Episode Transcript

Danny Lennon: And here we are! A big welcome to the podcast to Dr. Megan Rossi. How are you today?

Megan Rossi: Yeah, good. It's Friday night, actually. So, feeling ready for the weekend.

Danny Lennon: So hopefully our brains are still working at full capacity at this time of the week. Which I'm sure they are. I've got a lot of questions that I want to dive into and a number of these topics I find fascinating and interesting of how, not only of what we're taking from research, but how do we go about communicating that to a broader audience. So maybe before we get into any specifics, can you maybe give us a bit of a quick introduction to your work, both in clinical practice and in academia and anything else you feel might be relevant for people listening?

Megan Rossi: Yeah, look so I decided, I think. nearly 20 years ago or something like that, that I really, I loved science and nutrition and I wanted to be a dietician. So I embarked on that. Absolutely loved the degree. And then actually it was in my final year, studying nutrition and dietetics when sadly I

lost my grandma to bowel cancer. And, I reflected back on that. And during the degree we learned a little bit about the gut, but really not in any sort of detail.

And that was when did I start my degree of 2006 or something like that. And so yeah I thought, okay. The gut is a horrible thing and I don't want anything to do with it. And then I started working as a clinical dietician, both in the hospital setting with all different types of conditions, cancers, kidney disease, heart failure, mental health issues.

But also I was very fortunate to be the nutritionist for the Australian Olympic synchronized swimming team. And what I found so striking is that despite very different backgrounds, Everyone was coming to me, complaining of the gut. And I thought, God, what is it about this organ? Like it's haunting me. So that's when I thought, you know what? I tried to do some research to find out about it and it was like 2010. There wasn't really that much out there. So I thought. I got to my grandma and to my patients and clients to find out more about this organ. So that's when I embarked in a PhD to look at whether we nourish the gut, and it was in my particular PhD, looked at pre- and probiotics. So probiotics being the live microbes, prebiotics being the fetilizer for them. Together being a symbiotic. And looked at whether that can improve the health of not just things like gut symptoms and kidney function, but also systemically in terms of things like mental health. And it was really that PhD, that game changed everything for me, it became so clear. It surprised all of the research team actually, we were like, oh my God, this is something big that we're able to show signs of like kidney function, improvement, mental health improvement, gut symptoms, improvement, et cetera. And it was really after that PhD, I was like, if I'm really going to help people it's going to be via the gut. This is a landmark scientific discovery. That's got so much behind it. So I thought, how can I, continue my research career. And I, being from Australia and if anyone's listening to this who is Australian, we don't really get taught that much about, or have ambitions necessarily. And I'm stereotyping here to go abroad, live abroad, like I'm from Cairns, a very small town.

So my supervisor just one day said, oh, you should just move to London for a year, get some experience, in the research labs over there. And I thought, oh yeah, sounds good. So. Applied for a job at Kings College in London was very lucky to get it. And I moved over not knowing anyone, not really knowing

what I was getting myself into. But that year was just incredible in terms of the opportunities for research funding in the UK. That I just couldn't, I couldn't go home after that. So we got some amazing research from the, medical research council and a lot of independent bodies that allowed us to really, to grow a whole body of research, looking at how we target the gut through the right nutrition and whether that can improve the things like yes, mental health. Yes, inflammatory of bowel disease. Yes, IBS, et cetera. And yeah, I haven't looked back.

Danny Lennon: Some of what you say there about how we've started to see these connections from research between gut health. And we use that as a general term for now, and maybe we can get bit more specific in a moment, but gut health and all these different systems around the body and these potential benefit we could have in a whole range of different conditions.

And I think that kind of brings this double edged sword because on one side, this is of. Really interesting and brings up lots of potential research questions, which to a researcher like yourself and your colleagues is amazing to be in this field, but I'm sure something just as annoying maybe to you is then seeing how people maybe from outside of academia, or unfortunately, in some cases, maybe inside take some of this and maybe stretch that beyond what is actually appropriate either.

Misinterpreting what we actually know from evidence, or maybe focusing on these small little things that we don't have much evidence for and missing actually, where we have some really useful evidence. So I'm just wondering, like, how has that. What perspective do you have over the last few years where there's all this excitement, but also probably seeing other people from outside of your field give it a bad name.

Megan Rossi: Danny don't even get me started. I totally get that. And it was really that frustration of the injustice that despite the amazing, incredible research that we're finding out about the gut, it just wasn't being translated. Throughout my, my research career I've continued to see clients because I think that really makes sure that my research is very relevant and I was seeing in clinic people going on the craziest diets because they'd read it on a blog or, Dr. Google had told them that was good for their gut. So, like I said, was that injustice that, the gut's potential wasn't really being seen by the general public that actually led me to, start the Gut Health Doctor. I thought

on social media, as one does in the 21st century, look, if I get a few hundred followers and educate them on science translation, I'd be doing more of a service then staying away in my research ivory tower and keeping all the research to ourselves.

So I set up yeah, the Gut Health Doctor, and it was just, a really great time. There was a lot of media attention around the. and I think people were looking for, a credible source of information because they'd heard, all of these like crazy myth and maybe they tried them and it made their gut worse.

So they were a little bit skeptical. So they, come to Gut Health Doctor. And that really for me has. An incredible passion project, because it's about translating that hard science into, practical strategies that people can take on board and really improve their lives. Going down all these crazy things, like food intolerance tests and these commercial microbiome tests that do my head in, because I see them in clinic, people pay 400 pounds, what's that $500 to get their stool samples, analyze for the bacteria. And they come to me and I'm like, okay. Now tell me, what's going on? And I look at them and I go, look, this is cool information but unfortunately it's just a teeny snapshot. There are still thousands of microbes living in our gut that we don't know the name of. We have not just a bacterial component in our gut.

We've got the fungal component. We call the mycobiome, we've got the viral component. We call the virome. And we've even got parasites in our gut, which actually synergistically work to look after the gut. So, so far we've very much been focused on the bacterial component. We haven't even cracked that. So actually these commercial microbiome tests really aren't impacting my clinical judgment or informing my clinical practice.

So, I think that's a really important message that I hope the listeners, cause I know they're very educated, but if you hear these tasks, being sold and are a bit tempted, if you've got all the money in the world, Hey, do it out of interest. But don't think it's going to, change what you should be eating or, someone's clinical judgment of what's going on in your gut because we just don't have the information. I think certainly maybe in five, if. 10 years, we will we'll have that ability, but at the moment, the research isn't there. And some of the research studies we're doing at Kings is around personalization. So we did a study published a couple of years back where we looked at, not just the bacterial there and the microbes out there, but the chemicals, the volatile

organic chemicals that they were producing. And those chemicals of bacterial producing were as a more of a predictor of response to different dietary interventions than the bacteria. The. But still those like metabolites, the chemicals of bacteria producing, they still aren't good enough to be a predictor that could then be sold in the commercial world yet.

So yeah, hopefully people can spread that word. And when we do have the evidence, Hey, I'm gonna be all for, it's gonna make my practice so much easier, but I just hate people being taken advantage of essentially.

Danny Lennon: Yeah. And it's interesting when you see people who are maybe self-appointed gut health experts without any relevant background, it's often an over-indexing on these things that you just mentioned, like gut microbiome tests, and there's no real attention paid to things that actually would help people.

Like when we think of the things, people are not doing what their diet already. And I think one of the really cool things to see about much of your public facing science communication. If, when people look at it, they can actually see that, oh, there's these big messages focused around overall dietary patterns instead of I need to go and get this expensive testing.

And I think that's something we're gonna dig into. And so think there's probably a few buckets that we can separate. There are some overlap here, but it's worth on one side saying for certain gastrointestinal disorders, there's clearly specialized clinical dietetics that is involved in there that has some nuance to it. Then at the other end, we have for people maybe in the general population that are just trying to improve their overall health and looking well, how do I improve my gut health as part of that? And then that kind of overlap of people that maybe have some gastrointestinal symptoms, but maybe not full disorder, so to speak.

So maybe if we start at a broad level first, I think one of the key message that comes across from some of the ideas you've been trying to get across is not only looking. the types of dietary patterns of, oh, eat some vegetables. You've really hammered home, this idea around diversity. So for, just from an overview level first, could you maybe put forward what is the case that you can make for thinking about diversity rather than just the total amount of let's say plants or vegetables that one consumes?

Megan Rossi: Yeah, look, this is a good one. And this is one of the reasons, behind the, how to eat more plants concept the new book. It's because we now have this new understanding, of nutrition, the mechanisms of it. So certainly when I was studying nutrition back all those years, we got taught that food could have an impact on our health and our risk, our dietary risk disease, risk factors.

And that was all through human metabolism. And that's what we based our nutrition guidelines on. But more recently we've discovered actually, Hey, we've got these trillions of microorganisms that do so much for us. If we treat them right. If we feed them, and it's this new mechanism, this new pathway of how food is having an impact and that's because how it feeds our gut microbiome. So I think in all the historic kind of government guidelines around eat more fruit and veg, eat more fiber. we have missed this component of diversity. Cause we didn't understand that bacterial component. And the element of that is that each different microorganism has different fiber and phytochemical preferences.

So each different, plant's got a different array of phytochemicals that I either plant chemicals in them. So what we're seeing. There are six, essentially different plant-based food groups. You've got your whole grains, your nuts and seeds, your fruit, your veg, your legumes; beans and pulses, and your herbs and spices.

Now each different category has a different profile of dietary fibers. So we talk about fiber like it's one thing, it's a hundred different types, as well as phyochemicals. There's tens of thousands, but each different category have, it has its own unique profile. So people who go keto or paleo where they're cutting out either whole grains or the legumes, what the science has actually shown is they narrow down and miss some key microbes in their gut because they have starved out the ones that like the legumes or the whole grains.

So it's not just total, fruit veg, because that's doing a disservice to the whole what I call them the super six in the book. Because each category does different things and feeds different gut bacteria. So I think that is where this new principle around diversity comes into play. So it's trying to get in, something from the super six, most days and yeah, there was a study.

Which was guided by some amazing researchers in the US. And what they showed is people who ate at least 30 different types of plants per week had better gut health, more diverse range of microbes compared to those who ate the same ten on repeat. Now they looked at whether, if you're a vegan or omnivores, so also ate meat, predicted your gut health, they said, no, the key predictor was that diversity of your plants.

And so, yeah, that's a really new point I think that over the next, probably five to 10 years, cause it does take quite a long time for research to translate into guidelines will probably start to show up in government guidelines.

Danny Lennon: Interesting. So in that case, it could at least theoretically for now we could say, if we take an example case where someone maybe is consuming an overall appropriate amount of total energy macro nutrients overall look good, their food quality is pretty good, but they're relying maybe on a very small number of foods that they're consuming regularly every day.

We're now putting this case forward; by having a greater diversity of the different types of foods they can consume, let's say across a week or whatever the case may be. There's potential benefit from that. Just from one perspective that people may be asking is okay, in, for example, studies that look to assess this when we're talking about observing improvements with greater diversity for gut health, given all the complexity you've mentioned around gut health, what is one of the typical ways we try and assess benefit or what is a beneficial change that we're looking to see? And of course this may be different, but what is a few different ways that potentially we could look at that in research?

Megan Rossi: Yeah. So in the research world, we look at. Mainly the (Shannon diversity index (SDI)) . So in terms of the diversity, the amount of diversity, the different types of microorganisms in the gut, we use that as a bit of a marker, but as you said, there's obviously a lot of limitations to that. But what we have seen is that, that diversity of the bacteria in particular that's been linked with things; reduce cardiovascular disease lower risk of mental health disorders like anxiety and depression, lower risk of different breast cancers, et cetera. So, that seems to be the marker that has that association attached to it. But you're right, a lot of this is based on the observational studies.

So we need to be doing these head to head studies, to have a look at kind of those details. But I think at the moment where the research is, it's given me confidence enough to say, we should not just be on the broccoli and the quinoa diet that I know a lot of healthy eaters do because it's very " "clean", it's your calories in it, you go to the gym and how much to work out and all of that sort of stuff. So you think you've got healthy diet. But actually I do see a lot of those people in clinic. And they are not thriving. Like they could be if they had that diversity.

So they've changed up, made some, added in the 30 different types of plants a week. And actually they've reported feeling better hitting new PBs, etc. Of course that's anecdotal. When we take it together with the observational studies, I think it's fair to say it's worth giving it a try.

Danny Lennon: So, so on both the front of the microbiome, and then also the plant foods we consume in the diet were as a general heuristic, we can say more diversity. Is better than less diversity. You mentioned this study that has the comparison between 30 and 10 plant foods. I think you said per week be beyond that obviously there's some scope in there of saying, well, more is better that then less. Is there anything then to or how should people make an, a kind of initial judgment for them of, well, how much do I need to focus on getting the exact number, right? Or what are the typical concerns that maybe patients have came to you with, when you first talk about increasing diversity, are there any problems that initially they have to get over either logistically or even psychologically?

Megan Rossi: Yeah, I think the first one is very much like. Oh, God does that mean I'm gonna have to buy more food. It's gonna be more expensive. I'm gonna have to do more prep. And that's just something that I definitely wanna like bust straight up there. It's not at all. It's literally, whenever you go to the grocery store, you just have diversity in your mind. So instead of just getting your chickpeas, get your three seed mix instead of getting your pumpkin seeds, get your three seed mix instead of just getting your broccoli, get your stir fry mix of edge. That's not costing you anything extra. It's literally just at the store thinking diversity cuz each different, like I said, species of plant has its own profile. So in the book I've dissected it. The humble apple and I just highlight the 300 different. Plant chemicals, phytochemicals within apple. So it contains things like insitol, which we know is got good evidence for polycystic ovary syndrome. It's got dopamine,

that, that feel good hormone. It's got a hundred million bacteria on the skin of it each and every apple. And that's just, Boring old apple. And if you extrapolate that out to all the other, tens of thousands of plants out there, you start to appreciate that each different species does have its own unique plethora of these phytochemicals that, we have seen the studies associated with a range of health benefits from not only, Looking like in terms of our skin health but also internally in terms of reducing cancer risk and and kidney failure and things like that.

Danny Lennon: Yeah. One of the interesting things is, and polyphenols is a great example. And phytochemicals more generally of, we're not only seeing just the, how many of these thousands that, that could potentially have a benefit, but then you add in the fact that each one of those. A whole range of metabolites off the back of it that probably are having physiological impacts.

And so we're still scratching the surface of everything these may do. And I think that even gives a kind of a greater emphasis to one of the initial points you made of rather than work from the bottom up of saying, let's go and test your microbiome and then try and work out decisions in this kind of very reductionist bottom up way instead there's we know that just general increasing the diversity of different plants and fruits and vegetables, and the legumes in your diet is having knock on impacts. We can maybe allude to some of those mechanisms, but we know that we can actually go and look at the epidemiology and look at actual human health outcomes, as opposed to just mechanistic speculation, which is where much of the, I would say quackery in this space ends up being. So it's just based on mechanisms without any good outcome data.

Megan Rossi: Yeah. And we know that like it's 20% of animal studies actually are contraindicated when they go to human clinical trials. So, we are very different to mice. We work very different. And just to pick up on that point about the polyphenols 90% of polyphenols, actually humans can't digest.

It's our gut bacteria similar with, the mechanism of dietary fiber human cells. We don't have the enzymes to break down dietary fiber. So it gets the low part of our intestine where the microbes uniquely have that capacity to digest it and then produce the things like the short chain fattyacid, which have that, those systemic benefits.

So I think, again, it highlights that a lot of, the things we associated and we knew were beneficial for our body, actually, without our bacteria, we wouldn't be able. Feel and experience those benefits because they're needed for the digestive process to get into our blood, to have those effects. So yeah, comes back to the bacteria, a lot of human metabolism.

Danny Lennon: You've mentioned dietary fiber a couple of times. And I really wanted to dig into some of the details here because as you noted, thinking of fiber as one thing is probably a mistake because we have all these different types of fibers that have very different physiological effects.

And so going back to your earlier point about dietary guidelines, we can look to specific recommendations of grams of fiber per day, depending on what guideline you look at. This may be in terms of grams per thousand kilocalories, or it could be based on men and women giving recommendations. Well, whatever it is, we have these grams of fiber per day, rough targets. But of course, that speaks nothing too. Where should this come from? How do we even think about getting different types of fiber? How important is that? How much should each contribute and even what those types are. So maybe as a, at a broad level, can you maybe start breaking down fiber into some of the different types based on their different characteristics? And what's the, a good starting point for people to think about sub classes of fiber?

Megan Rossi: Yeah, this is a good one. So we actually wrote a paper. So anyone who's really interested in the mechanisms and. I guess the chemistry behind dietary fiber I'll send you a send you the link so people can read up on that. But I think it's important to, to highlight when we talk about the subcategories, a lot of us have been, taught at university talk about insoluble and soluble fiber. However, the the FAO actually in, I think it was 2005 recommended that we stopped using that categorization of fire because it's just not helpful and it doesn't translate.

For example psyllium husk is a soluble type of fiber. So is inulin: that's another type of soluble fiber. Now, if anyone, has seen those fibers, they both look very different; psyllium is all granular, it makes this thick liquid, and it has mechanisms that help with bowel function actually. But the bacteria can't actually digest most psyllium husk. It's malabsorbed because of the structure, the bacteria can't penetrate to digest that fiber. Whereas the other

type of soluble fiber inulin actually is a fertilizer. The gut bacteria, it dissolves the water has no thickness. It's a prebiotic. So despite being classified as the same fibers, they functionality and therefore benefit in clinical practice are like opposites. So we need to actually start talking about fiber as in oatfiber, as in psyllium husk fiber, as in prebiotic fiber verses... so the source of the fiber verse talking about, the subcategorization of the fibers as the the prebiotic, the short chain prebiotic talking about things like the soluble/ insoluble et cetera.

Danny Lennon: Yeah. It is really interesting because even when. People try and make categorizations on, on that basis, they can run into trouble. And I think that the paper you just referenced, there's a really really nice explanation. I think a really nice graphic when people do read that of, I think you talked about things like solubility viscosity and fermentability.

Megan Rossi: Look at that...you've read the paper! Very impressed!

Danny Lennon: Of course, I'm too much for a nerd not to read papers. So, and across that, one of the really nice things is that there's. For any one fiber, we can plot it on a kind of spectrum for each of those things. And then those things interact. So we have to think that in almost like three dimensions, so all these fibers have these different properties.

And so it becomes much more complex than putting it in this. Either you say like a bucket of soluble or insoluble, or even just prebiotic or non probiotic, we have to think across a number of these different characteristics for what physiological impact that may have. And so when this does come to, again, translating that for people. Is that a case of making them aware of different categories, thinking about what type of effect we're trying to gain from adding a food or not? How do you tend to work through this? Through in clinical practice?

Megan Rossi: Yeah, that's a good one. So I think for the general population, I just say, look, if you're getting a 30 different plants from the supers. You're going to be getting all those different types of fiber that your body needs to function, including the prebiotics, including the ones that support more relaxation effects, ones that support more of, lowering absorption of a cholesterol and all of that sort of stuff. So you're good there guys.

However, in clinical practice where we need to be a bit more nuanced based on people who actually have gut issues, that's when I will, recommend certain types of fiber based on what their needs are. So for example psyllium husk, it has so much research for constipation. So that is one that I recommend quite a lot.

And remember that one actually doesn't feed the gut bacteria and that's a benefit of why it works for constipation, because we know that a lot of the other prebiotic fibers like insulin actually can make things like constipation and bloating worse, because that fermentation process. So the benefit of psyllium and why it works so well for constipation. And actually you can also thicken up looser stools as well. So sometimes diarrhea, more explosive stools. I do recommend clients and patients have that. Then in terms of people with raised cholesterol that I would recommend having oats because of the beta glucan fibers within that. So again, being very specific in terms of those indications for those different types of fiber. But that's more, like I said, in clinical practice where we're looking for those nuanced sort of situations.

Danny Lennon: So in terms of working out a theoretical ideal that people listening may wish to aim for when they're thinking about, okay, I've gotten this my mind, a total amount of dietary fiber that've being told is quite useful. But now there's these different categories that have different effects that I can think about in actually terms of thing. Like how far does one need to go to think about, okay, I need to break that down by this much of my dietary fibers contributed. These types of fibers versus this, as opposed to just thinking, oh, just get a few different sources like how do we, where do we draw the line, yeah.

Megan Rossi: Look, I go through a little bit more detail in the book for those who love, more prescriptive recommendations, particularly when you are quite new to this whole food world. So in talking about, how to get your 30 plus grams of fiber a day, it's things. Five serves of veg two serves of fruit, three serves of whole grain, and three serves of either legumes, nuts and seeds.

Most days is how you can get the fiber in. And then I've got what a serve of, whole grain is it's half a cup one's slice of grainy bread and what servers a veg and things like that. And again, because the super six, so each of those six plant based categories has got its own unique combination of fiber. If you're

getting those kind of, those like volumes, then you're probably going, getting sufficient amounts to, to, feed that range and diverse, of those to feed that diverse range of gut microbes and get all those sorts of needs in terms of, cholesterol lowering and like saving, like I mentioned. But if you do have a clinical issue, that's when you need to be more about, okay, well, you should be adding in more. Like the psyllium husk fiber, or there's also, good evidence for things like the fiber within Kiwi fruit for constipation as well. So that's when you be a bit more specific.

Danny Lennon: So far, we've talked pretty much about how do we develop this overall dietary pattern where people are getting not only more or plants making up the majority of that intake, let's say, but also increasing their diversity across that. And so if we're thinking about this concept of having a diet with a lot of plants in it, there's of course. Better and worse ways to go about that. And I think there's from at least from a research perspective, one of the things you've highlighted is research looking at the plant-based diet index so that this is the way we can actually look at some of the epidemiology and kind of score food, frequency, questionnaires.

I'm just wondering, could you speak a bit more to that, of how this index has been used in research and then off the back of. What implications this has for thinking about the healthfulness of a plant-based diet.

Megan Rossi: Yeah. So some brilliant research has developed this index. So it's the plant-based dietary index and there's subcategories of the healthy plant-based dietary index and the unhealthy plant-based dietary index. And essentially what their goal was to really show that. Not all plant-based foods are healthy. And I think this is an important concept that as we see all of these like crazy vegan, fast food worlds popping up, people are aware of that just because it says vegan or plant-based doesn't mean it's healthy.

So what the researchers did essentially is categorize the whole plant-based foods, those super six in their whole form versus the ultra processed version. So things. Those refined protein plant-based powders, things like sugar, that's from a plant, right? So you could think that's healthy. And all the other sorts of like refined versions, white bread, white rice, all of that sort of stuff. And what they showed is that people who Inre had a high school on the unhealthy plant-based tax, their a risk of, I think it was heart disease. About 30% greater compared to those who had a much lower rating.

And then similarly, when we talk about the healthy plant-based index, those who scored the highest, had a much lower risk of heart disease as well. And that index has been used then in many other studies and looking at other outcomes, like things like gut health. And, obviously it makes sense the higher the wholeness of the food.

The more likely you're going to contain all those polyphenols, which are gonna feed all the gut bacteria, because we know that processing not only takes out lot of fiber, but the heating and the processing denatures some of those phytochemicals.

Danny Lennon: Yeah, I think that's such a crucial kind of point of just by knowing whether someone is following a plant based diet or not. Doesn't really tell us much about the healthfulness of that diet until we actually know what the actual food choices are made. And this extends to everything else. We could think about someone telling us the macronutrient profile of their diet, and it literally tells us nothing about the healthfulness until we see the actual food choices.

And so this is when you see much of the debates. Nutrition online. It's interesting that we forget this part and it's people debating things that are very arbitrary and contextless. If I can say that with, unless we clarify what is actually included as part of that pattern.

Megan Rossi: Yeah. I love that because yeah, you do see all the time and things like, The Western diet's high fat. And you're like, yeah. So is the Mediterranean diet like, Ooh, what does that mean? It literally means nothing. We need to talk about whole foods because the macronutrient profile it's pointless.

Danny Lennon: Couldn't have a discussion where we're talking about the concept of gut health without bringing up fermented foods and much of this, actually, one of the papers you were an author on, I actually read before a podcast episode I did with your colleague Eirini Dimidi a while back. And you guys had published a paper on the topic of fermented foods.

I think it was a few years ago now, maybe. Three or four, at least. And at that time, some of the conclusions around many of these types of foods that were, that are commonly available, whether that's kombucha, kefir, kimchi, and so

on, at least the commercial products that people will likely see when they're in a supermarket. Actually we don't have really good evidence that they're having an impact on gastrointestinal health, the way that they're perhaps sold to people. So I was wondering, could you just start with in the time, since then, has anything really changed and what, from an overview level where we left with the current state of evidence on fermented foods and how that stacks up with many of the claims people here about these different types of products?

Megan Rossi: In terms of the research from that review paper hasn't changed a whole lot. There has been a little bit more research in the space of things like kefir, we know is a fermented milk which is a similar, to the benefits of yogurt, which there's a bit live yogurt, natural, which there has been quite a lot of research behind.

And that's sadly companies who produce these products are able to fund the studies. But, it's important to realize that they still often are research led. So these companies will provide grants and money, and often it's matched by government funding, but they have no say in the research outcomes or how it's conducted.

So it is actually. Independent. And I know that can probably differ based on country and the regulations, but I can certainly say at Kings and the, all the other sort of universities I'm aware of in the UK, If there is a kind of commercially funded study, like there is no way you can be dodgy with it.

You can be less dodgy with that. Then you can be one goverment funded by the government because there's been so much focus on it. All the research has to be like in this ivory locked database and any changes any function is recorded. So, I would say often the ones that are commercially funded are, undergo more scrutiny.

But of course that's not the case for all. I'm just speaking about the ones that I've ever been involved in. So yeah, that's, I guess why there is more research around things like the life yogurt it's because they've been more funded, no one's gonna fund a well, very few people are funding, kimchi intervention studies, or kombucha intervention studies until recently where I guess they've become more popular and therefore there's more interest.

So, yeah, I would say that overall, we know that fermented veg, like suaerkraut and Kimchi from observational studies have suggested health benefits. And then in terms of the kefir, there has been a few clinical trials particularly looking around people who go on antibiotics. And they've shown that to have some protective effects on the gut microbiome, including things like, The antibiotic associated diarrhea and stuff like that with H. pylori Infection, or do you have multiple high course of high dose antibiotics? That comes to, where does that leave us? And I would just actually highlight in terms of kombucha, there still hasn't been any, human clinical trials looking or intervention trials, looking at the benefits of kombucha.

And then we do see the traditional types of fermented foods. Don't always get translated to the commercial world. So I think, the ones that I've seen kimchi and sauerkraut, most of them. The translation are actually quite legit. You can notice by the amount had that bite to them, that acidity Yeah of course you do get some that are in the ambient section and therefore they couldn't contain live micros because they'd still be fermenting and gas would blow up. So there's a few things to walk out for you. If you're having this fermented foods, they should be in the chiller. And then yeah, in the kombucha world, making kombucha is really expensive.

So if there's a product that's quite chaep, chances are, it's not legitly, fermented. So yeah, that's a bit of a watch out there and you can taste it if a drink, a kombucha that's really sweet. It's not gonna be great. It hasn't had that fermentation process where the microbes include. So the bacteria, including the yeast convert those sugars into organic acids, it needs to taste a bit better. So, you need to be quite sensible there just cause it says kombucha on the pack doesn't mean that necessary is unless you taste it, it's a bit sour. So what my general take on it is if you don't like fermented food, look, you can have brilliant gut health and, be fine.

I would say that I think there is emerging research and we know mostly based on like test tube, at the lab, we see that they do have these a range of organic acids and they have been associated with health benefits. I said that, there potentially could be a health benefit attached to them.

No panacea. That is for sure. But we know that things like, kimchi and sauerkraut, they also are going to for those prebiotic types of plants in it. And other really high polyphenol types of herbs and spices as well. So there's that

sort of benefit as well. And I love the flavor of it, there's especially like kimchi with eggs; it's just like my perfect combination. So I would recommend that people try start to include in their diet maybe a couple of times a week, but I wouldn't be, paying these extortion necessarily amounts thinking it's going to revolutionize your gut health, try dabbling it yourself.

It's actually, they're quite easy to make. In my first book, I've got recipe how to make kimchi and kefir and sauerkraut as well. Instead of people, spending. 10 times the cost of the standard versions, for something that's become quite a hot trend.

Danny Lennon: Yeah. I think it serves as a really good case study, almost of many questions that are challenging with nutrition more broadly, particularly when we're trying to look at emerging evidence and how that gets misused and then actually think, well, what standard of evidence we really want.

So, as an example, you might have companies producing a commercial kombucha drink and they will go on the coattails of, oh, well, we see associations between fermented foods and health benefit, but comparing the type of. Commercial drink. They have to fermented foods in like traditional Japanese meals is completely different.

And you look at, because those things are not just fermented foods. They also have a certain nutrient profile. They have phytoestrogrens all these other types of things. And the same thing, if you're including kimchi in a recipe, that's also. Providing an actual plan and it has nutrients, polyphenols and so on.

And so it's clear that we need to, first of all, distinguish between different things. But then also I think from a research perspective, one of the challenging things is we might see a potential benefit on, for example, changes in the gut microbiome and we can detect them, but then we need to go and say, well, where.

How is that translating to human health out outcomes and how much of that is responsible? Just this mechanism versus all these other things we have to adjust for. So it, it is just a really useful case study of these questions that come up all the time in nutrition science discussions.

Megan Rossi: Yeah, absolutely. And I think it becomes quite clear that things like. Kombucha from, your mainstream supermarket, probably isn't going to be doing a whole lot for you, gut health. But what I say is that if it means that you're not having a diet soda, It's probably gonna be a win, a good switch for that perspective.

And if you enjoy the taste, it's probably better than having a bottle of wine, not necessarily one glass of wine. I think probably one glass of red, wine's going to be better than kombucha for you, but most people don't just have one glass of red wine do they right.

Danny Lennon: Very much. So, Megan, if we start rounding out with kind of pragmatic takeaways. First of all, for people who either for themselves or recommendations they may give to a client or a patient they work with from a, from an overview level, some of the things that we've discussed around getting more plants into people's diet. I think, trying to think about, well, what practically, what type of questions come up in practice?

One of the first ones is not only, well, how do I fit all these into my diet, but it's well, How to go about trying new vegetables, you're saying I'm barely able to consume the ones I have now. What are some of the big roadblocks you tend to see of getting people to not only vegetables, but other types of foods that there might be not used to consuming?

What are the ones that you most commonly see present in practice?

Megan Rossi: Yeah, I think people's just fear of the unknown, we're habit buyers. And if we see this like new legume or black beans we're like. What do I do with that? What is it gonna taste like? God, I don't have time to like experiment in the kitchen and actually in how to eat more plants, which is actually called eat more live well in the UK. Crazy that the names are are separate, but that's just enough to confuse everyone. But in there I've got a section called meet the legumes and meet the whole grains and what I've done. All of them. They both contain eight different types from your local, from, your mainstream supermarket. You don't have to go to all these fancy health food stores, but what I've done is unpack what you could switch them into in your diet for, the nutrition profile of them, the flavor profile of them and just some fun facts around. So people start to go, oh, actually I feel a bit more confident to, if I'm making brownies to add into can of black beans. And

that sort of thing, I think is a big barrier for people trying new foods is because we are just so set in our ways. And if we don't know how it's gonna.

Work, we don't really wanna invest that time. So it's just about, picking maybe one a week and exploring with it. And you actually often find that there's so many plants out there that you really enjoy the flavor of that you had no idea existed. Like for example, frika, I absolutely love the nutty profile of frika that, before all this, I wouldn't even bothered to try cause I'm like, I'll just go eat barley or something like that. So it's getting it's that twofold. So getting the confidence, but also getting, that understanding of the importance, nutritionally of why it's good to branch out.

Danny Lennon: I'm trying to think about other concerns that maybe practitioners have to face when maybe. Discussing any dietary change, but some of the changes we've discussed here is around convenience. And then also things changes that might be perceived at least as being cost prohibitive. Are these ones that are also come up and what is the typical way you. Try to address those.

Megan Rossi: Yeah, look. Absolutely. And that's one of the things I really try drive home is that actually it's not gonna cost you anymore. It's not gonna take any more time. Like I said, at the start, it's just, when you go to the grocery store, thinking diversity, wherever you can and get them to try it out. And they notice that yeah.

Actually getting the mixed beans instead of the chick peas didn't cost me anything extra. Still put it in the same recipe. Oh, it's great. Enjoyed it. And I got three extra plant points attached to that. Woo winning. So it's those sorts of things. Those really small things. I think it's probably quite important that we do touch on one of the big barriers that I see, with people with sensitive guts and eating more plants and that's gut symptoms.

We can't get away from it, but it's one that I really. Made sure that I tackled in how to eat more plants because it really upsets me when I hear people say, I really wanna eat plants. I know they're so good for me, but they just don't agree with me. So I just can't eat them. And my past 15 years as a clinician, there's not been a gut.

I haven't been able to teach to eat more plants. Okay. But it's about two elements. Just in brief, I know we're wrapping up on time, but the first one is go slow and steady. Because a lot of the, these. They contain these prebiotics in which are fertilizer for gut bacteria. But if we go from a little fertilizer to a lot of fertilizer, our gut bacteria literally have a field day.

They party, they produce loads of gas. And if you've got a stressed gut, that means your enteric nervous system, the millions of neurons that innovate your gut are really sensitive to any expansion. So that. Gas often gets trapped in your gut triggers your enteric nerve system and activates your pain pathway.

And in turn, even things like promotes bloating via your diaphragm contraction, because your body's trying to expand out to accommodate for the extra gas and all of those sorts of things that are attached to it. But if we go slow and steady and that's one of the things I've got in the sense I've got menu plan.

How people go. So setting in terms of teaching their gut things like the legumes, the I'm gonna garlic that are here all the time. People can't eat, I show you how you actually can eat them. But the other thing is, reducing the stress in your gut because no matter how slow you go with plants, if you've got a really stressed mind up here via that inter nervous system, including that vagus nerve, it literally strangles your gut and therefore the gas that's produced gets trapped in your gut or has to come out your back end. Whereas actually, if you've got a relaxed gut, most of the gas that's naturally produce when they bacteria ferment fiber, just a waste product, like they produces beneficial elements, like short chained fatty acids. They naturally produce a little of fiber.

What happens normally in a relaxed gut, most of that gas actually gets through our digestive tract and we breathe it out. So we don't get that trapped gas. We don't get that extra excess fluctuance, but for that to happen, you need to have a relaxed. So again, I talk about five minute strategies of how to relax the gut, whether it's, box breathing for five minutes before you have a meal to make sure that the guts in a relaxed state, so then any gas or bacteria produce can come and we can breathe it out, verse causing all that sort of gut distress.

And then there's also the types of fiber, like we mentioned. So I've got. I'm sure you're aware of the low FODMAP diet. It's a medical diet that we use for in clinical practice for people with IBS, with great success. But it is a really restrictive diet and people often at risk of nutrition, deficiencies, and the recommendations are that you see a, for trained clinician to go through the diet. But I know that's not accessible for everyone. Seeing a clinician NHS waiting list is like 12 months in the UK in terms of seeing a trained dietician. So. I put together a "FODMAP light" approach, which essentially just takes out some of the really high fermentable foods really like top, top prebiotic foods, just for a period of four weeks to give your gut that little bit of rest while you slowly start to increase them.

And that's called "FODMAP light" . So it's just a few switches without being overly restrictive, but it's something that's more safe for people to get that benefit at home without. To, to wait that 12 months to see a clinician.

Danny Lennon: Yeah. I'm so glad you bring up this topic because it touches on two really important facets. One, like you say is that whether someone has been diagnosed with IBS or whether they just experience IBS like symptoms, there, there's a huge amount of people experiencing this. And that ends up being a barrier to including more high fiber foods generally and plant foods and not. Is it really useful to hear you say, even in those circumstances, people can be trained to be able to include more of these?

I think the, that, that is such an empowering thing because unfortunately when people believe that even the limited amount they currently consume is too much, then they fall prey to just the absolute charlaton's in this whole carnivore community where they know that people experience gut symptoms from at certain time points, whether that's stressful periods or IBS, or maybe certain FODMAPs are causing to have certain symptoms.

And so now they can tell them, "well, I can fix this if you just only eat meat". And of course what that's doing is essentially just the most extreme form of that restriction, where you are indeed, maybe taking something out that is causing an aggravation. But as you said, that is. This is something that is known already in dietetics, right?

This is something that is done where you can take these things out and appropriately build this back in to the point where someone can start

consuming lots of plant foods, again, as opposed to feel they need to. Follow these diets that are not only are necessary, but come with a whole host of potential issues. And so I think what you've just said, there touches on those two aspects that are particularly important.

Megan Rossi: Yeah. Look, you see it all the time. As you've said, it's really disappointing because we know that if you cut these foods out for long periods of time and then. Try and reintroduce them, then you're gonna get worse symptoms and they blow out.

And then that reinforces like, oh, I must have a food intolerance. And the same with these invalid IgG tests that are floating online, that so many people for victim to, they pay their money, like the York test, for example and these tests that come back, tell them that they're intolerant to like 20 different foods.

And in my years I have seen hundreds of these reports and people being like, I can't eat this food. I can't eat these foods. And actually a lot of them are literally FODMAPs that they've just these. People have just, seen there's a mechanism in terms of some aggravation of gut symptoms and then oh, I'm gonna make them think they've got a food intolerance.

When actually it's not a food intolerance. They've just got a sensitive gut is the underlying cause. And these really healthy foods can be a trigger if you've got a sensitive gut, which is, maybe we go into dysfunction between the gut and the brain is the actual underlying mechanism of these sensitive guts.

And that's been shown by the Rome criteria who, come up with the functional gut disorder hierarchy. And under that you've got IBS, functional bloating, function, constipation, and all that sort of stuff, which is what my first book love your gut or eat yourself healthy is all about trying to get on top of them.

But yeah, it's so, so upsetting that these tasks like those IgG ones, which the world immunology association has literally said are invalid. Actually, they're a sign of tolerance, IgG tests. Don't use them are still being used by literally hundreds of thousands of

Danny Lennon: people. Yeah. Like you say, it sets people up for this self-fulfilling prophecy.

And in the same way, where that you see when these carnivore doctors and they'll say to people, look, don't take my word for it. Just try this diet out. And then you go back to eating your. Plant foods with all your fiber and just see what happens. It's of course, you're taking people with GI symptoms, putting on an elimination diet for a couple of weeks and then saying, go back and eat all this food. And as if then that's teaching them, oh, you are right. Plants are bad for me. Plants are gonna kill me. It's wild.

Megan Rossi: I know. It's really evil in a way. Isn't it? It's just, and if people think about building muscle if you stop going to the gym, then. you're gonna lose your muscle, but then you go back and hit it really hard. It's gonna hurt like hell and then, but you don't think, oh, that's really bad for me. You go, oh, no, I'm actually just building my muscle up again. And we know that having more muscles associated with all these health benefits. So it's actually a good thing in the long term. And we need to start thinking about that with, these gut sensitivities

Danny Lennon: megan, there's so many topics that I would love to talk to you about, but I think for today we don't have time, but maybe at another point we can certainly do a round two. I know there's so much on the interaction between the gastrointestinal tract. These various systems around the body that we've mentioned. I would love to ask for your thoughts on but today is not that day. I will let you get your weekend started. So before I get to my very final question let people know where they can find you online, where they can find your work and anywhere else you'd like to point their attention towards.

Megan Rossi: Yeah. So I've just at the Gut Health Doctor whether it's the website or on social media. And then the Gut Health Doctor, we've obviously got research section information, section, clinic, section, et cetera.

Danny Lennon: And that brings us to the final question. I always end the podcast on, and this can be to, with anything even outside of today's topic, if you wish it's quite a broad question.

So for forgive me but it's simply. If you could advise people to do one thing each day, that might have a positive impact on any area of their life. What might that one thing?

Megan Rossi: I'm going to say, this sounds really simplistic, but it's chewing your food at least 20 to 30 times, which is something our mother's always told us, but we do have, that scientific evidence behind that, actually, if you are chewing your food more, you are extracting more of that nutrition.

So you're really gonna maximize the nutrition of what you're putting into your body. And then the other thing chewing your food means you're going much slower and that's being more mindful around food. And I think most of us can relate when we've eaten a chocolate bar and we've looked out and be like, did I eat that?

Is it gone? So again, chewing, you're more mindful and present and actually get to really enjoy food. Cause I think that's another important one. Yes, food is so powerful in terms of health and disease risk and all of that sort of stuff. But actually food is really pleasurable and we need to enjoy it.

So yeah, chewing is I think really powerful.

Danny Lennon: Awesome. Dr. Megan Rossi. Thank you so much for taking the time to come and talk to me today. It was a real pleasure.

Megan Rossi: Thanks for having me.