Digestion: Small and Large Intestines Pathology

Transcript

Welcome back to the continuing saga of the large and small intestine, the lower part of the GI tract. I'm Dr. Ritamarie Loscalzo, and today in this talk, we're going to go through what can go wrong in the small intestine.

Before we begin, like just make sure that you're aware that any of the information I'm presenting here is not intended to replace a one-on-one relationship with a qualified health care professional and it's also not medical advice.

When you're presenting to your clients, you need to be really careful and make sure that they are aware that what you're presenting and what I'm presenting here today is intended as a sharing of my knowledge, information, clinical research, and clinical experience over many years.

I encourage you and you should encourage your clients to make their own health care decisions based upon your research and in partnership with a qualified health care professional. This is especially true for folks who are on any medications. Just want to make sure that the things that we talk about in terms of nutrition are not going to interfere with the protocols.

Let's talk now about what can go wrong with the intestines. We talk a lot, we've heard a lot about leaky gut malabsorption over and over again. We're going to actually just go inside and show you what it is and show you how to manage it.

Dysbiosis and basically dysbiosis means bad life in your gut. Dys is bad and biosis is life. It's basically when your gut flora is out of balance. What you have in your intestinal tract is this amazing repository of gut bugs. They are good guys. They're the ones that help you. They help synthesize B vitamins and vitamin K, and they help to protect your membrane. They help you absorb your food. They're good and they keep away the bad guys, but sometimes those bad guys just sneak in anyway and they overpower the good guys and what you end up with is a condition called dysbiosis.

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That may mean that either you have not enough of the good bacteria or too many of the bad bacteria or both. What does that mean? You could have a fungal overgrowth, you could have candida infection, you could have a cryptosporidium infection, you could have H. pylori. We already talked about any number of kinds of infection in that bowel, and that contributes to dysbiosis. Even if you don't have bad creators in there, you just don't have enough of the big creators that creates dysbiosis.

Irritable bowel. You've heard that, may be you've even just had it or thought you had it or have been told you have it or continue to have it. Irritable bowel is basically when your bowel is not handling this typical signals. For example, you are feeling like you have to have bowel movements like two, three, four in a row and then may be you go three to four days without any. You have urgency when you have the desire to have bowel movement. It's not just oh I need to have a bowel movement when you find the next toilet. It's like I need to go now. That's different. That's a functional thing. It's a functional thing.

Even the dysbiosis is kind of a functional thing. There is no damage to actual tissue except what damage it might cause, but the act of having some bugs living there that don't belong and not having enough of good bugs and having an irritated bowel, that's more of a mechanical functional thing, but inflammatory bowel disease is real pathology.

Inflammatory bowel disease is when there has been an erosion of the tissue of the mucous membrane that lines your gut and into the wall. It's painful, it's dangerous, and it needs to be under control. There are couple of different inflammatory bowel conditions: Crohn's and ulcerative colitis, and they're different, yet they are the same. They're different in several ways.

1. Ulcerative colitis usually occurs in the descending colon into the sigmoid colon. An ulcerative colitis is usually associated with bleeding in ulcers and you'll have blood in your stools. The onset can come on really rapidly and usually doubled over in pain because it's pretty darn uncomfortable.

Crohn's disease on the other hand can actually happen anywhere in the intestinal tract, anywhere in the small or the large intestine. It's most common location is right around the ileocecal valve of the area but actually can occur anywhere. Whereas with ulcerative colitis, the ulcerations are superficial and it causes thinning of the mucosa. With Crohn's, it's actually much deeper. The ulcerations can be deeper, and there is a thickening or scarring of the mucous membrane.

With ulcerative colitis, there is definitely lots of bleeding because of the superficial nature and because of the proximity to the exit whereas Crohn's may not cause bleeding in the stools, although it can. It's certainly not as common as in ulcerative colitis.

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Both of them are very painful. Crohn's tends to cause much more in the way of that punch in the stomach doubled over type pain whereas ulcerative colitis may cause more of a pain, but it's not as deep and disabling, although both can be very disabling. We'll go into a lot more detail about both of these conditions when we'll look at the large intestine in detail.

Here's the thing. Most doctors have no clue how to treat either one of these. They give people steroids, and guess what? They take them off all the foods that could be helping them. They take them off greens. They take them off vegetables. They say they have too much fiber and it will irritate it.

Seriously, I had somebody, the husband of the patient many, many, many years ago and he had been coming to see me here and there to get adjusted, and he came to see me one day because I want to talk to you about my bowel. He said, "I've been having these problems. I'm doubling over with pain. I've no idea what it is. I went to the doctor." I said, "Okay. What did he say?" He said, "Well, he did some x-rays and he said I have Crohn's disease," so "what did he say to do?"

What this doctor wanted him to do was go on this diet that had, it was like white rice, cereal, and lots of meat and eggs and dairy products and no vegetables. I looked at this and I said, "This is just wrong. I can't do this." He decided, "What do you have to offer? What you want to give her?" I told him and told him what he would have to do.

I told him that the foods that the guy they were recommending were not good. I told him that the best results with ulcerative colitis and Crohn's disease were when people did fasts. They actually stopped eating because it's so hard to heal that. Think about if you have a big open wound on your hand and every day you require it.

I've heard, I don't know if you guys have heard of Paul Nison. He is a raw food guide, he does videos. He spoke here at our potluck one time, and I heard his story. His story went something like this, "Well, I was a high stress exec in New York and living the fast life and I had this doubling over pains in my bowels, and they told me that I had ulcerative colitis I think it was. You see the ulcerative colitis look Crohn's. I had to take these steroids, and there wasn't really a lot I could do. I should slow down a little bit, take a vacation. They didn't have anything else to offer me."

He said he started researching and reading, and he went back to the doctor. He said, "You know what, I heard that gluten. Getting off of gluten can help to calm down inflammatory bowel. Well, you know about that?" and doctor said, "Oh, you know I don't believe in this stuff," so Paul said, "Hmm, I'm going to give it a try." Enough of gluten and got much, much better.

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Then, he was doing his research and he said, "Ah, what if I get off dairy," so he asked the doctor. Doctor said, "Ah, ah, you know, doesn't do anything," so he said, "While he was wrong the last time, may be I'll be wrong again," so he went off the dairy, got a little bit better. He just kept doing this. Anytime the doctor said, "Nah, nah," he seems to take it okay. The doctors know what they're talking about. He ended up getting off all the stuff and being on just mostly eating vegetables.

Then, he ended up somehow coming into contact with the Hippocrates Institute and went and did the program and did juice cleansing, and he has never had his ulcerative colitis back. I've heard stories like that over and over again.

There's a guy who started the company called the Vitamin Code, and it is also, I guess it's a branch or whatever Garden of Life and he had ulcerative colitis or Crohn's. I don't remember which one, but he had one of those. He was basically really, really skinny and scrawny and he couldn't focus, and he has gone through the whole same kind of thing, figuring out what foods he could eat that would help him.

That's what you need to do with your people. You want to find out from them what they're willing to do to get results. That's a really important question to ask for upfront because it's really important to find that out because sometimes people are not willing to do what it takes. If you've got inflammatory bowel, you got to be really strict. You may need to do a cleanse, a fast, or juice cleanse, just a protein powder, got rebuilding cleanse for weeks.

What you really need to do is give it a chance to heal. Just like if you took your hand with all the open wounds on it and stuck it in dirty dishwater every day, it wouldn't heal. Same thing with your gut. It's not going to heal if you keep throwing fuel into the flame. This is something that needs a lot of attention. We can do great things, but they got to be off of gluten, they got to be off of dairy, they got to get off the sugar. They got to be on lots and lots into muffins and the anti-inflammatory herbs. I'm going to share with you some pictures.

Let's move on, and I'll give you some protocols in a bit. Diverticulosis and itis. If you recall on the picture of the large intestine, basically there's pouches in the large intestines. If you look at a picture of the large intestine, you'll see this little pouchy things and it's almost like they're held together by a string in the middle and these little pouchy things, and those are called diverticuli. Diverticuli.

Diverticulosis is when those get swollen. They get expanded and stretched beyond what they should be and food get stuck there. Over time if the food continues to get stuck there, some of that can get trapped and bacteria or organisms can grow in there and you can get an infection. That's when it goes to diverticulitis.

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That diverticulitis as well as inflammatory bowel disease are high risk for colon cancer, very high risk, especially the inflammatory bowel disease, so you got to be careful about that.

What causes those to outpouchings? Well, sometimes it's like at exercise, like at fitness. Sometimes, it's just even the wrong kind of food which causes this really hard stool that's hard to pass through and it breaks off in those little marble pieces and get stuck and stretches out these diverticuli.

Let's take a little tour through the large intestine, and you'll get to see where some of these outpouchings and diverticuli are. There's one over there. You'll see some more. See those little holes, that's diverticulosis. When you see that there is some like a little organgy kind of bacteria looking pockets, that's going to be more of an itis where it's inflamed. It's kind of go in through them, there's a hole right there. There's another one right there, and this one looks like it might actually be a fissure because the hole is one there and one there and it's going through. There, that one looks like it's infected. It's got semi-yellowish inside of it.

That's a polyp over here on the left. This is a sigmoidoscopy which is basically where they go up, stick a tube up through the rectum, and there is a camera attached to it and scope. You see how nice and clean this intestine looks. It's because they've taken this laxative that completely wipes them out before taking the colonoscopy. What do you do about it? Well, I'm going to give you solutions in a bit because a lot of these have shared solutions.

Constipation happens when the stool does not pass through you as quickly as it should. It can happen because a large intestine is absorbing too much. It can happen if so much water. It can happen because you don't have a good peristalsis. Remember peristalsis is that wave motion, you don't have enough of that. It can happen because you're eating foods that are aggravating and irritating to it. It can happen because your ileocecal valve is stuck.

Lot of ways that constipation can happen in hemorrhoids followed from constipation because when you're constipated and you're having a hard time passing your stool, you push too hard. You have a lot of pushing and that can cause a little delicate veins that are near the opening of the anus to break open, to bulge out. If they bulge out and then they kind of break open, then they're bleeding hemorrhoids, so hemorrhoids are not necessarily bleeding but they are definitely these outpouchings.

What else can go wrong in the intestines? Well, as a result of having leaky gut which is the first one we talked about, you can end up with food allergies. I'll explain more when I show you the pictures.

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Diarrhea. It's another thing. What's that? Passing stuff passing through too quickly and everything is real liquid, that's usually a sign of the large intestine, not absorbing enough liquid, so the liquid stays in the stool, yeah, and then it goes out and then gas and burning could be so many different things, right.

Gas and burning could be because you got this back up of stool and there it should be getting out and it's not. It's rotting. It could be because you've just had something that you're allergic too and all the lymphatics swell up, okay. It could be that you're making up enzymes, so there's a lot of reasons for these things. You want to get it to the heart of why these things are happening.

You've probably seen this picture before. I show it a lot, but every time I show it, people learn new and different things. What we have here on the left hand side is a picture of a nice, pink, healthy intestinal tract, small intestine. You see everything looks pink and there's little green lines on them. They're just a normal flora. You've got a few toxins, but they aren't able to pass through because there's not a big enough space.

You've got some unhealthy bacteria, but that's everybody has some unhealthy bacteria, but you mostly have the good guys, okay, mostly have the good guys. Actually go over to the right hand side, it looks like a sorry site. Doesn't it? You've got toxins that are falling through holes, you've got bigger holes than you have on the other side in between the cells. You can see cells on yeast to be ceased, but some of those are getting into those holes and going through.

You've got a lot of activity that's happened as a result of the right hand side just getting depleted, getting worn down. Why did it get worn down? Well, have a look. Have a look over at the foods and the drugs it's putting in: Hamburgers, French Fries, Ice Cream Sundays, and then some kind of medication, probably antacids.

On the other one, then you've got fruits and you've got vegetables. They do have bread in there, but I don't think that's as healthy as it could be, but you've got the fruits, then you've got corn. Corn is okay, some people don't tolerate it, some people do fine with it.

Anyway, you've got the good veggie, good stuff, and they've milk which I don't agree with either. The milk in the dairy, the milk in the bread I don't agree with, but for the most part, you get the picture. The green side wins, hands down, but you see these spaces in here. The spaces in between the cells. They don't allow much to get in, okay. You see these spaces. Look here, looks like a cavern. The white guys are yeast, and then these green [inaudible 00:18:20].

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What causes it to go from the nice pink one to the other one? It's damage to the intestinal microvilli, okay. You see all these little places where it's a little bit kind of yellowish, goldenish. They're little holes right where the arrows are. You can see holes. They're actually boring holes into your intestinal tract and broom they go in. Those big molecules go and the toxins go and the allergens go in. What happens? You have a reaction.

What are the symptoms of leaky gut? You're going to see this a lot. You have to be able to find this. Obviously, some of this is typical GI stuff, gas, bloating, constipation, diarrhea, pain, but you're also going to see with leaky gut aggressive behavior, depression, anxiety, confusion, brain fog, mood swings, nervousness, and poor memory. You may be tempted to just immediately go work on the neurologic disturbances without working on the underlying cause, without even making the connection, okay.

At least here, you have the ability to know that it's not all in the gut. You can have respiratory problems, how asthma is a really biggie, sinus congestion, air-borne allergy, shortness of breath. We've seen them. Seen those symptoms go away when we address the leaky gut. It's just a hormone imbalance that can lead to leaky gut and insulin resistance. You can have thyroid complaints, you can have adrenal fatigue, you can have menstrual imbalances.

Insulin resistance causes inflammation, and when you have a leaky gut, you have a lot of additional inflammation going on in your bloodstream because your body has so much more work to do to take care of all of the little extras, right, the extra immune things, and things are dangerous but they're really probably not.

The symptoms can be anywhere. You can have them in your immune system. It could be recurrent vaginal infections, bed wetting even, hard joint pain, muscle pain. All because of a leaky gut, so leaky gut leak no more. The causes of leaky gut, we talked about some. If you got bad organisms living in your gut, the toxins released by those organisms, especially when you try to kill them. Other things like toxins like alcohol, caffeine, heavy metal toxicity, food additives and preservatives.

I am always amazed that how many people that come in and they're really knowledgeable about diet and they're still doing caffeine and alcohol. They really are toxic to the system. They can create leaky gut amongst other things. Medications especially things like NSAIDs which are nonsteroidal antiinflammatories like Motrin, and which is the one, ibuprofen and those sorts of things. Also, aspirin for sure. Antibiotics and birth control pills and steroids, which affect the level of the flora and the measles vaccine, and diet. We'll show you list of all the dietary foods that can cause leaky gut.

Eating under stress is huge, it's so huge. Pancreatic insufficiency is huge if people really get how important it is that they be able to digest their foods properly.

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If they really make the connection, if they're savvy, and they can look the question here and go, "Oh, I have a problem here" and insufficient chewing because those undigested molecules just give more heat to the flame. When you don't chew enough, same thing, okay. When you eat under stress, same thing.

Functional assessment of leaky gut. We talked about kind of little bit of symptomatic, but what about functional assessment of leaky gut? You really well look at their mental and emotional state. Are they little stressed by needs that are just blowing all their cycles every day? If they are, you need to work on their stress management. You're going to need to teach them some techniques, may be you have a favorite technique, may be you teach them some hard math, may be you send them to a yoga class. Whatever, okay, that you need to be addressing that.

Of course, the chewing which we've talked over and over again, that's a functional assessment. Chewing is not overrated, really is important. Stomach acid: You look at the stomach acid, you can measure it or you could just assume based on symptoms that they are stomach acid and that's contributing to the leaky gut.

The mucosal lining. How good is the mucosal lining? Well, how do you measure that? Well, we can't go in and measure it, but we can certainly go by symptoms. If they get burning in their gut when they eat, then that could be a problem, okay.

Liver-gallbladder function. You want to look at that. Look at that on their labs. If the liver and gallbladder are not working properly, that could be what's contributing to leaky gut. Same thing with their pancreatic enzymes. We talked just some things to look forward to see if they have any balance. Fix the things that are originate. Fix those things first.

People will go back trying to fix their leaky gut and say, "You know, I've been trying to fix my leaky gut for six years," but they haven't looked at some of the underlying functional pieces that need to be addressed as well. Sometimes, it's really simple and sometimes it takes long, but most of the time when you identify, it's not that hard to fix but you don't want to just treat the leaky gut. You want to look at these other factors, the mental, the emotional, chewing, stomach acid. How well is their mucous membrane protecting them? How is their enzymes, gut flora, etc.?

Here's a list of some things you can find out and assess leaky gut. Ask people if they have constipation or diarrhea, abdominal pain or bloating, mucus in stools, food allergies, ulcerative colitis, Crohn's disease or celiac. Basically, if they do have ulcerative colitis, Crohn's, or celiac, then they're more likely to have a recurrence. Alcohol consumption, it's going to make you sick. History of antibiotics. Use of nonsteroidal anti-inflammatory drugs. If they have those in their history, they are good candidates for a leaky gut protocol.

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In addition, we have depression, hormone imbalance, brain fog; these are all non-local, non-gut related symptoms, and we see it all over the place. You may think while this is crazy, that's just exhaustive. No. You will see patterns. It's amazing how far stretch this is.

Even gluten intolerance. A reaction to gluten intolerance, passing through the gut can create bone loss. It's just so far reaching. Really need to take stock of it. All these symptoms: Poor memory, joint pain, chronic or frequent fatigue, sinus or nasal congestion; these all can be related to leaky gut. We may be going and trying to do an antihistamine kind of herb and what can we do for their upper respiratory, what are we going to put on their skin, where when we need to look at their gut.

That's why I put this first because I want you to learn this, and I want you to look at every person who come in that comes to see you and every person that's in your life and see what can I do. Is there a way to help them fix their gut and make this go away because it's far reaching, and those red ones are systemic symptoms.

As I've been saying, we'll go into a lot more detail about all the labs when we do the sessions we have what four months of doing assessments. We'll get into way more detail, but I did put up a couple of test places. You can test leaky gut, you can test for intestinal permeability. The reason I like this particular test from Cyrex Labs, they basically tells you there is specific chemicals, inflammatory mediators that will be affecting your gut based on why it's leaky. What you can tell from this is whether you got is leaky because you've got some sort of bacterial overgrowth, because it's related to allergies and the inflammatory mediators from the allergies, or because it's just the cells being inflamed from being inflamed. They're just being inflamed on their own.

Tight junctions have zonulin, and it looks like you've got enzymes or antibodies that are attacking the zonulin, then it tells us a whole bunch of stuff, so basically that. We'll go through way more detail about that. I'll give you sample lab reports on that and how to read them and all, but it's a good test when you're working on all the stuff you think should work and it's not. That's just my side about tests.

There's some basic tests I think everybody should have. We should be having CBCs and vitamin D and we've thyroid issues, getting the thyroids checked and all. I really like to get people doing the adrenal stress indexes, but lot of the tests I don't run very often. I run them when I'm getting stuck. I run them when I'm doing what I know to do and it's not working and it usually does. When that's the case, I know that there's something astray, there's something different there; may be it is H. pylori like it was with the woman I was telling you about earlier, may be it is a parasite that needs to be gotten rid of, may be it is this leaky gut, may be there is some amino acid imbalance.

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I would write an amino acid and organic acid panel together when I'm working with somebody and things just don't seem to be working and I want to see what's going on, so that's when you'll be using these tests and how could we get by without the test is what I'd like to do. How could we get by without doing the tests if we can and then know when you need to do the tests because you really want to get this person well, so that's basically it.

This intestinal permeability, there's of course the stool test which tell us a lot. The BioHealth One does not tell me much about inflammation in the gut as opposed to the Genova and the Metametrix which do. I think the Diagnostics and the BioHealth are really basic, but they also tend to be a little bit more accurate in terms of particular gut microbes and H. pylori, so I make a decision which one to do based on what information I want to have.

Then, there's gluten tests. If any one of these are happening for people, if they've got inflammation in their gut, if they've got intestinal permeability antigens and antibodies, if they've got gluten tolerance, then that says well, yeah leaky gut is a big deal. You can tell how well the leaky gut is progressing by how well the tests are doing, so stool antibodies for gluten.

I don't run them all the time on people. Here's when I run them. I run them when people are like [not aware 00:29:16] about gluten. Do I have to? Do I have to do it all the time? Let's run the test, that way you'll know for sure whether you have do it all the time.

Then, there's the blood antibodies that will show a whole lot more about gluten and it's like 20 different gliadin fractions, not just the one that the regular blood test.

Now that we've pretty gone through what can go wrong with the small intestine, let's have a look at what can go wrong in the large intestine.

You have ulcerative colitis. Ulcerative colitis is actually usually over on the other side. The drawing is ... It's a drawing, but usually it can happen in the ascending colon, but it's usually happening in the descending. Ulcerative colitis, you see how red and fiery it is and irritated. That's what happening inside your gut. It's like that.

You can also have little polyps that develop and then some people have multipolyps. The polyps just actually grow and grow and grow, and there are lots of them throughout their intestines and periodically have to get them removed, but most part they seem one or two of them.

Diverticulosis. You see the pointing to. This is what it looks like on the outside. It's an outpouching of the intestinal pouch. On the inside, it sits in little hole, right, and that hole is like a ballooning out of the side wall. Things can get stuck in those really easily.

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People with diverticulosis are told don't eat nuts, don't eat seeds. They can easily get stuck in there, but the problem is also that hold there even if you're not eating seeds, even just a bolus of food that's been churned and is kind of a soft stool by the time it gets there. It still can be getting stuck in there, and you can get infections and that's when it turns into diverticulitis. This is diverticulitis, right there. See how red and inflamed it is. This one is just normal, this one is really inflamed. I wouldn't want to be this person.

Ulcerative colitis, polyps, and diverticulosis; not good, not good, okay. Those are the main colon diseases. The other one is cancer, colon cancer. These are all predispositions to it, and we'll talk about cancer after we talk about inflammatory bowel.

Let's take a closer look at inflammatory bowel diseases. Inflammatory bowel disease generally is what it sounds like, right, it's chronic inflammation along the GI tract. It's usually caused by an autoimmune process, and the main ones that we know about are ulcerative colitis and Crohn's. You may hear people talk about general colitis, and again anything that says "I" used at the end is an inflammation, so colitis would be inflammation of the colon, but the main named ones are ulcerative colitis and Crohn's.

There is also a category called microscopic colitis and there's two of them in that collagenous and lymphocytic, but the difference between that and the ulcerative colitis and Crohn's is that with the microscopic colitis, it's just what it says. The inflammation is on a very microscopic level, so you're not going to see it as overt changes as you would in inflammatory bowel disease.

Taking a look at the photos, you've got the healthy colon on the left, nice and pink and smooth and glistening and then you've got in the middle the ulcerative colitis and you could see, I mean it's ulcerated.

There are spots that are reddened and you can see they look like they're crevices and then the Crohn's. The Crohn's disease has more of a thickening in the inflammation, so it's not so much ulceration as just big inflamed patches. We're going to take a look at each of these both from a standpoint of describing them and also we're going to take a look at some colonoscopies and see what they look like.

Let's start with ulcerative colitis. Ulcerative colitis most commonly is located on the left side of the large intestine, the descending colon, the sigmoid and the rectum. Most likely, it can occur anywhere in the colon and is generally going to be confined to the colon unlike Crohn's, which can occur anywhere.

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Some of the key characteristics of ulcerative colitis are inflammation and ulceration on the surface of the intestinal lining as we just saw on the picture. There is thinning of the mucosal lining and blood and mucus in the stools is a hallmark sign. Bloody diarrhea is actually the most common manifestation of ulcerative colitis. People can be running to the toilet like 20 and 30 times a day. It's just this constant urgency and need to defecate with watery diarrhea that's bloody.

It can be scary as all get out for people. It's cyclical, so it comes and it goes. There is flare-ups and there is remissions in between. They can cause abdominal pain and cramping as well as rectal pain. Now, the overall signs, the systemic signs of ulcerative colitis as well as other inflammatory diseases like Crohn's, weight loss because it can't keep anything down, the diarrhea, fever, and fatigue.

Now, not everybody with ulcerative colitis constantly has a fever, but if you're working with someone who presents with weight loss, bloody diarrhea, fever, and fatigue, you're going to be thinking ulcerative colitis. The only way to actually confirm ulcerative colitis versus Crohn's versus something else is through looking at a colonoscopy and in some cases taking samples of the tissue and doing a histological examination.

Crohn's can be located anywhere, anywhere in the GI tract. Most commonly, it's in the ileocecal area. About 50% and that's in the ileum or the cecum right on either side of the ileocecal valve. Other locations that are common are the large intestine, so just the large intestine, 20% of them and just the small intestine 30% and then very rarely in the stomach, mouth, and esophagus.

The difference between the Crohn's and the ulcerative colitis is the nature of the inflammation. This is inflammation that goes deep, not just on the superficial level, but it goes deep into the layers of the mucosal lining, causes thickening of the mucosal lining and usually very serious pain doubling over kind of, "oh my God, I think I'm going to die" type of pain, lots of diarrhea, although it's generally not bloody diarrhea and if it is, it's more of a lighter bloody diarrhea than with ulcerative colitis where there's huge like pouring out of blood.

Again, systemically it can be weight loss, fever, and fatigue, so that's not a differentiating factor between the two, but the big differentiation is usually less rectal bleeding and the location of the pain. With ulcerative colitis, usually but not always, there's going to be pain in the left side in the descending colon area whereas with Crohn's, you're going to have it more on the lower right side in the area of the ileocecal valve.

Now, let's take a look at a colonoscopy. We're going to look at several colonoscopies. The first one here that we're looking at is a normal colon and you see how pink and pretty the tissue is and it's glistening and you can actually see some of the blood vessels underneath.

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You see the folds. Everything looks normal. There is no sign of inflammation. There is no sign of polyps. There is no holes. Everything just looks pink and pretty and it functions normally.

You don't see any poop stuck in the crevices as you hear about, but of course there is a big purging that happens before you do a colonoscopy, but this will let you see how nice it looks, how healthy it looks before we take a look at some of the ones that are not so healthy.

Next, we're going to take a look at the inside of a not so normal colon, and we're going to see what all the different things are that can go wrong.

This is a YouTube video of a colonoscopy and you can see some polyps right there inside and as we go further down, you just see there is just some irritation to the lining there. There's a little bit of ulceration over there on the side and yeah there is some redness. It looks sore, it looks aggravated, it doesn't look very comfortable. This is ulcerative colitis.

As we progress through here, you're going to see even more, just yeah really uncomfortable looking stuff. Yuck, don't looks okay. Does it? Doesn't look too good. Yeah, lot of mucus there, lot of ill, look at that. Really super, super red and sore, super red and here's an even worse spot as it comes down. Look at that. Wow. It looks like there might be a little bit of diverticulosis right next to it as well or diverticulitis. I showed you these pictures to give you an idea of what's going on when people are telling you about their pain, what might be going on, what's really going on inside, the depth and the seriousness of these conditions.

Let's take a look at a couple more. This next one is of Crohn's disease in the distal ileum, and this is a YouTube video from a company called Gastrolab and they're showing you some really graphic stuff, so when someone is coming in and they said I was diagnosed with Crohn's disease and I don't know what to do and every time I eat a salad, I am in dire pain, you can understand why.

You can understand why just about anything that would go into a colon that looks like this would hurt, would be hurt, painful, very painful and the thing is, the doctors are well meaning when they tell people don't eat anything with fiber in it because they are thinking that those fibers are going to aggravate, but the recommendations that they're making are just totally ridiculous because they're telling to eat things like white bread, which contains gluten and lots of yogurt and things like that.

They're on the right track because the way we're going to work with people with conditions like this is to calm and sue that tissue. Look how irritated that is. It's just all throughout. There's little lesions. There is big bumps. There's so much going on in there.

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It's no wonder these people are in so much pain and the thing is, when we talk about how to deal with these conditions and what you can do for it and it's going to start with calming down the tissue, and calming down the tissue generally means someway of getting them off of solid foods to give it a chance to rest.

Imagine how uncomfortable you would be with this kind of lesions and irritation going on in your colon. It would not be fun to eat.

This next short clip is of ulcerative colitis and this is a colonoscopy of the descending colon. You can see as we get there, look at those raw areas. It looks very different from what we just saw in Crohn's. It's much more superficial ulceration, lot more mucus here. It looks like there is also some polyps, you see those little bumpy things. Those are polyps, but a lot of mucus.

There is a really big ulceration there, oh, bunch of mucus, bunch of little ulcer. Oh boy, look at all that. Mess.

This next video clip is showing an animation of the immune response that is thought to be going on during Crohn's disease.

Video: *Crohn's disease is a debilitating illness with severe symptoms that have a great impact on quality of life. This disease is characterized by inflammation of the intestine caused by an adverse immune reaction to naturally occurring bacteria. The bacteria slip between epithelial cells and the intestinal wall where dendritic cells engulf the bacteria. The antigens are presented to T cells, which become hyperactivated. The T cells furiously attack the bacteria causing extensive collateral damage to nearby intestinal tissue. Dying epithelial cells release additional factors that amplify the immune response.*

Next, let's take a look at colon cancer and it's very fitting to take a look at colon cancer after exploring inflammatory bowel disease because inflammatory bowel disease does put a person at increased risk of colon cancer, so let's have a look. We won't go into major detail on it, but I just at least want you to understand what it looks like.

Colon cancer is the third leading cause of cancer related deaths and it's estimated that over 50,000 deaths in 2014 alone were attributed to colon cancer. There is a lot of risk factors, demographic factors and let's explore some of those. Men have a slightly higher risk of colon cancer than women, but the huge one is people over 50 have a much, much, much, much greater chance of getting colon cancer than people under 50.

What are some of the risk factors?

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Well, polyps. Those little polyps you saw there as we explored the colonoscopies as bumps. Those are actually can be precancerous and that's why a lot of people like to get colonoscopies to try to detect those and remove those. It could be a good strategy, and I believe that prevention is probably a better strategy.

Let's look at some of the risk factors and then look at the types of cancer and how they manifest. A very common cause is polyps and a lot of people have these "benign polyps" that lead to colon cancer. Any kind of inflammatory bowel disease whether it's Crohn's, ulcerative colitis, diverticulitis, all of those put people at higher risk for colon cancer.

In addition, there is some dietary and lifestyle factors that put people at risk for colon cancer. Included are alcohol, saturated fats and processed meats, the chemicals that are used to process meats, the chemicals that are produced when meats are heated and barbecued like the heterocyclic amines and general lifestyle factors like sugar, poor bacterial counts in the gut, so when people are on antibiotics a lot and their gut microflora is out of balance.

A lot of things that we know how to help people with, we know how to help people prevent is important, so let's take a look at the different types of colon cancer. The first one which you'll see on the far left, the stage 1 is actually called cancer in situ, I-N S-I-T-U, cancer in situ and what that means is that it's isolated to the region. That would be something that's in the colon itself, but hasn't extended out beyond the wall.

The second one is actually a localized cancer and it's a type 2, stage 2 and it's where the cancer has pushed its way through and is embedded in the wall.

The third type which is more of a regional type cancer is when the cancer is broken through the wall of the colon and has affected lymph and other tissues in the local area and the fourth one is when it becomes metastatic. It's broken through and the cancer cells have gotten into the blood stream, they've managed to travel around the body and caused a metastatic disease where the cancer can be carried to any part of the body including the liver, the bones, the breasts, etc.

Best is to catch it before it becomes cancer so to reduce the risk factors. All the things we're teaching you in terms of protocols and foundational healthy digestion are going to be helpful in preventing colon cancer.

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