

Ecological Medicine - Ref

164SM

with Sarah Myhill

18th May 2021

TRANSCRIPT

Please note, this is not a verbatim transcript:

- Some elements (repetition or time-sensitive material for example) may have been removed*
- In some cases, related material may have been grouped out of chronological sequence.*
- The text may have been altered slightly for clarity.*
- Capitalisation and punctuation may be erratic...*
- There may be errors in transcription. If something appears odd, please refer to the recording itself (and let us know, so that we can correct the text!)*

Steven Bruce

My guest is Dr. Sarah Myhill, who is an independent practitioner down in Wales where she practices ecological medicine about which we'll learn quite a bit more later on in the show. She has an approach to medicine, which I think will find favour with you and with many of our fellow practitioners because she has a very naturopathic attitude when it comes to practicing. She is in fact a naturopath. And she has deregistered from the General Medical Council after 20 years as a GP, and I suspect we will get to hear the reasons for that in a short while. One of our particular interests is myalgic encephalomyelitis, ME, chronic fatigue syndrome. She's written a number of research papers on that topic, as well as six books about lifestyle, diabetes, of course, ME and other things. And all this information is available on her website. So while we may talk about a lot of things, which are on that website, much of the value of this evening is going to come from the questions that you and others ask us because we can go down any particular avenues or rabbit holes that you particularly want us to. And Sarah I know has so much to share with us. She is no friend of Big Pharma. And I imagine that she's raised the hackles of a few people in the General Medical Council as well as some of her fellow practitioners. And I suspect that she will share that information with us shortly. Sarah, great to have you with us. Good evening, and welcome to Nancy as well sitting on the back of your chair there.

Sarah Myhill

She's my best friend, accompaniment and we do everything together.

Steven Bruce

I don't think I can possibly have done justice to what I've read about you in that little introduction, because I'm going to say something which might sound, I hope not condescending or patronising because he's not meant in any way. But you are a lady with some serious balls. You have a letter publicly posted on your website accusing the authors of the PACE study of fraud, three counts of fraud, you've been to the Information Commissioner's Office, you've taken the GMC to task and I think very recently, you kind of won your case on this, haven't you, which will tell us about in a minute. And you know, it takes some guts to do that. And just in case people are wondering what the PACE study is, this is the study into pacing, cognitive behavioral therapy, graded exercise and specialist medical treatment for ME, chronic fatigue syndrome, which dictates what is the current theory policy on best practice, I believe, for treating ME. Sarah I know we want to talk about groundhogs particularly, but please, can you give us a bit of background into the PACE study and your approach to it and so on?

Sarah Myhill

Oh gosh, well, I've been working with patients with chronic fatigue syndrome and ME since the early 1980s. And it became very obvious to me, very early on that this is a physical problem with physical treatments, and physical interventions to allow these people to heal and get well. And when the PACE study was published in 2011, the essence of that was that they produced inflammation, which they said, cured 22% of patients, you know, massively improved up to 70% of patients through graded exercise and cognitive behavior therapy. Practitioners like me, and I'm sure many who are listening knew that could not be right. Because a condition that is defined by exercise intolerance is hardly going to be amenable to that as a

treatment. It's an oxymoron. It's a nonsense. And this all started not with me but with another group who asked the authors of the PACE study for the raw material that underpinned that study, you know, what are the figures? Where's the data? We want to have a look at that, and guess what they refused. So that was the first trip to the Information Commissioner. And the Information Commissioner said, well, this is a public study. It's been publicly funded to the tune of 5 million pounds. Of course, the data can be anonymised. And yes, it should be analysed by a third party. And at that point, that was taken up by a doctor who's also a statistician, and he number crunched the data and essentially said, this is a fraudulent study. The goalposts have been changed. The numbers have been tweaked, the parameters which determines an improvement otherwise, you know, do not conform and so on and so forth. Now that study was then sent back to PACE authors for commentary and those three pieces of correspondence were taken by the Journal of Psychological Medicine and sent to 40 academics all over the world, independent academics, and the commentary was published in the August Journal of Health Psychology, August 2017. Having read that through very clearly it was quite obvious that yes, the PACE study was scientifically fraudulent, and by implication financially fraudulent because 5 million pounds of public money had been misused.

Steven Bruce

Was that fraud deliberate? Or was it just a failure to apply the correct statistical modeling or something?

Sarah Myhill

Well, that's a very, very good question. And that's not for me to answer that. The fact is, it was fraudulent, the scientists or, the psychiatrists who did this study, were essentially using public money to support their own ideas, to support their own model of chronic fatigue syndrome, ME as psychological conditions. And in doing so, they twisted the data in order to make it fit their own beliefs. So, in January 2018, I reported all those authors of that study to the General Medical Council for research fraud, and by implication, of course, financial fraud. Now, the General Medical Council sat on this for six months, they couldn't make up their mind which way to jump. And in fact, I subsequently did a freedom of information act, sent it to the GMC, and it's very clear, there was enormous internal debate within the GMC about, you know, how they should proceed. Anyway, they wrote me in July 2018 said, no, we're not going to investigate these doctors, no case to answer. So, in response to that, I said to them, well, in that case, I want you to give me the evidence base on which you made that decision, because I supplied to the General Medical Council with a huge evidence base, a *audio problems* academicians, scientists, clinical doctors and scientists saying this is a fraudulent study. And by contrast, the GMC could not give me one study that supported their view. So, I said, please give me the evidence base, and they refused. So, I said, okay, I'll take you to the Information Commission, which I did. And that whole process took some years. The first response I got back from the Information Commissioner was yes, doctor Myhill is right, this was the decision of September 30 2020. Yes, doctor Myhill is right. The GMC should supply her with that scientific basis. And the GMC appealed that decision. And their argument was, if we release that evidence base to not to Dr. Myhill, then the rest of the world can infer that she has reported on the GMC for fraud. And that is a slur on their professional upstanding. That's the information that I am not entitled to because it might impugn their reputation, which is a completely circular argument. Anyway, we had a hearing with the Information Commissioner in March, and there was a split decision. And on the strict facts of the law, the GMC are arguably correct. But because the public

interest is so massive, one member of the committee, or of the panel rather, supported my view. So, we're now in the throes of appealing that decision, this is going to run and run and run. But the bottom line is, if the GMC do not give you the evidence base, or their refusal to investigate the pay sources, that means that they can investigate any doctor they like, they can come to any decision they like, and not provide the evidence base for that. I mean, that's called a dictatorship. And actually, there is a dictatorship of medical thinking currently going on. And this case illustrates that perfectly.

Steven Bruce

This could also almost be a textbook case for people who want to analyse medical research and statistics, couldn't it? Because, you know, all the things that you said there, they seem to bring up all the well-known flaws in many research papers, and the biases and so on. But what is the, usually there's a financial vested interest in this and of course, we think of Big Pharma. For these people it was just that they wanted to reinforce their own preconceptions, was it?

Sarah Myhill

There is that, but again, you see, you're probably aware of a document in America called the Diagnostic and Statistical Manual, which is how psychiatrists treat disease. And they have about 300 different diagnoses which includes things like bereavement, stammer, these are all psychiatric conditions, and guess what, every single diagnosis ends up with a drug therapy and psychiatrists in America, if they don't follow that paradigm, then they can be struck off, sued, complained about and what it means is, you know, this country's going down that route. So, we're no longer diagnosing. We're just having clinical pictures, all of which lead to a symptom suppressing drug route, and guess what, it's all driven by Big Pharma. So, the GMC essentially are acting as the puppet, the mouthpiece of Big Pharma.

Steven Bruce

Which is quite depressing, isn't it? And I take it this is why you are no longer registered with the GMC.

Sarah Myhill

No, I'm no longer registered with the GMC for another reason. I am the most investigated doctor in the history of the General Medical Council. By last September...

Steven Bruce

Your popularity rating has now just soared amongst our viewers.

Sarah Myhill

By last September, the score was Myhill 36, GMC nil. They then took me to a hearing, which was investigation number 37, which I won, against all the odds, I won it. So that was a great excitement. Since that hearing, they've now put in another five new complaints, and believe me, none of these complaints come from patients. All these come from doctors or often the GMC itself. So, for example, somebody, who I suspect the internet troll, does not approve of my advocacy of using vitamin D to prevent COVID-19 infections. And the GMC have upheld that as a complaint. Ditto for iodine. Ditto for vitamin C. Ditto for

paleo ketogenic diets. So, the bottom line is, I can't be bothered anymore. These GMC battles are massively demanding of time and energy. I can't afford to pay a lawyer. So, I've defended myself throughout. And I just can't be bothered. I'd much rather spend time with good people like you, good people who are listening to me, to help patients, because this has got to be a grassroots revolution. This is not going to come from the top down, it's got to come from the bottom up. And it needs good clinicians, good therapists, who are asking the question, why, who are looking for disease causation, so they can best help their patients.

Steven Bruce

This is slightly off topic, I know, because we're into the realms of the hearing of their GMC, or the GOsC, GCC. I've seen the effects of those hearings on people. And I mean, they were incredibly stressful, just a single hearing. And I suspect that many of the people watching us this evening will want to advocate the sort of things which I know you advocate and are looking for the evidence on which they can do it. And it's actually reassuring to hear that you have won your battle because if someone were to complain that we were advocating vitamin D or something else, and we were taken to a hearing, we will say, well hang on, GMC, there's precedent for this, because I think our councils go after us even harder than the GMC because they're so desperate to prove themselves to be up there with the big boys. And as you say, the legal expenses are phenomenal. But they will always have a QC prosecuting the case, which means that yeah, it's a difficult program. First question has come in. They want to know whether that's a lurcher behind you? Someone said it's a sloucher? I think you said it was a Patterdale Terrier.

Sarah Myhill

So, this is a Patterdale Terrier. Yes, she's my chief pest control officer at my farm. So, she's very good with rats, mice, squirrels and rabbits.

Steven Bruce

Brilliant. Okay, so let's talk about what we said we were gonna talk about, can we start with ecological medicine? You're a member of the British Society of Ecological Medicine. Ecological Medicine sounds great. So, what is it?

Sarah Myhill

Okay. It is simply that we, modern conventional medicine, no longer diagnoses. Modern conventional medicine has symptom, symptoms addressing drug, off you go with a prescription. The analysis has gone. No longer they asking, why does this patient have arthritis? Why does this patient have migrane, why does this patient have chronic fatigue syndrome? And ecological medicine is all about, are looking at the mechanisms by which people have symptoms. Because if you can establish what those mechanisms are, then that has very obvious implications for management, because you can identify what those mechanisms are and therefore apply the treatment and this treatment is good old fashioned naturopathic medicine. That's where it all starts, and very often all finishes. But because we live in a complex world is getting increasingly complex. So, let's just very briefly, let's look at chronic fatigue syndrome. Now fatigue is the symptom that you experience when energy delivery doesn't match energy demand. And the way I explain that to people is that we have a certain bucket of energy that we can spend in the day. And let's say that bucket of energy is

that big, if we spend more than that bucket of energy, then you will die because you don't have the energy for the brain to work, or the heart to work, the immune system to work and so on. So, what that means is if that energy gap narrows between the bucket of energy available and the energy that we are spending, if that gets narrow, then the body starts to give you symptoms and it gives you such severe symptoms to stop you overspending because if you do overspend, you would die. So, symptoms are there for very good reasons and the symptom of chronic fatigue is there for a very good reason.

Steven Bruce

So, we have to figure out why the buckets not full then?

Sarah Myhill

Correct. So, there's obviously, there's a two-pronged approach to this. First of all, we have to look at the mechanisms by which the body generates energy, I, as you say, get that bucket as large as possible. And then we have to look at how energy is being wasted. If it's being spent wastefully. Now, two thirds of all energy just goes on staying alive, just basal metabolism. And what we have left, we then spend mentally, you know, working physically, working emotionally, you know, looking after our families and friends, and so on. And if we've got excess energy, then we can go out and have a lot of fun with that, whether we're digging in our garden or walking our dogs or riding our ponies or whatever. But people with chronic fatigue have got a small energy bucket, most of their energy is used up just in staying alive, just in basal metabolism. And they have got no gap, they've got nowhere to spend their energy, and therefore they've got no energy for mental work. And so, they have foggy brain, short term memory, can't multitask, can't get things done, they have a poorly physical energy, some of them are bed bound. But all activities have been carefully paced. And you know, and they just don't have the energy for emotional stuff. So, it's a horrible condition. And to say the starting point is to make that energy bucket as large as possible.

Steven Bruce

If I may interrupt, I'm guessing that someone with ME who goes to see, I won't say GPs, but you know, any medical practitioner of any sort, has a strong chance of being told to just get a grip and pull themselves together and get out there and do something.

Sarah Myhill

That's the terrifying thing. And this is what's so bad also about the PACE trial because they recommended graded exercise, what happens with graded exercise, you just use the exercise and narrow that energy gap even more and make the symptoms 50 times worse. And what's more, they then don't have the energy to feed themselves or to heal and repair or to even think about...

Steven Bruce

Sarah, do you know, I don't know if it's a petition or whatever, or is it the medical abuse of people with MEs, and it's called MAIMs, which is a fantastic acronym for it. Is there evidence of harm occurring because of conventional medical protocols?

Sarah Myhill

Absolutely yes. And when I submitted my complaint, to the General Medical Council, that was followed up by a petition of over 10,000 signatures of people who've been harmed, together with 2000 letters to the GMC, from patients who had been harmed by great excise therapy, ie they have been made worse. And for some people, that worsening has persisted for years.

Steven Bruce

The paper had four elements to it, it had pacing, CBT, cognitive behavioral therapy, graded exercise and specialist medical therapy. What are those other elements, we know what CBT is, but what's pacing, what's specialist medical therapy?

Sarah Myhill

Pacing is simply about managing your energy. And when people are very ill, of course, they have to pace. In fact, when you think about it, we all have to pace our lives, you know, we'd all like to be there working, doing things all night, all day, all night, all day. But you would very quickly succumb and die. So, we all have to pace activities to a certain extent. The point here being is if you push yourself too much, then you go into an energy deficit situation, which results in delayed fatigue. So, let's take an example. Steve Redgrave, wonderful athlete, you know, he would have trained every day within his energy envelope. But when he was competing for his gold medal, he would have pushed himself into near death situation, he'll use up every drop of energy in his body. In fact, a friend of mine is a rower who tells me, if you're really competing at the point at which you cross the finishing line, you should be almost unconscious, because you have no energy left even for the brain to work. Now in that event, not pacing, he will pay for it the next day, he will be fatigued and exhausted, it will take him a few days to recover, because he's pushed himself to his limit. And for many patients with chronic fatigue syndrome, they're doing this all the time, just the business of existing, they're already pushing themselves to their limit and they pay for it the next day. And that gives us the difference between normal fatigue, because I'm normally fatigued at the end of the day, have a good night's sleep, wake up next day and I can go again. Whereas the chronic fatigue syndrome patients, you know, they're getting delayed fatigue, if they overdo things one day, they pay for it the next day, and that is pathological fatigue. And they may take two or three days to recover and that's called post exertional malaise. And that gives us the difference to normal fatigue. And as I say, pathological fatigue.

Steven Bruce

Is it a stupid question to ask whether the PACE paper is still the thing that dictates the NICE guidelines?

Sarah Myhill

Well, interestingly, in the last few months, the NICE guidelines have thrown out grade exercise as a treatment and that is now no longer valid. They haven't given the reasons why, though, of course. But for example, for long COVID, I noticed there was something came out about four months ago, do not exercise, if you have long COVID, exercise will make you worse, do not exercise.

Steven Bruce

Right. Sorry, we got off the topic there because you were telling us about ecological medicine. But you started talking about ME again. So. Okay, so the idea that we're actually looking for a cause will appeal to everybody who's watching us this evening, without a doubt. I mean, it kind of surprises me. I mean, I have huge respect for all doctors, because you guys cram into your heads more than I can possibly imagine. And recall it at the drop of a hat. But surely most of your colleagues are also trying to find the cause. Why? Are they just prevented because of the time they spend with patients? Or?

Sarah Myhill

No, I did 20 years in NHS general practice. And since then, I've done another 20 years as an independent general practitioner. And throughout that time, I have been trying to persuade my medical colleagues, my GP friends of the worth of ecological medicine. The trouble is, medical training is no longer about causation. It's no longer about looking at the root causes. So, if a patient comes in with migraine, or let's say a patient comes with asthma, so the standard medical treatment for asthma is first the blue inhaler, then the brown inhaler, and then the blue and the brown inhaler. But that tells us nothing about why that person has asthma in the first place, we need to ask, you know, are they allergic? Is that causing the broncho spasm, we know most asthma is allergy. Are they hyperventilating? Do they have a magnesium deficiency? What about B12? There are lots of ways we can treat asthma very effectively, using simple naturopathic ecological techniques. But you have to ask the question, why. And unfortunately, our doctors are not trained to do that. And part of the reason why I have deregistered from the GMC and become a naturopathic physician, is because you guys are listening, you guys are asking the right questions, you know, you are asking the question, why, now, I don't pretend to know all the answers. As I discovered them, I write books about them, and I put them on my website. So, what I discover is out there, but GPs are not even asking the question why? And, you know, you can blame it on time, but I don't, because, you know, I spent 20 years in NHS general practice, and I treated all my patients like this. In fact, one of the reasons I left the NHS general practice is because I got my wrist slapped because my prescribing budget was so low, she's not prescribing drugs, she must be a bad doctor. Yeah, naughty girl. And many of my colleagues who have come out of NHS medicine have been similarly treated.

Steven Bruce

We had another speaker along quite a long time ago now, but one of the comments that he made was that, he calls himself the, I think the pill avoiding doctor I think it is, but he was saying that the money that the NHS could save if they cut down on the polypharmacy and other prescribing habits is amazing. Interesting comments here. We've had a lot of people in our Vimeo team, there's two groups of people watch us, there's the Facebook team and the Vimeo team. Apparently, lots of people in the Vimeo team have said that if you've got a case to take to the GMC, they will contribute. So, we will drive them to your page to help you out there, Sarah.

Sarah Myhill

That's a blessing. Well, I mean, I have never asked patients or anybody for money to buy legal advice, because I do it all myself. It's cheap. And you know, I've seen lawyers make such a pig's ear of various cases for other people that I determined I was going to do it all myself and so far, it served me well.

Steven Bruce

There's an old saying isn't there, that anyone who represents himself in court has a fool for a lawyer, but I think that depends on just how bright you are. And clearly, it's as you say, it's served you well. Just supporting what you're saying here. Jonathan Lawrence says that he's had a patient who went on graded exercise therapy and went from fatigued to bedridden. So maybe he ought to support that MAIM's petition. Daniela has asked, what is an example of graded exercise?

Sarah Myhill

Well, very simple, you just do a bit more and a bit more and a bit more every day. So, the first day you walk, you know, 20 meters, the next day you walk 30 meters, the next day you walk 40 meters and so on. It's as simple as that you, gradually increase the amount of exercise you do, but the point here is, if you haven't got the energy to do that, you just deplete your energy bucket, make things much worse. As I said earlier, a condition which is defined by exercise intolerance, that's hardly going to be the treatment is it, you know?

Steven Bruce

Yeah, Mags has said, I'm sure you'll come to this but in ME, why is a patient's energy so depleted and I think all three of your papers have centered on mitochondria, haven't they?

Sarah Myhill

That's part of the story. Now there are two, the chronic fatigue syndrome is not the same as ME. Now, chronic fatigue syndrome is when energy delivery mechanisms are at fault. ME, you have energy delivery mechanisms at fault and inflammation. And inflammation means the immune system is busy. And if the immune system is busy, that's using up even more energy and giving you symptoms of inflammation, you know, heat, pain, swelling, redness, loss of function. So, inflammation kicks an enormous hole in the energy bucket. And that inflammation may be chronic infection, it may be allergy, it may be autoimmunity. So, with all my patients, I always start with energy delivery mechanisms. And there are four big players. And the analogy I like to use is the car analogy. So, for your car to work, you've got to have the right fuel in the tank, you've got to have a good engine, you've got an accelerator pedal that works and a gearbox that works and all four of those have to be working together to get a result. So, but the fuel in the tank, for the fuel in the tank, we have to do a paleo ketogenic diet. That is the starting point. And if people listening to us tonight, do nothing other than go away and do a paleo ketogenic diet, they will be doing themselves a very big favor. And the reason for that is that the preferred fuel of our mitochondrial engines are ketones. That's how they function best, they like to run on keto.

Steven Bruce

I've certainly seen this, touted on the internet, the brain cannot function on fat, it has to function on carbohydrates, glucose.

Sarah Myhill

Absolute rubbish. That's a well-developed myth. The brain works perfectly on ketones. In fact, you can reverse dementia by putting people on a ketogenic diet, not my work. Dale Bredesen, consultant, neurologist in California, reverses dementia with the ketogenic diet.

Steven Bruce

And I think, when we spoke the other day, I mentioned Gary Taubes, who I interviewed a little while ago, purely about the keto diet, and he was very hot on the fact that it's the only diet that has any real research behind it. And it has been quite reliably shown to reverse type two diabetes.

Sarah Myhill

But I mean, the best piece of research is two and a half million years of evolution. Yeah, this is the part that we have evolved to live over that duration of time. This is the one that perfectly fits our gut function, our body function and our brain function. I know at this point, people turn around say, oh, what, you know, I can eat, you know, a primitive man would have had fruit, would have had nuts, would have had seeds and would have had grains. And the answer is, yes, he would, but only for a very brief duration of time during the autumn. And that ability to run on two fuels, to swap to carbohydrates, to take advantage of that free windfall, that free harvest, that free food that comes along in the autumn and get addicted to it, to eat it in an addictive way and get fat. And getting fat is survival value for winter. It keeps us warm and it's a fuel supply. So, you know, we have this amazing ability to run on two fuels, which not many animals have me, my dog can only run on meat and fat and my horse can only run on grass. But you know, we have these two fields we can run, which has afforded enormous survival value. And that's part of the reason why we are so numerous in the world today. But we eat carbohydrates in the autumn in an addictive way as winter survival value and we eat them because we get addicted to them. Now the problem with modern food supply is, we have this amazing system of agriculture and food delivery, we can eat those foods all year round. And because we get addicted to them, we don't want to stop eating them. And so, we end up with constant autumn mode, constant metabolic syndrome, with an inevitable progression to diabetes, to obesity, to heart disease, to cancer and to dementia. So, the paleo ketogenic diet is the starting point, a) to treat chronic fatigue syndrome, but b) to prevent all those other diseases of Westerners, those degenerative conditions, cancers, heart disease, dementia, it stops all those from developing. So, people listening tonight, who may not have chronic fatigue syndrome, but we all want to live to our full potential for as long as we possibly can, because you know, having life is fun or should be and to do that you need to do a paleo ketogenic diet.

Steven Bruce

I suspect there were a lot of questions about that because the paleo diet, the keto diet, the Atkins diet, they've come in for a lot of stick from people who probably have an interest in other means of supporting life. But let's wait for these questions to come in here, because there are lots of, I've already, I've never had

so many questions so early in a discussion. So, I can see that this is going to go very quickly this evening. Just a minute ago, you highlighted the difference between ME and chronic fatigue syndrome. Does that mean, is that recognised in general practice? Do people treat them differently? Do they add in anti-inflammatories or?

Sarah Myhill

No, anti-inflammatory is a symptom suppression.

Steven Bruce

I didn't mean in your practice, I meant in general practice, what are people getting if they go with ME as opposed to chronic fatigue?

Sarah Myhill

They just get symptom suppressing medication.

Steven Bruce

Right. Okay.

Sarah Myhill

Which is not addressing the root cause. And the problem with symptom suppressing medication is the underlying pathology is accelerated. Now, I'll give you an example here of a doctor who did research work at Bath and he was using Neproxen. And he was looking at what happens when he gives Neproxen to patients who have hip pain. And the answer is, they come to their surgery sooner, they have to have their hip replacements much more sooner than those who tough it out, who try Glucosamine Ultra, who try other things. And he was about to publish this research, when he got phoned up by the boss of Neproxen, who said, you publish that research, I will stop funding your professorial chair and that will be the end of your job. So, guess what, that study never got published. It illustrates the point that we have symptoms for very good reasons. Symptoms protect us from ourselves. And if you prevent those symptoms from happening, then you go on causing damage, whether that's chronic fatigue, whether that's chronic pain, whether that's inflammation. I mean, I think part of the reason we have so much post viral fatigue these days is the standard doctor's advice for treating any viral infection is symptom suppress, yeah, take aspirin, take paracetamol, take antihistamines, take cough suppressants. But they suppress the very mechanisms that we need to get rid of that infection. You know, why do we run a fever? Because all these viruses, all these bacteria are heat sensitive and running a fever kills them. Why do we cough and sneeze, to get rid of them, to reduce the viral load, to expel them? Why do we have a runny nose? The same thing. Why do we feel exhausted, because then we go to bed and we wrap up warm so we can run a fever? And we leave the immune system with the energy that it needs to fight. If you symptom suppress that and fight on carry on at work, you take energy away from the immune system, and the microbe wins. And then you risk permanent, long standing infection which drives so much pathology later on in life.

Steven Bruce

Okay, thank you. That was going to lead me on to another question about, which I now just lost on my list, but there's plenty to look at. Victoria asked if there was a link between Epstein-Barr-virus and chronic fatigue.

Sarah Myhill

Well, Epstein-Barr-virus causes ME, it causes inflammation. And it's a really nasty little shit of a virus. I can tell you. And I think that's responsible for the majority of patients with post viral chronic fatigue syndrome. Post viral chronic fatigue, yes. And chronic inflammation that runs with it. And Epstein-Barr-virus we know it's a carcinogenic virus. We know it drives many cancers. We know it switches on many pieces of autoimmunity. I suspect it drives many pain syndromes. And it affects the heart, for example, so you can get heart problems with chronic Epstein-Barr-virus infection, it's a really nasty little infection and must always be taken seriously. And a very common sequence of event is the young person who is dairy allergic throughout childhood. And you can diagnose dairy allergy very easily because the babies have colic. Then they move on to toddler diarrhea. Then they grow out of that and they get catharral conditions with blue ears. And then you get recurrent tonsillitis and then headaches. And then they go to university and they get their Epstein-Barr-virus, it's the kissing disease, it's transferred in saliva, and then they have ME, you know, sometimes decades after.

Steven Bruce

I think the answer's yes, there is a link or at least with ME, rather than CFS. We got a question from Claire Minshall. Claire, I didn't know you were watching. It's great to have you with us. Claire has done several broadcasts with us in the past about rehabbing OA and things like that. Claire says it's a fantastic broadcast. And she's braised the obvious point. She says clearly paleo keto diets don't work for vegetarians and vegans. She didn't say that I'm paraphrasing. Sorry, Claire. So, tell us, you can do this if you're a vegan or a vegetarian.

Sarah Myhill

Of course, you can. It's not easy. But it is perfectly possible to get into ketosis. I mean, this is not a high protein diet. This diet is where you power the body with fat and with fiber. And you can get vegetarian fats like coconut oil, palm oil, and I know you'll throw your hands in horrors and say, well, palm oil has terrible ecological problems. But the point I try to make to my patient is that person sitting in front of me, I'm trying to get them well. I'm not trying to treat the world, you know, I've got to do whatever I think is best for that person in front of me. Now, the point about vegetarian and vegan diets is they are not ecologically correct. The primitive man was not a vegetarian, and he certainly was not a vegan. And what I do know is that being a vegetarian or vegan is a major risk factor for chronic fatigue syndrome and ME for all sorts of reasons. So, I'm not a fan of vegetarian and vegan diets. I am a complete fan of animal welfare. I'm in a very privileged position, I have my own farm, I'm self sufficient in eggs, in chickens, and in meat. So, you know, I make sure that all my animals have a jolly good life and a jolly good death. So, I sympathise entirely with the ideals of vegetarianism and veganism, but they are not desirable if you want to avoid chronic fatigue syndrome and ME.

Steven Bruce

Okay, thank you. Hope that helps Claire. Jen, always asks the question when we mention diabetes, and I think this is a really, really good one. Because she's asked, how a keto diet can help to reverse type two diabetes. Now there's a good physiological reason for this, isn't there, it's not sort of hippie thought or anything like that.

Sarah Myhill

If you want to, there's a very excellent book on this written by Jason Fung, called The Complete Guide to Fasting. But people who are running their bodies on sugars and carbohydrates constantly overwhelm the ability of the body to deal with that. Now we have in our liver, what I call a glycogen sponge. So when we have a meal, and of course, all meals will have some carbohydrates, even to eat cabbage is going to have some carbohydrates in them. But very often, people eat high carbohydrate diets, they eat grains, you know, pulses, root vegetables, sugar, and so on and so forth. And when that happens, as they have a meal, there is a tsunami of sugars that pour from the gut, via the portal vein into the liver. As I described, the liver has what I call a glycogen sponge, which should be squeezed dry, mops up that sugar rush, and then releases it little and often between meals to supply the body with sugars, because those people are running their bodies on sugars. But if they overwhelm that glycogen sponge, and if they overwhelm the muscle glycogen sponge, and if they overwhelm, you know, all that, eventually, sugar is going to spill over directly into the bloodstream, and you'll run a high blood sugar and you will have pre diabetes and then diabetes with all the problems that go with that. Now, the point about doing a ketogenic diet is, if it is available, the body will always burn sugar first. So, you get into a ketogenic diet, and the first thing it does is it squeezes dry its glycogen sponges till they're empty. And then it squeezes dry their muscle glycogen spines until they're empty. And that will take maybe a week, maybe for some people two weeks of doing a ketogenic diet. And at that point, the body then switches to ketones and fat burning. And at that point, the average blood sugar starts to come down and down and down, glycosylated hemoglobin is full, and blood sugars end up completely level. There's no wobble whatsoever. So, I can guarantee reverse type two diabetes by doing a ketogenic diet. Every single time it worked. In type one diabetes, it's an incredibly useful intervention, you may not get rid of all your insulin completely, because we all need a little bit of insulin. One example of this is there's a GP down in the south called Dr. Ian Prute, who is a type one diabetic. And he did a five day fast. And he's keto adapted. He's been on a ketogenic diet for some time. He did a five day fast, during which time he ran 20 miles every day. And so did another four of his friends. Five day fast, 20 miles every day, during which time his blood sugar was absolutely level, it never went up. It never went down. He didn't have to change the dose of insulin, he stayed completely fit and completely well. So, type two diabetes is, as I guarantee, reverse it ketogenic diet.

Steven Bruce

Sorry, I was just struck by a question that just came in while you were saying that. What I wanted to go on to as well is Gary Taubes I mentioned before he wrote a book called The Case for Keto, which I'd thoroughly recommend along and we'll make sure people have a link to the one you just mentioned as well. But he also points out that eating carbohydrates stimulates insulin production, but also it blocks the use of

fat as an energy source and it also drives fat into the fat cells. So, it has a sort of a double whammy effect. And that there is a threshold of carbohydrates after which that insulin production becomes a problem. And the fat suppression becomes a problem if you like. So, I mean, it might be worth again, I'd thoroughly recommend Gary's book. And as I say, this one as well to learn about why it works. But I don't think, Jan, just to put your mind at rest, I don't think there's any doubt in the evidence that it has a very beneficial effect. I would say certainly with type two diabetes, and I'm not sure whether the evidence is strong for type one, Sarah?

Sarah Myhill

Well, you can certainly reduce your insulin dose. And that's the key. So, you just baseline, you have a baseline and very often, with time, very often, the insulin dependent diabetics develop insulin resistance and have to increase the dose and increase those and then they get brittle diabetes, when their blood sugars are all over the place. And that can be massively improved with the ketogenic diet. Now, the only rider to this is that if you're using any medications that lower your blood sugar, like Metformin, like Sulphonamides, like insulin, then you must monitor the blood sugars very, very, very closely. And I recommend any patient who does that, uses something like, what's the device called, off the top of my head. But continuous blood sugar monitoring, Dexcom is the device. And that tells you what your blood sugar is from minute to minute, and you see exactly where it's going. And you can track it. Because as you get into ketosis, and as you squeeze your glycogen sponges dry, your need for those drugs will fall dramatically, and you have to reduce the dose of them. Otherwise, you risk the blood sugar going very, very low and getting hyperglycemia. And there are serious problems associated with that, because you can't make blood sugar from gluconeogenesis, you know, with those drugs, when they're playing. So, so you know, if you are on diabetic drugs, drugs do monitor very closely indeed.

Steven Bruce

Well, here's one for you the other effect of a keto diet, which I think is pretty well researched is that it raises your bad cholesterol. And it also drops your blood pressure. Are there negative consequences to either of those?

Sarah Myhill

Okay, well, it doesn't raise your bad cholesterol, it raises your good cholesterol. And I know that because I've collected figures for patients over the last 20 years. I stopped collecting them now because the results are so reliable. When it comes to cholesterol, it's not the total cholesterol, which is the problem. I like people to run a total cholesterol of six or seven maybe, because I can show you studies where the higher your cholesterol is, the longer that you live. We're talking about HDL cholesterol here. Now, the point here is that cholesterol is not a cause of arterial disease. It's a symptom of arterial disease. HDL cholesterol is used up in the business of healing and repairing arteries. So, people are running on sugars and carbohydrates. If they're running on sugars, their sugary sticky stuff, it sticks to arteries and damages them. And HDL cholesterol is used up in the business of healing repair. So, they often have very low HDL, sometimes, you know, 13, 14, 15% of total cholesterol. As soon as you have a ketogenic diet, you're no longer damaging your arteries with sugar. In fact, ketones have an anti-inflammatory effect. And therefore,

there's not so much healing or repair going on, and that the HDL level rises. And the two centenarians in my practice, have both have HDLs of over 50% and they're sharp as tacks, very bright, very with it. And they both do a ketogenic diet. So ketogenic diet has a marvelously beneficial effect on cholesterol. But bear in mind, cholesterol is, you know, it's not the cause of arterial disease. We have been fed this fallacy that high fat diets cause high cholesterol which damages arteries. No, no, no. Wrong all the way through.

Steven Bruce

I imagine you know Dr. Malcolm Kendrick, don't you?

Sarah Myhill

Indeed.

Steven Bruce

I've interviewed him I think three times and he's a treat to listen to on the subject of cholesterol and heart disease and he doesn't mince his words either about just how wrong the theory is. Gosh, I don't know where to start. A couple of people have apparently asked, you mentioned four sources of energy or four players in energy delivery. We've had one, did we miss the others?

Sarah Myhill

We've got the diet and gut function which are the fuel in the tank. And then we have the mitochondrial engine. And this is my special area of interest, this is where I published papers in conjunction with John McLaren-Howard, demonstrating that those patients who have the most severe fatigue have the worst mitochondrial function and vice versa. Then we had the thyroid accelerator pedal and hyperthyroidism is incredibly common in patients with chronic fatigue syndrome and ME. It's incredibly badly treated, the doctors don't know how to diagnose it. They don't know how to treat it and most people end up being under treated in consequence, and then we have the adrenal gearbox and it's the adrenal gland allows us to gear up in response to demand. In response to talking to you guys this evening, you know, my adrenal glands swing into action, produce the adrenaline so that I can perform. And say I think that is the gearbox of the car. But the mitochondrial engine is very, very, very important. And when I was in medical school in the 1970s, obviously, we had to do biochemistry, and it was a subject that you didn't attend the lectures because they were so boring, muddled up the night before on coffee and chocolate to get you the answers out onto the exam paper next morning in hopes that you passed. But we learned about mitochondrial event, and the reason they didn't seem important is because they had no clinical application. No clinician was talking about mitochondria. We now know that mitochondria are implicated in almost any disease process you care to mention. We know they have a role to play in diabetes, for example, certainly in dementia, certainly in cancer, and of course, in heart disease and heart failure and heart dysrhythmias. I almost cannot think of a pathology in which mitochondria don't play an important part. Why, because they're the energy delivers, is mitochondria, which take fuel from the bloodstream, hopefully in the form of ketones. burn it in the presence of oxygen to generate the energy molecule, which is called ATP. And with ATP, you can do any job in the body, you can contract a muscle you can conduct a nerve, you can make a hormone, you can digest food, or whatever is an essential fuel and mitochondria are common to all living things. So you know,

like Nancy, she has the same mitochondria as I, as the sheep, as the grass out there. They have mitochondria to generate energy, as do trees. You look around. It's a common biological unit, from which all life generates energy, except yeast cells, they get energy in fermentation. But that's a rarity, that's a minute compared to the greater whole. So, we have to have mitochondria in a fit state to work. And for mitochondria to go well, they have to have the raw materials to go well, they have to have the right fuel, they have to be free from blocking. And they have to have the right control mechanisms. We talked about the fuel, they like to be run on ketones. And then there are five common rate limiting steps, and we ascertain those through the research that I did with John McLaren-Howard. And the common deficiencies that come up time and time and time again that make mitochondria go slow are magnesium, coenzyme Q10, vitamin B3 as niacinamide, acetyl L-carnitine and D-ribose. You know there the five nutrients that come up time and time again as important for mitochondria.

Steven Bruce

We had a question about coenzyme Q10 that came in while you were speaking. So, I think you answered that one. Came in from somebody who's calling themselves 005.6. I don't know what that means, but they're definitely not statistically significant. So, I'll get rid of the question. So okay, sorry, I interrupted you there were you about to say more?

Sarah Myhill

Well, of course, and then mitochondria can go wrong, because they've been blocked by something. And in my early days, you know, of seeing patients with chronic fatigue syndrome and ME, I was seeing patients with shaped it fluid. We've been poisoned by organophosphates, Gulf War veterans who've been poisoned by organophosphates and 9/11 farmers who've been poisoned by organochlorines from burning plastics. And all these poisoned people, their mitochondria were going slow. Why? Because those nasty toxic chemicals thrown into the body are like throwing a handful of sand into a finely tuned engine. They inhibit the engine in lots of different ways. Now, if I do fat biopsies on people, which are very easy to do, stick the needle in, pull the needle out and the fat contained within the bore of the needle is sufficient for analysis. I have never found a normal result. We are all carrying a chemical burden, polybrominated biphenyls from fire retardants, organophosphate residues, organochlorine residues, bromine compounds, benzene compounds, all these things, because of the modern world in which we live, which is polluted. And they all have the potential to inhibit mitochondria and cause fatigue. And sometimes the sweating regimes are very helpful for any, any process that makes you hot, will allow these chemicals to evaporate from the lipid layer under the skin onto the lipid layer of the surface of the skin from whence they can be washed off. So, very simple way to get rid of them, obviously avoid them as much as is reasonably possible. But any heating regime, so hot baths with Epsom salts are perfect. Sunbathing, even better. Saunas, wet saunas, dry saunas. It doesn't matter, heating regimes boil off these chemicals and then wash them off the skin. And again, I've done fat biopsies now on about 30 patients before and after these heating regimes and in every single case the toxic load has come down. So, these regimes do work really well. And I'm coming to you with it because we live in such a toxic world, you know, because these things that aren't avoidable, we should all be doing some sort of heating regime all the time, doesn't matter if it's sunbathing, Epsom salts in the bath, saunaing, it's a very important part of us all just saying well.

Steven Bruce

Does this mean our Scandinavian colleagues are much more healthy than the rest of us?

Sarah Myhill

They probably are, I mean, those saunas are absolutely delightful and the effect is going to improve by massage, of course, because then you're physically mobilising the chemicals out. And the key thing is to wash off after, you got to shower off afterwards, because you mobilise the chemicals from the fat under the skin to the fat on the surface of the skin, and then you wash them off. Again, going for a run, if you've got the energy to go for a run, then that's a great way of detoxing because you get hot, you sweat, and you wash it off in the shower afterwards.

Steven Bruce

Has anyone ever done an analysis of the sweat and found the toxins in it?

Sarah Myhill

They're not in the sweat. Sweating is just symptomatic of the fact you've got hot, there in the fat, sweat is the lipid soluble product. And we talked about fat soluble chemicals, which gets stuck in the fat. So I say sweating just tells us that, you know, you've got hot, but the actual movement is through the skin, literally a boiling off from the subcutaneous fat to the lipid down the surface of the skin, and then you wash it off from the surface of the skin.

Steven Bruce

Okay, sorry, I got it slightly wrong. But I mean, if you were to swab with the skin after somebody had got hot, has that ever been done and proven that the toxins are there?

Sarah Myhill

No, it hasn't been done. It hasn't been proved. But it does make perfect sense. I've done fat biopsies before and after. It's got to go somewhere. Yes. And the bottom line is, we see clinical benefits from that, the patients get better. So, it's that part of a package of things, but I'm quite sure it is a really important part of.

Steven Bruce

We had a lot of questions, Sarah, about the diet. Sally has raised the issue of The China Study and says, well, what about this evidence that says that high protein diets were carcinogenic and bad for cardiovascular health?

Sarah Myhill

The PK diet is not a high protein diet, your protein intake is normal, it's exactly the same as in any Western diet. And in fact, what's so fascinating is that the body knows how to get the right amount of protein, we have a protein appetite. There's a wonderful book that was published recently called Eat Like the Animals, written by two evolutionary biologist who asked this very question, how do we know what to eat and how

much of and what they demonstrated very clearly is that we have a protein appetite. And they did many experiments, same principal experiment on different animals. But essentially, it started off with locusts. And they gave some of them a low protein diet, some of them a normal protein diet and some of them a high protein diet. And what was so interesting is that those animals that were eating a high protein diet, they satisfied their protein appetite very early on and they ended up losing weight. Those who had the right amount of protein get near to the fat in their diet stayed the same. And those animals that had a low protein diet, ate and ate and ate and ate until they satisfied their protein requirement. But in doing so they over ate, and they got fat and obese. The PK diet is not a high protein diet, the amount of protein you have is normal. It's a diet, which is high in fiber and in fat. And fat, of course, is very energy dense. So, you don't have to eat a lot of it. And then fiber is what gives us you know, fiber is good for our diet, is good for our bowel movements, it gets fermented to short chain fatty acids, and that's what fuels the lining of the bowel. So, it's not a high protein diet.

Steven Bruce

Do you find that's a hard sell with patients because there is an instinctive reaction I think, when you say to someone you need to eat fat, they will say if I eat fat, I'll get fat?

Sarah Myhill

I know, I hear that time and time and time again. But there is not a scrap of evidence to support that. Fat and fiber and chewing satisfies the appetite. And what we know is that people just don't need to eat so much. The key point to remember that carbohydrates and sugars is that they are highly addictive. And people eat them and eat them and eat them and they can't stop eating because they get an addictive high from them. And my guess is, many of the rationales, many of the reasons that people give me for not eating a keto diet are rooted in addiction. They rationalise their addiction. We've always done it like this. Oh, I can't manage without. Oh, I get fatigued if I don't have a sugary cola. Oh, I have to have a pudding or I don't feel satisfied after my meal and believe you me, I have heard all the excuses in the world. And the joy about keto is, is once you're on a keto diet, and your weight remains absolutely constant, you know, you eat your appetite, you don't want anymore, you're perfectly satisfied with what you've got. Of course, you'd have the odd treat. And guess what, I'm no paragon of virtue. And of course, I feast sometimes. And of course, I go out on weekends have a jolly with my friends. But it's easy to get back on the wagon and get back on the wagon. I do. And I want all my patients to be, you know, as well as I feel. And you know, you will, again, one of the things I tell all my, I run various mentoring groups, and I talk to naturopathic doctors and others. One thing is I tell them all is, you must do the diet, because there's no way you can convince your patients of the importance of doing that diet unless you do it yourself. And then you learn all the ups and downs, all the wrinkles, all the problems, wave them by the foods and you can answer any question that gets thrown at you.

Steven Bruce

Certainly, the keto diet, Sarah, again, it is more difficult for vegetarians, vegans. But what struck me about it is it's actually not a difficult diet to stick to. Whereas if you tell people to go and run around a lot more and eat fewer calories, then that is very difficult to stick to and nobody ever does.

Sarah Myhill

Correct. And that's right. And that is why calorie restricted diets fail every single time. Because if you reduce your calories, the brain says, oh, we're in starvation mode, we'll stop generating energy then. And if you don't generate energy, you put yourself in a state of chronic fatigue syndrome. You're depressed, you're miserable, you can't have fun. You haven't got physical energy to do things, you can't get the mental energy to do things, people get fed up with it, go back to their wicked ways and back comes the weight and they're back in metabolic syndrome, again. That usefully illustrates the addictive nature of sugars and carbohydrates. And once you see it as an addiction, then you understand the rationales, you realise, you understand the withdrawal symptoms, you know, you understand the ups and the downs, it all falls into place.

Steven Bruce

I thought this was a whole lot of nonsense when I talked to Gary Taubes about the keto diet, because he said, you know, he did what he calls intermittent fasting, which I call late breakfast, he says he doesn't have anything to eat before midday. And I thought, well, I could never do that. And then I started doing the keto diet, and I'm just not hungry. And I lost, I didn't have a huge amount of weight to lose, but I lost a lot of weight on it. And yeah, I am a lot healthier. And I hope that answers the question from a number of people who asked about your views on intermittent fasting, but what do you think of it?

Sarah Myhill

Well, I whenever I have a difficult question, whatever that question is, always go back to first principles. Always ask nature, always ask evolution. And the bottom line is, did primitive man get three meals a day? Now he didn't, you know, he feasted and he fasted. So, you know, he'd go out, he'd kill, and they'd eat a lot and sit around and have fun, and then they get hungry. And then they'd be fasting two or three days before they go out and kill again. So no, he didn't get three meals a day. And the interesting thing is that fasting, you know, over the first few days, gives you better energy mentally, and better energy physically. Now, I do a fast day, once a week, which I almost look forward to because I know my brain is going to function really well. I just had a lovely lady who I've been treating recently who, by the time she came to me had had one round of chemotherapy for her multiple myeloma and the disease had come back. And the consultant was saying, shall we, or shan't we do the second round of chemotherapy or, you know, I'm not sure it's going to work and was, you know, very worried about the whole business. Anyway, to cut long story short, I persuaded Philippa to fast during the day of her chemotherapy, and the day after, and to take vitamin C for bowel tolerance, and a few other things as well. She got into ketosis first, obviously, because once you're in ketosis, fasting is easy. So, she went on the ketogenic diet straight away. And then let's say fasted for two days on either side, every single one of her infusions, and she had 10 of them. And she said, I felt great during infusions, I had very few side effects. I didn't need any drugs to control my symptoms. She sailed through the chemotherapy beautifully, much to the surprise of her consultant. Her cancer marker, called the kappa was over 1000 before she started that second round of chemotherapy.

Steven Bruce

That's bad.

Sarah Myhill

That was bad. That's very high. And the consultant said, if we can get it below 100, that would be a very good result. He said, if we get it below 20, I sure believe that we have cured you. And her result came back at 23. And she felt great. So, it's just an illustration of cancer cells can only run on sugar, cut out the sugar, replace it with vitamin C, the vitamin C kills the cancer cells, as well as the chemotherapy and you get a major cancer cell hit and that was reflected in her tumor markers at the end of the course.

Steven Bruce

Gosh, we always like to make sure that we talk about communication and consent on these broadcasts. I suspect you need to be very cautious about telling your patients you will cure their cancer because the general counsels will jump up and down very heavily on anyone.

Sarah Myhill

I'm only quoting what that consultant told that patient.

Steven Bruce

Right, thank you. Katie has asked about dairy consumption, anything wrong with that?

Sarah Myhill

Yes, dairy is one of the most dangerous milks, most dangerous thing you can possibly drink. And again, this is derived from a paper written by a dear friend of mine called David Freed, who wrote a paper called The Cow and the Coronary. And he looked at dairy consumption throughout Europe, country by country, and broke it down into the different dairy products, the cheeses, the butters, the milks, the creams, and so on. And the facts that he came up with is that the more dairy products you consume, the greater your risk of heart disease, he then broke it down into, well, which bits of the dairy is a bad bit. Now the safest dairy product to eat, which has no impact on heart disease is butter. So, and the butter is pure fat, of course, perfect for the keto diet. There are two problems with dairy products, first of all, is the milk protein. And milk protein is growth promoting and makes for sticky blood. So, you want to avoid, I mean milk is obviously, nature designed milk for young mammals. If young mammals don't grow very quickly, they get predated. So, all milk proteins are growth promoting and they make you grow faster, and that's not good if you've got a cancer, that's bad news. Secondly, there's far too much calcium in milk. Relative to magnesium. The proportion of calcium to magnesium is 10 parts calcium, one part magnesium, and since they're absorbed by a similar mechanism, then eating dairy products will induce a magnesium deficiency. And magnesium is essential for mitochondrial function. It's been dubbed nature's tranquiliser, it calms down muscle contractions, it switches off nerve conductance. So, you become magnesium deficient and say that's a major risk factor instantly for osteoporosis as well. And the third problem is of course the milk sugar, so lactose in milk can be fermented in the gut and that gives you, you know *audio problems*. So, the most dangerous milk product you could possibly drink is skimmed milk, because that's high in sugar. It's got high milk protein, it's got the wrong balance of calcium, magnesium, it's got no fat in it. The safest dairy product you can have is butter. And on top of that, milk is a very major allergen and so many people, myself

included, get into ecological allergy medicine because they have allergies and milk comes at the top of the list of allergies as described for infantile colic, for the toddler diarrhea, for snotty nose of catharral conditions, recurrent tonsillitis, migraine. These are all dairy allergy driven conditions.

Steven Bruce

Gosh I've heard that before and then something I've tried to ignore or shut out because I absolutely adore drinking milk. I have cut milk out and I switched to cream which I'm told is slightly better for my coffee and that's the only dairy I have these days other than butter.

Sarah Myhill

Well before you go on, I too love dairy products, but any amount, and you know and I'm ill with them, but the alternatives nowadays are fantastic. And the coconut milks, the vegan cheeses, the vegan butters are brilliant. They have the similar taste and texture to dairy products, and I no longer feel deprived now.

Steven Bruce

We've got to get onto groundhogs shortly, because we only got 25 minutes left, but Simon says, what about people who are allergic to cruciform vegetables?

Sarah Myhill

Well, you have to avoid them. It's unusual and unfortunate, but you have to avoid them. And there are interventions we can make to try to reduce one's allergic tendency, but in the short term, just avoid. I mean allergies, we have to ask why are we seeing so many epidemics, we're seeing so much allergy at the moment. It's so common. An allergy is switched on by vaccination, and your kids are vaccinated for health these days. And no wonder we got so many kids with asthma and eczema and allergic disorders. It's switched on by vitamin D deficiency. Now we've been told that sunshine is a dangerous commodity that gives you cancer, rubbish. So, people avoid the sunshine. At the end of the summer, instead of having lovely brown children running around, we're all whiter sheets and sunshine is the major source of vitamin D. And further, we know that dairy products and gluten switched on allergies, and autoimmunity. In fact, those are the risk factors for type one diabetes. Again, in children. We're seeing a lot of type one diabetes, why, vaccination, vitamin D deficiency, dairy products, they are the three big risk factors.

Steven Bruce

Thank you. Just one for my team. Claire, could you please have a look at a question that's come in from Jan. It's quite a long question. But there are some points in it that need clarification. And I want to read it out because it's quite an important one. It's again, it's about diabetes. Alexander says, a patient of his who used to be a GP succumbed to ME after a flu vaccine 18 years ago, she had a surprise, huge semi recovery with doing the Michael Mosley 800 diet for weight loss. You know anything about that?

Sarah Myhill

Well, is that, I mean Michael Mosley is also an advocate of the ketogenic diet. So maybe, I'm not sure about if that is 800 diet was that, but we know allergy can present with fatigue syndromes. And if you just change

your diet, you might find for reasons of pure serendipity, the avoiding of food that you're allergic to was making you fatigued. So, I'm not quite sure what the Michael Mosley, that diet is. But it's got to be either a keto diet, or maybe say through sheer luck, there's a food that's being avoided.

Steven Bruce

So, we might not want to go too far down this rabbit hole, but Anne has asked what's happening in long COVID that's causing the symptoms of chronic fatigue.

Sarah Myhill

Well, long COVID is ME, it's a post viral syndrome. And you know, we've known for hundreds of years that there are post viral syndromes. And so, it's just another it's just another ME that has a viral trigger. The point here is that if you have an acute infection, what should happen is you should run a fever, cough, get all the symptoms, the immune system should deal with it, get rid of it, end of story and get normal again. But the problem is nowadays is, we're immuno suppressed by modern diet, by micronutrient deficiencies, by maybe electromagnetic radiation, by maybe poisons and toxins. We're deficient in essential nutrients like selenium, magnesium, zinc, vitamin C, vitamin D, iodine, and so we don't deal with those infections adequately. And then we're symptom suppressed with drugs maybe. And so instead of the body having that virus and getting rid of it, that virus persists and it remains in the body and remains in the body with the potential to cause biochemical habit, switch on allergy, switch on autoimmunity, inhibit mitochondrial function, maybe knock out the thyroid gland, maybe, you know, disrupt control mechanisms in the brain. So those chronic viral infections, you know, bribe ME and fatigue syndromes. And that happens because we make an inadequate immune response to that infection when we get it whatever that infection may be. A long COVID is the same as post Epstein-Barr viral syndrome. It's the same as post-polio syndrome. It's the same as post flu syndrome. It's just more of the same.

Steven Bruce

I'll tell you what, I'm trying to get Sebastian Rushworth on the show, I haven't actually managed to get through to him just yet, but he's somebody I came to through Malcolm Kendrick, I don't know if you've read any of his material. But he's written a brilliant book. It's very, very thin. But it covers post viral fatigue. And he does a very careful analysis of the statistics which say, well, there is no such thing as long COVID, it's just post viral fatigue much the same as any other post viral fatigue, exactly as you've been saying there. Right, now Jen's question has been clarified, Jen's clearly upset about this idea that you heard about fasting and running when your diabetic. She says, the idea that a type one diabetic fasting for five days and running every day is just mind blowing. She goes to her allotment for a couple of hours. It's very easy to have a hypo she says. She then needs to take carbs. What Sarah said about type one, fasting and exercising doesn't make sense at all.

Sarah Myhill

Jen hasn't listened to what I said first. Before you even consider doing that, you must get keto adapted first. Dr. Ian Prute, GP in the south. He's been a keto adapted athlete for years. And he's type one diabetic and his insulin requirements are very low, because he is running on fats all the time. When he needs more

energy, he just burns his own body fat. Now I quite agree with Jen, if you are a type one diabetic, running on carbohydrates, then it's a very difficult balancing act, you know, eating the right amount of carbohydrate, right amount of insulin, right amount of carbohydrate, and you're continually getting upwards and downwards. As soon as you get into ketosis your blood sugars iron out, your insulin requirements iron out, and you can get on with life and do what you like.

Steven Bruce

How do you know you're in ketosis? Can you buy things to measure it?

Sarah Myhill

Yeah, very easy. I use ketone breath meter. Now there are three measurements you can do. There are three types of ketones. The best would be to measure your blood acid, or blood, beta hydroxy butyric acid. But the only problem with that is you have to prick your finger to do it. And guess what, I don't like doing that and the testing stick cost a pound each, and guess what, I'm skint. The other thing is to measure ketones in your urine and you pee out acetoacetate so you can get dipsticks called ketostix. And peeing on that will tell you if you're in ketosis because the sticks go purple. I like the ketone breath meters, which you blow into and that measures acetone in your breath. And now they are very sensitive, they need to be handled well, some people say that they're not accurate. If it's done properly, and it's done well, then they are super accurate. And the point is, any amount of ketones will do. As mentioned beforehand, the body will always burn sugar and carbohydrates first in preference. But when you run out of those, when the glycogen sponges squeeze dry, when you didn't have sugars and carbohydrates in the gut, the body will have run on ketones, and you can measure that in the breath. So that's a very useful way to know that you're in ketosis.

Steven Bruce

What was the blood test measuring you said?

Sarah Myhill

Beta hydroxy butyric acid. And what I'll do is I've updated my information about, you know, fine tuning the PK diet, which I will send to you, and please send that on to any of your listeners. They're most welcome to have it.

Steven Bruce

Thank you. Right, groundhogs.

Sarah Myhill

Oh yes. Now, groundhogs, I keep talking about groundhogs and the word comes from the film that comic on Groundhog Day, when our hero goes back to, he's in a time loop and he goes back to the beginning of the day and starts all over again to see if he can get it right. And groundhog for me is a sort of time loop, because I keep coming back to it over and over and over again. And groundhog is simply a package of treatment. And there are three layers of groundhog and we should all be doing groundhog basic. Groundhog basic is what we need to do all the time, from birth, to live to our full potential and live a

wonderful life. But guess what, and that includes a paleo ketogenic diet, a packet of supplements, the right amount of exercise, the right amount of sleep, you know, right amount of sunshine, and so on and so forth. And that's groundhog basic. And then we have what I call groundhog acute. And groundhog acute are the interventions we put in place in the event of an acute infection, like COVID-19, like influenza, like a urinary tract infection, or like a skin infection or whatever. And that's groundhog basic ie the diet plus, vitamin C to battle your problems. Maybe using iodine, maybe using herbs to deal with infections. It's another package of treatment to deal with acute infection. Because most disease gets into us via an acute infection, whether it's a post viral syndrome, whether it's cancer, whether it's heart disease, you know, whether it's dementia, they are all infection driven conditions. So, dealing with acute infection efficiently is really, really important. And then we have what I call groundhog chronic. And that is the patch of treatment. For those people who already have pathology, they come to me with dementia, they come to me with cancer, they come to me with heart disease or chronic fatigue, or ME or whatever. And that patch of treatment is all that's gone before, plus detox regimes, you know, plus maybe techniques to retrain the immune system like micro immunotherapy, like EPD, or whatever, whatever, where it gets a bit more complicated. But the point is, we have got used to having one symptom, you know, one drug and away you go and that's the end of it. And it's not like that with ecological medicine. It's complicated. But it's not so complicated that nobody can understand. It is complicated, but it's the same thing over and over and over again. So, as I say, That's why I talk about groundhog regimes, because that simplifies the treatments into packages that we can discuss very easily. And details, those packages that are all on my website. If you go to that and put in groundhog, then you will get them up and how they work and what each package entails.

Steven Bruce

Yeah, and there was a hell of a lot of information on your website, isn't there, sir. And I'd recommend it, you could spend a happy half hour wandering through the different links on the website. Lawrence says he recalls in biochemistry that β -oxidation was something that happened if there wasn't any carbohydrate left, is that the keto diet?

Sarah Myhill

Correct. Beta-oxidation is all about fat burning. And when the body runs out of glucose or sugar from the gut, when it runs out of glucose from the glycogen sponge, it will switch into fat burning which is beta-oxidation. And if you want to lose fat, you want to lose weight then you got to use the beta-oxidation to do that.

Steven Bruce

Thank you. Jonathan says, what do you think about liposomal vitamin C?

Sarah Myhill

I think it's a con. I really do. When liposomal vitamin C came into the market I asked them, you know, well, where's the study to show that it's more effective than good old bog standard cheapest ascorbic acid. All they said, there's one study we did. And we gave one person 36 pounds of liposomal vitamin C and one person 36 grams of ordinary vitamin C and of course at that dose, they had diarrhea as you would expect.

And the person who had liposomal vitamin C had slightly higher blood levels than the other. That's not good enough. So, I got back to them, you must be joking, you've got to have a better evidence base than that. At which point they cut off communication with me. Ascorbic acid, bog standard ascorbic acid or magnesium ascorbate if you don't want the acid, works perfectly well. It works brilliantly well. It's what nature produces. It's what's being used by, you know, Robert Cathcart, by Frederick and all these vitamin C pioneers for decades, and it's fabulous. That's all you need.

Steven Bruce

Super. 005.6 is back in the question chain here and says, is there any way of ameliorating the brain fog during the transition from carbs to keto?

Sarah Myhill

No, it's just the phase you have to go through. And I call it the metabolic hinterland. And that's what stops a lot of people during the dark because, you know, they can't bear the withdrawal symptoms. And if you think of sugars and carbohydrates as an addiction, which they are, and what happens when you give up an addiction, you get withdrawal, symptoms, the very fact you're getting foggy brain or fatigue and feeling awful tells me, you're a carbohydrate addict. And then that increases the imperative, increases the need to do the diet.

Steven Bruce

It's interesting, though, how quickly you cease to crave carbohydrates I think, after you've made this transition, at least that's my own experience.

Sarah Myhill

Yeah, the biggest problem I run into is something which I call keto genic hypoglycemia. Now, normally, when you switch from running on carbohydrates to running on fat, you fat burn with thyroid hormones, but hypothyroidism is incredibly common. It's very common in patients with fatigue syndrome. And if you are underactive with the thyroid, and you don't have the thyroid hormones to fat burn then you fat burn with adrenaline instead. Now the symptoms of low blood sugar are not symptoms of low blood sugar, they're adrenaline symptoms. And so, people feel like they've got low blood sugar because they're using adrenaline to fat burn with. And that's a very good clue that there's a thyroid problem and that needs treating as a separate issue.

Steven Bruce

Could you, I don't know who sent this in, you need to show and tell us the evidence behind your assertion here, Sarah, why do we have to have Epsom salts in our bath?

Sarah Myhill

Oh, you don't have to. But it's a very, well, firstly, it's very cheap. You know, you can get 20 kilograms of Epsom salts for about 30 quid and that gives you 40 bars. But there's some lovely work done by Rosemary Waring at Birmingham, who looks at Epsom salt baths and she had 19 volunteers who were students. And

she asked them to soak in Epsom salt baths every night for two weeks. And she measured their blood magnesium and blood sulfates and their urine magnesium and their urine sulfate before and after and in every single case magnesium came up in the sulfate and of course sulfate is essential for detoxing. And then of course it came up in the urine as well. So, it was passing through them and doing good as it passed through. And two of the volunteers of that work were mature students who had arthritis and they both said, and my arthritis cleared up too, and so it's a very good treatment. You get magnesium and sulfate in and also to warm up the body and pull the toxins out. So, it's a great all-rounder, cheap, easy anybody can get. And for those people who don't have a bath but have a shower, I discovered on Amazon you can get sort of a bucket that you can put in your shower that fills up from the shower and you can sit in it. So, you can have a very good Epsom salts you know wash even if you've only got, or Epsom salt bath soak rather, even if you've only got a shower,

Steven Bruce

Sitting in a bucket of water sounds to me like very much what I would have called a bath but...

Sarah Myhill

Yeah, it's a little bath that fits into your shower.

Steven Bruce

Someone explained to me that 005.6 is apparently James Bond on partial furlough. Good to have you with us James. Ian wants to know if a keto diet helps with restless legs.

Sarah Myhill

Oh, it might. But restless legs is an interesting one. And I think, well, an awful lot of restless legs is magnesium deficiency. And you need calcium to attract muscles and you need magnesium to relax them. And we are magnesium deficient. And so, I'd advocate a good dose of vitamin D at least 10,000 IU daily because you need vitamin D to absorb magnesium and of course calcium and then at least 300 milligrams of magnesium and that will often work. It can also be an allergy symptom. So again, you cut out the grains and the dairy which come up, you know, very commonly as driving forces and it may also be a poor energy delivery issue. So, because as I say, you need energy for muscles to relax. So, to relax the muscle you need about four molecules of ATP, I beg your pardon, to contract you need four molecules of ATP. To relax you need two molecules of ATP, so you need energy to relax muscle, so any condition associated with poor energy delivery could present with restless legs.

Steven Bruce

You aren't the first of my guests to recommend a level of vitamin D, which is way above what is supposedly the standard daily intake, according to NHS websites and so on.

Sarah Myhill

Yeah, but they are set ridiculously low and again, if you got a difficult question, go back to first principles, you know, ask nature, what did primitive man do? Primitive man had 12 hours of full body sunshine every

single day. And 10,000 IU is equivalent to one hour of full body sunshine. Yeah, it's not a huge amount. It's a modest dose. And the point here is up to 10,000 IU of vitamin D, there have never been any problems, no side effects whatsoever. Some doctors will say the same for 20,000 IU of vitamin D. Some doctors use 50, or 100,000 IU vitamin D daily, but at those sorts of doses that you have to monitor the serum calcium. Vitamin D is the most important anti-inflammatory in the body. So, if you are in a vitamin D deprived state, you will be in a pro inflamed state. And we know inflammation, you know, can be very damaging for the body, autoimmunity, allergy, degeneration.

Steven Bruce

Thank you. I've had a lot of questions about COVID and vitamin D, and COVID and other things. And I'm actually trying to steer clear of the COVID questions. While there are other things, and we've only got a few minutes left. So, apologies if you want to know about COVID. But I'm trying to get a different speaker on to address that subject in particular.

Sarah Myhill

Oh, I can address that subject to don't worry.

Steven Bruce

Shall we get her back? Let's get her back again and talk about COVID. That would be great fun. I mean, you talked about dementia earlier on, Dee has asked whether a PK diet helps with vascular dementia?

Sarah Myhill

Absolutely, absolutely. Because vascular dementia is poor blood supply to the brain, and therefore you're not getting the oxygen and the fuel there. If you do a PK diet, one of the good things about that is you thin the blood. And therefore, it can flow more efficiently. You supply fuel in a much better basis, which is as ketones, and my guess is, you can actually improve arterial function with all these interventions. For example, one thing that I learned from John McLaren-Howard is that, you know, we rather assume that the heart is entirely responsible for the blood circulation, not so, the heart is just part of it, the heart generates about 60% of the circulation. And the rest of circulation is carried out by the muscular arteries, which, you know, pick up the pressure way, and move it on like a wiggly worm. So, the muscles themselves, the arteries circulate the blood. And if you've got good magnesium delivery, which is vital for arterial function, and good energy delivery to the arteries, then you will further improve the blood supply again. So, the keto diet works for all forms of dementia because it improves energy delivery.

Steven Bruce

I'm sure there's gonna be a lot of people who are hugely sort of reassured by that, coming back to the business of communicating with our patients, what do you think we can legally tell them on the basis of evidence given that we are told that we must practice evidence-based medicine?

Sarah Myhill

Everything that I've said to you today has an evidence base, I can reference anything that I have said.

Steven Bruce

And bear in mind, Sarah has done this in hearings at the GMC on a number of 39 occasions.

Sarah Myhill

Absolutely. And I mean, all my stuff, I've written down in the book Ecological Medicine, which is available, and the Infection Game. So, if it's in that Ecological Medicine, there is a scientific rationale for it. I haven't put down all the references in that, simply because it does make it so unwieldy. But there is not a sentence in there that I cannot evidence base.

Steven Bruce

Brilliant. So, we'll give you links to all of Sarah's books, but you've also got a PK or a keto recipe book as well, haven't you, which is very useful for people who are struggling to find variety in their keto diets.

Sarah Myhill

Yes, I have written that book for those people who don't have the time, the energy or the inclination to cook. And of course, my patients don't have the energy. I didn't have the time and I didn't have the inclination, but I eat very well, from the recipes in that book.

Steven Bruce

Dawn has asked whether infrared light helps to increase mitochondrial function.

Sarah Myhill

Oh, absolutely. It's a wonderful thing. And to explain this fully, we have started talking about something called the fourth phase of water, which is a new idea about how water behaves when it's against the membrane, but against the membrane water forms itself in something called EZ or exclusion zone water, which has very fascinating physical properties. And it cannot do that without an energy source and that energy source is infrared. So, all our membrane functions, where energy is generated, how cells are controlled, how nerves are conducted, how muscles contract, it all happens on the membrane. And that is dependent on exclusion zone water. And exclusion zone water is built from the energy of far infrared. And that is why sunshine is so good for us. That's why far infrared saunas are so good for us. And that's why we feel great on a sunny day, because we have more energy, it's free energy. So please, if you've got far infrared sauna, use it. Again. It's one of my favorite multitasking tools, it gives you energy, and it helps to detox.

Steven Bruce

Okay, last question for you, then, Jule says, what's the best way to test the mineral levels.

Sarah Myhill

There isn't a very good test for it to tell the truth. You know, the tests just aren't that reliable, and they're rather expensive. But the bottom line is, we're all mineral deficient. And one of my favorites, I ended up making various products. And my latest one is called sunshine salts, because it's got all the minerals that we

need, in decent amounts, the correct proportion and a form that soluble. And the bottom line is if you're eating a modern diet, you will be mineral deficient, simply because there's a one-way cycle of minerals from the soil, into plants, into animals, fast the correct way. And these days, I actually never test for minerals because I know what the result is. But by the time people are doing ketogenic diet, they sort out their fermenting gut, and they're taking good patches of supplements and these are all in my groundhog regimes, there's no secret about this. You look on my website, you'll see what that entails. And your minerals will gradually stack up and correct beautifully. And I very rarely test.

Steven Bruce

Well, we really are almost out of time. And 005.6 says this has been brilliant, but he does think the dog is whispering the answers in your ear. I've had a lot of people saying could we get Nancy back again, please, especially if you would like to join her, Sarah? One more question. Rebecca sent this in ages ago. So if you can give me 20 seconds on this. Rebecca says she believes gut dysbiosis and vagal nerve tone is massively important in chronic fatigue. What do you think?

Sarah Myhill

I agree 100%. And, again, I could talk over a whole session on the gut function. But the bottom line is the upper gut should be a digesting sterile carnivorous gut, like my Nancy's gut. And the lower gut should be a fermenting gut to deal with fiber. And if we're eating sugars and carbohydrates, and we overwhelm our ability to deal with them, we end up with an upper fermenting gut and that gut dysbiosis is a major problem. Why? Because we malabsorb minerals, because we don't digest proteins because we don't sterilise microbes coming in our systems, and freezing the upper fermenting gut is a major part of getting well. So, I agree 100%. Vagus nerve. Now the vagus nerve obviously is the main thoroughfare by which the brain and the gut communicate and they communicate very well, they do. And we know that there are going to be problems with the vagus nerve, for example, patients who have very severe fatigue syndromes can present with POTS, postural orthostatic tachycardia syndrome. Now part of POTS has to do with poor energy delivery mechanisms. But there are some people improve their energy delivery mechanism, but still have POTS. And that seems to be due to an infection of the vagus nerve. And on my website, the most recent posts I put up has to do with how we can treat that, maybe with electrical stimulation, maybe TENS machines. Another technique I'm getting interested in at the moment is something called, frequency specific micro currents, which are a fantastic treatment for a whole range of conditions. So, agree with your your questions in both cases, absolutely spot on.

Steven Bruce

Sarah, it's been brilliant. Thank you so much for coming on the show. Can we get you back again sometime?

Sarah Myhill

Of course, you just have to ask. I can talk. I can talk for England.

Steven Bruce

I wish you would and I wish perhaps you'd talk at some of our osteopathic and chiropractic colleges because it would be a world of reassurance to us that there are people out there who do think along lines that we like to think we think along. So, we got time for this evening though. So, thank you once again. So, kind of you to share all that information so freely.

Sarah Myhill

My pleasure.