

Transcript of Dr. Carr's Do You Need Probiotics?

Good afternoon, this is Dr. Martin Carr and I am a gastroenterologist. I have practiced in a suburban setting in Orange County, California for 30 years. This podcast segment is about the amazing topic of probiotics. I would expect anybody listening to this has heard of probiotics, and if you haven't then you probably have been down in Antarctica for very long time without a radio. It is a big topic these days and a multimillion dollar industry worldwide, producing probiotics either as part of a food product like a yogurt or kefir or as a capsule for people to buy and take. So what are probiotics and how have they helped some of my patients and how might they help you? Probiotics are defined as a product that contains live bacterial spores or in some cases spores of yeast that will come alive but not replicate, that is they come alive in the intestine after they are taken orally and confer some benefit on the host. There definitely is evidence from studies that people with, for example, bloating and intestinal gas from IBS, can get improvement from certain probiotics, and people with severe diarrhea from *Clostridium difficile* might have some improvement in diarrhea from probiotics, and other examples that I will talk about in a moment. But there is also some concern about the amount of money that is being spent and the perhaps false advertising about certain products. There have been a couple of studies done in which probiotic products were taken off the shelf and then examined in a microbiology lab to see if the labeling was correct. In a number of these studies, only a quarter to a third of the products actually contained the bacteria listed on the label, or contained the number that was advertised in the label, so that 2/3-3/4 of the products were not what they were labeled to be. I will be mentioning some products by name in a few minutes and I have to give credit before I go any further to some excellent authors and give the names of the books. Some of the information I am referring to comes from these books. The first one is **Dirt is Good** published in 2017 by Jack Gilbert, Ph.D. and Rob Knight, Ph.D. and the other book is **The Psychobiotic Revolution-Mood, Food and the New Science of the Gut-Brain Connection** by Scott Anderson with 2 professors from Cork, Ireland, John Cryan, Ph.D., and Ted Dinan, M.D. Ph.D.

I am now going to talk about what are the potential uses of probiotics for patients seeing physicians or seeing gastroenterologists. I am going to tell you a couple of success stories. There is a product named VSL #3 produced by a company in Rome, Italy. This been available for over 15 years. Last year, I saw a woman who had had the entire colon removed because she had severe ulcerative colitis years ago. About 7 years ago she had the colon removed and her small intestine had been attached down to the very beginning of the anal sphincter. She had had diarrhea ever since the surgery. She went back to her surgeon, who had her try a few dietary things and take Imodium, but that did not work too well. She came to me and I talked with her and asked her if she had ever taken VSL#3, which has quite a track record helping people with pouchitis with diarrhea after that surgery, and she had not. So I asked her to start taking VSL #3 and she took a dose of 2 of the 112 billion spore capsules twice a day and had a dramatic improvement. And that has been maintained ever since then. On the other hand, I have a patient who has Crohn's disease of the small intestine, fairly mild Crohn's disease, and he has not had a response to VSL#3 at all. So what do we make of this? Why can one person have such an excellent response to VSL#3 and another person not? I can tell another story about another individual who had had the colon taken out for ulcerative colitis and was living with an ileoanal anastomosis and what is

referred to as the pouch as a new rectum. He was having problems with loose stools and even fecal incontinence at night and he tried VSL#3 and did not get good response. But when he took a product called Nature's Bounty Probiotic 10 produced by a company in New York State, he had a very good response taking 2 of those capsules twice a day. He also uses turmeric capsules and some fish oil capsules and got complete remission of his problem. He now has formed stools and no longer any incontinence. What I want you to get from these stories is that there is not a universal use of any given brand of probiotics such that you can say it is going to work for all people with a certain problem. There is definitely some trial and error involved in people trying probiotics for different conditions. I have had patients use probiotics to treat constipation, to treat bloating and gas from irritable bowel syndrome, to treat diarrhea and I have now read about possible benefits from probiotics or prebiotics, which I will define in a moment, in conditions such as depression or insomnia. There are now data that people can take probiotics and get a benefit in terms of their mood and their sleep. There is a famous study from 2013 which was performed at UCLA under the direction of Kirstin Tillisch M.D. and the senior author, head of that group was Dr. Emeran Mayer. In this study they had 3 groups of women who underwent functional MRI of the brain as they were shown different images to see if having a probiotic drink with a large number of live probiotic bacteria would make a difference compared to a probiotic drink without all the good probiotic bacteria or something else not a probiotic drink at all. The only group that showed a difference in their mood response to these images on functional MRI was the group of women who were given the probiotic drink that had a lot of probiotic organisms in it. This is a very exciting study. So what are some of the actual products?

I have gotten these lists from **The Psychobiotic Revolution** book and the **Dirt is Good** book, and this does fit, in a number of cases, with my own experience. In the **Dirt is Good** book, some brands that they are listing include

BioGaia, Pro Tectis which have *Lactobacillus reuteri*

Culturelle, which contains *Lactobacillus rhamnosus GG*,

Florastor, which is the yeast *Saccharomyces boulardii* and

VSL#3, which is a high-quality probiotic containing multiple beneficial bacterial strains.

In the **Psychobiotic Revolution** book, there is a chart and information about Activia yogurt as potentially having a benefit for mood. Activia yogurt actually contains a probiotic mixture very similar to the yogurt drink used in the Kirstin Tillisch- UCLA study that I just mentioned. Activia also can give benefit in reducing bloating and gas. If you take 4 of the 4 ounce Activia yogurt containers per day, you get improvement in constipation. That has been shown to work in groups of elderly people who were studied.

The probiotic Align has been shown in studies to potentially have a benefit in terms of mood and also improving intestinal gas and bloating. I certainly have had patients, not in a study that I have had them participate in but anecdotally, who have had benefit from the probiotic Align to help their IBS bloating

and intestinal gas. Other products that are listed in the chart in the **Psychobiotic Revolution** on page 264 are again the:

BioGaia, showing benefit for GI symptoms of bloating, intestinal gas

Bio K also gives benefit for IBS type symptoms. Others that can improve symptoms include:

Culturelle, which is lactobacillus rhamnosus GG

Dan Active, which is a small container of yogurt probiotic liquid that does not contain any significant lactose or actual yogurt

Florastor which is a *Saccharomyces boulardii* yeast probiotic which has been shown to improve diarrhea, bloating and gas symptoms in different studies. There is another probiotic that has shown some benefit in terms of improving mood in some studies and that product is named ProBioMood. This is not something I have had any of my patients try yet. It is produced by a company in Sudbury, Massachusetts called Pure Encapsulations, Incorporated. It is a lactobacillus acidophilus and Bifidobacter longum product.

VSL#3 again has shown benefit in treating IBS symptoms of bloating and gas and loose stool and also has caused significant improvement in treating pouchitis as I mentioned earlier in this talk, and in ulcerative colitis and Crohn's disease, but not universally. Yakult is actually one of the oldest probiotic products. It was originally made in 1935. Yakult is another item that you buy in the dairy product part of the supermarket—a small, couple of ounce container that has a large amount of yogurt probiotic without really any yogurt and also contains some artificial sweetener.

So there is definitely a range of uses of probiotics in treatment of patients who see a gastroenterologist. I think it is very fascinating area. I have definitely had patients have dramatic improvement in diarrhea and in treating intestinal bloating and gas. There is definitely a role for it in a number of different situations but I would like to describe an important thing that especially physicians need to be aware of, and patients should be too, that there are certain circumstances in which a probiotic should not be given. In particular the yeast type of probiotic, of which Florastor, a brand of *Saccharomyces boulardii* probiotic, is an example, should not be given to people who have significant immunosuppression. For example, for somebody with active HIV-AIDS or someone with cancer who has been undergoing chemotherapy treatment or certainly someone undergoing a bone marrow transplant, it is not a good idea to give the yeast type of probiotics. There have been cases of people having blood-borne infection with yeast because they were given a yeast-based probiotic during that time of immunosuppression. Having a central IV line in place is another risk factor for those individuals.

So probiotics should not be given to people who are severely immunosuppressed from HIV-AIDS or from cancer chemotherapy or bone marrow transplant. But in other settings they are extremely safe. In the 15 years or so that I have been advising people to experiment with probiotics to treat their symptoms, the worst side effect that I have ever heard is a patient saying that instead of improving his intestinal gas, it made him a little gassier. That was the worst complaint I've heard. In the medical literature and

certainly in testimonials that you can see on websites that is also about the worse complaint that you would see. I have also rarely heard patients say that he or she thought that the diarrhea was slightly worse from a probiotic. In that instance the patient stopped it and returned to their previous state. So in general they are quite a safe thing to use.

What about prebiotics? Prebiotic means giving a type of compound that is digestible by bacteria, and hopefully more by the beneficial kind of bacteria that are in the large intestine and end of the small intestine. You change the balance of the gut flora by taking this prebiotic. Now prebiotics can be anything from a combination of foods that have certain types of fiber, to the other end of the spectrum - types of chemicals called oligosaccharides that are made to mimic the oligosaccharides in human breast milk. So here is the background to this particular story. Human breast milk and breast milk of other primates and some other mammals contain these oligosaccharides that the newborn infant or newborn born animal cannot digest. So then why are they in the breast milk? The answer is to feed the developing gut flora of that young individual. In particular the human breast milk oligosaccharides, referred to as HMOs, in particular foster the development of different bifidobacteria species in the large intestine. Bifidobacter and many lactobacillus species are among the most beneficial or helpful of the gut flora in humans. To give an example of this kind of a prebiotic, look at the website of this company product: www.bimuno.com. Bimuno is an oligosaccharide product that mimics the type of oligosaccharide in human breast milk. When you buy this product in United States, it is available on Amazon.com, you get a box with about 30 little packets and this can be added to hot or cold water. It is not going to be damaged by putting it in some hot tea. You don't digest it, and the stomach acid in your stomach does not knock it out the way stomach acid might inactivate certain probiotics. This oligosaccharide gets all the way down to the end of your small intestine and large intestine where it fosters the growth of Bifidobacter. These bifidobacter species do a number of different good things and there are studies using Bimuno to improve IBS symptoms of bloating or gas but also to improve mood. There have been some studies done using Bimuno oligosaccharide and then measuring the cortisol levels in the study participants compared to the control and also looking at response to disturbing images. There was evidence that it actually suppressed cortisol stress response and also improved the mood as measured in the studies.

There was a BBC television program about insomnia in May, 2017, hosted by Michael Mosley M.D. who is a very well-known TV producer of science shows on the BBC. During the show he took the Bimuno for 7 nights in a row and wore some sleep monitoring equipment. His problem with insomnia actually improved during that short week of taking the Bimuno. The story goes that the next day all of the shelves in stores in Great Britain that sold Bimuno were cleaned out by insomniacs going to buy it.

The final story on these prebiotics is not out yet and more research is being done. But taking something such as Bimuno, which is just an oligosaccharide product, is extremely safe. It could be given to individuals with immunosuppression, theoretically, because it is not doing to turn into a live organism. It is going to enhance the growth of certain organisms in that person's gut and those organisms are already there, whether the patient is immunosuppressed or not.

So this is another fascinating area. I have some patients who are trying Bimuno right now to treat their GI symptoms and will see what they report back to me. Of course there are going to be more studies about this.

I think that what a purchaser needs to be aware of is that you can't always depend upon what response you are going to get from these different probiotic products. So do not be too disappointed if you try one and do not get significant improvement. It would be wonderful if there was a probiotic testing board that would verify the actual quality of all of these different products—that is why I was very interested to read these 2 books, **Dirt is Good** by Jack Gilbert and Rob Knight and **The Psychobiotic Revolution** by Scott Anderson, John Cryan and Ted Dinan to get some input from microbiologists who read all of this literature about which probiotics they feel comfortable writing about and therefore advising that people might be interested to try.

This is a topic that is so very interesting and we certainly will be seeing much more about this in coming years. But do not be afraid to try these products to improve your symptoms as long as you are not somebody with significant immunosuppression or going through cancer therapy. In that instance, definitely, as with any advice that I am talking about on these podcasts, talk with your physicians first before you take any probiotic and even any prebiotic. Talk with your primary care doctor or your gastroenterologist and see if it makes sense for you to be trying it and ask them about these different brands that I have mentioned in this podcast. Thank you all for listening and I wish you all good health.