



Steph: Hi Kirsty, and thank you for joining us today.

Kirsty: Hey Steph, thanks for having me.

Steph: You're very welcome. I'm really looking forward to today's topic. Probiotics are obviously a very vogue topic at the moment, so I wanted to start with a little 101. What exactly are probiotics? How do they work in the body? And should everyone be supplementing with them?

Kirsty: Okay. So, yes, they are extremely hot topic at the moment. But probiotics are basically live microorganisms. In most cases, they're bacteria, and they're beneficial microorganisms that we find within our gut, so within the human gut. It is just basically a diverse amount of bacteria, and there are all different types of strains that you can get as probiotics, and the aim of those probiotics is that we take them and they come into our body and they basically increase the amount of those beneficial bacteria within our gut microbiome, and support our health, support our immune system, and our digestion and really just help us with our overall health. That's the basic premise of why we would take probiotics.

Steph: What about should everyone be supplementing with probiotics?

Kirsty: This is a tricky question and my response to that at the moment is no. Because it's a bit hit and miss. I mean, within our gut microbiome, we have trillions and trillions and trillions of this bacteria, a diversity of the different type of bacteria that we have in there.

Unless you've had very specific tests to show what you are deficient in and what you've also got an overgrowth in, or what is in balance, you're taking something and stabbing around in the dark with what you're having. Now, obviously if you're having fermented foods, which have all those beautiful probiotics in them, that's amazing.

But when you're having probiotics and you're not really sure what's going on within your gut microbiome, you won't really know what probiotics to take. Yeah, I think it's become a bit of a fad and we see lots of people taking probiotics and we'll get into how we measure how strong they are and all those sorts of things, but I think you need to be that detective, and you need to take that ownership and be the advocate for yourself that you need to be, and find out, "What type of probiotics does my body need? How do I rebalance my body by using the right probiotics?" And then they will be fine for you to have.

But I'd hate to see anyone spending money on probiotics and they just don't need to have it, or it could actually be worsening the symptoms or creating an imbalance.

Steph: Yeah. Absolutely. Where do we start then? I mean, let's say in the absence of testing, what do we see when we're maybe looking at a store bought option? They use the measurement term CFU, which does talk about the strength. Talk to us more about your thoughts there.

Kirsty: Yeah. The CFU is the Colony Forming Units. It basically just tells us how much of that particular, the strain, how much of it is in there and how it's going to colonize within your gut. Now, when we look at the digestive system, the digestive system has, as it goes through the body, there's a pH gradient. In our stomach, the pH is super, super, super low.

It's like 1.9 or something, or around the 2. It's really, really acidic. The reason why it's acidic is because we want to kill off any infections, or we want to kill off anything in our food that is going to disrupt our body. Probiotics are extremely sensitive to acid and they're very sensitive. So, there are some probiotics that if you take them, if it doesn't have a very high CFU count, so lots of it, like we want to be looking in the billions, if it doesn't have that 25 billion in there, and you've got really robust amount of stomach acid, there's a really high chance that it won't actually survive that stomach acid and get down into the intestine, and into the bowel, where those bacteria need to colonize and set up.

The CFU and the strength of it's very important, because you want it to be able to get past that stomach acid and get down into the gut. The CFU, just also gives us an understanding of with the live bacteria, just making sure it is a colony, and there's lots of them there, so we can make a difference.

I would be looking for a high in the billions, so between 15 billion and 100 billion. That's very, very important. The other things that you want to look at is just to make sure that it is a live culture, and so you want to be looking for one that's in the fridge. There are a few strains that are stable at shelf life. Sorry, stable on the shelf, that don't need to be refrigerated, but there's very, very, very few.

That's a really easy thing that if it's not in the fridge, it's probably not the right brand for you. And then, making sure that you're looking at strains that will actually survive that stomach acid. Things like *Lactobacillus rhamnosus* and *Saccharomyces boulardii*, and those types of strains. They're well known for surviving the stomach acid and really making sure they colonize.

Steph: Yeah, interesting. There are obviously a lot of "shelf" stable probiotics on the market. Is that to do with the fact that obviously they perhaps can test the initial ingredients, which can then be included on the label, but there's no regulation to test if the bacteria are still alive, or what your thoughts on what we see in terms of shelf probiotics?

Kirsty: Yeah. So, obviously to keep them shelf stable, they have to have a filler in there, there'd have to be excipients in there that, what are they and how are they impacting your body, and how are they impacting the actual strains of the bacteria?

Yeah, they can only measure the strength of that bacteria, obviously at the lab, and then how strong is it when it's been sitting on the shelf for three months before you pick it up? Being a living food, it needs to be protected and refrigerated, so yeah, I'm not a big fan of the ... And there may be ones out there that I haven't seen that are really wonderful, but at this stage I'm not a big fan of ones that just sit on the shelf, because it goes against the concept of a living food.

Steph: Yeah. And then you mentioned about the stomach acid, so how does that then impact your choices around whether you would choose a powder or are they better in a capsule? Can everyone tolerate capsules?

Kirsty: Yeah. So, I mean, gosh, it's a great question with two parts to it. There is some probiotics strains that have what's called an enteric coating on them, so that enteric coating is specifically there to survive the stomach acid. When you take it, as it goes through the stomach acid, the stomach acid will burn that enteric coating and then once it's progressed through the digestive system, when it finally gets down to the small intestine, the premise is that then the living bacteria that's in that capsule has survived, and then will be able to colonize.

That's something like Mutaflor, which is a wonderful *E. coli* strain, so a beneficial *E. coli* strain, that is absolutely vital for that small intestine. But if you're taking probiotics that have got capsules that are made out of cellulose, or they're made out of different types of man-made products, your body might not even be able to actually digest those capsules, or the capsules are burnt off by the stomach acid and it won't survive.

Yeah, you've really got to look into what you're taking, and the form that it's going in, and how it's going through your body.

Steph: Yeah, right. It sounds like then we're looking for particular strains that we know can survive the acidic nature of the stomach, but also that maybe food is best for the reasons above.

Kirsty: I mean, obviously food will always be best, but when you get that CFU count nice and high, you've got a much better chance of it getting through and colonizing. If you do need to go for a probiotic capsule or a probiotic powder, then just make sure you're getting a really good quality, with a really high CFU count, and understanding, "Okay, what's going on for me? What are my health concerns? What are the specific strains that I need?" Rather than going for that scattergun approach of just going into the chemist and going, "Oh, I think I need to take a probiotic" and just picking up something off of the shelf.

If you've got a skin condition or if you've got eczema, or any of those sorts of things, yeah, something like *Lactobacillus rhamnosus* is going to be amazing. It's going to be very, very beneficial. It's beneficial for IBS, and that's why see it a lot in the store bought probiotics, because there's a lot of research around the *Lactobacillus rhamnosus* GG, that specific strain, and its impacts on those things.

I would, when you're working either with your practitioner, or you're going to buy some probiotics, I would go through each strain. "Okay, what are the strains? What do they do? Do I have those problems?" The research is out there, and so you can be that little detective to find out what exactly is perfect for your situation.

Steph: Yeah, beautiful. What are some other examples then? I mean, IBS is obviously a really, really huge issue. It's that unfortunate blanket diagnosis that people are often given when there's no other explanation for their symptoms, but it has been studied so well, so we are really clear of what strains can assist, but have you got some other specific examples as to what strains you would use in particular health situations?

Kirsty: Yeah. *Bifidobacterium* strains are really, really well researched with regards to things like B12 deficiency, and therefore obviously having a lack of energy and having a lack of, with your B12, lack of energy and also mental health and that clarity. So, low moods.

*Bifido* strains help us to synthesize and make those B vitamins, so if you've got mood, if you're feeling like you're really up and down with your moods, or you do have a B12 deficiency, then those *Bifido* strains are going to be incredible for you.

The *Bifido* strains are also amazing for helping to digest plant matter. If you are the person that's taking digestive enzymes to try and help to digest your food, because every time you eat, and then you check out your stool in your toilet, which we need to be doing every day, because that's the window of your health, and if you see carrot in there and you see your leafy greens in there, and there's

a lack of ... Sorry, there's undigested food in there, and you're taking digestive enzymes, then your next thing to look at is your Bifido strains.

"Do I have a lack of Bifido strains?" And then maybe I need, because I can't digest my foods, then I need to maybe bump them up. There are certain probiotic companies that do just Bifido strains. We know that for children, with regards to colic, supplementing with Bifidobacterium longum can be, and the infantis is really beneficial to help with colic and being unsettled and that gassy picture that young, young kids get.

There's little Baby Biotics that can really support babies when they're breastfeeding. There's some really good research around that. And then obviously there's more complex, like that Mutaflor that I was just talking about. That's going to help with a lot of mood disorders. If you've got thyroid issues, if you've got any form of mental health concerns, then we know there's such significant links between low E. coli, which is the beneficial strain that we have in our small intestine, and those conditions.

Taking something specific like that Mutaflor can have such a huge impact on your health. We also know that things like Saccharomyces boulardii can really help with thrush and really help with candida. It's a really good one for traveler's diarrhea, so if you're traveling to overseas, to a developing country or Bali or something like that, a lot of those ones that you see in the shops, I think they literally call them traveler's support or traveler's aid or something, that will have that Saccharomyces boulardii in there, because it helps with getting obviously the pathogenic E. coli, or salmonella, those sorts of things.

It helps to crowd out those horrible, horrible gut bugs that you get when you're traveling, and it can help to rebuild your gut. Yeah, it's a bit like a shopping list. What do I need and which particular strains are going to best support me for that?

Steph: Yeah, beautiful. There's some great ideas. What about when it comes to the products that we see on the market that involve prebiotics? Could you define prebiotics for us and your thoughts on the inclusion of both pre and probiotics in a supplement or powdered form?

Kirsty: Yeah. A prebiotic is food for the bacteria. We've obviously got the bacteria which is the probiotic, and then the prebiotic is you've got those little guys living down there in your gut, and the prebiotic is the food that goes down there and feeds them, so they can multiply.

Prebiotics we find in pretty much every food that we have, and that's why we're such an amazing complex system, but we're basically all microorganisms and then what we eat goes to feed all of these different microorganisms. It's a beautiful synergy, but what I see is a bit of a fashion at the moment, is a mixture

of having the probiotic supplement and then the prebiotic supplement within it. Things like FOS and inulin.

Now, once again, these prebiotics, if you have imbalances, or if you've got some conditions that you're working with, the prebiotics might actually be feeding those pathogens that you've got, or those specific issues that you have. You've got to be pretty careful, which is why food is always going to be best. There's obviously prebiotics in all the foods that we have, so if you are out of balance, just stick with food for now.

And then, really I feel like you should be only working with a practitioner if you're going to be using prebiotics, because they can really feed infections and really throw a complete firestorm and cause all sorts of problems. Always using food and obviously that's lots of fiber, your nuts and seeds, and resistant starches, and all of those beautiful, even meat fiber is a wonderful prebiotic for Bacteroides strains.

You can get it in your food, but you need to be digesting your food to have it broken down into those beautiful little parcels for your bacteria to then utilize. That's also where I see some poor people, they're eating the best gut healing diet, but they're not digesting it, and so their gut bacteria is starving, and that's when we see a lot of gut problems and a lot of people really, really struggling to rebuild their gut.

Always be looking at your digestion and how you're preparing those prebiotics and that food for your bacteria.

Steph: Yeah, really interesting. 'Cause again, I'm starting to see a lot of products on the market, and it's definitely a term that we're discussing a lot more, whereas probiotics have been around for decades. In my experience, prebiotics are relatively new to the party, so to speak, but yeah, the fermentation, particularly that lack of awareness as to what's happening internally can create a bit of a volcano if it's not prescribed appropriately.

Kirsty: Yeah. We haven't had to in the past, ever use an inulin fiber, which has come as a supplement, to grow our bacteria in our gut. This is all new stuff, and I always get a little bit concerned when we're isolating one thing and then just dumping it into an ocean, which is basically what you're doing with a prebiotic is, "Oh, this is the latest thing so I'll take that and dump it into your body," which is this vast ocean of so many complex systems, bacteria, microorganisms, and what have you done by just isolating that one thing? But giving your body huge amounts of, how does that work in every other system?

But when you eat foods as that medicine, your body knows how to utilize that, and the bacteria knows how to utilize that, and obviously there are cases, and Steph, you and I work with people that have got those cases, that we've seen their results, we've seen what's going on, and they may need those very specific

things. But that's when we know exactly what's going on, but yeah, just going out and buying a prebiotic and dumping it into your ocean, I'd be a bit nervous about that.

Steph: Yeah. I agree. I think science has evolved a long way, even in recent years. Like, I've definitely been guilty of saying that it's really important to choose a probiotic with the most number of strains, but if you've already got overgrowth of those strains, then you're going to perpetuate the overgrowth. It's coming back to our mantra, that test, don't guess. Because then you know exactly what you need, and you're not going to have to find out the hard way.

Kirsty: Yeah. That was for me, I had to find out the hard way unfortunately, and for a long time, I was supplementing with a probiotic that had a strain in it that I had an overgrowth of anyway. I was just making myself sicker and sicker and sicker, and was buying a very, very expensive probiotic, that I was spending a heap of money to make myself worse.

Yeah, it is really important now. Obviously yes, lots of diversity in Australians is important, but know each particular strain. There are even some people that have specific genetic conditions and have specific concerns where there are some strains that have histamine forming metabolites and that cause issues within the pathways within your body, that you just never will be able to have.

Once again, it's really getting to know your body and what's right for you, or if that's not something that you're into, find someone that ... I love to do, so a practitioner, and get them to do it for you. Not everyone wants to spend all their time looking at the literature like you and I do, Steph. I forget that sometimes. Just utilize us. We'll make the decisions for you, but yeah, it can just cause so many problems if you're not really, really onto it.

Steph: Yeah, absolutely. Is there anything else we need to be aware of when looking at probiotics off the shelf?

Kirsty: Yeah. I mean, obviously just making sure about the quality, the stability of it. Look at the date. Really make sure that there's a long time before the end date, because obviously the bacteria in there does die off, and so if the shelf life is ending in a month's time, you're not going to get much out of that. That's very important.

Yeah, I think just making sure that you understand what's going on for your particular body and what you need is really the end game with that.

Steph: Yeah, really cool. What do we do when we're traveling, if we can't take the packets that are sitting outside the fridge?

Kirsty: Yeah, so when you're traveling, first of all, do you actually really need it? Lots of people, because there is this big thing about probiotics, a lot of people just think

that they need to take it. But a lot of people don't need to take any probiotics with them.

I suppose just first check in, do I really need to take it? And secondly, if you don't, you can take probiotics on ice in little freezer bags, and you can take that on flights with you. You can check them in. Most places have a fridge when you get there. They will survive outside of refrigeration for a period of time, so if we were flying from Australia to New Zealand or Bali or even over to Europe, if that's on ice, it's going to be fine, and it will last the distance.

Then obviously pretty much you'll have access to a fridge, unless you're going hiking or doing something outdoors, where you don't have access to a fridge. But with regards to the traveling, *Saccharomyces boulardii*'s such a good one to take with you, and that does survive quite well outside, whilst you're traveling. That should be fine.

Steph: Yeah, beautiful. Amazing. Very individual, but really important to learn exactly what you need, and that's why we always, where possible, suggest buy a screen testing, which is the fecal microbial analysis that you and I have spoken about many times. I will put some more information in the show notes about what that involves, because there is a way for you to identify your gut microbiome and learn more about what strains that you would benefit from, but definitely look at those symptoms as well.

Because your body will tell you a lot about what's going on, and if you start quite gradually, you can do a little bit of testing, but beyond that, I would definitely look at learning exactly what strains are inside you with your Bioscreen FMA.

Kirsty: Yeah, absolutely. It's funny, talking about Bioscreen, I had a phone call with the director of the lab there, and we were talking about prebiotics. I said, "Oh, what's your thoughts on all of these new prebiotics coming through, and all of these products that have these probiotics and these prebiotics in here, and this big rage at the moment, add it to smoothies and it's in all the foods, and all this kind of stuff?"

It was so funny, the scientist said to me, "And were we taking these 50 years ago? Were we taking these 100 years ago? Do our guts even know how to handle these things?" It was funny, it was only about two weeks ago we had this conversation, so it just reminded me of that. So yeah, exactly like what you're saying, Steph, just make those little inquiries, and it's incredible when you find out what's going on. You get in the driver's seat, you start moving forward.

Steph: Yeah, absolutely. I love that. Thank you so much for sharing your wisdom again today, Kirsty. It's been great to have you on the show and we look forward to speaking to you again soon.

Kirsty

Thanks Steph.