



THE

FATIGUE

SUPER

CONFERENCE

Case study: The importance of diet

Guest: Helen Lynam, Kirsty Cullen, Emma Monteith

Helen: So welcome to the fatigue super conference. This is one of five nutritional case studies which I am going to be leading, my name is Helen Lynam and today I'm joined with Emma Monteith and Kirsty Cullen. The aim of these case studies are to share the realities of clinical practice.

Consultations and a therapeutic process don't always go exactly as the textbooks say. So through these we hope that both practitioners and clients will be perhaps more enlightened and find them helpful. Throughout these we're going to share functional matrices and test results to bring the cases to life and hopefully through that give you a perspective on the time scales involved and some of the challenges of actual reality.

This kind of thing isn't touched on that much, so we're hoping that it's going to be an addition to your current knowledge. Most books and most courses that are out there really talk about the theory. The good news is there is a case study book coming out later on this year which three of the team have been involved in. It's an international book that one of the team actually edited. So this is the start of hopefully greater things to come in the nutrition world in understanding cases for real.

So for today with Kirsty and Emma, we're going to start off at the building blocks, an area full of confusion and false promises and that's the area of diet. It should be the foundation for all nutritional therapy approaches and so it seems like a really good place to start our case study discussions.

So Kirsty, let's start off with you, if you can sort of share a little bit more about the dietary considerations that we want to take into account when we have someone come to us with chronic fatigue, ME?

Kirsty: Cool. So as registered nutritional therapists we're always going to think about the basic foundations of the diet. So the macro-nutrient balance on the plate, the carbohydrates versus proteins, good fats and think about pulling out the things that are less helpful, so refined sugars and

carbohydrates etc. So that's almost the given in any work that a nutritional therapist is going to do.

Kirsty: But when we are considering CFS and ME we actually want to dig a little bit deeper. ME/CFS is a multi-factoral condition and in that it often involves many different functional systems within the body and each of those functional systems within the body often have specific nutrient needs. So for example, the TCA cycle; which is the cycle through which we make energy, we require basic substrate going into that, so carbohydrates and fats. But actually further into that process there are specific requirements for nutrients such as magnesium and B3 and zinc. And so as we're working through that cycle and thinking about where the energy road blocks are happening we may need to think about specific nutrient work. Not just through supplements but also through foods that are rich in those specific nutrients on the plate.

Helen: And it's interesting isn't it,? So many of our clients actually do put a lot of work into their diet before they come. They have often been ill a long time, they've been working on their own or even with other therapists. It's a dream when someone comes, I always say if they come drinking Diet Coke and having Jammy Dodgers for breakfast. That's a joy but it rarely happens like that, does it? Talk us through some of the healthy diets that people come to us with.

Kirsty: Yeah, absolutely and as you say, often people come to us with many years of illness under their belt and they've made really valiant efforts to improve their diet and improve their health outcomes. And so when we're looking at a food diary and seeing a really good diet, you have to start considering what the road blocks are between the plate and the cell; and the mitochondria. So why are we not getting all of those good intentions into the cell to make energy? And there are various road blocks. So we think about things like anti-nutrients, so phytates and oxidates. We also want to think in huge detail about digestive practice. So we can have the best plate in the world, but if we're not digesting and absorbing and assimilating those nutrients then that good work is in some part going to waste. There are other road blocks to consider, so things like PH balance in the body can have a huge effect. Cell membrane health can have a huge effect. Down to things like kryptopyrroles which might bind to real essential nutrients like manganese and zinc and biotin. So really identifying those road blocks is very important and as important as considering what's actually on the plate in the first place.

Helen: And our approach, the Optimum Health Clinic approach, talk us through that, as far as you know, the decision process as to all of the diets that there are out there.

Kirsty: And it's fair to say there isn't one approach that fits all. Cases of CFS are very, very variant. So obviously yes, we're going to think about the basic diet, making sure it's clean and nutrient dense and natural and organic if possible. Then we're going to be thinking about the specific nutrient needs for mitochondrial health. I know that in one of our other talks, Sarah Myhill breaks that down very well in terms of those nutrient requirements. But then on top of that we're going to think about specific allergies or intolerances for that particular client and then we're going to potentially use other well-researched and well-utilized protocols. So things like FODMAP or specific carbohydrate diet or the Wahl's diet or other protocols such as low-histamine, low-tyramine, low-mold approaches. And so it's really about juxtaposing and piecing together elements of all of those three as are required for that particular individual.

Helen: Brilliant. Thank you. And we're going to talk a bit more in detail about picking out one of those diets later on our way.

Kirsty: Yes indeed.

Helen: So Emma, I think it would be really good to start off with one of your cases. I'm going to pull up the functional matrix so sort of bare with me as I share my screen. I think what's really good about this is how actually doing some simple changes really did make a difference. But talk us through, to start off with, some background. Tell us a little bit about this person.

Emma: Yes, okay, so this person came to us in December last year and he'd listed his top concerns as fatigue, brain fog, feeling overwhelmed, anxiety and headaches. But as you can see if you look at this functional medicine matrix that I've filled out, perhaps one of the main things that was going on was the stress, the long-term stress and he was very busy at work. What I didn't write in there and should have done is that he'd had testicular cancer and he was put on some BEP chemo therapy. And that was really one of the main triggers to the beginning of this chronic fatigue syndrome that he was suffering from.

Helen: And I think when we talk about stress I think that's a really interesting point to bring out because stress isn't just emotional stress as people often think it is. It's a stress on the body to have that sort of toxic onslaught, isn't it? So it's important that when we every talk about stress that we're actually talking about a much broader word, aren't we? Than is often use in the general public.

Emma: Yes, No, absolutely right and as you can see from this picture, there's all sorts of things going on with this chap. He had headaches, migraines and unexplained rashes, sore throats and he had high blood

pressure so the GP had put him on some Coversyl. He was worried about his weight gain, he had put on over a stone in the last year. His blood sugar was all over the place. So always beginning with looking at his diet, it was quite straight forward to see that whilst he tried to put in a few healthy vegetables here and there, the balance was completely, completely out. He had very low vegetable intake and there were certain things like the high-refined ... he had a huge amount of buns and crackers and fries and crisps, so that would have been contributing to his blood sugar being everywhere.

Helen: And how was that sort of blood sugar imbalance, do you think, affecting him? Was there something that's here on the matrix or were there other symptoms that he talked through that were an indication of that?

Emma: Well, he was definitely very anxious and his sleep was really poor and so the impact of the blood sugar going all over the place, when it was low he probably was feeling depressed, he definitely suffered from a bit of depression. He was irritable and often when you have low blood sugar you can feel irritable. And the anxiety of course feeds into that as well. And so beginning to look at the digestive system as not working optimally, partly because he was probably feeding unwanted bacteria with this excessive amount of refined carbohydrate. And so, I very much wanted to begin with his diet because ...

Helen: And that's quite normal isn't it? So even people who were on quite a healthy diet and we would not under any circumstance say that this was, but even people who are trying very hard with their diet and have done a lot, often they're still reaching for the refined carbohydrates for that quick energy fix. The body tricks us into thinking that that's what it needs doesn't it? And of course it's not the answer.

Emma: Yes. No, absolutely. It's very key in the first instance to get this blood sugar level under control for all those reasons.

Helen: So why don't you talk us through what you suggested to him? Before you ... don't tell us yet what his reactions were, just tell us what you suggested.

Emma: Okay.

Helen: Take this away now.

Emma: If this is basically our foundation diet and I discussed with him dividing his plate into one quarter protein, one quarter carbohydrate and the other part of the plate, the other half, being vegetables. And I wanted him to include good quality and varied protein, organic if possible or free-range or

fish and wild fish with every meal. And then to avoid the refined carbohydrates, so the white rices and all the other unfortunate things like the crackers and the buns that he was having. And ideally for a carbohydrate to include root vegetables, so carrots and parsnips and to him that was new, that he needed to think about these root vegetables as being ... the quarter plate as being a carbohydrate basically. I said they were the best choice of carbohydrate but that otherwise he could have wholegrain rice, quinoa or corn for example.

Helen: And of course with all of those you're getting just that many extra nutrients, aren't you? That's the thing, there's a lot of research out there that shows when you refine the grains you take out so many of the minerals. And those minerals, of course, you need to process the grains in your body to actually digest them. So by going to those more whole, straight from the ground natural foods that haven't been processed, you're getting all of those extra vitamins and minerals and phytonutrients.

Emma: Yes. No, absolutely. If you try and think of your plate as being a rainbow of different colors and each of those different vegetables for example will be giving you different types of beneficial nutrients and phenols and that's what I tried to encourage him to do. And then we're talking about the half plate being made of three different vegetables ideally. I mean approximately the size of a medium apple, but I didn't want him to go hungry so I tried to explain that so long as the proportions of the plate were quarter protein, quarter carb and half veg it didn't matter, sort of, how big the plate was per se. I didn't want him to think he was going to have to starve. And so I gave him a list of different vegetables he could choose from; asparagus, green beans, mange tout, broccoli, brussell sprouts and it didn't have to be green vegetables. It could be cauliflower and fennel, mushrooms, so he had that list.

Emma: And then I tried to explain to him that it would really help his blood sugar if he didn't snack. Sometimes in the short term it's necessary if people's blood sugar really is everywhere and so to begin with I encouraged him to have one snack mid-morning and mid-afternoon to try to choose from a healthy option. For example, half an avocado with some olive oil or a few chopped up bits of carrot with hummus or perhaps a couple of oat cakes.

Helen: Very different to what he was having before.

Emma: Yes, absolutely. The crisps and crackers and things were what he was having before.

Helen: So that's an important point about the timing of the meals as well because we talk about that with our clients don't we? It's very difficult if

someone's been grazing all of the time to go to three meals a day, which is probably, on average, the best place to be. And it might be two meals a day, it might be four meals a day, it kind of varies. But if people had been snacking as he had, with very unbalanced blood sugar, to go to three meals a day is too much of a shock to the system. We talk about stress, that would be another stress. Sometimes we have to stick with the amount, sort of the frequency that people are eating but start to change the content before we then start to put more gaps in between the meals.

Emma: Yes, absolutely right. And I also wanted to make it clear that if he was going to have a snack, and needed a snack, then if he was going to choose something slightly sweet like an apple or a pear, that in order to slow down the release of sugar into the blood stream, that it would be really helpful if he had some protein, for example, a few nuts, five almonds or a few walnuts with it. And berries are a good fruit option because the type of sugar in berries, the xylose releases more slowly into the blood stream. I think it's about a tenth the speed of fructose. And even with berries, ideally just have a few nuts and seeds. Because obviously if your blood sugar levels are getting too high and the insulin is released from the pancreas and removes that and then you might end up feeling slightly more tired than before you went for your craving to try and lift you.

Emma: And as we said earlier, so all the carbohydrates and sugar will be likely to be feeding any unwanted bacteria that he might have in his gut and intestine.

Emma: And I tried to encourage him to try to include things like garlic and ginger and turmeric in his diet. Luckily he has a very supportive wife and so she was listening in which was helpful because I'm not sure how ... because she's the one doing the cooking. Again, he's lucky.

Helen: And that makes such a difference doesn't it. Where so many of our clients don't have that benefit of someone who can care. We've got a whole section on this summit, on the conference, about caring for people who are on their own. It can be quite tough. And then sometimes we're just helping them choose the best quality ready meal that we can, aren't we? You know this can be a bit of a luxury to people if they haven't got that help.

Kirsty: I think that's really important as well, isn't it? We can make a lot of good nutrition recommendations but actually, with the client group that we're dealing with, the practicalities of putting that on the plate has absolutely got to be top of the consideration list. You know, our clients aren't going to stand in the kitchen and cook for hours. So we have to come up with really practical, easy, quick solutions that kind of embody all of the recommendations.

Helen: Absolutely, but it's also I think a great opportunity for people to ask for help. You know, so often ... I know I'm the same and so many of our clients are the same, they try so hard to be independent and don't like to ask for help. And this is an area where actually friends would be more than delighted to help if they just knew what to do. And of course what we do is we sell, we share rather, recipe ideas and things so that's an option for people to share those ideas with friends. And say, "Yeah, if you want to help me, rather than come around and talk to me for three hours, because I can't cope with that kind of stimulation, cook me a meal, drop it off for a couple of minutes, have a quick chat." And that would be a great help wouldn't it? Sorry Emma, just sort of interrupted, but I just sort of think everything that you're talking about is great but I'm also conscious that sometimes this is kind of looking for a kind of affection which isn't always an option is it?

Emma: Yeah. No, too right. Too right. But so going back to the other suggestions that I was trying to encourage him to do, I haven't mentioned fats, they're really important to include; the good quality fats. Coconut oil, olive oil, avocados and obviously the nuts and seeds that provide beneficial oils. I asked him to include those. And then to help him with digestion perhaps a little bit of pineapple or pawpaw, sometimes they contain a good source of digestive enzymes. And then always going back to that plate, so making sure that the whole meal was balanced. So if he was having something to drink that was fruit, maybe fruit juice, he'd have to take that into account. Maybe dilute it fifty-fifty with water. If he was having, if he wanted something sweet, I tried to discourage it but if he did have anything, that had to be, just because it wasn't his main course you had to make sure that the total amount of carbohydrate was still in balance with the protein and vegetables.

Emma: And then the other major thing for him was that he was having so much gluten and I just wanted for the first six weeks of his diet, just to try and give his whole digestive system, a sort of holiday as it were, so that he could have every chance of healing it up. And so asked him if he could avoid gluten, which is obviously rye, barley and wheat. You know, gluten is such a filler and it takes up room of good, nutrient dense foods and it's very difficult to digest; a very long protein and it can rip through the gut as it were. Some people are good gut healers but often if we're stressed, having ripped through the gut it's difficult for some of us to heal afterwards. So I just wanted every chance for his gut and digestive system to heal up. And he had noticed in the past that he got rashes when he ate anything dairy. So I thought it might be a good idea to keep that out a well, just for the first six weeks.

Helen: Isn't that interesting, that he'd made that observation and yet still had dairy? So that's often the case because sometimes people notice things but then don't necessarily realize the significance because it's just a rash and

that's fine. Because if it's a rash on the outside the bodies gone to an awful lot of trouble to produce that rash on the outside, something's gone wrong inside as well. I think that's where we can help just to encourage people to notice what's going on in their body and to respond accordingly. And to realize that they're messages, they're signals that the body is trying to tell you something.

Emma: Yes. No. Too right. And it can be quite helpful to write a food diary and just see, you know, if anything is related to your migraine, is there anything you ate? And if you look at that over a week or so sometimes you can make these connections more easily.

Emma: So we talked about caffeine, he had a bit of caffeine and I tried to explain to him that the direct impact of that on his adrenals and therefore ... call it a nutrient rubber, it tends to take away some of the nutrients that might be better used to help raise your immune system for example. And we didn't want him pumping his adrenals because that might release sugar from the muscles into the blood stream and then cause again this imbalance in blood sugar. So he was going to try and stick to one cup in the morning, one cup of coffee in the morning and then the second week or third week in, he was going to try and do that alternate days. And maybe just using some decaffeinated coffee in the very short term just to get him off that slight fix that he'd started to resort to.

Helen: And of course we're not about trying to deprive people. I think people often think we are. But you know, a timely cup of coffee is okay, but as you say, a coffee perhaps with a meal rather than on its own. Sometimes we use coffee to keep them going because of its effect on the nervous system, which releases the stress hormones and causes then these changes in sugar. But going to a decaffeinated is quite a good idea. Bearing in mind toxic load, there's quite a lot of decaf coffees, decaffeinated via a chemical process. And then of course you've got the organic and the Swiss water filter method, which is what we would be recommending, isn't it?

Emma: Yes. No, absolutely. Definitely, you can get them, they are expensive, that's the downside, but definitely it's worth investing in these better decaffeinated coffees if you are going to go that route.

Emma: So shall I tell you what happened after six weeks?

Helen: Well I'm intrigued, yes. How did that go down? Because that was quite a big change for him actually wasn't it? Towards that's our ... our bread and butter, it's clearly not our bread or butter. But you know, that's what we know so well, for him that was a big change. What did he think?

Emma: Well he was ill enough to want to make a lot of changes and he had the support of his wife, but still he was really worried about the alcohol. Because I had asked him to cut down or out on the alcohol. He was fifteen, sixteen units a week, that was going to be difficult. The gluten, you know, he was so used to having his buns and crackers, that was going to be a big issue. And he said that he absolutely hated me for the first two weeks. He said it's lucky that he was living in a different country and that he didn't bump into me.

Emma: But then he began to see an improvement, which is actually quite quick, isn't it? When I spoke to him after the six weeks he said he wasn't feeling a hundred percent but he definitely had more energy and he really was beginning to feel more like his old self. And he had lost twelve pounds.

Helen: Gosh, in six weeks?

Emma: Which was almost a bit quick. Yes. I guess he had a lot of toxins, were just coming out and he really stuck to it. He really did stick to it, which can be, you know, quite extreme. I did try and ask him to go into it a bit gently but some people are all or nothing and he was one of those.

Helen: And that's a good point actually because quite often we might suggest gluten free first or dairy free first or just make one meal a day healthy. And work on breakfast for a couple of weeks or even a couple of months before you then start to think about what changes might you make to lunch. Clearly he was, as you say, all or nothing. But that's not necessarily what we expect.

Emma: No.

Helen: Or what a lot of people are even capable of doing. Hats off to him for that amount of effort he must have put in.

Emma: Yes. I mean he really did put in the effort. It's nice when people do put in the effort that they reap the rewards from it. Because that doesn't always happen either does it? He felt that if he was initially at fifty percent of his capabilities, he was now nearer seventy-five percent on a good day and his sleep had much improved and he wasn't waking at night anymore. He'd lost any blood sugar imbalances, he wasn't even craving sugars anymore and he was a lot less anxious. So there were ... he just couldn't believe it, he was so happy, he was so thrilled. And his wife and you could hear as well how happy she was in the background.

Helen: Well yeah, she's getting her husband back as well.

Emma: Yeah.

Helen: Now obviously, so seventy-five percent, that's still a long way to go. And like you say this was only December. Gosh, it's May now as we're speaking today so it was six months ago. I guess there's still other things that you're now planning to work, that's the baseline in place, you're now working in different areas with him.

Emma: Yes. No, absolutely. That was the baseline. He made a huge improvement but still work in progress. The next thing he's doing is a urine test, looking at toxins. As I want to just see what else is going on, what else might be just holding him back. As Kirsty said earlier, there's so many different pieces to the jigsaw but that's the next place we're looking at. Really, partly because of the headaches that he still sometimes gets, that he gets less but he still gets them. Yeah.

Helen: Lovely. And we've got a whole other case study on toxicity, so a little plug for that.

Emma: Perfect.

Helen: Thank you, thanks ever so much. Because I think hopefully that gives everyone a good idea of the baseline, where we start. But it's rarely that straight forward. This sort of brings us across to you Kirsty with a slightly different one where we had to go ... Well you had to go to a more specialized diet. And so let me bring up the functional matrix for this and you can start to talk us through this particular chap. Chap, I don't know, is it a chap or not?

Kirsty: Lady. Yeah, absolutely. So this particular case is a really good example I think of immune overactivity. And that's quite interesting to bring into the fore because a lot of people would say that ME and chronic fatigue are kind of typified by low grade chronic immune activation. So this lady had a lot of things going on through her immune system. So not only did we want to consider immune health as a whole but actually really look at this case considering histamine and the potential for histamine intolerance. What's interesting about that whole concept is a lot of the signs and symptoms we see in histamine intolerance are very similar to those that we commonly see in chronic fatigue and ME.

Kirsty: So if we look at this matrix, in the top right hand corner, which is kind of our immune corner, of course there's a huge amount going on. So multiple food intolerance and chemical sensitivities, there was a history of frequent, recurring infections. Frequent urinary tract infections, which are also associated with histamine release. In terms of her fatigue, we often see lots of different types of fatigue, but a sense of a flu-like fatigue, so a sort of an immune activation there. A real explosive cough in response to environmental

allergens. Washing powder was one of her biggest triggers and actually ended up hospitalized at one point through that kind of reactivity. Tongue tingling in response to certain specific foods. There was certainly a reactivity to mold, which again can be histamine promoting. And a lot of rashes and itchy skin going on.

Kirsty: Aside from that top corner of the matrix, if you carry on going around the matrix then in a clockwise fashion you can start to see other signs that we might associate with histamine release. So obviously a lot of fatigue, which is a common association. Migraines, alcohol intolerance, dizziness, a sort of vertigo, then thinking about insomnia, which is important because we know histamine to be quite an excitatory neuro transmitter. So it's not uncommon to see sleep issues in this type of picture. Anxiety is quite an interesting link because we know that corticotropin releasing hormone, which is part of the whole HPA and anxiety axis, can cause mast cell activation and histamine release. So again, we might see a classic picture of stress and anxiety through this type of case. We've also got headaches and migraines and acid reflux. And again, histamine is associated with the production of gastric acid and we know that there are three histamine receptors in the gut. And we know that histamines are involved with the contraction of smooth muscle within the intestinal tract.

Kirsty: So there are lots of elements here that in and amongst everything else that we are going to look at in this particular case, we might at this point want to consider looking at histamine intolerance as a potential and testing for that.

Helen: Yeah, brilliant. That's really, really useful. Where would you start with someone like this? Or where did you?

Kirsty: Interestingly enough, if you look through the diet first and foremost, in a very similar fashion to Emma's case, you know, very unbalanced in terms of refined carbohydrates and gluten and dairy very much in the picture. And then low in the nutrients that we need in terms of protein and plant food and fiber and good fats. There was sub-optimal hydration going on. Poor blood glucose management. All of those things needed to be addressed. And actually in doing that and improving the basic foundation diet, pulling out those allergens or allergenic factors that might be promoting an immune activation, those elements as a foundation were extremely helpful in this particular case. A lot of the signs and symptoms decreased just with the basic foundation diet work. But in this case then beyond that and that improvement, I will probably go on to recommend looking for histamine intolerance more specifically in a test.

Helen: Isn't it interesting that a lot of what we suggest is kind of what a Mediterranean diet is? It's the classic, balanced proteins and carbohydrates, lots of vegetables, lots of good fats. But actually the classic Mediterranean diet is high in histamine foods isn't it?

Kirsty: Yeah.

Helen: So by putting someone, without the obvious knowledge to start off with, by going to the basic diet, you sort of take a layer away, which then makes what's underlying a lot clearer. Which sounds like that was the case here.

Kirsty: Yeah. Absolutely right. And you know, that's the point I think within nutrition guidance, there's foods that we might consider to be really healthy and helpful in the context of a diet. So for example, bone broth, kefir, we love those as part of a protocol. Within a histamine case we're not going to consider those because they are naturally, as we'll speak about in a moment, high in histamine. So you have to be quite considered in terms of the healthy food options that you're making and recognize that even healthy options might exacerbate symptoms.

Helen: Absolutely. So shall we dive a little bit more into the whole area of histamine and histamine intolerance and the different ways in which we can test for it?

Kirsty: Yeah. Absolutely. So the test of choice that I think we're going to have a look at here, or one of the options should I say, is to look at the enzyme diamine oxidase. To put that into context, histamine intolerance is probably typified by an imbalance between histamine exposure or production and the enzymes that break it down. So diamine oxidase and histamine and methyltransferase are the two enzymes. So if we've got an imbalance in histamine production and those degrading enzymes then of course we've got more exposure to histamine and the potential for more histamine related symptoms. This test is by Psyotech, available through Regenerus labs, I think the cost of this particular test is \$88. And it looks at the level of diamine oxidase. So the basic principle being if the levels of diamine oxidase are lower, then there's more likelihood or probability of histamine intolerance. In this particular case we've got a result of 7.4. So looking at the results guide there, there's a probable incident at 7.4.

Kirsty: But also as practitioners we've always got to look back to the clinical signs and symptoms. So if you marry this test result with the whole plethora of histamine suggestive signs and symptoms then from here I would

probably take the assumption that we are going to work on histamine through the diet and other protocol recommendations.

Helen: It's worth pointing out there's other ways of testing as well, isn't there? So I'll share this one if I can. Which is a much more comprehensive one, which is a lot more expensive at \$310. But this is looking much more at when you are thinking that there is a gut permeability issue that's also associated with histamine. So you're getting zonulin measured which is a marker for gut permeability. You've got the diamine oxidase, you've got the histamine and then looking at some histamine ratios as well. And actually if I go up, you can see the next page is then looking at the LPS markers as well, which are another important markers when we're looking at gut permeability. It's a very different way of looking at histamine, a very comprehensive way. And as I say, particularly when you're thinking it's associated with a particular function in the body.

Kirsty: Yeah, absolutely. And that consideration of gastro-intestinal permeability and wall health if you like, is really important because obviously if we've got a gut wall that is irritated and inflamed and more permeable than it should be then that is really going to potentiate immune activation and histamine release. So the health of the gut wall is absolutely essential when you're thinking about this type of picture.

Helen: You're fair to get into a vicious cycle at that point don't you? It's really hard to break through so this gives a good picture if that is actually going on.

Kirsty: And also Biolab I know do urine or plasma testing for histamine as well. Which is around \$60 I believe. So there are various options when you're considering getting clinical data on board.

Helen: Yeah. Which is great. So why would histamine be relevant to chronic fatigue? You kind of touched on it but ...

Kirsty: Yeah. So histamine is part of our natural immune response, it's a really important part of how we defend the body. Mast cells release histamine and then histamine kind of creates this cascade of the production of the pro-inflammatory molecules and interleukins and what's interesting is that in some research we have seen elevations in those particular molecules in CFS patients. That obviously is going to be of interest.

Kirsty: There's a lot of research also that suggests that immune dysfunction which gives way to that kind of inflammatory pathway is very common and prevalent in ME and chronic fatigue. And a lot of people, as I say, would sort of assimilate chronic fatigue and chronic low grade immune activation as part

of the same picture. I think King's College did some research which I looked at the end of last year, so December 2018 or thereabouts, which actually highlighted that they thought that immune overactivity was a definite sort of risk factor for the development of chronic fatigue.

Kirsty: So obviously anything that promotes the activation of that inflammatory pathway is going to be of interest when we're thinking about a chronic fatigue case.

Helen: And it's trying to peel back the layers as well isn't it? So many of the things that are on the initial functional matrix, for instance as symptoms, chronic fatigue itself, ME are symptoms. So even the presence of histamine is another symptom. It's not the answer, we don't sort of sort that out and that's it. We're still wanting to get behind what the triggers are for histamine, aren't we?

Kirsty: Yeah.

Helen: Because that's what we're doing all the time, we're peeling away the layers, getting deeper and deeper and deeper. So what kind of things could cause high histamine?

Kirsty: There are so many and this is where the complexity and the detective work begins. Sibo is one that I would want to pick up initially; small intestinal bacterial overgrowth. We know that there are some forms of bacteria that are histamine producing. So obviously where we've got bacterial overgrowth in the small intestine or indeed dysbiosis elsewhere, we want to think about the role of unhelpful bacteria in the production of histamine.

Helen: And we've got two cases of sibo, that's in another of our recordings, there's two cases of sibo, so looking forward to those.

Kirsty: Yeah. Absolutely. Increased intestinal permeability, we've already spoken about, obviously hugely important. Then there are classic allergies; environmental allergies, animal allergies, then thinking about bacterial, viral, fungal insults as well. And then also thinking about emotional triggers, so we've already talked about why anxiety kind of feeds into that histamine release mechanism. So we want to look at a case and really assess for any of those particular factors. And it will vary hugely. Yeah.

Helen: So what do you do? What's the answer? What did you do with this lady?

Kirsty: So there are a number of protocol options. First and foremost the diet is a good place to start. And the way I think about the diet is three fold.

Along with typical allergenic responses within foods, we've got foods that are high in histamine, which will be converted into histamine in the body. We've also got foods that will promote the release of histamine in the body. And then we've got foods that will suppress the action of histamine degrading enzymes like diamide oxidase in the body as well. And that list is actually a list of really nice, nutritious foods that normally we would love to have in the diet.

Kirsty: So I think what I would normally suggest is taking out the lions share of those foods, which in the first couple of weeks can feel quite restrictive. Assessing the response to that, assessing if there is an improvement in symptoms and then bringing them back in one at a time and seeing what that particular individual response is. I know it's certainly ... I have a lady who has histamine issues, she can eat strawberries without any issues at all but if she puts tomatoes in then she knows she has a histamine response. And they both have the same mechanism of action in terms of promoting histamine release in the body. So it is little bit of trial and error and of course we can look at this beautiful packaged low-histamine diet, but we have to consider the practicalities of that on a long term basis. And also the fact it might not be necessary to cut everything on that list out of the diet.

Helen: And I think that is a really good point with any of these limited diets. It's always about personalizing them because none of us are the same as the textbooks that are out there. All of those textbooks, and there's hundreds and thousands on diets and nutrition, they are right for that person who wrote it or that person who they're about. It's always about ... your lady's classic, you know, tomatoes and not strawberries and sometimes vice versa and that's unique, isn't it? Because we're all unique and that's where it needs detective work, that's where we are a team, a member of the team with our client, isn't it? So I always say that they're experts on the ground. They're on site, on location, living it all of the time and we just sort of dip in and give the best expertise we possibly can. Ultimately it's always about supporting them to get to the best for them as an individual.

Kirsty: Yeah. Absolutely right. Food preparation is really important as well, so we know that histamine levels increase in food the older the food is. And so that has a real practical implication in so far as normally I would say take a load off and use leftovers for lunch the next day if that helps with managing fatigue but in this case obviously that's not going to be necessarily beneficial. And so fresh foods are always going to be the best way forward in a low histamine diet. So that's another practical consideration. There are some wonderful natural anti-histamines, vitamin C for example. We might want to look at the use of binders within a protocol, which will help to kind of bind to histamine in the gut, sort of to prevent its uptake into the body. Stress reduction, hugely important, so meditation, breathing, psychology work really

add a huge amount to the picture as well. So there are various tools that we'll want to use but we build them in nice and slowly as you say. And I think that's important when you're making big and definitive changes, is that gradual change really encourages compliance is what I tend to find. And it's important not to overwhelm with all of these elements all at once.

Helen: And all of those then combined with digging deeper to the causes and addressing those. Eventually people's histamine tolerance levels, hopefully, increase.

Kirsty: Yeah. Absolutely. And I think people become quite aware after this work, of the triggers. After a period of time they'll work out whether it's tomatoes, whether it's the cat, whether it's pollen season. They'll become quite conscious of those triggers. And if it is a real seasonal situation then of course we can work with a protocol to put elements in just ahead of pollen season to really support the body and make sure it's prepared.

Helen: Yeah. Exactly. Brilliant. Thank you. Anything else on histamine? I think I've ...

Kirsty: Yeah, I think that pretty much sort of covers ...

Helen: I think that's a pretty comprehensive view of it, yeah.

Helen: So I think just before we finish I think it's worth touching on some other diets that we might use. And I think before we talk about those, I'm going to throw out at all of us a discussion on vegan actually. Because that's not a diet that we would choose to put people on but it's a diet that we're seeing more and more of. Isn't it? So, I think it would be quite good to share our views on that.

Kirsty: I think it's interesting, we deal with a lot of different clients with a lot of different approaches to foods. And a desire to follow a certain type of diet may not always necessarily coincide with what's best for recovery in that moment. So of course we're always having to marry what the body needs in terms of its basic nutrients with individual dietary choices and so with any dietary choice like veganism or vegetarianism or whatever they may be, our role is very much to look across what's going into the tank and work out whether actually within that dietary approach there is enough for cellular level repair and recovery of course. That's our ultimate goal.

Helen: Yeah. I think it's fair to say that we will always respect people's ethics without doubt. If it's an ethical choice and it's something that people really strongly believe in we are absolutely going to respect that. We're never going to go round to someone's house and force them. But I think sometimes

we have to be honest that there may be limitations. It's not understood yet. I don't think the science is out there that I've seen but there does seem to be a difference between animal proteins and vegetable proteins when it comes to recovery. Now at a basic cellular level, or a molecular level rather, they're the same. Methionine is an amino acid which you get in meat and in vegetables but when they're all bound together, the structural effect seems to be different. So we do find sometimes that we can make a massive difference with a diet but we might not be able to make all of the difference if people are choosing to cut, say animal proteins, out of their diet.

Helen: What we want obviously is to get people well so that that isn't a choice, because actually on the whole if it's done well, those kind of diets, they need a lot of effort to be done well don't they? But if done well, they can sustain a healthy person. But sometimes it's difficult to get well. I'm sure there's cases out there and there'll be people who want to share their stories of how they have got well on a vegan diet. Because like lots of diets, once you go to cooking from scratch, and putting more attention into what you're eating, what you're preparing, that in itself increases the nutrient availability of the food doesn't it?

Kirsty: Absolutely, which then has onward going implications for the gut and the cellular level health as well. Which is actually another important part I didn't say about the histamine protocol there. Obviously that work in the gut is super, super important as well. I'm thinking about gastro-intestinal integrity and sibo work and microbiome balance and that type of thing and I think with any diet, the foundation is the gut and so making sure that we've got that gut in place to access any good sort of dietary intentions is super important.

Helen: Yeah. Absolutely. Because I think if you put some work into the gut that's when a lot of these intolerances reduce don't they?

Helen: Which brings me to a really good example of a chap who came to see me, who we'd actually worked with for quite a while and he'd got almost well, but he wasn't a hundred percent and he had a rash. A persistent rash that wouldn't go and I always said until that rash goes, I'm not happy you're well. And he was hovering around the ninety-five percent mark. And this is not something I normally do but I decided to do an IGG test. And this was really interesting, because I've always resisted them, obviously they're available online, often you don't have to go to practitioners to do these IGG test. And what they're doing is telling you what your food intolerances are. I've always resisted them because it's like if you've got a lot of IGG intolerances that's just telling you about your gut health. But we'd done a lot of work on this guy's gut health through stool testing and things. So we got his tests back

and I'm looking to see if I've got them up here and actually yes I have. So I can just share them very quickly. If I start the show ...

Helen: And so here we can see, if I put it on full screen, quite a lot of food as I go through the pages, there's a lot of foods there where it's actually come up. And it's interesting because what he decided to do was to sort of pick the foods in between that he supposedly tolerated and to cut out a lot of the food that are in the red, definitely they got cut out completely. The amber were half cut out and the yellow partially cut out, they were just eaten on rotation. But what was quite interesting was a lot of the foods coming up, that came up as red, were foods he was eating because of the healthy diet I'd put him on.

Helen: So once he started to eat the other foods, he actually then went backwards. And very, very quickly his fatigue got a lot worse. So I just thought this was so fascinating because people will come to us with IGG tests, I mean cutout foods and feeling worse. Of course what it came down to is sibo, which is a story for another day. And as soon as we started addressing that ... you know, ironic, the foods that he has an IGG intolerance to we put back in and he felt better. His rash interestingly did go but it went with his energy. So I just wanted to share that because I think people who can often go off and do their own testing, don't necessarily understand the context that those results should be taken and read as. Which is always important, not to do things in isolation and not understand the whole picture.

Kirsty: Yeah and I always think, when there's a body in crisis and in chronic illness and the immune system is on high alert, quite often there will be intolerances and lack of acceptability for an array of foods, which actually when we calm the system down and improve gastro-intestinal integrity and get the HPA axis calmed down, then actually their intolerance for a wider range of foods starts to improve.

Helen: And just to end I think we should have a couple of minutes on the ketogenic diet. You know, we know our friend, I say friend as in a friend of the clinic, who we admire so much, Sarah Myhill is a big fan of the ketogenic diet and it's something that she would now insist on with anyone following her work. I think it's worth sharing our thoughts. Emma, I don't know if you want to share just our initial thoughts on the ketogenic diet and what it is?

Emma: So the ketogenic diet is a high fat diet, I think it can be quite extreme and probably it would be in the interest of the client just to introduce that sort of thing very slowly and I personally would be very cautious of such a strong type of diet.

Helen: Yeah, I think that's fair to say. Kirsty what are your views on the ketogenic diet at the moment?

Kirsty: I think it's one of those really interesting elements where the research is very, very supportive. So the research for ketogenic diet would suggest that ketogenic diet enhances mitochondrial function, it enhances glutathione activity, regulates superoxide dismutase and anti-oxidant enzymes, actually reduces inflammatory species in the body and reduces lactate and lactate plays into the fibromyalgia picture so often. So actually the research is there, the practicality of it is that some of the symptoms and side effects can be quite bothersome to say the least. So increases in cholesterol certainly initially, I think there is evidence to show that that kind of tapers off and sort of returns to baseline. Constipation, kidney stones and a lot of the initial research that was done on the ketogenic diet was around epilepsy. So we've got some really good studies there to kind of show the potential side effects. So I think, as with anything, caution should always be exercised. Certainly anybody with an already existing high level of cholesterol or a history of hyper cholesterolemia, anybody with a primary carnitine deficiency, these people probably, might not want to use that as their primary dietary tool.

Kirsty: But as I say, certainly the research is there so it's sort of considering again what's best for the individual.

Helen: And where I think you make a great point though about dietary changes in general, but ketogenic very specifically, for someone with chronic fatigue, it's really something that we would build, we as a clinic, would build up to if we ever thought it was relevant. We wouldn't be putting someone on it day one because it can be such a shock to the system. Just the type of eating, the preparation of things, because again you are cooking from scratch to be able to do it, it can be very easy and it sounds great But the practicalities ultimately have to be considered don't they?

Kirsty: Yeah and it's balancing it against that typical sort of high refined carbohydrate diet as well. What we do know from research is that excess food intake leads to mitochondrial dysfunction, it increases oxidative damage and cell death essentially. So there is a lot of research to show that optimal mitochondrial function is achieved with levels of calorie restrictions. So that is very considered fasting in that sense and potentially uses something akin to a ketogenic diet but obviously using variations of those within the context of a wider protocol rather than strictly adhering to them as very pure ideals I think.

Helen: Because ultimately it comes down to the individual doesn't it? The individual symptoms that someone has, the triggers that got them to their health and their support and their capabilities in applying any of these dietary changes. So thank you so much Emma and Kirsty, I hope that's been of help to our listeners and thank you very much indeed.