

**OPERATOR:**

Hello, everyone, and welcome to *Nutrition in IBD: Making Healthy Choices*, a free telephone/web education program. It is my pleasure to introduce your moderator James Testaverde, Senior Director of Patient Services at the Crohn's & Colitis Foundation of America.

**JAMES TESTAVERDE:**

Hello, everyone. On behalf of the Crohn's & Colitis Foundation of America, welcome, and thank you all for attending tonight's program.

This activity is supported by an educational grant from Janssen Biotech, Inc., administered by Janssen Scientific Affairs, and through a sponsorship from Shire.

I would like to address a few housekeeping items before we begin. To allow full participation in today's program via the web, please be sure to disable any popup blockers on your browser or computer. And after the presentation, we will open up the program for your questions. We will take as many questions as time allows from both the telephone and webcast participants. If you are not able – or if we're not able to take your question, CCFA's IBD Help Center can be reached Monday through Friday, 9 AM to 5 PM Eastern Standard Time, by calling 888-694-8872, or by sending an email to [info@CCFA.org](mailto:info@CCFA.org).

Upon exiting today's program, you will be prompted to complete a brief program survey. We ask that you please take a few moments to provide your responses, as your feedback is extremely important to us as we plan future educational activities.

I now have the pleasure of introducing the speakers for tonight's program. Our first presenter, Dr. Gary Wu, is the Ferdinand G. Weisbrod Professor in Gastroenterology at the Perelman School of Medicine at the University of Pennsylvania in Philadelphia. Our second presenter joining us this evening is Lisa Cimperman. Lisa is a clinical dietician in the surgical intensive care unit at University Hospitals Case Medical Center in Cleveland, Ohio. She is also the spokesperson for the Academy of Nutrition and Dietetics.

Dr. Wu and Lisa, thank you so much for joining us this evening. It is now my privilege to turn the program over to Dr. Wu.

**DR. GARY WU:**

Great, thank you so much. Delighted to be here tonight and good evening, everybody.

So the first slide here are the objectives for today. So we're going to describe about the importance of diet and nutrition in inflammatory bowel disease, review data on the role of diet in IBD, explain social and special on popular diets in IBD, review general healthy eating principles, and suggestions for diet during a flare, and then discuss eating outside your home, at holidays and at gatherings. So it's a mixture of some basic concepts about diet and nutrition in IBD, what we do know, what we do not know.

**DR. GARY WU:**

I'll talk a little bit about thinking forward, about research in the area. And then Lisa will be talking more about some basic principles and practical considerations for diet and inflammatory bowel disease.

So I'm going to start with a couple of introductory slides. The digestive journey here. So digestion is process of food conversion in substances that your body can absorb. The body absorbs these nutrients from food to function properly.

Now most of the absorption actually occurs in the small intestine, but water, watery food residue and undigested secretions pass into the large intestine where the water is reabsorbed. So the colon is largely there to absorb fluid and electrolytes and salts and things like that. Where again, nutrient absorption is primarily in the small intestine. And this will be important as we think about the distinction between Crohn's disease and ulcerative colitis.

Finally, solid undigested food mixes with bacteria in the large intestine to form bowel movements.

So you know, there are two ends of the spectrum of inflammatory bowel disease, ulcerative colitis and Crohn's disease.

So in ulcerative colitis, because it is localized only to the colon, we know that the small intestine works malproperly. But then inflammation in the colon can cause watery diarrhea and what we call fecal urgency, having that urge to run to the bathroom to pass liquid stool.

By contrast, as you know, Crohn's disease can affect any region of the gastrointestinal tract from the mouth to the anus. And sometimes it does actually involve the small intestine and when that happens the digestion and absorption of nutrients can actually be impaired. But just like ulcerative colitis, patients with Crohn's disease can also get inflammation of the colon and that will also lead to diarrhea, not only the inflammation in colon in Crohn's disease, but also the undigested, unabsorbed nutrients from the small bowel, if the small bowel is involved, can also contribute to that diarrhea in Crohn's disease.

So diet and nutrition are important for health obviously. Diet, by definition, is the actual food that is consumed. And nutrition refers to properly absorbing food in order to stay healthy. That's the ultimate goal of good nutrition. So incorporating good nutrition to your diet is essential.

So what's the clinical relevance of diet in inflammatory bowel disease? Well, we know you as patients that have inflammatory bowel disease do desire therapies that don't suppress the immune system, that is something that is quite clear. And we know that diet is something that you folks think about an awful lot because diet is something that you can take control of, that you can take ownership of. And so diet, we know, is very important to you because it's something that you deal with every day.

Now when we think about diet and bacteria in the gut, these are environmental factors to which your intestinal tract is actually exposed. And this is actually an important component of the development of inflammatory bowel disease. And I'll touch upon that a little bit more in the next slide.

**DR. GARY WU:**

Now we do know that diet is associated with inflammatory bowel disease. So there are studies where people have consolidated many different publications over the years and they tend to find relatively consistent findings. And that is dietary intakes that are high in fat and meat are generally associated with increased risk of Crohn's disease and ulcerative colitis. Whereas a plant-based diet, high in fiber and fruit intakes and vegetable intakes, are associated with a decreased risk.

Now these are large, what we call epidemiologic studies, looking at how often we see inflammatory bowel disease in large patient populations. This does not refer to like individual people that have inflammatory bowel disease. These are looking at very large groups of individuals. But we do see these trends and by and large it is the Western, industrialized diet, high in meat and fat that are bad, and plant-based diets seem to be associated with a lower risk. And we actually observe this globally, where agrarian cultures like in Africa, eating – where individuals are eating more of a plant-based diet – we see a much lower prevalence or much lower number of individuals having inflammatory bowel disease in those societies versus in industrialized nations. So there is definitely consistency with diet and where we actually find inflammatory bowel disease being most common.

As I mentioned on a previous slide, there are many factors that are involved in the development of inflammatory bowel disease. It's a complex disorder. There's clearly a genetic component of this and we know that if there's a strong family history of inflammatory bowel disease, that increases the risk in other individuals in the family for having inflammatory bowel disease. We understand those genetic factors and to a large extent they lead to immune system abnormalities.

What this is, in response to something in the environment. Environmental exposures. And one of the biggest environmental factors are actually the bacteria in your intestinal tract. But another environmental exposure is diet.

We do know that diet does influence the bacteria that live in your gut, so they are actually intermixed. So these environmental exposures may be talking to each other per se, and may be playing a role together in the development of inflammatory bowel disease.

So what do patients with inflammatory bowel disease think about diet? Well, a proportion of individuals feel that diet causes inflammatory bowel disease. About half of patients believe that certain foods cause flares. About half of patients report that they have a change in their pleasure of eating. And about two-thirds of patients report not eating certain foods that they usually like to eat to prevent flares. So there is a notion from our own patients that diet is somehow associated with inflammatory bowel disease, but it's not consistent. It's not as if we know very consistently that patients, if they eat a certain thing, will have a bad outcome. Or if they stay away from a certain thing that they'll actually do better. And that's one of the challenges in the field.

Yet we do listen to what our patients tell us. And that's why I think together with those large review studies that I mentioned on a previous slide, that there is something about diet that influences inflammatory bowel disease.

**DR. GARY WU:**

One other challenge, though, is that there is no direct evidence right now that diet or a particular diet can cause or cure IBD. We do have a notion that modifying diet might help in the treatment of inflammatory bowel disease, but we don't have specific recommendations about that right now. But I'll get back to, a little bit later, about how we're thinking about how to get to that endpoint, how we could think about making recommendations for a better diet in patients with inflammatory bowel disease.

Now it's important to know that IBD is not related to a food allergy because food allergies are a different immune disease than inflammatory bowel disease. But intolerance to certain types of foods can be associated with symptoms that are very similar to inflammatory bowel disease. So the proper diet in inflammatory bowel disease would not only improve symptoms of inflammatory bowel disease, but underlying that, we hope that understanding more about diet will enable interventions to enable healing. And again, as I mentioned, this is very important to patients with inflammatory bowel disease because this will help you control your own disease.

But we do have a notion that for right now diet should be individualized for each patient and I'm sure Lisa will be talking a little bit about that later.

So studies on the relationship between diet and nutrition and inflammatory bowel disease are limited in terms of really good types of studies. So there are a lot of studies that are out there, but they're really small, not really well controlled from a scientific standpoint. They're the type of studies that we really can't make broad recommendations about. And so these are sort of what we call anecdotal reports, sort of case by case, people saying oh, well, yeah, this thing sort of made me feel better, but it doesn't reach the scientific rigor for us as a physician community to make broad recommendations.

So we think that diet does have an impact on disease. Research so far has not been completely adequate to show how this takes place. We have a notion that diet can impact upon the immune system and I'll give you a little bit of an example of that. But it is quite clear over the past decade that diet can impact upon the composition of the bacteria in your gut. But then also diet can be metabolized by the gut bacteria to produce a lot of small molecules that may also influence inflammatory bowel disease. So we do have these notions about how diet may be affecting intestinal inflammation, but there's still a lot of work that needs to be done.

Unfortunately, a lot of attention has not been paid to diet previously, but I think that the Crohn's & Colitis Foundation, as well as other organizations now, are paying much more attention to diet.

So I already covered this on a previous slide. This is again the notion that individuals eating a westernized diet are at increased risk for inflammatory bowel disease. People living in agrarian cultures are at decreased risk. Again, the point of this slide is that there are very significant limitations to these types of studies. What these types of reviews actually do is they put together a whole bunch of different studies and try to make a common conclusion. They are a legitimate way of looking at the

**DR. GARY WU:**

data, but there are limitations, to the degree that we can't feel confident of making broad, sweeping recommendations for patients that actually have inflammatory – active inflammatory bowel disease, based on this evidence. But we think that it's a component of stuff that will ultimately help us get to the point where we can make these types of recommendations.

Importantly, these types of observations really don't deal with current disease activity. This is just basically looking at trends of inflammatory bowel disease in large populations.

Another example of information that the Crohn's & Colitis Foundation has actually gathered about diet and inflammatory bowel disease is actually from patients. So there is a very large internet-based study called CCFA Partners. And so what this study has done is basically collected food, dietary questionnaires, to measure eating patterns in the patients that have inflammatory bowel disease. And they ask open-ended questions about the foods that they think improve or worsen their symptoms.

And some of the things that they found were that there were some consistent findings. Foods that are more frequently associated with improved symptoms were yogurt, rice and bananas. Foods that were more associated with worsening symptoms, well, you can see that whole list of a lot of different things.

So this is actually interesting information for us, but there are significant limitations to this data also. This is self-reported. They could have something to do with just intolerance to food. There was no real measure of inflammation, the degree of active disease that was going on.

So it could simply be that individuals are eating these types of things when they have a flare because it doesn't make them feel as bad. So it means that it's not that eating rice, yogurt and bananas is actually treating their disease, it's just something they're not as intolerant to when they actually have a flare. So it doesn't prove that eating these types of things will make your disease better, it's just something that is associated, that people tend to eat, when they're not feeling as well. And I want to emphasize that point. Because again, we can't make any broad recommendations right now about specific things in the diet that we can recommend that will make your flare actually better.

The important point, however, is that when we think about diet and inflammatory bowel disease, we have to look at many sources of information. Sort of those reviews that I showed you as one source of information. What you tell us as scientists about your own experiences in diet is another source of information. And then animal studies, very careful scientific studies that we do in the laboratory, is another source of information. And scientists are putting together all those three sources of information to help synthesize a bigger picture as to what might be the better diet in inflammatory bowel disease.

Principles of good nutrition. Maintaining good nutrition is important because maybe that might help medications be more effective. We do have this notion that it might improve healing and immunity. We do know individuals that are malnourished do not heal very well and immune systems don't work very well. And it may minimize GI symptoms by normalizing bowel function.

**DR. GARY WU:**

I won't get into too much detail here. There is a notion that certain types of vitamins might be good in inflammatory bowel disease. So there are some animal studies and there are some small human studies suggesting that supplementation of Vitamin D might modestly improve things. But we do have to be very, very careful when we look at this type of data, again, because Vitamin D deficiency might simply be a marker of bad Crohn's disease because Vitamin D is a fat-soluble vitamin. If you have inflammation in the intestinal tract, it may prevent you from absorbing Vitamin D appropriately. So it may not be that Vitamin D itself is better for inflammatory bowel disease. It may just be if you have bad disease you don't absorb it very well. Nevertheless, your physician should be measuring Vitamin D levels because if they're low, it's important to get supplementation of that important vitamin.

Now we do know that there is an interaction between us and the microbiota that is bacteria, and microbes that live in the gut. We as hosts provide a very unique environment for those bacteria to live. And in return bacteria provide many benefits to us. And I won't go through listing all of these things, but it's very clear that bacteria are really, really essential for normal health.

But then you may be asking, well, Dr. Wu, you just said that bacteria helped to cause inflammatory bowel disease, and that is also true. So what we think – the association really is that for those individuals that have the right genetic makeup, certain types of bacteria, or the composition of the bacteria, may actually be bad for inflammatory bowel disease. So overall bacteria are good, but altered composition of bacteria in individuals that are genetically predisposed, play a role in the development of inflammatory bowel disease. And I'm happy to explain that more in-depth in the question and answer period if necessary.

So this slide here is looking at the interaction between diet and the host and the microbiota. So we do have the notion is diet is directly important for us through nutrition. But we also know that diet can change the composition, the type of bacteria that live in your intestinal tract. And diet is all what you eat, also is utilized by bacteria in the gut to produce a lot of small molecules that may also be important for health and/or disease.

So when we think forward about how we can develop new technologies through diet that may be beneficial in inflammatory bowel disease, those are the things that are sort of shaded in gray. So we can think about medical foods and there are companies and investigators very interested in this. Medical foods that might deliver something good to the host directly, that has inflammatory bowel disease. But then diet may actually work in a beneficial way through bacteria in the gut. So the next generation of prebiotics, where these are fermentable substrates like fiber and things like that, that are then converted by bacteria to small molecules that may be beneficial. We can think about the next generation of probiotics that maybe change the composition of bacteria in the gut, that may be beneficial. Or as a combination of both those prebiotics and probiotics, something called thing synbiotics, that together might be effective.

**DR. GARY WU:**

I have to say my own bias in the field is that right now there's not a lot of strong evidence that any particular prebiotic or probiotic is beneficial for the treatment of inflammatory bowel disease. Having said that, what I highlight here is the next generation of these products. We do believe that using very sophisticated science that we have available currently, that we can design better the next generation of pre and probiotics for the treatment of disease.

Is there a special diet for inflammatory bowel disease? Well, the short answer is no. Again, as I've been saying repetitively, there's no special diet for inflammatory bowel disease. But we do know that dietary modifications might actually help with symptoms.

And there are several diets that are advertised specifically for managing IBD, but this is more managing symptoms, not necessarily disease activity, and Lisa will be talking more about that.

So most studies have not proven scientific benefits in these formal types of studies. There are benefits that are shown in animal studies and so our role as scientist and physician are to translate that information we've discovered in animal models to something that is relevant in human biology.

At the end of the day where are we with diet and inflammatory bowel disease? It's got to be individualized and you should talk to your doctor about any questions that you have.

So there are many different types of diets that are out there. Elimination diets that patients use because they're things that they know makes them feel worse and I think that that is a golden rule that should be followed. Low residue diets are sometimes used, especially in patients who have strictures, to prevent clogging of the stricture. Fiber actually causes gas, so if gas and bloating are a symptom of yours, reducing fiber and low residue diets may be of benefit. Total bowel rest is of benefit in patients who have severe disease. And in that sense we do need to give nourishment intravenously, through an IV.

I should mention that there is one exception to the dietary rule and the treatment of inflammatory bowel disease. There is a diet that we know is effective in the treatment of Crohn's disease. And these are what we call elemental or defined formula diets. These are diets that largely cannot be consumed orally. They have to be fed through a tube. We use primarily in pediatric patients. And is used as first-line therapy in many countries in Europe and in Asia, a couple of places in Canada and the United States. These are effective for the treatment specifically of Crohn's disease. The mechanism by which this works is not well understood, but there are a lot of us working very hard to understand how these elemental diets work, because we do believe that if we understand how this works that we could understand principles by which we can design better diets for inflammatory bowel disease.

And then there's sort of the gluten-free diet that is primarily used for the treatment of celiac sprue.

So at this point I think I'm going to turn over the slides to Lisa, who'll take over from here.

**LISA CIMPERMAN:**

Thank you so much, Dr. Wu.

As Dr. Wu has stated, we haven't quite unlocked that exact combination of foods or diet for every individual, or a combination of foods to necessarily treat or cure IBD. But we do know what the basic principles are of a well-balanced and healthy diet.

Individuals with IBD are at a higher risk for malnutrition for a number of reasons. One being a loss of appetite or food aversion. Food simply becomes an unpleasant experience when it's associated with negative symptoms such as diarrhea, abdominal pain or bloating. Individuals with inflammatory bowel disease also have increased caloric and protein needs due to the inflammation associated with Crohn's or ulcerative colitis. In addition, symptoms such as diarrhea or vomiting can result in the loss of nutrients such as electrolytes and fluid. And as we'll see in the next couple of slides, medications can actually have a negative effect on some of the vitamins and minerals.

So here we have a chart on some of the common nutrient deficiencies with ulcerative colitis. As Dr. Wu has mentioned, ulcerative colitis affects the colon. And so this affects those nutrients which are absorbed or reabsorbed in the colon.

Crohn's disease is associated with even more nutrient deficiencies because it tends to involve more of the GI tract. In addition, most of our nutrients are absorbed within our small intestine. So you can see, depending on where your disease is located, or if you've had bowel resection and also depending on the types of medications you're on, it can affect vitamins like B12, folate or Vitamin A, as well as minerals such as magnesium, zinc, calcium and potassium.

It's important to note that you don't want to use this chart to start supplementing vitamins or minerals on your own. Have a conversation with your physician to pinpoint what vitamins or minerals you may be deficient in, follow up with testing, and then start with supplementation.

One of the things that you can do is to look for food sources of some of these vitamins and minerals. Getting nutrients from your food is always the best choice. Often the foods that are nutrient-dense, that contain these vitamins and minerals, have other health benefits as well. So you can see B12 is found in animal products. Folate is found in fortified foods and leafy greens. Calcium is found in soy or dairy products. So these really are the building blocks of a healthy diet, and you can't overdose on these vitamins or minerals through food, which may be the case if you tend to go towards supplements.

As far as supplements go, as I mentioned, it's essential to talk with your doctor or dietician about any supplements that you're taking. Certain supplements can interact with prescription medications. Some things that you may want to consider taking are a multivitamin or mineral supplement. If you do this, look for one that has no more than 100% of the recommended daily intake. You want to avoid taking any multivitamin that has mega doses of vitamins or minerals. You can also look for the USP label. It's the United States Pharmacopeia, and this is a voluntary label that supplements can – or vitamins can have put on their product that ensures good and safe manufacturing practices.



**LISA CIMPERMAN:**

You may need an additional calcium and Vitamin D supplement. If you take a calcium supplement, spread it out in two or three doses over the course of the day. Your body can only absorb about 500 milligrams of calcium at a time.

You may also need monthly B12 injections if you have disease of the ileum, or folate, depending on which medications you're on. Again, discussing it with your doctor is essential.

So the basics of a healthy diet include enough calories to maintain your weight or increase your weight if necessary. The number of calories that we need varies on our activity level, gender, age. So it's hard to give a broad number. But one way that you can ensure that you're getting enough calories is to just weigh yourself weekly. As long as you're maintaining your weight, you're eating enough. If you're losing or gaining, you may need to adjust your intake.

Protein is an essential nutrient for healing and building muscle. Most Americans get plenty of protein. If you want to know how much you should be consuming, take your weight in pounds and divide it in half. Aim for that amount of protein in grams per day. And we'll talk a little bit more about common food sources for protein and exactly how to meet those number of grams per day.

Water is often the forgotten nutrient. So fluid and electrolytes are essential. Divide your weight in pounds in half, and this is the number of ounces that you should drink in a day. It's actually a bit of a myth that we all need eight cups of water per day. It's actually based on your body size and also how much you're exercising, the heat, how much you're sweating, and also any losses through diarrhea or vomiting as well.

So we're going to look a little bit more closely at the components of a healthy diet. And first I want to start off talking about whole grains. Whole grains are a source of carbohydrates, your body's preferred energy source. In fact, you need about 150 grams of carbohydrates per day to keep your brain functioning optimally. So it's really important to avoid low carbohydrate diets, just in terms of maintaining energy levels and overall health.

Whole grains are an important source of fiber, B vitamins and several minerals like iron, magnesium and selenium. Most adults need about six to eight ounces of grains per day and you can meet this by having, say, for example, a cup of oatmeal in the morning, which would be two ounces. A sandwich, with two slices of whole grain bread, which would be another two ounces. And then two-thirds cup of rice at dinner, which would be another two ounces. So we're not talking about huge portion sizes here.

If you're buying things like crackers, cereal, any cereal bars, for example, look at the ingredients list and make sure that the first word listed is "whole". It should be whole wheat, whole oat, whole something. The importance of this is that a lot of breads are labeled as wheat bread or 12-grain bread, and often this could be just white bread with a little bit of caramel coloring added to it.

**LISA CIMPERMAN:**

Fruits and vegetables are quite possibly the food groups that I see patients with inflammatory bowel disease avoiding the most. And the unfortunate thing is that fruits and vegetables really are powerhouses for vitamins and vital chemicals, and they're important for overall health. So while the concern often is, and rightly so, is inflammatory bowel disease, we need to remember that the other parts of our body need to be kept healthy as well. So a diet rich in fruits and vegetables is associated with a reduced risk for heart disease, diabetes and obesity.

What I would recommend is that if you find that fruits and vegetables are problematic for you, try cooking and peeling them. Putting them in smoothies is an excellent option. Or soups or stews can be well tolerated as well.

So I would encourage people just to try to include a little bit more color into your diet. This will really help with the overall nutrient profile.

Next up, we have sources of calcium. It's well known that milk is an excellent source of calcium, but you don't necessarily have to drink cow's milk if you don't want to. There are plenty of other sources. Calcium is very important for bone health and reducing the risk of osteoporosis. It's also involved in muscle contraction. Foods that contain calcium are also sources of Vitamin D, which as Dr. Wu has mentioned, patients with inflammatory bowel disease can be deficient in Vitamin D. It's also a source of phosphorus and potassium, which are both important electrolytes. And protein as well.

Three servings of dairy product, or an alternate source like soy milk or almond milk, will meet your calcium needs for the day. Yogurt also has the particular benefit of having probiotics in it as well. And as we heard, a lot of patients believe that yogurt is well tolerated and may even help with their symptoms.

Protein, as I mentioned before, protein is really important in terms of healing and in making up the components of your immune system. It's important to get enough protein and you don't necessarily need all that much unless you're recovering from surgery, for example, or if you're having a flare or recovering from a flare.

One egg or an ounce of meat or a cup of milk has about seven grams of protein. So again, if you take your weight in pounds and divide it by half, that's the amount of protein you need for the day. You can also use food labels to keep track of your protein intake and make sure that you're getting enough.

Foods that may be best tolerated are things like lean meat, low fat dairy products, eggs or egg substitute, beans. Again, this is something that can cause gas in some individuals, but you can try things like a pureed white bean soup or hummus. Cheese, particularly hard cheeses, if you're lactose-intolerant. Nuts or nut butters, peanut butter, almond butter, cashew butter. And then vegetarian meat alternatives like soy products or other options that are out there. Fortunately, our options at the grocery store are just growing and growing. So for individuals who do follow a vegetarian diet, there really are a lot of protein sources available to you.

**LISA CIMPERMAN:**

And try to include a little bit of protein at each meal.

The next thing that we'll talk about are unsaturated fats. So fat is actually essential. It cushions our joints. It also gives us healthy hair and nails. And it forms the cell membranes of our body. So one of the things that is really essential and may even be beneficial is omega-3 fatty acids. Omega-3 fatty acids do have anti-inflammatory properties. Unfortunately, we don't quite know the exact dosage or timing of consumption that will affect or stimulate the inflammatory response. But overall, omega-3 fatty acids are a healthy fat and they have been associated with a lower risk for heart disease as well.

Sources of omega-3 fatty acids are things like fatty fish like salmon or tuna. Walnuts or flaxseed oil are also good sources. And then more and more foods are being fortified with omega-3 fatty acid. One thing that you may want to try is using flaxseed oil in your salad dressing, substitute it out for the olive oil that you usually use.

If you do take an omega-3 fatty acid supplement, take a look at the EPA and DHA content. EPA and DHA are two specific fatty acids that are in the omega-3 fatty acids. The EPA and DHA, when added up together, should be one to three grams or 1,000 to 3,000 milligrams. There are also prescription omega-3 fatty acid products available and if you're interested in that, that's something that you can talk to your doctor about.

Mono-unsaturated fats are also heart-healthy. Examples of these include things like olive oil, canola oil, nut butters and avocados. All of these things are particularly good to add to your diet if you need to gain weight as well. They can also help with the absorption of fat-soluble vitamins like Vitamins A, D, E and K.

Again, as Dr. Wu, diet and tolerance are highly individualized, so what's problematic for one person may not be problematic for another. So just take these foods as something to maybe look at and pay attention to in your own diet and see if you are having any symptoms.

One that I'd like to talk about specifically are foods with added soluble fiber. So more and more food manufacturers are adding fiber to foods that wouldn't normally contain fiber. For example, you can find yogurt that has added fiber to it. Yogurt doesn't naturally contain fiber. Or you can find these very, very high fiber cereal bars that have upwards of eight to ten grams of fiber in one single bar. What these manufacturers have done are added – they've added soluble fiber in the form of fructooligosaccharides. And that's actually something that you can sometimes find in the ingredient list. Or it's listed as inulin or chicory root. This type of fiber, this type of soluble fiber, has not been associated with any significant health benefits. And often it's touted as being beneficial for weight loss or heart disease. This type of fiber is highly fermentable, which means that it tends to cause gas. So if you're finding that you're having a lot of abdominal pain or gas or bloating, take a look at some of the packaged foods that you're eating and see if the ingredient list has things like inulin or chicory root in it.

**LISA CIMPERMAN:**

Artificial sweeteners and sugar alcohols can also cause gas and bloating, as well as diarrhea.

Lactose intolerance is more common in individuals with inflammatory bowel disease, but it's not necessarily a given. You may be able to tolerate some amount of dairy product in your diet. High fat greasy foods can be problematic, as well as spicy foods and cruciferous vegetables. But again, once you cook these foods a little bit, they can sometimes be more tolerable.

Some foods that you may find helpful during or after a flare include diluted juices, half water, half juice. Unsweetened applesauce. Candied fruit without added sugar. Bland cereals like oatmeal or cream of wheat. Plain chicken, turkey or fish. Cooked eggs or egg substitute or also excellent sources of protein. Things like mashed potatoes, rice or noodles. And this may be where white bread becomes a better choice than whole wheat bread.

I just want to briefly review some popular diets that are out there. This specific carbohydrate diet in particular has a lot of testimonials of patients saying that it cured their inflammatory bowel disease. It's important to be wary of these claims. This specific carbohydrate diet has not been proven to cure the symptoms associated with IBD. It can also be problematic because it's extremely restrictive. So you may be falling short of some nutrients. And in individuals who are already prone to deficiencies, this is certainly not a good thing.

It also restricts complex carbohydrates. Now complex carbohydrates are fermented in your gut to short-chain fatty acids. And short-chain fatty acids are the preferred fuel for the cells lining your colon. So I wanted you to see where removing this from your diet may actually be detrimental.

Some of you may have heard about the low FODMAP diet. This is a diet intended for individuals with irritable bowel syndrome. And it actually does have some research behind it showing efficacy. FODMAP is an acronym for a group of carbohydrates that are highly fermentable. So again, the carbohydrates that are fermenting your gut and tend to cause a lot of gas. It is a pretty – it's a pretty complicated diet and if it's something that you're interested in looking at, I certainly wouldn't dissuade you from it. But it may be helpful to actually sit down with a dietician to go over the principles of the diet.

Atkins Diet is one that I would caution against. It's very – as we well know, it's very low in carbohydrate or eliminates carbohydrates, and it's quite high in fatty meats and fat period.

Moving on to the Paleo Diet, which is all the rage right now. You can barely step into a restaurant without seeing a Paleo section on their menu. The Paleo Diet is kind of interesting. The premise is that we should eat like cavemen in the Paleolithic time. The problem with this is that there's no way we can eat like they did in Paleolithic times because obviously our environment is vastly different. So that aside, it's really just kind of a modified low carbohydrate diet. It eliminates refined sugar, dairy, legumes and grains. It may not be as detrimental as, say, something like the Atkins Diet. But it's hard for me to get behind it simply because there's absolutely no research behind it. And the premise, as I mentioned, is a bit shaky.

**LISA CIMPERMAN:**

The South Beach Diet, again, a bit of a modified low carbohydrate diet. It can be nutritionally complete and is certainly not the worst of the bunch, but it does recommend fewer calories than would be adequate for most individuals. And again, particularly individuals with inflammatory bowel disease.

Weight Watchers, as we well know, is intended for weight loss. If you do feel that you need to lose weight, I would encourage you to talk to your doctor and dietician, so that they can work with you on a plan for weight loss, rather than going out on your own. Just because there are some more things that we need to take into account than with others who may not have inflammatory bowel disease.

So as we have very well established, no specific diet has been proven to control the symptoms of inflammatory bowel disease. Many options exist, but we have very few well controlled published studies. These diets can be very difficult and complicated to follow. And potentially risky because of nutrient deficiencies.

So what can we do to make food enjoyable again? Again, it's really going to vary for every individual, but we can provide some tips that may be helpful.

When eating out at restaurants I would encourage you to take a look at the menu online before you go to the restaurant. It may even be helpful to call the restaurant ahead of time and ask for further clarification on menu items or the preparation that's used or the ingredients that are used.

Know your trigger foods. And again, this is where contacting the restaurant ahead of time may give you some heads-up as far as whether or not they would be willing to modify certain menu items, to eliminate some of your trigger foods.

Select restaurants and menu options that you've enjoyed before. And also keep snacks handy just in case you find yourself in a situation in which there's nothing that you feel you can enjoy.

Watch out for hidden fat. Fat can be particularly problematic. It can sometimes cause diarrhea or abdominal pain or bloating. Things like sauces, anything creamy or crispy, tempura, all of these things indicate that it's typically a high fat menu item. Also things that say with a *beurre blanc*, that means it's in a butter sauce. But again, asking your waiter, even calling ahead of time, can really help head off problems.

Steamed or broiled foods are often cooked with very little fat and they can be good choices. You can also ask for sauces and salad dressings on the side. This may allow you to taste these high fat sides, but control your portion and making it better – more enjoyable and better tolerated.

Another great tip would be to divide the food on your plate in half, eat slowly, and that way you can kind of assess how you're feeling and stay on top of any symptoms that may come up.

As far as other things to be wary of, unfortunately caffeinated beverages and alcohol can irritate the gut and move food through the gut more quickly. In addition alcohol interacts with many medications. So talk to your doctor or pharmacist about any potential interactions with the medications you're on.

**LISA CIMPERMAN:**

Some good options can be water, sparkling water, unsweetened green tea or black tea, or diluted juice.

As far as holidays and celebrations, which are quickly upon us, try as much as possible to stick to your normal eating habits. I realize it's easier said than done, but being on top of your schedule and having your schedule planned out so that you know when you're going to parties or when you may be visiting family, it can help you keep on top of those days where you may have less control over what you're eating, and give you a little bit more motivation on those other days to stick to your healthy eating habits.

Know your limits. As Thanksgiving approaches, we tend to overeat on Thanksgiving, but keep in mind that Thanksgiving is not the last meal you will ever eat. And you will certainly feel much better with having eaten to satiety rather than past that point.

Keep your portions small. Eat smaller but more frequent meals. This is also a really good time to keep a food journal, so that you can keep track of new foods that you're eating and any symptoms that may come up.

I would also encourage you to inform your family and friends. Educate them about inflammatory bowel disease. And as your family and friends, they would be more than willing to accommodate you and try to make the experience enjoyable for you.

Bringing a dish that you know you can eat is also a great idea as well.

So just to kind of summarize some of the points that we've talked about. It's really important to work together to identify factors for nutrient loss and to recommend replacement if necessary. Optimizing nutrition can improve healing, particularly after surgery. And also making healthy nutritional changes to complement medical therapies can improve your overall well-being.

Additional resources can be found at the Academy of Nutrition and Dietetics. If you'd like to find a dietician in your area, you can go [EatRight.org](http://EatRight.org) and click on Find a Registered Dietician link. The public link also has more information.

Other resources for nutrition information include [MyPlate.gov](http://MyPlate.gov). It's actually [ChooseMyPlate.gov](http://ChooseMyPlate.gov). And IBD-specific information at [CCFA.org](http://CCFA.org).

There's also an online tool, an iPhone app for tracking your diet. You can find that at [CCFA.org/GIBuddy](http://CCFA.org/GIBuddy). And as always, the CCFA Bookstore has many excellent resources for you.

So as far as IBD management goes and to summarize again the points that we've talked about, inflammatory bowel disease is treated through a variety of treatment approaches. Good nutrition does not replace conventional medical and surgical therapies for inflammatory bowel disease. And it's very important not to abandon conventional medical and surgical therapies just for other alternative therapies like supplements or a particular diet. However, complementary approaches can help with

**LISA CIMPERMAN:**

symptom relief. And these complementary approaches include some of the things we've talked about like dietary modification and supplements, stress management and exercise.

And that concludes my portion of the presentation.

**JAMES TESTAVERDE:**

Great, thank you very much, Dr. Wu and Lisa, for your informative presentations.

Now it's time for the question and answer part of the program. And for everyone's benefit, please keep your questions general in nature, without personal details, so that we can provide an answer that is general as well. In the interest of time, I also ask that you keep your questions related to the topic. You are always welcome to contact CCFA's IBD Help Center if you have other questions.

So, Operator, can you please give instructions to the telephone and webcast audience?

**OPERATOR:**

To participate in the call by asking a question, please dial star-1 on your keypad. If you are joining us by web, simply click on Ask a Question, type your question, and then hit Submit. We will take questions in the order they are received. We can only take one question per person. Once your question has been voiced, the Operator will transfer you back into the audience line. Again, to ask a question, please dial star-1 on your keypad or click on Ask a Question, type your question, and then hit Submit.

**JAMES TESTAVERDE:**

Great, thank you. While we let some telephone questions be put into the queue, we're going to start with a few questions from the webcast audience. I'm going to direct the first question to Dr. Wu.

"Is there any evidence that eating organic food helps symptoms of IBD?"

**DR. GARY WU:**

Eating organic foods per se? I don't think that there's any strong evidence for that currently. You know, there is a notion that there could be certain types of we'll call xenobiotics. So xenobiotics are non-nutrient substances that we eat that are in our food supply. Or drugs per se, also xenobiotics. But the whole notion that organic foods might contain less of the xenobiotics, theoretically might be a benefit, but right now there is no strong evidence to support that.

**JAMES TESTAVERDE:**

Great, thank you. Next question for Lisa. "For those who have a J-pouch or have had sections of their bowel removed, are there specific guidelines for getting proper nutrition?"

**LISA CIMPERMAN:**

You know what, again, I would refer back to those charts that I presented at the beginning. Certainly with certain parts of your bowel that are removed, it may influence your need for vitamin or mineral supplementation. So I think that for patients with a J-pouch, a couple of things that are particularly important, are eating smaller but more frequent meals, and avoiding high fat foods, particularly high fat meals for example, and things like caffeinated beverages and alcohol, all of which tend to move things through the GI tract more quickly.

But for individuals who do have a J-pouch, it's really important to sit down with your physician and talk about which parts of your bowel may have been compromised or removed in surgery, and how this may affect your absorption of certain nutrients.

**JAMES TESTAVERDE:**

Great, thank you. And for all of you, the slides will be available a month after the webcast, so you will be able to reference those tables once again.

So the third question, Dr. Wu, we have several inquiries about gluten, so could you define gluten and then discuss its impact on IBD?

**DR. GARY WU:**

So gluten is a substance that is in wheat and to the best of our knowledge gluten is not the primary driver of inflammatory bowel disease. It is the primary driver of something called celiac disease or celiac sprue, which is an immune response to gluten. What essentially happens is that the gluten that you eat gets modified by your own immune system and then your immune system will respond abnormally, in your intestinal tract, and you get small intestinal inflammation. It's very important that you recognize that that disease, celiac sprue, is distinct from inflammatory bowel disease.

Having said that, we know that the genetic factors associated with inflammatory bowel disease do overlap with celiac sprue to a certain degree, but that's at a very scientific standpoint. The different types of immune pathways that may be in common between the two. But right now we, from a clinical standpoint as physicians, we consider them to be distinct diseases. So I would not necessarily recommend a routine basis, a gluten-free diet for patients with inflammatory bowel disease, the same way that we would recommend this for celiac sprue.

The only reason to exclude gluten from the diet, if you have inflammatory bowel disease, is that you know, your personal experience, with consuming gluten in the diet makes you feel worse. And that's sort of the golden rule, if it makes you feel worse, then you probably should try and stay away from it as best as you can. Try to still maintain a healthy nutritional diet.

**JAMES TESTAVERDE:**

Great, thank you, Dr. Wu. Operator, can we now take the next question from the telephone audience?



**OPERATOR:**

Our first telephone question comes from Kathy in California. Kathy, please state your question.

Seems as though we've lost Kathy. Our next question comes from Lindsay in Massachusetts. Lindsay, please state your question. Lindsay, your line is now live, please state your question.

Seems as though she dropped from the queue as well.

**JAMES TESTAVERDE:**

Sure, I will take another webcast question while we wait for those in queue.

This question is for Lisa. "Could you talk a little bit more about insoluble and soluble fiber and what the difference is?"

**LISA CIMPERMAN:**

Yes. So you know, it's an interesting thing, and this is probably just semantics, but we're getting away from calling it insoluble or soluble fiber. But first I'll explain what those terms mean.

So insoluble fiber are things like what we commonly think of as roughage. So the skins of fruits and vegetables or wheat bran, for example. An insoluble fiber is just as it sounds, it's not soluble in water. It's not fully digested in our intestinal tract.

Soluble fiber actually absorbs water in our GI tract. And examples of soluble fiber are things like oats and many fruits and vegetables like pears or apples are good sources of soluble fiber.

The point is is that most foods contain a combination of both types of fiber, insoluble and soluble. So it's really hard to exclusively consume one or the other.

So the trend now in the semantics of fiber is to just call both insoluble and soluble fiber dietary fiber. So dietary fiber is this naturally-occurring fiber found in food. And then we also look at added fiber. So added fiber are those things like the fructooligosaccharides that I mentioned, that are sort of the supplemental fiber, that is potentially added to food to augment its fiber content, or add fiber where there was none to begin with.

Overall insoluble fiber, you know, things like roughage or the skins of fruits and vegetables, can be difficult to tolerate, which is why peeling fruits and vegetables may be helpful. And in fact, soluble fiber may help diminish diarrhea because it acts to reabsorb water. So that's why things like oatmeal can be well tolerated, particularly during or after a flare.

**JAMES TESTAVERDE:**

Great, thank you, Lisa. Operator, could we take a question from the phone?

**OPERATOR:**

The next question comes from Harry in Nebraska. Harry, please state your question.

**HARRY:**

Yes, my question is on Remicade®, what is your feeling about that as a treatment?

**DR. GARY WU:**

So I guess I can take that one. Remicade is a biologic, an anti-TNF drug. I'm sorry, did the moderator want to chip in here for a second?

**JAMES TESTAVERDE:**

I was just going to say that we would like to keep the questions related to diet and nutrition. So you can continue with that.

**DR. GARY WU:**

Okay, alright, so just real quickly, it's one of a class of drugs that are effective for the treatment of both Crohn's disease and ulcerative colitis.

**JAMES TESTAVERDE:**

Great, thank you. Next question from our webcast audience. For Dr. Wu, "How important is it to follow guidelines such as limiting certain foods like nuts and popcorn, if you do not currently have any negative symptoms when you're eating those foods?"

**DR. GARY WU:**

Yeah, again, because we don't have a real strong recommendation generally that we can give to patients with inflammatory bowel disease to either include or exclude specific things in diet other than eating a healthy diet, my general rule is if you want to eat it and it doesn't make you feel worse, then you can – I think from the standpoint of your inflammatory bowel disease, I think you're free to eat that. So if you want to eat popcorn and you feel perfectly fine eating popcorn, I don't think there's any evidence that popcorn or any particular thing per se is going to make you flare. And your personal experience with this is the most telling aspect of it. So I would say go ahead, eat the popcorn.

**JAMES TESTAVERDE:**

Lisa, would you like to comment?

**LISA CIMPERMAN:**

I would just second the move for popcorn. Really, as Dr. Wu said, without these hard and fast recommendations that we can make across the population, it really does come down to the individual's experience.

**JAMES TESTAVERDE:**

Great, thank you. Next question is about tests that you can get to determine whether or not you're deficient in certain vitamins or nutrients. Dr. Wu, would you like to talk about that?

**DR. GARY WU:**

Yes, so I think that looking for vitamin deficiencies are sort of a routine thing your doctor should be doing. Calcium and Vitamin D are very important because again, we do know that certain types of fat-soluble vitamins are not well absorbed, particularly in patients who have Crohn's disease. As we do know, Crohn's disease can affect the terminal ileum and that – the last portion of your small bowel – and that last portion of your small bowel is actually very important for recirculation of the bile acids. Bile acids, which are made by your liver, are really important for the absorption of fat-soluble vitamins. And so it's not too infrequent that patients with Crohn's disease, who have ileal, small bowel involvement, can become fat-soluble vitamin deficient. So your physician should be looking for evidence of vitamin deficiencies and these are very simple tests to obtain.

Having low levels of calcium obviously has – and that is part of Vitamin D deficiency – is actually not good for bones. And so looking at calcium levels also.

So there are certain panels of nutrients, vitamins that your doctors should be looking for on a routine basis. We do broaden out those nutrients that we look for in patients who have lost a lot of weight and appear to be malnourished. Then we begin to look for more unusual minerals and vitamins that may be deficient, with the intent of supplementing deficiencies in those areas also.

**JAMES TESTAVERDE:**

Great, thank you, Dr. Wu. Lisa, would you like to expand a little bit on how often people should be checked for things like vitamin deficiencies?

**LISA CIMPERMAN:**

You know what, I think that it really needs to be determined based on the individual's experience. So for individuals who have very active disease or disease that is including more of their bowel, these individuals may need to be monitored more frequently. For people who may have disease that's very well controlled with the medications that they're on or who haven't had any bowel resections, for patients who haven't had any weight loss, they may not need any vitamin levels checked. So it really is something where we have to look at the individual circumstances and target our testing based on what we think is most likely. And then depending on the severity of their case, as Dr. Wu has said, maybe expand the vitamins and minerals that we're looking at.

One of the things that I would caution people against is that there are a lot of non-medical options out there for checking vitamin status. Some of these include things like hair analysis. This is not an approved way to check for vitamin or mineral deficiencies. So it's always important to have these levels checked through your physician. Because the fact is that there isn't always a blood test that can assess for a given nutrient deficiency. Some of them we do have blood tests that are good indicators. But others we don't. And that's why it's important to have a qualified medical professional directing this testing, so that you don't end up over-supplementing.

**JAMES TESTAVERDE:**

Great, thank you. Operator, could we have a question from the telephone audience?

**OPERATOR:**

The next question comes from Elaine in Massachusetts. Elaine, please state your question.

**ELAINE:**

Yes, I think you've done a good job of answering about fiber. But my question is, for somebody that has stricturing Crohn's and you're trying to put off any kind of resection surgery, is it advisable to eat a low fiber diet? And if there's more information about, although you answered some of this, about the kinds of foods in that particular situation, that one should stay clear of. Because clearly, like you said, each person's individual.

**JAMES TESTAVERDE:**

Thank you. Dr. Wu, would you like to take a first stab at that?

**DR. GARY WU:**

Yeah, so that is one of the two major indications for why we will recommend restricting fiber in patients with inflammatory bowel disease. One is, as you point out, solely a mechanical – sort of a plumbing issue. If you have a stricture, we know from very good experience, that the consumption of fiber, things that are not easily digestible, things like celery and cabbage and things like that, do put you at risk for developing an obstruction, especially if you have a very significant stricture. So our recommendation – and that's not necessarily even specific for Crohn's disease. We have patients that have adhesions, scarring in the abdominal cavity from having too many surgeries or having surgery, they are at risk for getting blockages because they eat too much fibrous material. So it is – so that is – so our recommendation in a situation such as yours would be yes, stay away from fibrous types of fruits and vegetables that are going to cause blockage.

The second reason is that bacteria digest plant and vegetable products into gas. And the short-chain fatty acids gas, hydrogen is one of the byproducts of this. And that's what makes people actually quite bloated. So most people will tell you that if they eat a lot of fiber they'll feel a little bit more bloated. That might be part of the symptom complex in patients that have inflammatory bowel disease. So that's another reason that we do recommend in our patients with inflammatory bowel disease, who have a lot of symptoms of gas and bloating, to decrease fiber in their diet.

**JAMES TESTAVERDE:**

Great, thank you. Lisa, would you like to comment?

**LISA CIMPERMAN:**

You know, the only thing I would follow up with is that this is one situation, too, where it can be really helpful to keep a food journal, where you keep track of what foods you're eating and any symptoms that you're having, like gas and bloating. This may help you notice certain trends and pinpoint problematic foods, and allow you to exclude those foods that maybe you do react to or don't tolerate very well. But then also include the foods that you do tolerate.

**JAMES TESTAVERDE:**

Thank you. And that will conclude the question and answer session. So thank you so much, Dr. Wu and Lisa, for your presentations and for answering our participants' questions.

Once again, for those listening, if your questions were not answered, you can always call CCFA's IBD Help Center Monday through Friday, 9 AM to 5 PM Eastern Standard Time, at 888-694-8872, or you can send us an email at [info@CCFA.org](mailto:info@CCFA.org).

As a reminder, an archive of today's program will be posted on CCFA's website next month.

You will now be prompted to complete a brief program survey. We ask that you please take a few moments to provide your responses as your feedback is extremely important to us as we plan future educational activities.

And I will now review some resources that you might find helpful.

Okay, so first on the list, which I had already mentioned, is CCFA's IBD Help Center. You can contact us again via telephone, via email, or you could actually visit our website and chat with an Information Specialist live via our Answer Chat feature.

If you'd like to watch other educational webcasts on IBD, you can go ahead and visit the web link on the screen.

We also offer many opportunities for you to connect with other IBD patients through several programs that we have. The first being our Community website, which is [CCFACommunity.org](http://CCFACommunity.org). On that website you'll be able to access an online support group as well as topic-specific discussion forums. You can also participate in CCFA's support groups, as well as our Power of Two program, which is a peer-to-peer mentor program. And another valuable resource is GI Buddy. And GI Buddy is a disease management tool that you can download onto your phone as a mobile app or access via your desktop. And to access that you can go to [CCFA.org/GIBuddy](http://CCFA.org/GIBuddy). And finally, you can also participate in other educational events by connecting with your local CCFA chapter by visiting our website.

So the next slide talks about CCFA's Partners program. And that's an online registry of over 14,000 adult and pediatric IBD patients from all across the country, that are helping CCFA improve the quality of life of those living with IBD. And if you'd like to learn how you can get involved in this exciting research initiative, you can visit [CCFAPartners.org](http://CCFAPartners.org).

**JAMES TESTAVERDE:**

And the next thing that I wanted to talk to you about is our Twitter chat. So if you have any concerns about managing your IBD during the holidays, then you should join us for our kickoff for IBD Awareness Week with the next Twitter chat, which is taking place on December 1, from 4 to 5 PM Eastern. The chat will focus on diet and stress and we'll review helpful tips for managing IBD. And Lisa Cimperman will also be participating in that as well. So be sure to follow at CCFA or at IBD Help Center on Twitter and use #HappyHolidaysIBD.

Finally, we would like to extend a special thank you to our supporters of this program, Janssen Biotech, Inc., administered by Janssen Scientific Affairs, for their educational grant, as well as Shire for their sponsorship of this program.

On behalf of the Crohn's & Colitis Foundation of America, thank you for joining us and have a good night.

**END**