might be parasitic, etc., etc. They're all given the exact same name of the disorder, irritable bowel syndrome; all have the exact same diagnosis. And then they get one of the drugs from the selection of treatments. So they either get an antidepressant if the practitioner thinks that this person is depressed and needs some help mentally/emotionally. They might get an antispasmodic drug, which sort of calms down the gut a little bit from the activity of the peristalsis. If it's more of the constipation type of IBS, they might get some sort of laxative that irritates the gut, and causes someone to go to the bathroom more often. And if it's the opposite, and they're more prone to the diarrheal type of IBS, they get anti-diarrhea, drugs, which basically slow down peristalsis and make the body hold on to the digestive matter a lot longer. So it's all just a bunch of different drug therapies, trying to deal with the symptoms and not really getting to the root cause. But you might be saying, but Josh, these are the treatments, it's just you telling me this, well, what does the research show? And the research is where I got my information. So there was the Cochrane Review of 40 different studies; they looked at many, many different people here, and what they found was the evidence for drug therapies is weak and there is no clear evidence of benefit for antidepressants, or bulking agents specifically to IBS. So, two very common therapies, bulking agents and anti-depressants, which are used for IBS. No benefit. What about when we compare a placebo to drug? So they found that a placebo is more effective than a drug. Drug effects are smaller than the placebo effects in most randomized trials for IBS. And this is interesting, because IBS is highly tied to an individual's nervous system to how stressed they are, how much time they're spending in fight or flight mode, versus rest and digest mode. So oftentimes, in a lot of the studies here, looking at IBS, that's a very significant confounding variable. The mental emotional state of the individual actually makes it quite difficult to test a lot of these treatments. We're going to see a



couple of examples of that. So what we find is that a lot of the prescriptions for IBS, if they're even just placebos, they can show benefit here. And in the comic, the pharmacist is saying, 'make sure you take it every day, otherwise, the effect wears off', and he's giving her 'Placebonex', so a play on the placebo. So sometimes the placebo effect in and of itself, can actually present the individual some substantial benefits. And that's a whole discussion for a whole other day.

4:26

We find that with people with IBS, they have significant unmet needs. In this study, they mentioned that there are significant unmet needs including lack of familiarity with irritable bowel syndrome, difficulties in diagnosis, and lack of effective treatments for the multiple symptoms of the disorder. So it's one of those very significant gray areas in medicine, and people with irritable bowel syndrome have a very, very difficult time finding resolution when they follow the standard medical treatments.

5:02

So before we get into what we do, let's first discuss who is affected by IBS. About 10% to 15% of the population here in North America is affected; that's a substantial amount of people. Estimates worldwide are about 0.8% to 28% of people are affected, and probably varies from region to region based on people's diet and their lifestyle. Most of those who are suffering from IBS are women. And most are from upper socio-economic groups, which is interesting because a lot of the stresses in foods associated with IBS are more prevalent with people that can afford to eat really bad foods or to be a lot more stressed for various reasons.

5:58

Now, how do they figure out if you have IBS? Well, it's called the Rome III Criteria. And why do they call it the Rome III Criteria? Well, they went to Rome once, they figured out some ways to diagnose and identify IBS, and then they tried that for a bit and it needed modification. So they went back a second time and then a third time. So it's the Rome III Criteria. And basically, subjects have to experience, for at least three months, the onset of at least six months previously; so let me just repeat that, at least three months, with the onset of at least six months previously, of recurrent abdominal pain or discomfort associated with two or more of the following. So they had to have had it regularly for three months, but it started at least six months ago, with at least two or more of an improvement in their symptoms with a bowel movement, and a change in frequency of their bowel movements. So maybe they're more prone to diarrhea, and the change in the form of their stool. Okay, so that's the Rome III Criteria. If they have abdominal pains and discomfort improve when they have a bowel movement, and they have had change in their stool, that's enough to give them a diagnosis of IBS.



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So they have these symptoms, but what are the causes? What are the root causes of these symptoms? Because as I discussed, there could be five people with these symptoms, but they could all have completely different reasons why they have these symptoms. One aspect, we have to consider something called iatrogenesis, and this is incorrect diagnosis or basically treatments based on incorrect diagnosis. Iatrogenesis means when we give a treatment and it causes more harm than good, it actually causes something to happen when something wasn't actually there. So oftentimes, people do experience incorrect diagnosis of their symptoms, because there might be some sort of symptom overlap with something else that's going on. Remember, we talked about all the food sensitivities and allergies? How many of those things can cause symptoms that look like IBS? We even see in the literature that there are a number of unnecessary surgeries. I mean, it even goes that far. Removal of gall bladders, removal of ovaries, uterus, the appendix might get removed and even people have had back surgeries in response to symptoms associated with IBS. So the diagnosis is very wishy-washy as well.

8:59

Now what does foods role play in IBS? Well, food is the number one trigger, as reported by individuals with IBS. I eat this food and I have this reaction, I eat that food and I get gas and bloating and whatnot, diarrhea, constipation, etc. They have a much higher rate of positive skin prick tests. So looking at IgE allergies. And they also have quite a bit of success when they eliminate food based on IgG allergies. So this study looked at IBS; it was a randomized control trial using IgG food allergy testing as the diagnostic tool. Basically through that they determined a modified elimination diet for those individuals. One group got a sham diet, so they were told that they've eliminated the foods are allergic to where they hadn't done that. And another group got the IgG pure diet, and they experienced a 30% improvement. So what I find interesting also, and you'll actually see this as a theme, is if you look at the top line of this chart, the people on the Sham diet actually had some response. And that's what we call the placebo effect. So even someone who thinks that they're having a diet that might be right for them, is going to have a diet that's going to actually help them just through the effect of the placebo. So it's always really important to explain why you're giving something to someone, because if that diet is the right diet, it will actually enhance its effect; it'll add a bit of a placebo effect on top of that, which is always good to take advantage of. Now in relation to gluten and IBS, this study showed that the chemical presentation of gluten sensitivity is a combination of IBS-like symptoms. So we always have to consider, and I'm hoping that you're thinking this anyway after our discussion on gluten, we always have to consider gluten as a key factor with any digestive illness, especially IBS.

11:18

Now, this is a chart showing the symptoms that 78 different patients experienced due to gluten sensitivity. The left hand chart shows intestinal issues. So we see



that 72% experienced bloating, 77% abdominal pains, 40% experienced diarrhea, 18% constipation, so pretty significant numbers there on bloating, one of the key symptoms, and abdominal pain for IBS. But those are all intestinal symptoms. What about gluten's effect extra-intestinally, outside of the digestive tract? And this is another area, which I spend quite a bit of time explaining to my clients, that gluten doesn't just affect the digestive tract, but it affects the whole body. It can cause a whole variety of symptoms. And I often actually show them this specific chart; it's a wonderful tool. And the right chart shows these symptoms. So about 42% of them experienced a foggy mind, like brain fog. About 36% of them experienced fatigue. How many people go to their doctors these days saying that they are experiencing fatigue? And how many practitioners are saying Well, why don't you first try eliminating gluten and we'll see what happens. About 33% experienced eczema, 32% experience headaches from gluten. Again, I mentioned earlier that headaches are a big problem and highly related to allergies and food sensitivities, specifically gluten. Same with many neurological issues. We see joint and muscle pain related to gluten, leg or arm numbness, that's a pretty serious symptom and it can be related to gluten. I've seen multiple clients where their depression lifts when they eliminate gluten, and even anemia, because we know gluten causes leaky gut, we know gluten can damage the gut, and if the gut is damaged, we have trouble absorbing minerals. Really, gluten is like glue. It's sticky, it's that fluffy stuff, and it gums up that whole machine. In fact, I saw a recipe once on how to make glue. Natural homemade glue; you take one cup of flour, very heavy in gluten, 1.5 cups of water, sugar and vinegar. How many people are eating these exact ingredients every single meal and just gumming up the whole system, right? They're just eating glue basically. So we need to really look at what we're eating and how it might be affecting the gut.

14:13

Now one of the best diets for IBS, irritable bowel syndrome, is called the FODMAPs diet. It's often where I start when I'm working with clients with these specific issues. FODMAP is a bit of a weird name. It came out of Monash University, they did a lot of work with these different carbohydrates and that's basically what the name stands for: fermentable oligosaccharides, disaccharides, monosaccharides and polyols and these are really just different sizes of carbohydrates. Certain bacteria in the gut love to eat these carbohydrates and ferment them, and they make fermentation byproducts, which then can cause bloating, and gas and diarrhea, and even constipation, and a lot of those symptoms associated with IBS. So a lot of people with IBS benefit greatly from going on a low FODMAP diet; not forever, but for a period of time, until we re-establish balance in the gut microbiome. How do we do that? We stop feeding that culture of bacteria that really, really, really likes these carbohydrates and we focus on other food that doesn't feed them as much, and that way we can sort of manipulate and bring that microbiome back into balance. So this can be a very powerful diet.



15:46

There are some basic guidelines on the diet; these are the foods you want to eliminate, a whole bunch of foods, a whole bunch of fruits. Now, just another point about this diet, sometimes it's not that obvious. So a chart and a food plan is really important for you to give your clients so that they can follow it really closely. As you can see here, some fruit are allowed, and some fruit are not allowed. So we've got the fruits, we've got the whole fructose family; honey is very high in fructose, as well. The whole lactose family, so all the different dairy products. Fructans, which include a lot of vegetables, and interestingly enough, a lot of very, very healthy vegetables, a lot of the cruciferous vegetables. So that's why we don't want our clients on this diet for the rest of their life. This is a temporary diet for healing. Most of the glutenous grains are included there. It mentions some other fruits and some miscellaneous foods. And then in the galactans, we've got the legume family, and polyols we have some more fruit, some vegetables and a whole bunch of sweeteners we want to stay away from as well. Then on the Allowed chart, we've got a lot of berries, a whole bunch of other vegetables to choose from. I really like to focus on what my clients can eat before freaking them out with all the stuff they can't eat. Now in the Grain category, it does mention spelt, but I will take pretty much all my clients off of gluten completely and that includes spelt, so I don't want any chance that the foods that they're consuming are going to cause an issue and of course spelt has gluten in it. Certain milk products, which are lactose free, I would eliminate that anyway because of the casein and whey component. Nut milks are a good alternative as well. So typically, again, I would also eliminate all dairy products. And then we find that even though sugars on the list; I won't have someone consume it. Maple syrup isn't a FODMAP, so it's allowed and they can use that in small amounts for their sweetener.

18:05

So a FODMAP diet can be quite useful. Has it been shown to be useful? Absolutely, there have been multiple studies on it. This study was published in 2010, and it showed that dietary FODMAPs induce gastrointestinal and systemic symptoms experienced by patients with IBS. So FODMAPs do worsen symptoms, and when they're eliminated they improve symptoms. FODMAPs is a really wonderful foundational diet for people with these types of symptoms.

18:37

Now, what about antibiotics? We have an obsession with antibiotics here in North America. In fact, I believe it's the law that if a doctor suspects an infection, they must prescribe an antibiotic. So we're way overly prescribing antibiotics. In other countries like, I believe Switzerland or Sweden I believe it was, they prescribe about a fourth of the antibiotics that we prescribe here in North America. They wait often to see if a person's immune system can fight off the infection. Of course, antibiotics mean against=anti, life=biotic, so they kill everything and they severely upset the gut flora of an individual.



19:24

They are broad spectrum; they can't hone in and kill one specific bacteria in the skin or in the throat or in the intestinal tract or wherever it is. They just kill everything. And when we leave our gut available to really establish balance again on its own, it's really bad at doing that unless we're giving it the right foods and supplements. So antibiotics really predispose people to getting IBS. There's quite a bit of research showing that a course of antibiotics really upset the gut flora. In this chart, it's showing different antibiotics along the left hand column and then it's showing whether they increase certain bacteria, or decrease certain bacteria, or have no effect. So you can see here with the red circles, these are all the families of bacteria related to the antibiotics that are decreased and to what extent. You can see in the third column, that anaerobic bacteria are greatly affected by pretty much every antibiotic. And of course, anaerobic bacteria are the really good bacteria that like to live in the small intestine, and in the large intestine. These circles indicate where there's a growth of resistant strains. So we also have the ability to develop resistance against these antibiotics. The bacteria see this antibiotic and it kills the ones that are the weakest, but the strongest ones prevail, and they become what are called antibiotic resistant, bacteria. And these can present some very serious problems for people. We have things like MRSA, which are quite abundant in hospitals, which affect the lungs, Methicillin-resistant Staphylococcus aureus, MRSA. So, we see that this really can set people up for a bad situation. And some antibiotics don't even have an effect; they're useless.

21:51

So here's a really cool chart showing a number of things. What this study was showing was how the microbiome is affected by antibiotic therapy, and by antibiotic therapy accompanied by some sort of probiotic. And in the case of this study, they were using *Saccharomyces boulardii*. *Saccharomyces boulardii* is actually a non-pathogenic yeast. So *Saccharomyces boulardii* is a yeast that is beneficial to our gut. It's not a resident of the gut. If we take it, it takes a couple of days for it to get its numbers up in the gut. And we have to continuously take out about three to five days after we stopped taking it. It's completely eliminated. But when it is in the gut, it has a number of different beneficial effects. It's almost like sending in the law enforcement, like the SWAT team, to go in, seek and destroy, take out the bad guys, and then get out and that's what *saccharomyces* is so effective at doing. Another reason why I love *Saccharomyces boulardii* so much is, because it's a yeast, antibiotics don't kill it. With probiotics, if you're taking them with antibiotics, it kills the probiotics, right? But *Saccharomyces boulardii* is a yeast, it doesn't get killed, so it's wonderful to use. So what's this chart showing us? The red area, all the way on the left, is the two weeks that the antibiotics were used. The blue line is how much the microbiome sort of got depressed. So they took the antibiotics, and the microbiome took a huge dip, right? It kills everything. The red line is when the antibiotics were taken with the *Saccharomyces boulardii*. So instead of such a huge dip in the microbiome, we find that we're able to preserve the microbiome a lot better when we take the



Saccharomyces boulardii with the antibiotics, and then we stop. So they take the antibiotics with the Saccharomyces boulardii, and then they stop the Saccharomyces boulardii and the antibiotics, and then we just leave them. The green line is when we take the Saccharomyces boulardii after the antibiotics continuously to really restore the microbiome. You can see it goes right back up to baseline. And the black line is a hypothetical situation where we would take the Saccharomyces boulardii, both during the antibiotics and after the antibiotics, which really is the optimal situation. So for all of my clients, if they're ever taking an antibiotic, I recommend that they either take Saccharomyces boulardii or a probiotic with the antibiotic. If it's a probiotic, I say take it as far away as possible. So if they're doing the antibiotics in the morning, they take the probiotic at night. If they're doing the antibiotic three times a day, they do it between meals. But they should do it during. If it's Saccharomyces boulardii, it doesn't matter as much when they take out; they should do it during, and then definitely after at least a month, and that will help to restore the gut microbiome.

25:26

What we know is that one course of antibiotics can upset the microbiome for the rest of your life. So when I do my extensive histories, I'm always asking people if they've ever taken antibiotics. And if they say yes, I find out when and I put that on their timeline. Now one of the effects that these antibiotics can also have is something called small intestinal bacterial overgrowth (SIBO). Small intestinal bacterial overgrowth is basically when there's an overgrowth of the bad bacteria; it's a form of dysbiosis. The gastrointestinal immune effects of SIBO provide a unifying framework for understanding frequent observations in IBS. Those are pretty powerful words, a unifying framework. So this article is suggesting that SIBO, small intestinal bacterial overgrowth, or this state of dysbiosis, is the reason why most people have some level of IBS. And it's definitely something we want to consider. So let's dive into that a bit deeper.

26:38

First, let's look to see what SIBO actually is. Now, on the top here, we have a healthy digestive tract, we have the duodenum, the jejunum, the ileum and the colon, and you can see that there are specific amounts of bacteria in each portion of the digestive tract and specific types of colonies. And there's a major area; fermentation and gas production is in the colon here in the healthy gut. Now, in SIBO, you can see that a lot of the fermentation in bacteria colonies that are in the colon move up the digestive tract and infiltrate areas where they shouldn't be living. And thus they cause fermentation and a whole bunch of unwanted symptoms. And that's small intestinal bacterial overgrowth. You're not catching anything, you're not getting anything new, and you're just having a movement of certain organisms into the wrong location. It's like if Canadians here started moving into the US, yet, we're Canadian residents, we'd be infiltrating on their territory. And if we didn't do that, legally, they would probably send us back to our country. So that's all it is. It's an infiltration of a different area of the gut.



28:10

Small intestinal bacterial overgrowth is often found in IBS. So anti-microbial therapies are definitely things to seriously consider when working with someone with IBS. In this study was about 78%. So the next question is, have there been any studies looking at using anti microbials with people with IBS? And the answer is absolutely. So in this study, one of the researchers here was Dr. Gerard Mullin, who's a gastroenterologist at John Hopkins University and a functional medicine practitioner. And what they did was they compared a common therapy for SIBO, Rifaximin, which is a drug, they compared it with an herbal therapy. So what they found was the response rate in those taking Rifaximin, a prescription drug, the standard of care was about 34%. Whereas with the herbal therapy was about 46%, a much higher success rate with the herbal therapies. So we can use botanicals and these herbs that really don't have any side effects and are quite mild in the way they work, to get a really nice response in what's happening in the gut.

29:31

What herbal therapies did they use? They used a number that are quite familiar to me here, because they use them from very specific professional brand companies. The first one is Metagenics and they use two. They used one called Candibactin AR and Candibactin BR. For each of these therapies, they use two capsules of both items. So two of the Candibactin AR and two of the Candibactin BR with breakfast, and then two of each with dinner. And they did the same with these two other products, FC-Cidal and Dysbiocide by Biotics Research and they used two of each for breakfast and dinner as well. So these therapies can be very effective in restoring balance in the gut, killing off some of the bad guys, and restoring that microbiome back into balance. So that's with bacteria, but what about parasites?

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So parasites are a lot more common than people think. When testing just random people, about 23% are positive for parasites, and this was looking at about 13, almost 14,000 patients here. About 12.5% of them were positive for Blastocystis hominis, and then it goes all the way down to about 0.7% for Giardia. So many different parasites, Blastocystis hominis is one of the more popular ones, but many different parasites that could cause a variety of issues in different hosts. Now honing in for a moment on Blastocystis hominis, which is the most common one, we found that about four times more frequent infections of this in people with IBS. So if we looked at the populations with IBS, and we looked at the populations without, the populations with IBS have it four times more often. So we'd see for people with Blastocystis hominis, versus one. When we treated these people with Blastocystis hominis, we found resolution about 80% of them. So, pretty significant that these parasites can have that effect and can play a role. Now with Giardia, we find that people getting treated with Giardia with conventional medical treatments can actually have symptoms that last three years after the treatment. That's pretty significant. It means maybe we didn't get



the parasite or maybe there has been some lasting effects on the microbiome that we haven't reestablished and repaired. We can find out some of this from stool analysis. There are obviously some standard medical tests that look for parasites. And there are some functional medical tests. There's just this funny comic here, this guy has a stool in his hand and the attendant is saying, 'that's not quite the stool sample we had in mind, Mr. O'Donnell.'

32:42

So this is a stool test of one of my clients. What we found was that they had an overgrowth of yeast; they had a parasite of *Blastocystis hominis*; they had no *Giardia* or *E. histolytica* or *Cryptosporidium*, which can be a lot more severe. They had a pretty high adiposity index with high Firmicutes and low Bacteroides. And these are all the beneficial bacteria. So they had pretty low levels of the beneficial bacteria. As you can see, there's quite a variety here. Some people ask, which is the good one? But they're all good. And remember, you want diversity. I use the example of the Amazon rainforest; we want a really diverse gut. So you want to be in about the 4th or 5th percentile here for these good bacteria.

33:40

So looking at this microbiome as a whole, this individual had a yeast overgrowth, they had a parasite, and they had a pretty low amount of the beneficial bacteria. So, they were in a state of dysbiosis. Now, this client particularly didn't have some serious digestive issues, just some minor stuff, but they did have some more serious autoimmune conditions, showing that probably a lot of it was beginning in the gut.

34:14

Now regarding the gut, the mucosa is directly exposed to the external environment and taxed with antigenic loads consisting of commensal bacteria (those are the good bacteria), dietary antigens (those would be the foods we eat), and viruses, and had far greater quantities on a daily basis than the systemic immune system sees in a lifetime. 99% of the time, the job of the immune system is to not respond. So it's a very important interaction that's happening here in the gut wall. The immune system needs to keep things in check. There needs to be that communication between the guards around the wall and the immune system on the inside to make sure that there isn't that overreaction, because there is so much exposure. And an interaction between the food we eat, the bacteria that's in our gut, and the integrity of our tissue all play a role in making sure that this is kept in check.

35:14

Now talking about specific probiotics, how do probiotics help with those with irritable bowel syndrome? Now what I found in practice, this is a bit of a more difficult thing to figure out. Some people do really well on probiotics, some people, you need to change the probiotics a little bit, you'd have to try different



ones, and some people can't tolerate them. But in this study, they looked at probiotic *Bifidobacterium infantis* and wanted to see what it was like compared to another probiotic, *Salivarius* or a placebo. And what they found was that the *B. infantis* fared a lot better and improve the score for those with IBS and improved the symptoms. Now I went to go look at this study to dig a little deeper and I found something that was quite unfortunate. The way they delivered the *B. infantis* or the *salivarius* or the placebo was malted milk. Malted milk is basically malted barley, wheat flour, and whole milk. My guess is that the chances that a lot of these individuals were sensitive to just the malted milk alone was pretty high. And I would love to see a study like this done, where they gave it to them in some other form where they weren't consuming gluten and dairy with what they were supposed to be taking. I mean, sometimes it's just ridiculous how these studies are designed.

36:57

Now continuing along the lines of IBS and some treatments associated with them; not just IBS, but also small intestinal bacterial overgrowth, yeast and other digestive issues where there are more spasms involved. Peppermint oil can be extremely beneficial for that. It's got natural anti-spasmodic activity. It works both internally to help to calm down the digestive tract. It also works externally; you can rub it on muscles to help calm muscles. It's shown to have activity against *Candida albicans*, so great for yeast as well. It's got sort of a dual activity in terms of being able to kill and being able to help with the spasms. So it's got like this mechanical symptomatic relief aspect, but also some antimicrobial activity. And most essential oils actually have a good anti-microbial aspect. Now one thing we need to note when it comes to peppermint oil, and also peppermint tea, is that it can relax the lower esophageal sphincter. The lower esophageal sphincter is the one that closes off the esophagus from the stomach. When would we not want to use peppermint oil therapy or peppermint tea? If someone has gastroesophageal reflux disorder, heartburn, Barrett's esophagus, we want to be very careful with using this because it's going to relax it a little bit and allow contents to spurt up. Someone with a healthy lower esophageal sphincter is not going to have a problem really with the peppermint; probably won't even notice it. But it's something to be aware of and also something to ask your clients if they have reflux and symptoms like that, do they consume a lot of peppermint tea? So how does peppermint oil do when used for various symptoms associated with IBS? Well, peppermint oil put up against a placebo has quite some benefits. So for abdominal pain, it helped about a 79% rate versus 43%. And another thing I want you to pay attention to here is, look how well the placebo did; it improved abdominal pains by 43%, distension by 29%, and stool frequency by 33%. It really just illustrates and furthers this mind body connection. So the peppermint oil fared quite well in about a 73% to 83% decreased symptom presentation. And truly we do see a very strong component of the mind involved with IBS. We have a lot of terms and phrases associated with our gut like butterflies in the stomach, or I don't have a stomach for that, or someone who has a cast iron stomach, or they can't stomach that or having a gut feeling. We have all these



euphemisms that we say referring to the mind gut connection. We've known this for years.

40:18

But how does stress play a role with IBS? I'm just going to read the caption here; the role of stress in the development and modulation of IBS symptoms, the IBS cumulative lifetime stress produces physiological changes in the brain and body that reflect dysregulated neuroendocrine hormonal and autonomic activity. So we used to think that IBS was all in someone's head. But now we can see that there are distinct physiological actions, risk factors, early life experiences, where there might be a stressor coupled with a genetic component. Triggering factors, which could be psychological stressors, coupled maybe with more mechanical stuff, like an infection, or surgery or antibiotics, and then perpetuating stress in the life can keep that IBS going. So counseling becomes an important part of the IBS picture, changing your beliefs, changing the stress in your life to help get more into that parasympathetic mode. And these are some a few other studies showing that life events can increase symptoms of IBS.

41:33

Oftentimes, when I do a history of people with IBS, and I look at their timeline, I see that a very specific moment in time, where there was really high stress, is when all their symptoms started. Maybe they went away to university. I've seen people who have broken up from a relationship, had a divorce, quit a job or started a new job, and these were the beginnings of their IBS symptoms. General stress can worsen the IBS symptoms, and also the disease stress, the stress from the disease itself can cause issues as well. So we see here that with IBS, it's multifactorial; we can have many people with the diagnosis, but we have to consider parasites, small intestinal bacterial overgrowth, history of antibiotic use, the stress component, and many factors involved in what might be going on in this functional bowel disorder.