

How Butyrate Supports Gut, Cell & Brain Function – Jessica Kane Berman – #982

Dave:

You're listening to the Human Upgrade with Dave Asprey. Today, we're going to talk about your gut and you can say, "Good God, how much are you going to talk about guts, Dave?" And the reality is that there's at least as many bacteria in your gut, if your gut's working right, as there are cells in your body and we know the least about the gut. So I'll probably keep talking about it for a while because it's one of the big areas of performance enhancement that you can have. You want to live longer, get better control of the mouth, the gut, the whole GI tract. The definition of biohacking is change the environment around you and inside of you so you have full control of your own biology.

The reality is that the stuff in your gut is talking directly to your mitochondria and your cells via chemical, even via light mechanisms and probably some stuff we don't even understand, so if you get control of that, you are gaining control of your own biological functions, which is kind of cool.

Now, our guest today is Jess Berman who's Chief Marketing Officer and owner of BodyBio, which is a supplement company that was founded by her grandfather who was an early master, an inventor health explorer named Ed Kane who passed in 2021 at age 95. So, this is a company with a long history of knowledge and information.

Jess, welcome.

Jess:

Thank you for having me.

Dave:

All right. You were actually working in the arts and suddenly you said, "I'm going to run my grandfather's company." What's going on with that? Tell me about it.

Jess:

My grandfather was a researcher. He originally got into biohacking in the 1980s. He owned a steel company, and he was suffering from chronic fatigue and heavy metal poisoning and everything else.

So, this is a man who went from coast to coast looking for solutions to his own health issues and really got deep into the science of fatty acid research, cell membrane medicine and really intensely researched really what goes on in the cell membrane. And there was a lack in the market of supplements for physicians looking to address brain injury, genetic disorders, neurodegeneration. And so the company actually originally started through blood testing, he was doing blood testing and it was just very tricky with at the time the FDA regulations [inaudible 00:03:48] developed a lot more now, but he was really a biohacker that took his health into his own hands and said, "I'm not going to sit here and feel this way," and saw that there was a gap in the market and started a supplement company in the early 1990s from there.

Dave:

That is incredible. This is the exact definition of a biohacker. So, we didn't have a name for it in the 80s and he probably felt a little bit lonely as they used to call them health nuts or weirdos and there's all these 80s words for people like that. But what you'll find is he actually went out and said, "Well, I've got to hack myself." This kind of touches my heart cause this is exactly what happened to me. I'm trashed biologically, the doctors aren't helping me, I will go do it and he wrote a software program to figure out

what nutritional deficiencies he had in the 80s, started a supplement company... Guys, I'm not the first, you understand what I'm saying here?

Jess:

The difference is he didn't know how to market it. That's really the difference there and that's how I got involved in the company. It's really what it came down to.

Dave:

So, you've got 30 years of history building these amazing products, and now you're going out and talking about it, which is really cool.

Now back to BodyBio, I would say you have some very high-quality supplements. I take, for instance, your sodium butyrate or calcium magnesium butyrate I like a little bit better before bed because studies show that butyrate increases deep sleep and I know having more butyric acid before you go to bed is terribly, terribly important. It also feeds your gut bacteria so they grow more. And this is something that's just in my normal stack when I was traveling in Peru a little while ago, I took that stuff every night and I consider to be a part of making my gut work better, but you make a bunch of other stuff and stuff that's relatively unusual, which is pretty cool. So, tell me a bit more about gut health.

Jess:

Yeah. So, I mean, if you go back to the area that my grandfather focused on was really addressing the cell as the foundation and structure and function of a living human being. So using phospholipids, bioactive lipids, butyrate, electrolytes to really address and optimize neurometabolic and cellular health. So that's really the findings that he came through with in the 1990s, started manufacturing this stuff then. So we really stick to a very specific group of products and most notably the two that we're most known for are phospholipid complex of phosphatidyl choline, and then the ancillary phospholipids and we could talk about that, and our butyrate, which has become something that's become very popular, but it was not known about really. I mean, there was not a lot known about it 10, 15 years ago when physicians were using it from us.

So it's an exciting time for us, but it's also just a different time to navigate all these popular supplements and everything that's going on and everyone promising this panacea of health. When we're sitting here saying, "It just has to start at cellular health." That's this foundation that's so important to all these other issues that you're looking at tackling. So if you don't take care of this part of your health, you're not going to see gains in the long run, especially from the longevity standpoint.

Dave:

It's really funny, we're by design supposed to see ourselves as a body like, "oh, look, I have this whole body," but in reality, most of what's going on in your body is controlled by the cells or even more specifically inside the cells by mitochondria. So if you really want to improve what you see as your body works, and keep in mind at the end of this episode, your body will be different than it was at the beginning, you'll have shed some cells and added new cells so you're constantly changing. The body isn't really a real thing, it's like a swirl or an Eddy, so you can change it because of that. It's not a concrete thing, even though it feels concrete, it's not. And that's why by changing the input stream of things, you can get crazy results.

But if you focus on fixing cells, then the cells automatically and invisibly work together to do stuff better. So my approach to biohacking lines up totally with that. And I became familiar with butyrate first when I started looking at problems with my gut years ago. But then in the realm of ketone research, it turns out

that butyrate, which is named after butter, you guys notice I'm kind of a fan of butter, so butyrate has all these different things, including it's more ketogenic than C8 MCT oil, it just doesn't taste that good so you might not want to mix it with your coffee. But you can take it and it has all sorts of other stuff that happens in the gut. So tell me a bit more about butyrate, but not just from the ketone perspective.

Jess:

Sure. I mean, butyrate's fascinating. So it's a metabolite that's produced, it's a byproduct, when you have a balanced microbiome, a very healthy microbiome, which even at our healthiest, it's like a glyphosate exposure. You can eat all organic off your own backyard, you're still going to have glyphosate in your food. It's just an unfortunate occurrence and the reality is diets today and the food sources that we have, we are systemically low in butyrate production. It's made, this byproduct is made, from the bacterial fermentation of resistant starch. We are systemically eating low levels of resistant starch. What's resistant starch? Cooled and cooked mashed potatoes or any type of potato, cooled rice, plantains.

Dave:

Mmm, hmmm.

Jess:

And so, we have all these great diets that are helpful in other ways, but we're losing sight of this important short chain fatty acid production in our gut. So the number one thing that butyrate does is it feeds the colonocytes. The colonocytes are the cells that line our gut wall and it's the major energy source for those. The turnover's very fast, it's only one week and they are the fuel source for that. And that's a really important part of our gut health.

So in addition to that, it helps with the expression of tight junctions, so leaky gut, helps to kind of seal up a leaky gut, you have all these very popular supplements these days, L-glutamine and aloe and marshmallow root. Practitioners are using all these different ways to work on leaky gut, but butyrate is one of the most important players in this entire equation and so it's interesting that so many people are missing out on that from an intestinal permeability perspective. It influences the mucus layer, it creates a thicker mucus layer, which is so important in our gut lining and that also will bring me to phosphatidylcholine because 80% of our gut mucosa is actually made of phosphatidylcholine, it regulates T cells. Go ahead.

Dave:

Back when I wrote the Bulletproof Diet, which is I think, geez, 2012 I was writing it, and I came across research that said collagen could be converted to butyrate in the gut by bacteria. Do you have any evidence about collagen versus resistant starch making butyrate?

Jess:

I think there's a lot of different things that can increase the fermentable fibers that make it to your colon. Resistant starch is the No. 1 source, but you could-

Dave:

Yeah, it works much better, I think

Jess:

We really suggest that people eat a very varied diet in very varied plants. I think it's a bit controversial to say that you can get enough in a carnivore diet. I'm going to argue that you cannot, but if you eat a diverse plant diet, along with meat, I do not advocate for vegetarians.

Dave:

I think if you do a carnivore diet, the way the original carnivore people say just eating meat, no. If you do a carnivore with herbs, that provides a huge benefit, Dr. Gundry and I were just talking about that, a massive improvement. Herbs of the original supplements that people passed around. But I find that almost everyone does what I did when I was developing the Bulletproof Diet and recovering from being a vegan, recovering from toxic metals, kind of like your grandfather had from mold exposure, from Lyme disease, all kinds of stuff. So I went through and I said, "What am I going to do? I am going to try a three month of carnivore or very close to carnivore." And they didn't have a name back then and it caused leaky gut and it caused a spike in cortisol and it was not a good thing.

And I said, "Well, what would happen if you had meat and non-inflammatory vegetables and some fruit, but not too much?" And it's really funny to me because what I'm seeing modern carnivore do is, including with some friends, they're saying, "Well, I have honey and I have fruit and I have a carnivore diet," and that doesn't appear to be the same thing. So where I am, I'm like herbs, some carbs, but not too many, fruit after dinner, but not more than 25 grams of fructose has been the recommendation for a year, and I want you to poke holes in this based on your knowledge by the way that's why I'm telling you all this, and then the final thing is you need to have lots of herbs and you can have less inflammatory plants. Does that work with what you know from your grandfather and from your own practice about cell membranes?

Jess:

I think it does. I mean, it would sound like a diet that even he ate. The man ate 12 eggs a day until he died, but he was after a lifelong search of phospholipids, and he knew what worked for him. He ate vegetables, he could eat raw dairy and tolerate it very well and he knew what exactly what worked for him and his gut. I think at the end of the day, it's not about one or two individual fibers or whether this type of collagen feeds this bacteria. How do you know if you have that bacteria in your gut? It's about diversity and diversity has shown to really support the commensal bacteria growth in the microbiota. So I think that's really important.

Dave:

I like it, and I do take polyphenols, a whole bunch of different ones that are signaling molecules for that. And also I think soluble fiber is important and this is a big debate in the carnivore world. There is abundant evidence, like hundreds and hundreds of longevity studies that I went through when I was writing my anti-aging book, and soluble fiber converts to butyrate in the gut, so there's an argument that says you ought to have some soluble fiber, a good amount of grass-fed meat and grass-fed animal fats specifically for their effect on cell membranes. And I love it that BodyBio makes phosphatidyl lipids or phospholipids. Can you talk more about what phospholipids do? Where would you get them nutritionally? What happens when you take them? Just kind of walk me through the story.

Jess:

Sure. The membrane of every single cell in our body has a bilayer, it's a wall that encases your cells, and that wall is constantly changing and the majority of the outer layer is phosphatidylcholine. You have the

ancillary phospholipids on the inside PE, PI, PS, phosphatidic acid. And then you have cholesterol and your proteins and everything else that make up the rest of your cell membrane. But what's so important is as we age, we lose levels of all of the phospholipids and we're not necessarily getting enough from foods. One of the highest phospholipid containing foods is eggs, but then eggs are also high in sphingomyelin and not everyone can necessarily tolerate a ton of eggs and it's not to say-

Dave:

What is sphingomyelin. Walk people through that.

Jess:

There's a ratio and my grandfather at the end of his life was doing some really interesting research on the ratio for which you, when you're born, you have very high levels of PC, very low levels of sphingomyelin, and as you age, it flips and there's a direct correlation between high levels of sphingomyelin and heart disease as we age. So he was getting into that research and it's a shame he wasn't able to complete it, but it's a really interesting topic in terms of cellular health.

Dave:

Is it, myelin is that fatty choline-based layer around your nerves and when you use your nerves more, you build more myelin so sphingomyelin is basically a differently formed myelin molecule. And it could be tied to heart disease and there's all sorts of correlations that aren't causal, in my understanding of heart disease it's probably not, but I could be totally wrong too. I don't think we know enough to say, but it's probably not cholesterol caused because we see lots of people, like 50% of people, with heart attacks don't have high cholesterol. It's so weird, but repeat after me, it's all about the cholesterol.

Jess:

So if you're looking at phospholipids and you'll see a lot of PCs on the market. What my grandfather figured out how to do was how to isolate and concentrate those specific phospholipids from soy lecithin and so that's controversial. People say, "We stay away from soy, don't take the supplement, it's derived from soy." That's just the highest naturally occurring source of phospholipids and it needs to go through a specific process in order for it to actually have liposomal phospholipids that are going to break through the intestinal wall to get through to your cells.

Dave:

So it's about delivery.

Jess:

It is.

Dave:

In the context of choline or phosphatidylcholine, this is something that's been used for a very long time to detox from mold. You can do it intravenously and part of my healing journey, the post vegan time after the vegan diet, really wrecked me, as it will from depleting fatty acids and replacing them with the wrong ones. I used insane amounts of phosphatidylcholine and sometimes just straight up soy lecithin or sunflower lecithin. I'd put it with butter and sometimes coconut oil, I'd make ice cream from it and I'd put in smoothies and this was to rebuild my cell membranes that were harmed by fat soluble toxins.

And part of what happens in the world today is you got all these lipophilic toxins so I was trying to increase my bile turnover. I wanted to make healthier cell membranes and I found the data that showed it takes about two years to replace half the fat in the body. So, if you go on a high phospholipid diet, for about two years you're probably going to get rid of fatty liver, you're probably going to get rid of a lot of the toxins that are in your cell membranes, but it isn't an overnight thing.

What do people feel when they first start taking phosphatidylcholine, the stuff that you guys make, which is a unique form?

Jess:

And it's two different things. So most PC is triple lecithin pectin oil and that's going to give you choline and triglycerides when it's digested, it's not liposomal. So it's great for increasing choline reserves, which is important for acetylcholine production, but true liposomal phosphatidylcholine and phospholipids are very different, so they're going to get through to the cells to help rebuild that membrane. They're also going to help detoxify your nuclear and mitochondrial DNA from those toxic insults. So it's very different and I think there's a lot of confusion and people may see there was one study done, I think at the Cleveland Clinic in 2011 that said PC increases TMAO. It doesn't. That's PC that is choline and triglycerides. Pure phospholipids do not in any way.

Dave:

Let's talk about this just a little bit. Dr. Gundry and I spoke about it on an Instagram live, Dr. Gundry is a friend and a pioneer in robotic surgery and heart health who's now looking at lifestyle and nutrition later in his career.

TMAO is a compound about 10 years ago that they said, "Look, people who eat red meat could have bacteria in their gut that converts it to TMAO, therefore red meat's bad for you."

They ignored the fact that fish and soy protein convert to TMAO even more than red meat, because it was an anti-red meat article, and what Dr. Gundry and I just spoke about is that that's so weird basic herbs taken with your meat block the TMAO degradation that's supposed to be a cause of heart disease. So it's completely nuts. I don't think TMAO is an issue if you eat herbs or you have a healthy gut bacteria, and I have measured mine with Viome, I do not have the TMAO formers, and if I did, I'd eat some fricking oregano and not worry about it. Does that seem like I'm being extreme?

Jess:

I think it's also about your food source. What type of animal protein are you eating? Where is it coming from? What has it been fed? And I think it's a lot more nuanced than that.

Dave:

It is more nuanced than that.

What's the comparison between the consumption of animal fat from healthy animals versus the BodyBio phospholipids, would you do both? Is there an overlap?

Jess:

Yeah. Yeah. You definitely want to do both. I think the studies show and the work that we've been doing for over 30 years shows that you definitely need both. I think if people are dealing with any type of chronic illness, like you dealt with, you need definitely higher doses, but a maintenance dose of, I mean,

I take one tablespoon a day. That's about 12 capsules. When I was pregnant, breastfeeding, two tablespoons a day.

Dave:

This is of your phospholipids, not of sodium butyrate or the-

Jess:

This is PC.

Dave:

This is PC, just so we all know. So guys in my fridge, I have I think six bottles of BodyBio phosphatidylcholine and whenever I get a chance I do liposomal... or it's not liposomal. I do intravenous choline because it's so powerfully detoxing. And even if you're saying, "But I'm performing really well," one of the reasons you're performing well is because your toxin levels aren't too high and when you get more phospholipids, your brain's going to work better and you'll be able to kind of flush out the crap that our bodies are accumulating because of what big industry's doing.

Jess:

Massively.

Dave:

I didn't realize that I could get your phospholipids in capsules, so I can get PC capsules from you guys?

Jess:

You can. I mean, one of the benefits of the liquid is anything you mix with it will become liposomal. So if you want to increase anything to your cellular delivery, you can mix it with that, which is an added benefit, but if you're just on the go, capsules.

Dave:

I didn't have the capsules with me when I was traveling. I was thinking about that. Is it heat stable? Can I put it in hot liquids?

Jess:

I wouldn't put it in boiling, but slightly cooled, yes.

Dave:

Oh, man. So in Peru I was having mate de coca, which is Coca leaf tea for altitude and if I could have made that liposomal by adding some of your...

Jess:

Would've been fun.

Dave:

Some of the BodyBio PC, that would've been a really interesting experience. Interesting. I'm going to have to go back to Peru and try this, but I would have preferred to take a bottle of phospholipids with me because when you travel, you're exposed to the crap they do on airplanes. They did this strange sweet smell right before you land, that's actually pesticides. Good thing I can do breath holding. It's insane. So they did that to us on at least one flight and then there's all the hotel fragrances and whatever the heck else. You're doing your best, but what I think is one of the most protective things you can do is to take PC. So, okay, I'm going to get a few bottles for my travel schedule, which is insane going up here. I've got another trip to Dubai coming up and of course for the biohacking conference. So that's cool.

Jess:

Yeah. It really assists in that everyday detoxification that we need. It's a very gentle detoxifier. It's not like taking a binder. But it's really going to work on a much deeper level at cellular replenishment. I think that's a really important everyday supplement for longevity.

Dave:

I would agree. And it's interesting that two of the things that you make are butyrate and the various butyrates and phosphatidylcholine, these are really powerful kind of... I guess they're both technically fat, but they're such unusual forms of fat that they do something different. So protein doesn't matter and fat doesn't matter because if you're eating two tablespoons of phosphatidylcholine in a liposomal form, the way you make it at BodyBio, or you're doing two tablespoons of soybean oil from commercial soybeans full of glyphosate, gross, not even in the same universe, yet the macro people are going to think they're exactly the same. But that leads to a question. So soybeans are almost universally contaminated with glyphosate and glyphosate loves fat. It's a fat loving molecule. In fact, it would accumulate in soybean oil. You're using soy lecithin.

Jess:

I got it.

Dave:

Tell me about what you do.

Jess:

We test for glyphosate all the time.

Dave:

And you're not using industrial soy, are you?

Jess:

No, but in addition to that, there's no soy protein in the end product of BodyBio PC. It's the soy protein that is estrogenic, allergenic, it's the soy protein that is the problem. There is none of that. So, you're left with phospholipids, that's it. That we then test for glyphosate.

Dave:

And you test the phospholipids so they're glyphosate free?

Jess:

They are.

Dave:

Lovely. That's really important. How would I know how much of the BodyBio PC I should take right now? I'm 200, maybe 204 pounds, I'm 11% body fat and I'm a walking wall of muscle. Cause you know my age, you know my sex, so do I take like half a bottle? Do I take a teaspoon? How would I know?

Jess:

Half a bottle would get a little intense.

Dave:

Yeah. Disaster pants land, right?

Jess:

There's no upper limit for it, but there's also, you don't need that much. You eat healthy. You get a lot of choline from your diet. Added is going to just help with the synthesis of phospholipids that decreases. We're just unable to do that as we age. I would say for someone like yourself, one tablespoon a day would be great. One teaspoon is totally fine. You, when you were dealing with mold toxicity, would've started at a very, very small dose and built up. So you would've started with like a dot and then built up after a week to half a teaspoon and increased from there, even up to about... I think most physicians are working with people who are dealing with specific toxic exposures like that, about two to three tablespoons a day in split doses, but it definitely will cause a Herxheimer, so you need to take that slowly. The interesting thing that you found when you took the IV PC is that IV PC is just phosphatidylcholine, the benefit of the liquid is that it is all the phospholipids in one, which is great.

Dave:

Okay. I like that idea a lot and I'm going to be getting the capsules for travel because when you're traveling is when you're most susceptible to things because of all sorts of airplane problems and whatever else. Now, I want to switch gears a little bit from phosphatidylcholine going back to butyric acid. And people who are longtime listeners by now have already learned, "Okay, you can raise ketones by eating some protein and lots of fat and no carbs." That's the old Atkins diet, the dirty keto kind of thing. You can just fast and raise ketones or you can use street grade MCT, which will raise them a little bit or you can take C8 MCT which will get you up into the beginnings of ketosis. This is the stuff that I've recommended in Bulletproof coffee, the brain octane oil from Bulletproof.

And then there's two other ways of raising ketones. One of them is BHB salts, or ketones salts, which I think have their issues with. And then there's ketone esters, which are the higher end stuff that also maybe put a load on the liver, but are certainly effective. I just don't know if they're a daily practice or not. I'm still figuring that one out, but I know for high altitude that could be really helpful or for airplane travel and all, I interviewed Dr. Veatch about it. But what's not in that list that belongs in that list is butyric acid by itself. So beta hydroxybutyrate salts or BHB salts or ketone salts... Wait, isn't the second B beta hydroxy butyrate? That is butyric acid. Talk to me about the difference between taking your butyrate versus the beta hydroxy butyric salts.

Jess:

Butyrate is not just for your gut, it has systemic benefits. A lot of butyrate that you either take or make in the body goes throughout your body. BHB is made in the liver from sodium butyrate in the body. And so taking sodium butyrate is going to increase your BHB levels. It's just not as trendy necessarily as ketone esters, which the research is still out on those as well.

Dave:

Well, it's really interesting because if you take a BHB salt, that's different than sodium butyrate, right?

Jess:

Yeah.

Dave:

I am opposed in principle to the ketones salts. I don't think they're a great idea for long-term because of the load on the kidneys. I could be wrong, but I'm pretty sure I'm right. I don't use them regularly and I have odd results when I try. So I'm... we'll just say I'm a little skeptical of those given that MCT oil works so well and it's much more affordable. But when you take a few sodium butyrate capsules, you feel it, you get the BHB boost, but it does a bunch of other stuff in addition to giving you the ketone boost. In fact, it's twice as ketogenic as C8 MCT oil, you just can't blend it in your coffee. So what else does butyrate do besides making BHB?

Jess:

It's fascinating. I mean, it's... the effects that it has on the gut-brain axis are really just being studied and they're fascinating. I think one of the most important things it does is it alters our gene expression. It's known as a histone deacetylase inhibitor, it helps your DNA to express how it should as opposed to be altered through the toxins that we're exposed to on an everyday basis. It's protective against many forms. I can't say the word, but the big C word, especially for those that are related to the gastrointestinal region. It has a myriad of brain supporting benefits. It supports the blood brain barrier. It inhibits inflammatory pathways like NF-kappaB. I mean, it's really an awesome supplement that I think they're just finding out about. I think through COVID, we found out so much about its role in immune system, in cytokine function. It really is extremely important for regulating the immune cells, not only from the gut, but all over the body and telling those immune cells what type of cell to be.

Dave:

Wow. So you could have the same benefits as taking a BHB salt and a whole bunch of other benefits to support your gut and to reduce inflammation. And do we know if it's directly reducing inflammation or is it just reducing inflammation because ketones reduce inflammation?

Jess:

It's directly reducing not only systemic inflammation, but mostly colonic inflammation.

Dave:

So there you go, guys. I think there's a clear argument for taking good old fashioned butyrate instead of BHB salts.

Jess:

And I think we talk about, I mean, I've listened to the company, Pendulum, and they've been on your podcast before and they make a bacteria probiotic strain that increases butyrate production. You can have foods that increase butyrate production. You have different forms of butyrate. There's tributyrin, there's butyrate salts. The research as to which is best, it doesn't matter, it's not... I wouldn't say the research is there. I think that there's over 5,000 studies using butyrate, most use sodium butyrate, it's the type naturally produced in the body, and I think that they all work. It's all about raising your butyrate levels. Try one, try all. I don't think it matters.

Dave:

Wow. Okay. That's cool. I take... Well, okay. I have your sodium butyrate. I have your calcium magnesium butyrate. I think calcium magnesium works better, but it smells like socks.

Jess:

You mean vomit?

Dave:

And the sodium... By the way I eat all sorts of stuff. I swallow them, it just doesn't bother me, but it's probably better than Spermidine, that stuff is... I used to take the lab grade spermidine out of a vial and that stuff was horrible, but I would do it before I could buy supplements that did that. But the sodium butyrate seems to work, but I feel like the calcium magnesium works better for me. Do you have any idea why that would work?

Jess:

No and I think it depends on the person. Sodium butyrate works really well for me and it really depends. There is a version of butyrate that doesn't smell that we are coming out with a supplement that launches on September 20 that will not smell, which is exciting and that's a tributyrin based, but I personally find, and that's a butyrate molecule, it's butyric acid back to a fat, a glycerol backbone, and so that one doesn't smell at all, which is great. And for the general population of people, they may find that one to be much more appealing. I still take sodium butyrate. It's just what works for me.

Dave:

Okay. So it's worth playing around and so, guys, as you know, anytime someone comes on who is an expert in a field and is making something worthy, come on, where's the discount for the tribe? So we've got a discount for you guys, I believe, here. What is it? Here you go, bodybio.com/dave use code Dave25. And thank you Jess, 25% off for you.

So what I want you to do is try a bottle of sodium butyrate and a bottle of calcium magnesium butyrate, and I want you to take each one individually, smell that thing when you open it, you'll know which one is calcium magnesium, and it's a weird... it actually smells more like blue cheese, but you can take them and you don't taste it when you swallow them and see which one makes you sleep better. For me, it's a nighttime thing. And I improve my deep sleep when I take them better from calcium magnesium, but the sodium also works. I just feel like there's a boost for me from the second one.

And while you're at it, because that's a massive discount, get a bottle, either the capsules or the liquid, of the phosphatidylcholine and see what that does for you. If you take it and you feel like garbage, welcome to Herxheimer land, and Herxheimer is a name for a reaction that happens when you start detoxing. When you're full of toxins like I was, almost anything that liberates toxins so your body can

excrete them also... you're already so full of toxins that if any of them are circulating, you're like, "I feel so bad." You can get a headache, rashes, nausea, super brain fog, all these things. At this point though, you really do need to detox.

So if you take the phosphatidylcholine and you feel like garbage, then you need to back off on the dose and maybe look at a binding strategy with activated charcoal and maybe see a functional medicine doctor. A normal, healthy person should be able to handle a tablespoon of that stuff and feel good on it, right?

Jess:

Yep.

Dave:

Okay. So that's kind of a quick and easy way of testing. So the three things are sodium butyrate, calcium magnesium butyrate, and phosphatidylcholine either liquid or capsules. And because you're saving a bunch of money, that's cool, but that's kind of what we're talking about here. The butyric acid, even if you were to take it every other day, it's going to teach your gut bacteria to make more butyric acid, because it's a postbiotic. Talk to me about what postbiotics do.

Jess:

They're a group of byproducts that are made when you have a healthy gut. And the research shows, actually, that it's super physiological doses that are really beneficial and therapeutic. So they're using 2.5 to five grams a day, a lot being done on blood sugar regulation, insulin resistance, butyrate's effects on metabolic disease. So I think that's all a really exciting area of research that's happening. You take it for sleep, I take it for insulin resistance. I take mine one pill, three times a day. And so it just really depends on the individual and what your needs are and what your body's telling you, but postbiotics are a really fascinating genre, I think. Just kind of this term is coming out and becoming much more popular of something that's really important in the gut. I think for a long time, we focused on probiotics, but we now know that that's very strain specific. A general probiotic may not be something that's necessarily good for everybody. It may not work for your specific microbiome.

There's a lot of research, obviously being done on prebiotics, but it's not just about taking one or two fibers. It's about diversifying that. So the interesting thing with the new supplement we're coming out with that doesn't smell. So if you open your sodium butyrate and your cal mag butyrate and you're like, "I can't do this," I don't even put it in my hands, I actually put it in the cap and take it from the cap because I refuse to touch it. We've partnered it with a... it's a bacteria phage prebiotic that is non... it's very different than any other prebiotic fiber. So it's not a fiber, it's a phage and it is actually clinically proven to help gut dysbiosis. So it's going to help increase good bacteria, decrease bad, along with that tributyrin. So, it's like a one stop shop for gut health in that respect, it's a pre- and post-biotic.

Dave:

Wow. I'm excited to give that a try. That's going to be amazing because very few companies are making bacteria phages at all, which is really cool. And if you're listening to this going, "What the heck is a bacteria phage?" Well, it turns out that there are things that prey on bacteria the same way that they try to prey on us or help us as the case may be. So, you can control your bacteria population with bacteria phages, but they're just very, very little known about them.

Now, here's a question from the Upgrade Collective for you. Susan says, "I seem to bruise more when I take phospholipids," have you seen this before?

Jess:

I've never heard that one. And I get the weird ones, like when our quality control department gets... The one that is the most common is when you take very high levels of phospholipids, you can sweat a lot. That is common. Headache, common when they first start taking it. Brain fog, common when you first start taking it. Bruising? Now my question for you, Susan, is are you taking BodyBio PC or are you taking triple lecithin labeled as PC?

Dave:

Oh, Susan what's going on there? She was cheating. She was taking the triple lecithin. So it actually wasn't phosphatidyl is what you're saying?

Jess:

It wasn't liposomal.

Dave:

It wasn't liposomal. It was phosphatidyl but not liposomal. So, it could have been going somewhere else in her body and she says, "Ha, oops." So you might want to try a liposomal form so it gets in. The other thing that could be happening is frequent bruising has to do with usually mast cells or VEGF, which both get disturbed by mold. With mast cells, when they get set off if you liberated fat-soluble toxins in the body and it caused mast cells to erupt or they actually degrade or they explode, they release heparin in addition to more histamine. And when heparin happens, this is why toxic mold causes nose bleeds and why it causes frequent bruising. And what do you know? Susan says, "Oh, post-COVID my VEGF is very high." So there you go, you're probably having a little bit of a healing response there.

Jess:

Speaking of mast cells.

Dave:

Yeah.

Jess:

Butyrate is very potent for histamine intolerance, mast cells and it prevents mast cell degranulation, which is really cool.

Dave:

Oh, thank you for saying that. That's one of the other reasons I take it. I have had a lifelong toxic mold exposure since I was a little kid and I have the genetics that makes me much more susceptible to it, like 28% of the population, which is why I know so much about mold, and after I got COVID, my mast cell issues got worse. I'm less histamine tolerant than before.

But what I think is going on here is I did increase my amount of butyrate, in fact, I ran out not so long ago. I had to order another dozen bottles from you because I'm looking at getting those levels down so that my body handles stuff better than it already does, which is still at a record level for me. But there's always another thing. So upper limit to butyrate, if I take a dozen of them at a time, dozen capsules, am I okay on that?

Jess:

I mean, I wouldn't. I think it's like about six grams.

Dave:

Six grams. What if you go over it, what's going to happen?

Jess:

I have heard there was... there's always going to be you're going to have thousands of positive studies and one negative study and people are going to pull out the negative. I love when you Google butyrate and this first study that comes up is, "[Butyrate, a Double-Edged Sword](#)," so we get people who send that to us all the time. I think that after six grams you can activate a latent herpes, which as you know, herpes simplex one and two are like everywhere and you have Epstein-Barr and all these different things, so I think it's just, you should keep it under that. There's no reason to be taking that much.

Dave:

Or if people are afraid of herpes, I just have to say it, BHT, butylated hydroxytoluene, is a synthetic oil antioxidant that's been used probably by your grandfather, I'd be shocked if he wasn't taking that, as an anti-aging compound because it stops lipid oxidation in your cell membranes. Now at exceptionally high doses in rats, it has been linked as a hormone disruptor. So, my friend Vani who's the food babe, every time I mention BHT for herpes, because herpes has long term negative effects and so does EBV, big ones, and BHT has... it's not perfect, but it has very small effects compared to herpes and it's totally worth taking it for a little while to inactivate and activate herpes virus. So people are like, "But endocrine disruptors."

So food babe listeners who are also fans, BHT to treat a specific condition at a certain level is different than throwing in your food every day. Shingles too and chicken pox, it works fantastic. So I doubt anyone's ever tried mixing it in with butyric acid, but I would. If I was dealing with that, I would literally empty the capsules out, I'd like melt it down as a very low melt point and I'd add BHT that also has a low melt point, I'd slime it all together and then I'd swallow it. By the way, that is not advice, I've never tried this I have no idea if it would work, but if I was dealing with that shit in my brain, I would try it. Then again, I'm a biohacker and I do weird stuff.

Jess:

Just remembering actually, I mean, I did see a study that was being done on colon cancer and they were using 20 grams of butyrate a day, so-

Dave:

Yeah, I don't think it's going to be bad in higher doses. Besides your body makes probably that much anyway if you're eating enough fiber and we just don't even measure that. So who knows? What we have now is a pretty clear case that says that if people are getting their phosphatidylcholine in a liposomal form or they are getting it maybe from egg yolks, maybe from taking some sunflower lecithin, those are not going to enter the brain the same way, but that they're going to be healthier in general because lecithin deficiency is, or choline deficiency, is a really big thing tied to non-alcoholic fatty liver disease. And there's a really clear case for taking some kind of butyrate, whether it's sodium or calcium magnesium, and those are two areas that you specialize in. There you have it. What did I miss? Anything that you should say that I didn't ask you?

Jess:

I don't think so. I think we covered it.

Dave:

This was your first ever podcast, right?

Jess:

First ever video podcast.

Dave:

Okay.

Jess:

I've done other podcasts, just not on video.

Dave:

Good deal. Well guys, Upgrade Collective, how'd she do? You got a "thank you Jess." 11, 10, 10, 100. Jeez, Hudson, that was awesome. That was Joanne, actually. Hudson says 10. So basically you rocked it. Thank you.

Jess:

Thank you.

Dave:

This is precious knowledge, very few people, even the world of biohacking, talk about liposomal PC or butyrate. I think, butyrate is a very important part of both postbiotic and the world of keto. A small boost in ketones equals a large boost in anti-inflammatory reaction in your brain and taking this stuff before bed really truly does improve my sleep quality. So this has been a really helpful interview. Thank you for doing that. Thanks for taking over your grandfather's company. I love the legacy and the lineage of BodyBio. People have been working on this problem for decades and will work on it for decades more, we're just getting better at it.

Jess:

This is true. Thank you very much for having me.