Migraines - Ref 264

with Simon Billings

18th October 2022

TRANSCRIPT

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Steven Bruce
Good evening. Well, another busy week and it's only just started. As you probably know, I'm currently on jury duty, so only just got back into the studio, where my brilliant team seemed to be doing very well in my absence. Some have even said that it's all better without me. However, moving on, let's get back onto this evening CPD. Don't forget, of course, you can send in your own comments and questions at any time. And we're still waiting with bated breath for the first person who's brave enough to call in on the live video link. The button for that's on the webpage underneath the video panel, I think. Sadly, if you're joining us through Facebook, that option is not available, but do keep your comments and your questions coming in, please. This evening, I have Simon Billings back on the show. Simon has been a chiropractor for over 20 years and has a very keen interest in the nutritional aspects of healthcare. He's been with us before as I said, but this is his first appearance in person in the studio. So, Simon, it's great to have you with us. Welcome to our studio.

Simon Billings
It's a pleasure to be in the flesh.

Steven Bruce
Yeah, it's great. You've been with us before and I've asked you this question before I know but so, how do you, a chiropractor, get this interest in nutrition and in migraines, which is our topic for this evening?

Simon Billings
Yeah, so really through my own health issues. So I qualified in 2001. And from when I started college through those five years, from 96 to 2001, I was getting iller and iller, I just didn't quite know, IBS and skin problems and brain fog and all sorts of other problems and getting more and more stiff and achy.

Steven Bruce
Nowadays, they just call it COVID.

Simon Billings
COVID or fibromyalgia or something. So in the end, in about sort of late 2007 I think it was, 2008, I got diagnosed with ankylosing spondylitis. And then a few years after that I got psoriasis and that then, I'd already had an interest in nutrition and so on at college, but I had to do it for myself then at that point, and so I dug right down into functional medicine, nutrition, and had some infections in play and gluten intolerance and a whole lot of other bits and pieces and dental infections. And so through doing all of those bits and pieces and having some dental surgery and gut treatment stuff, I was in remission from psoriasis and AS and then once you have all that information, it's pretty dense stuff. And you have to be able to then try and know, how do I want to translate that into my chiropractic practice, goes to the chiropractor. And that was hard, because full time functional medicine nutrition, it's you know, you're there with the client for an hour, and then you go 10, 15 minutes or whatever it is, and you've got to do your chiropractic bit or whatever you're doing. And integrating them is hard. And that's kind of been the bit I've done more recently was trying to distil down the bits that are really pertinent in what it says in neuromechanical setting, be it chiropractic, osteopathy, physiotherapy, whatever it is.

Steven Bruce
It's what I have enjoyed about our conversations in the past that you're introducing things that lots of people can do without going on lengthy courses to learn about, although obviously you can provide them the information if they need help, but stuff which can make a big difference to the outcomes for their patients which is very, very helpful. Just for clarity, if you were an osteopath, I could say, well, are you a cranial osteopath or a structural osteopath? What kind of chiropractor are you?

Simon Billings
I am all of those. I do a lot of manipulation. I do a lot of muscle testing. So I went off and did a muscle testing course my first year after graduation, that was very informative. So it's for me, it's like a window into the nervous system. It's very obvious before and after. And then also, I did a lot of SOT, sacral occipital technique, which means doing a lot of cranial work and occipital work.

Steven Bruce
So that's what we would call cranio sacral technique.

Simon Billings
Yeah, exactly cranio sacral osteopathy. So I do a lot of muscle testing and manipulation. But also, I understand the cranio dental mechanism. We'll talk about that within migraine as well. That's really important. And dentition. I worked in a dental clinic, working with the dentist, with people with things like trigeminal neuralgia and all sorts of other weird stuff.

Steven Bruce
As a chiropractor?

Simon Billings
Yes. Yeah, as a chiropractor, that was in house with them. That was really interesting. I learned a lot there.

Steven Bruce
Your formative years were at the Anglo European College, you're diversified by training.

Simon Billings
Yeah, exactly. I'm structural.

Steven Bruce
Diversified, I thought that's what chiropractors call structural stuff.

Simon Billings
It's a technique, diversified is the kind of main technique, so I do, yeah, manipulation, a bit of cranio sacral, or cranial technique at least. And then yeah, integrating in the nutritional bits. And the bits I'm really interested in for my practice, and then what we teach in the course, is what we call keystone nutrients. So if you go to functional medicine seminar, it's like a maze without a map, and you're gonna get lost. So what you really want is, if the nutrient is low, that will be a showstopper, without that in place,

that keystone, the system will not run. So vitamin D is the most obvious one, or vitamin B12 as well. If you're low on either of those, you are screwed, you will never be healthy, it doesn't matter what you do, they're not going to recover, they just will not. And so we want to know what those are. And then you also have to be able to replenish them relatively quickly. And usually with supplements or some kind of change and see results within you know, a few weeks to a month, and they're the bits we're interested in. If you do that, because the whole point, if the patient is coming in with something neuromechanical I want my treatment to work, I have a whole lot of people where it works just doing chiropractic and manipulation of soft tissue and stuff and cranial works, there's a whole group that the results tend to dwindle down, and a chunk of those is because of nutritional stuff. If we can get the easy low hanging fruit picked, they'll respond as I would anticipate.

Steven Bruce
I don't want to go down a rabbit hole of talking about vitamin D or B12, because we've done shows on those before, we did vitamin D with you and we did vitamin B12 with Tracey Witty, both of those shows are in our recordings archive so people can look them up. But I must say that one of the things I found most difficult to get to grips with, particularly with B12 is accurate testing for vitamin levels. And then what kind of thing you use to supplement because it's not simply a question of going to Holland and Barrett's getting a B12 pill and taking it.

Simon Billings
No, I can summarise that if you want, because I do a B12 lecture. The simple answer is, and this is according, this is the one time I agree with NHS guidance, is that the blood test is simply not reliable. Bood testing can rule in deficiency, but it simply cannot rule it out. Because often people with the, what looks like really high levels is because they can't get B12 into the cells. It's floating around in the blood and it can't get into the cell or if they have pernicious anaemia, which is autoimmunity against the stomach, the antibodies against the stomach lining look to the machine like B12. And it pushes the numbers up artificially. So the most important thing is clinical symptoms. Do they have persistent tingling pain, numbness, particularly bilaterally? Do they have chronic fatigue? Do they have persistent pain? Do they have mental health issues, if you've got a trio of those, you got pain, brain and fatigue, and you have a B12 level that is in an intermediate zone, maybe under 500. Or if they've got really bad symptoms, you always should give a trial of B12. And that's what it says in the guidance actually, is routinely ignored, you should always give a B12 trial. And in our scenario, that would mean a sublingual. And usually in the active form would be most commonly prescribed, just tuck it between the cheek and the gum. And I would co prescribe with a methylating, B complex, which will have folate, B6, some trimethylglycines, and B2 in there as well. Because if they're low in B12, the chances are they're low in other stuff as well. And you need a complement so that the methylation cycle, which we're going to talk about in a minute actually spins and they feel better, and there's no risk in terms, there's no toxicity for B12 and B vitamins at all.

Steven Bruce
That was a lovely thing about talking to so many people about vitamin supplementation, which of course is of no interest to the pharmacological companies because there's no money in it. But it's very hard to overdose in any significant way. And you might get some diarrhoea or something, but it's hard with most of them to overdose.

Simon Billings
We should distinguish between water soluble and fat soluble. So water soluble being vitamin B, vitamin C, this comes in and it's out quite quick, vitamin C might give you diarrhoea, but the fat soluble ones, vitamin A, D, E and K, they will build up in your body, so they can be. So vitamin A toxicity is a thing if you took it long enough. And same with vitamin D, if you went berserk. You'd have to go at it. You really would. Yeah. And you might be very unlucky, certain patients with unusual actions. But yeah, for the most part, you have to really go at it for long periods to do any kind of damage.

Steven Bruce
So bottom line is, people should look at your last broadcast for vitamin D and Tracey Witty's for B12.

Simon Billings
Yes.

Steven Bruce
What's the other one we did with you?

Simon Billings
We did neuro inflammation, which we'll cover here again, in the context of the biopsychosocial model.

Steven Bruce
Yes, yeah. So there's some really good stuff we'll be able to look into to back up what we're going to talk about. But we're gonna talk about migrains. So, you had migraines yourself, you said?

Simon Billings
No, never had a migraine. But if you're interested and you want to know what migraine feels a bit like then you could go and eat an ice cream and give yourself an ice cream headache, because that is a similar feeling. The cold comes up, and it cools the cribriform plate very suddenly, and your body must try and warm that air up. And it does that by suddenly enlarging the blood vessels in the area and you get a sudden stretch. And the blood vessels have nerves around them. And that hurts. And that's where you get that feeling of fullness and that pain in your head. And that is similar to what people get with migraine.

Steven Bruce
Not all migraines are the same though, are they?

Simon Billings
No. Well, there is an umbrella. And in fact, I would say a spectrum, which we'll have a diagram to talk about. So there's traditional, migraine with aura, which is the one people tend to think about, we get flashing lights, and they know it's coming. And then they get the violent headache. And then there's without aura, it's still a migraine, they don't quite get some of the prodromal features. And there is some interesting research we'll talk about and in terms of picking what you're going to do with patients, because the ones with aura, often have a genetic component, and higher rates of deficiencies that respond better

to supplementation, particularly for treating the mitochondria. And then as we go through the spectrum, which we'll talk about, there's different things and mechanical stuff that comes in.

Steven Bruce
Okay, what about those people who have the prodromal stuff, the aura, but don't get pain? I'm really personally interested in this because I'm one of them.

Simon Billings
Don't get pain? Well, we'll talk, again, there's things like a cyclical vomiting syndrome, there's abdominal migraine, there's a theory that colic might even be a migraine. So all of it comes down to really about mitochondria for the most part, for true migraine, which we'll talk about in a minute. So it basically comes down to mitochondrial dysfunction. And you may get different manifestations, but fundamentally, the core of it is, dodgy mitochondria, and inflammation in the brain.

Steven Bruce
Okay, so before you crack on, I'm gonna bring in my one visual aid for the evening which is the NICE guidelines on headaches in the over 12s. Now, this is a riveting read. It's nailbiting, you have to get to page 14 before it mentions migraines and page 17 before it mentions treatment. But other than standard pharmacological remedies, the only thing it recommends is a course of 10 sessions of acupuncture, for Migraine with or without aura, as being something you might try. I'm guessing you're going to suggest that there are other things we could do. Well, let's start. What do you think of the NICE guidelines?

Simon Billings
Right. I mean, they are what they are, they're very pharmaceutical led. They want a certain level of evidence and evidence in that context is really about randomised double blinded studies, and then they want a certain methodological quality. And of course, these things are expensive to run and hard to do. And the drug companies have the money to do it with drugs and the supplement, you know, who's going to fund that?

Steven Bruce
There's also a mindset, isn't there, in conventional medicine, which says this is a pain, we need a drug that will fix it. And that's the way they are driven. I have a particular reason for bringing in the NICE guidelines. I think every time I can I bring in the NICE guidelines, because it looks really good on the certificate that we've done it, we've got a reference document that they can talk about if they're having to refer someone to a GP or whatever else. So it enables people to talk about the conventional approach.

Simon Billings
I mean, it's very, very pharmaceutical, very symptom led. And there's a slide later on at the end we were talking about, there's a drug they have for migraine, which is this sort of miracle drug we'll talk about, it's about seven grand a year, and it gives about 50% reduction in migraine. So what we want to know is, we know that in migraine, there's a lot of inflammation in your brain. And that inflammation, dysfunctional mitochondria is damaging you. And that's one of the reasons you get migraine, and that underpins all neurodegenerative diseases, cancer, strokes, a whole load of stuff. So the question is, can we ethically just treat that migraine with a drug which squashes it down in one area, but we leave all the root causes

in place and all of the downstream effects, when we know, I've got lots of research coming up, we can reduce it to that extent, and better in some cases with supplements and diet manipulation. And it's very cheap.

Steven Bruce
Interestingly, we had a lady called Elizabeth Huzzey on the programme quite some time ago now, she was talking about headaches. And she mentioned the business of acupuncture being effective. And apparently, acupuncture is effective in I think it was 75% of migraine cases to some degree. And I can't remember the measure of improvement. But sham acupuncture was only 5% less.

Simon Billings
Yes. And we'll see later on that there is to do with the neck and the jaw and how that overlaps into true migraine, which migraine is a cellular event. The question is why your cells are going bonkers.

Steven Bruce
Before we get on, I want to get into mirgaines, your stuff properly in a minute. Wallace says, do you use medical acupuncture as part of your management of migraine?

Simon Billings
No.

Steven Bruce
Okay, that's fair enough. And John says, which muscle testing course did you do? And how do you use it to treat or assess migraines? Or will that come out as part of the...

Simon Billings
No, it's not in there, I would say I did Simon King's course and it's now called afferent input. I think it's afferent input, if you find Simon King, afferent input. His stuff is genuinely unique, and some stuff he's developed. And there's stuff there that I use every single day, regularly and some of it is absolutely golden. And I would never be without it. He's very ethical in his approach to muscle testing, some of the muscle testing can be a little bit fluffy, frankly, and he's having none of it. So I would definitely recommend that.

Steven Bruce
Simon King is a...

Simon Billings
...chiropractor. But he's not registered anymore. But by training he is a chiropractor.

Steven Bruce
So now we're getting into the meat of this. We clearly got the boffins on tonight, because someone who the machine is calling Green Grass Makes Healthy Sheep says, I thought migraine research suggested a sweeping wave of cortical neurotransmitter depression, or is this now out of date?

Simon Billings
No, we're gonna talk about that in a minute.

Steven Bruce
Okay, good. Over to you. Let's talk about migraine.

Simon Billings
Alright, so we go through some slides. There we go. So the question is, are we primed for migraine because some people get migraine very easily and some people do not. And there's definitely a genetic component, we know that for sure. Or epigenetic, so to say around the gene. And the reason we're sure of that is because we know that there are a lot of deficiencies involved and that we can get around some of the genetics by picking those deficiencies, or in some cases, saturating the tissue to make the enzyme work. So the genetics are a code for an enzyme and that pushes the pathway. And if we can sometimes saturate the tissue with the nutrient that is activating the enzyme you can get around some of that.

Steven Bruce
I always forget to say to people before we start these things that, I know there are slides on the screen here and I know you're getting them flashed up for them as we go through this. I will send them out as handouts after we finish the show. Probably it's gonna be in tomorrow evening, because I'm, as I say, on jury duty. So don't worry if you haven't had time to write it all down or something. The great thing here is just listen to what Simon has to say. So we're on deficiency.

Simon Billings
Yes, B vitamins, vitamin D, magnesium, Co Q10 and carnitine, they're the ones that I use the most. Carnitine is a very underused nutrient. It is amazing, and we'll talk about that later. And the other thing is food reaction, and particularly as a food intolerance, and we'll talk about them as being a food intolerance. And then later on it, that there's certain food triggers that involve things like nitrites and sulphides and they're a slightly different thing. But those things come together. And then they give us really dysfunctional mitochondria. So you've got to make energy, and you're breaking the bonds of the food to release them in the electron transport chain. You're always gonna get a degree of leakage of electrons and that manifests as a free radical. And that's going to create oxidative damage. And the problem there is that the more dysfunctional mitochondria are, the more damage you get, that damage creates inflammation, that inflammation creates more oxidative damage, which damages your mitochondria. And you get this really vicious cycle. So this underpins Parkinson's, MS, Alzheimers, all of it is underpinned by that. And in the most complex stuff, this will be involved somewhere on the line because you have to, we have to make energy and so on. So mitochondria is the number one source of free radicals, followed by inflammation, and particularly, we have what we would say as a sustained, low grade inflammatory response, systemically in the blood, but also in the nervous system, because your blood brain barrier sensing the blood sends inflammation here, could be under attack, because immunity is up. So we'll turn on our immune system in the brain, the microglia. And we will make a bit of inflammation to make sure we clear out any infection. But if the "infection" is in fact, gluten or dairy, then it never goes away because you eat it every day. And then you have a sustained inflammatory response, which you shouldn't have.

Steven Bruce
And yet those people who are gluten or dairy intolerant are not always migraine sufferers?

Simon Billings
No, because again, you might need to be genetically predisposed to migraine or have other factors with your jaw and neck that might combine.

Steven Bruce
This might be the wrong time to deal with this. But a quick question about mitochondria. We've just taken delivery of Cat 4 Laser in our clinic and I remember when we were talking to Steven Barabash, the guy who's the sort of marketing man for this in this country who delivered it here, but he was also on the show before, he was saying that Cat 4 Laser is actually very, very good at providing energy or encouraging energy production in mitochondria. Is there a role for it, do you think in what we're talking about this evening?

Simon Billings
Possibly, I don't know about the actual brain itself. We have lasers in clinic we use but again, you might do it peripherally for some of the peripheral nerves in the neck, maybe into the jaw joint and those associated areas. I think that's how red-light lasers work in general, is through mitochondrial stuff and cellular manipulation for sure. Yeah. So might be useful. Yeah. Okay, so just as a reminder, I think most people know. A free radical, so normal stable electron should have pairs of electrons. Stable molecule, beg your pardon, should have a pair of electrons. A free radical is unstable, has one unpaired electron. And then what happens is, that unpaired electron it nicks one from a neighbouring molecule, so it's going in and that's damaging. And that then is a chain of events which gets passed down the line. It's like a fire that spreads and just keeps going and going and going. If you don't have adequate antioxidants, which are molecules with a spare electron, they can hand over and neutralise that and that's the issues is that we have excess oxidation going on with a deficiency relatively of antioxidants.

Steven Bruce
If you have lots and lots of antioxidants, more than you've got free radicals, then you just end up with the same thing, don't you? Lots more molecules with extra electrons.

Simon Billings
But they have a spare one, so they can hand it over. I think we talked about this earlier about the idea of, you know, can we treat symptoms and leave them. Migraines have quote, comorbidity, the term I loathe because all of these things depression, anxiety, stroke, irritable bowel, fibromyalgia, all these things, they're all just symptoms, and they're all underpinned by the same things, inflammation, mitochondrial dysfunction, and so on. So they're really just extensions of the same thing. And we want to look beyond that and really get at the root causes because then you give patients so much more value, much, much better improvement of health.

Steven Bruce
On that little slide, it says that the information is derived from the American Migraine Foundation, do they have a different approach to medical organisations in this country?

Simon Billings
I don't think so, particularly. I don't know, to be perfectly honest with you.

Steven Bruce
I was just curious.

Simon Billings
I don't really do too much with the General Association and stuff because they're just so pharmaceutically led. So migraine itself, the pain is felt through the trigeminal nerve and trigeminal is an unusual cranial nerve, so it supplies all of your face, and also your sinuses but also, it has a motor as part as well, so it supplies all of the muscles of mastication and it also supplies your dura and all of the blood vessels have trigeminal innervation. So that's really important. The muscles of mastication are really important as nerves, but then the other thing is that as well as the trigeminal, where the trigeminal comes in, at the brainstem, the upper three cervical nerve roots come in and form the trigeminal cervical nucleus, so it has a common input to the brain. So therefore, if you have something coming in nociception from the upper three cervical routes, that will go in and it will stimulate the same nucleus. And this means you can get kind of a summation or convergence of the two different inputs. And that provides us with a link from the neck, which then can potentially trigger a migraine, even if, yeah, so we'll talk about that in a minute but it means that there's a convergence and an overlap.

Steven Bruce
The conventional world here certainly differentiates between migraines and cervicogenic headache.

Simon Billings
Absolutely, yeah.

Steven Bruce
So this is effectively cervicogenic?

Steven Bruce
But it's not sufficient in its own rights to cause a migraine?

Simon Billings
No. So we'll talk about it in a minute, so there's a slide, when we talk about a mixed pattern, so they might get their normal headache and they get it here and occasionally they come to the front, but once a month it goes into a full-blown migraine. And these people are definitely primed. But because of the cervical thing, and maybe their jaw, that's feeding in and it's enough to push them over the edge. So C1-3 might be adding into the priming.

Simon Billings
Exactly. You need a combination of stuff and a priming of the system. And that's where we're going to look at. Oh, there you go. There's the migraine spectrum.

Steven Bruce
Just before you go on, because my list of questions is building here. Someone says, Simon says an ice cream headache is nothing like a migraine that's underestimating a migraine exclamation mark. It's being unkind to migraine sufferers, take it from someone who suffers from migraine.

Simon Billings
I will go with whatever you say.

Steven Bruce
You've obviously got it from people who have had migraines that theirs was similar, I guess.

Simon Billings
I read an article about migraine, they were saying if you want to know it's roughly, it's the same, the enlargement of the vessels will give you a sniff of it.

Steven Bruce
One of the others, I mean, it's an early stage to ask this, but Claire's asked whether you know about the EdACHe research which is going on within the osteopathic community at the moment. This is something that Liz Huzzey is closely involved in, amongst others. But it'd be interesting, I'll share the resources with you as well.

Simon Billings
Yeah, that would be great.

Steven Bruce
And then we've got some specifics about treating migraines, which I'll leave till later.

Simon Billings
It might be coming up in the slides, yeah. So we'd say on the far left, we say true migraine, this is a cellular event, and someone mentioned this earlier, you basically have a very fragile central nervous system. So it's on the edge of depolarisation. And what can happen is when you get to a certain point, where you get a vicious cycle, you get what's called a cellular metabolic collapse. And this leads to cortical spreading depression, which I think is what the person was saying there. It's a well-established thing that people get with traumatic brain injury and strokes and so on. So you get a complete depolarisation of the brain, it goes like a wave and it comes down through and then, at the end of it, then you have your trigeminal nerve's wildly hypersensitive, and the aftermath is what we would call a migraine. You're getting hypersensitivity and everything. Then at the far end on the right, we really have a pure neuromechanical thing so like you said it could just be a neck pain and it's a misdiagnosis, the patients that come in say I have migraine but they don't, they have a neck problem that's generating pain and they just refer to as a migraine because it's you know, a common term or they might have a jaw problem. And they might be having pain in the temple which is the temporalis muscle or jaw pain, you know, or tooth that could be referring up but they're just calling it migraine and that's purely a mechanical thing. And we should be all over that. That's our bread and butter.

Steven Bruce
I'm going to show my ignorance and feel very embarrassed. What does NICO stand for?

Simon Billings
It stands for a nociceptive inducing cavitational osteonecrosis.

Steven Bruce
I'm not in the least bit embarrassed I asked that question.

Simon Billings
So it's basically dead bone, I've got a slide, dead bone in the jaw, which is causing pain, and they're wildly under diagnosed, very common in wisdom tooth sites, which I had. And then in the middle of it, we have, we talked about that mixed pattern. So they have got a fragile nervous system and it is prone to collapse. And some of that, as well as being deficiencies or toxins or foods and inflammation, all the stuff we talked about, that trio of mitochondrial stuff, because we know that the TMJ and the upper three cervical roots are pushing, you know, nociceptive input into the trigeminal cervo nucleus, that will contribute to their fragile nervous system. So they might be getting a bit of both, they might have genuine true migraine, but they also might be getting some local pain. And they have their quote, normal headache. And then every now and again they get proper migraine and that, you'll be able to mop up their local pain and improve their threshold for true migraine by improving the neck and the jaw. And that will then raise their threshold so they're less triggered by certain things that used to trigger their migraine. That makes sense?

Steven Bruce
Yeah, makes perfect sense to me. Great.

Simon Billings
Okay. I think that middle a bit, I think that's really important because some people come in who have true migraine, and you can do something mechanical and it's magic. And they obviously have a big percentage that's coming from that input into the trigeminal cervo nucleus. And other times you'll do stuff and it does nothing, absolutely nothing, because they're a very pure chemical issue, cellular issue, and this has nothing to do with it.

Steven Bruce
A lot of what we're talking about here comes down to definitions as well. As you've said, if a patient comes in and says they've got migraine then that's either mixed or mechanical and you manipulate the cervicals and it goes away. We think we can fix migraines, they think that the migraine is fixed, but actually maybe it's not up at this end of the spectrum.

Simon Billings
Exactly so, yeah, so be very careful with when they say I've got a migraine, we want to be very picky about what are your actual symptoms? Because it's just a term which is well known.

Steven Bruce
You're handling the patient, how would you sieve out the ones who haven't got true migraine? What are your questions like?

Simon Billings
Oh, I mean, so with proper migraine, they know about it, they're flat out, in a dark room often, with or without aura. You can't function, the ones that I've seen. They'll often talk about, they'll get this pain in the temple here, they might refer to it as a tension type headache. That's almost always in my experience temporalis and it's a jaw thing and a bit of cranial work. And often they'll have mixed in some upper cervical stuff as well. Often hypermobile, in my experience. I don't tend to manipulate upper necks very often at all. So it's really about the severity often, and the frequency, you don't get migraine every day. That's just not a thing, you wouldn't be able to cope with that, not a true migraine. Because you'd be flattened the whole time. So frequently, what they really mean is I get neck pain, and it goes to my forehead, or I might feel it in my forehead or my eye or my temple. And that's what they're referring to as migraine. Okay, I'm gonna skip on, if I can. There we go. So the primary mechanism as I said is those three things: mitochondria, inflammation, oxidative damage, leading to this collapse of cells. And it's a wave, people often mention this wave-like thing that crashes over them. That's cortical spreading depression. And then the aftermath is the hypersensitivity of the trigeminal nerve, sensing the brain and all the they get edema in the brain as the blood vessels become leaky and stuff.

Steven Bruce
That probably was what our correspondent earlier was referring to.

Simon Billings
I'm sure it is. Yeah, I'm sure it is. Yeah, I'm sure.

Steven Bruce
We had a quick question about this, if I may. Derren says it was mentioned that many neurological conditions are underpinned by mitochondrial dysfunction, but is this dysfunction a result of the GIT and inflammation there and is this all a side effect of gut issues?

Simon Billings
I could be, yeah, because we have a gut brain axis, for sure. People who have neurodegenerative stuff, and I had a patient with motor neurone disease, that I treated and we did some organic acid testing. And he just had the perfect set of results for deficiencies and toxicities and mould toxins and clostridium difficile, all this studd, he was jut textbook. So in his case, yeah, absolutely. You can't divide them up, it's all linked. The only thing again, is how do you break that vicious cycle and where do we intervene, to try and get in there? And often the easiest way is with some supplements and then maybe removal of foods, because the results are quite quick. Yeah.

Steven Bruce
Do you talk to that lovely chap in Scotland who does treatment for motor neurone disease? A chiropractor, whose name...

Simon Billings
Donald.

Steven Bruce
Yeah. Donald Francis, is it?

Steven Bruce
Yeah, we had him on the show, it was a virtual show, but what an inspiring bloke. He's another chiropractor, isn't he, a McTimoney chiropractor, if I remember correctly.

Simon Billings
Yes, Don Francis.

Simon Billings
No, no, he graduated from Palmer. He does a lot of a lot of SOT cranial. He's involved in SOT Europe. Yeah.

Steven Bruce
Inspiring talk from him. And again, a lot of people who won't have seen the show might be instantly cynical about you can treat motor neurone disease and, of course, you're not going to fix it. But my God, you can make people feel better. I'd recommend it, it's in our archive, so I'd recommend it to anybody who's interested.

Simon Billings
I think some of my favourite patients are not the people where you treat them and they get completely well, and then they can come and go as they please. It's often the ones where they have been abandoned by the medical profession, and they have terrible quality of life, and some people are so unwell, you're never going to get them completely well, but you really improve their quality of life. And they're so grateful and it's so satisfying to be able to serve these people. I think that's a really humbling thing. So this diagram, this is really putting it together a little bit and the next one coming up to well. We're just talking about there's certain good things we need that are missing. And then there are certain bad things that we don't want in there, then there's a whole load of stuff, but we're gonna focus on the supplements and the foods. They drive our three things: mitochondria, inflammation, damage. That makes your nervous system fragile. And then we put in our neuromechanical part firing in which then drives the same stuff. Now, the next slide is really the same thing just in a different way.

Simon Billings
Get back. Is this a bit woolly for Simon Billings, that we need love and connection?

Simon Billings
You could argue that, I mean, I'm wooly on occasion. I mean, people need that, I think we're missing that in modern society. We're a bit atomized aren't we?

Steven Bruce
It's biopsychosocial, isn't it? So there's social aspect.

Simon Billings
I think we've kind of lost a bit of something, haven't we, in society. That's the same thing. Just I love a Venn diagram. Hands up. I just love Venns. I just love that. Okay, this is everything I'm interested in is overlapping the nutritional world. When you overlap that stuff, and you can get a hold of these things, your treatment works that much better.But it's the same thing really. The upper cervical three, the trigeminal nerve and all the stuff firing in and then with our bits overlap. All right. So the bit I'm going to talk about here is we need to try and break the vicious cycle somewhere. And the other bits, the that's circled is new, the other bit's all the same. So we know that you might get foods causing inflammation, which causes mitochondria, causes neuroinflammation. That neuroinflammation might make your nerve sensitive, the trigeminal, and that can be primed by certain deficiencies, like vitamin D will make you inflamed, if you're low in it. That will mean you're more sensitive to your mechanical issues. So you're more likely to get pain and that pain makes you more hypersensitive and so you get a vicious cycle. But the bit at the top there is neurogenic inflammation, meaning your nerve is making inflammation. So you'll see this in complex regional pain syndrome, I believe, where neuroinflammation, it's your immune system is making the inflammation here, the nerve is angry, the trigeminal nerve, and out of the end of the nerve comes some substance P. And there's another thing here, which is a really big one, called calcitonin gene-related peptide, or CGRP to its friends. This is the one that we'll talk later that drug companies are after, because it's an endpoint. So when your nerve gets so angry, trigeminal gets so angry, from all the things we've talked about, and it starts pushing out calcitonin gene-related peptide, it really then triggers something and your body becomes overwhelmed and that's the point at which you go into a full migraine.

Steven Bruce
So when you say the drug companies are after it, they're after adjusting it as an endpoint in research, what drug will cause it to change?

Simon Billings
Yeah, they've got one, and I'll show you in a minute. So that's the difference in this because its central nervous system, rather than a lot of other stuff that we talk about with healing of tissues and things, you get neurogenic inflammation, that's part of the issue. And then you get a trigger, and then we're over. And that's what I said, when you get past a certain point, you get an increased release of this peptide, and it really creates this, it's a spiral and the brain can't cope. There's not enough antioxidants, and it just goes boof. That's the point, then you get the sudden opening of the arteries and that's going to stretch, which is a bit not like an ice cream headache, not as bad obviously, the ice cream headache, this is worse, and the capillaries become leaky, so you get edema around the brain, so there's a swelling and a fullness in the head and there's metabolic collapse, cortical spreading depression, the aftermath is the migraine. And we want to know, when we go through in a minute, where are we going to make our intervention, where's the low hanging fruit to pick, from our research, that we can go in there and make a difference. That's what we want to know. So this is the idea of like your bucket's full and when the water spills over, you get a migraine and this is the bit, people tend to be obsessed with patients about their triggers. And they'll say things like, if I have chocolate or wine I get a migraine, it's bright light, or I get too much sleep or not enough sleep. But these things shouldn't give you migraine, they don't give me a

migraine, and they're bespoke. So really what our bucket is full of, we have some genetic issues, we've got deficiencies, we've got food issues, and we've got our neuro mechanical things, they fill your bucket, and then the triggers push you over. And what we want to do is get the bits there that are filling the bucket, drain it out, and we'll see later on those triggers suddenly don't trigger you. And we've got some research to back that up. All right. So our misdiagnosis, we mentioned, let's just briefly cover that. I think hopefully, most of us are happy with this. So the upper cervical facettes, peripheral nerves, and maybe trigger point referral. The jaw itself and the temporalis. I find that very common in practice, the temporalis muscle, because we've got lots of changes in dentition, people lose vertical height, they lose teeth, they have crowns, and this, that and the other. It affects the vertical height here, and the jaw tends to be retruded. And when it goes back a little bit and impacts up, the anterior portion of temporalis goes into overdrive trying to pull it forward. And you see this, when I worked with the dentist, we'd put a splint in it and we'd bring them forward, this muscle just goes so much less angry, it just immediately becomes less angry. So when they'd say, "I feel like I've got my head in a vice", it's almost always, in my experience temporalis trigger points. And if we can work those and do some cranial work and stuff that really makes a difference.

Steven Bruce
So other than splinting, what do you do on trigger points?

Simon Billings
So that's the one of the few places I do trigger points. I don't think trigger points do a lot in a longer term, but this is a not a normal joint, you can't manipulate that. So I do the trigger points. And particularly you must get into the mouth and you must get your finger, the little finger, on the tendon as it attaches to the coronoid process of the mandible. You must get in there and get right on it and it's exquisitely painful. People, it's like having a knife shoved in your face and people often their eye will water. That is really important to get hold of. Mobilise the jaw, just check, we'll talk about dentition later on. And then also I think it's really important to do cranial work. I would do it internally. I don't think you do that in cranial osteopathy. I might be wrong, it might be cranial sacral work but I like to get right on to the wing of the pterygoid plate and often because of the attachment of the pterygoid muscle, the lateral pterygoid, it's being pulled, relatively, pulled down. That's the wing of the sphenoid, lateral pterygoid, wing of the sphenoid, it gets pulled down. And I think you need to give it push up, along with pushing the pallet up. So we call that spheno maxillary craniopathy.

Steven Bruce
I'm somebody who does a lot of cranial osteopathy will tell me if they do something similar or how would they go about doing the same thing.

Simon Billings
Doing internal cranial is much more powerful, in my experience, because you get much more leverage. And because the pattern, like I said with jaw issues because of teeth changes is so common, that pattern is is incredibly common. The other thing just to be aware of is if they had any fillings, they might be getting direct pain or alteration of the occlusion and then we said the infection that's just dead bone and you have an infection, the bone often, and that can generate atypical facial pain. That's a NICO lesion,

commonly misdiagnosed as atypical facial pain or atypical trigeminal neuralgia because often it will go into the face as well. But that will then contribute to the potential priming of that system for migraines.

Steven Bruce
So how does it get diagnosed?

Simon Billings
You go to a biological dentist, and there's not many around who, either they can do it now with I think, they do these CT scans, you can get a local CT scan, you can see it there definitely, if it's bad, they'll see it on an X ray. Or there's also a mini ultrasound called a CaviTAU machine which picks it up as well.

Steven Bruce
So your bog standard dentist doing an X ray won't notice it?

Simon Billings
No, not interested.

Steven Bruce
Is this just gonna be one of your differentials here? Are there things which would which you would say no, you definitely need to be investigated for this?

Simon Billings
Well, it would depend on the history and stuff, but for the most part, most of the time it's the occlusion that's a bigger issue. And if we have time with our case study at the end, it's just looking at vertical height changes in here, sometimes. So common pattern with jaw primary, which is causing part of your true migraine, or at least giving you a misdiagnosis, will be they didn't used to have migraines until they got to 40 or 50. So if you've never had a migraine, and suddenly you get them when you're older, be very suspicious that your occlusion has been changed. And that slowly this system is compensating, the cranial getting cranked down. That might be a driver, stuff like that. But we'll come to that later, I've got some slides about sort of clinical patterns that come up and stuff. Okay, so then we have our mixed pattern. And like we said, that's then they might be getting genuine cervicogenic or some kind of jaw pain, and it's firing into a system that is sensitive. And that firing in is part of what then triggers a true migraine because the nervous system is delicate. And I'll just show you some research now. This is they're doing nerve blocks on the greater occipital nerve. So remember, if it's a true migraine, purely cellular thing, how much effect will this have? So it depends on the patient. So can you see here on the green, where I've circled in green, the intervention group where they did a placebo and they did a true intervention with the injections. In the intervention group ended up at six days a month versus 90 in the placebo. So a massive improvement, right? So in that scenario, they must have some issues with their upper cervicals and at the very least, that's contributing to true migraine and/or it might be that some of the people in the "chronic migraine" are in fact misdiagnosed and it's just this nerve locally causing pain and it isn't actually a true migraine. But you see there, there's also in the second study I've circled in red, there's no difference between the groups. So in this group, I suspect they're primarily true cellular migraine and this group had less to do with the neck, wasn't really involved.

Steven Bruce
Did you look into these in detail? Did you look at how they selected their samples, what the criteria were?

Simon Billings
I might have done at the time, but I can't remember off the top of my head. I think again, that might be the issue with that's why, if looked at again the studies, some of them are brilliant, some don't change, I think it might just be the misdiagnosis.

Steven Bruce
But also the sample sizes are very small.

Simon Billings
Yes, they're relatively small. Yeah, it's quite a lot of them accumulated. But you might be right. They're relatively small. So that's why I said again, I think there's a mixed response there. And it's the same here with a splint, using for grinding in the day and they have chronic migraine. And you can see here, it's intensity of pain over time, rather than days of headache, but it drops massively within a week. I mean, it's a huge drop, and then it carries on going, they took the splint out at 90 days, but again, in these people clearly at the very least, the jaw is either giving them a headache and/or it's feeding into that system because the trigeminal nerve, which we feel the pain through, is receiving information from all these muscles and from the jaw and from the teeth.

Steven Bruce
I prefer the term splint to a posterior interocclusal device, which is what that slide said.

Simon Billings
Yes, splint is easier. Okay, so then we want to get now to the cellular bit and the idea of being primed, we've got a smouldering fire in there and what's going to spark it into a flame and the triggers and so on. So, a little bit of techie stuff here. So when they talk about reactive oxygen species, it just posh talk for free radical. So here they're talking about we know that an accumulation of reactive oxygen species might be the primary trigger for cortical spreading depression. And then, I just put this in, because I just typed "migraine mitochondria" in and you cannot move for research. I mean, it's just bloody everywhere. It is pretty well established that at the very least, this is a key, key, key driver. Because you have to make energy and your brain is really hungry for energy.

Steven Bruce
There is always the question of which is the chicken, and which is the egg, though?

Simon Billings
Well, I mean, the mitochondria are going wrong because of deficiencies and toxins. When it really boils down to it, you're just a series of pathways and recycling, and you need a certain amount of good nutrients to run the system. And if you get toxins that get in the way, that's it. And so, it doesn't matter whether it's migraines, or you know, motor neurone or whatever, it's the same stuff. It's just depending on the severity and what's damaged. So cortical spreading depression, this is well established in traumatic brain injury, in stroke, and so on. I'm going to read these bits out because it's interesting hearing them talk here. So

they said cortical spreading depression can explain aura migraines. And it says, it occurs when the cerebral cortex is stimulated by chemical. So that might be an inflammatory cytokine, it might be that calcitonin gene-related peptide, it might be glutamate, they might get MSG headache, monosodium glutamate, or it can be homocysteine, which is a toxic chemical we'll talk about in a minute, or it can be an electrical signal. So that might be your neck and your jaw and your teeth firing into a sensitive system, that leads to excitation of the brain. And that's followed by an extended period of depolarization, that spreads throughout the cortex, and that's that wave that people talk about of pain that comes down, this kind of crushing thing. And then they get initial hyper increased volume, the arteries stretch, you feel pain, and then they constrict after that. And that is well established. And we now know that occurs in patients with migraine very nicely.

Steven Bruce
Here's a weird question, even I think this is a weird question: There's a lot of chat, isn't there, in pain research circles, that if you explain how people's pain is happening, particularly when it comes to spinal pain, it will help to reduce their response, their sensitivity, to that pain. It doesn't strike me, this isn't the question, it's a statement, doesn't strike me that that would work in these cases. Does it help to explain all this stuff to a patient?

Simon Billings
I don't think explaining it is going to change anything unless they're particularly stressed about it and paranoid they've got a brain tumour or something. Again, we mentioned it in the stuff we talked about, about neuroinflammation and the biopsychosocial model. Neuroinflammation we're talking about here, underpins chronic pain, because the nervous system is hypersensitive to incoming signals. It underpins nasty mental health issues, particularly when they're really "resistant" to antidepressant tablets. And it will underpin fatigue. And you put them in the biopsychosocial model, they're all in pain, because they're depressed, blah, blah, blah. But actually, again, the root cause for a lot of these patients, like fibromyalgia, is they're inflamed and their mitochondria don't work. So while I've used this as an explanation for migraine, it underpins, like I said, everything, almost without exception. So if you improve these bits, people tend to improve. So when I treat one to one clients, there's a common theme throughout all of it. If you get the right nutrients in, you can fill that nutrient gap, change the diet, things will improve. So, while I'm sure that can be helpful, in some cases, for sure, I'm sure it does, I think it's very easy for the medical profession to say, Ah, well, you've got this back pain and we've done X-rays, it's fine. There's nothing there. It's all in your head. And we know that sometimes it is in their back. And they need treatment and then sometimes, maybe they are hypersensitive because they're inflamed. And that's where the nutrition comes in. It's not that hard, once you get the basic principles of this and so on, it's not that hard. It really isn't. And it's common stuff 80% of time, it's the same 20% of inflammation.

Steven Bruce
And again, I don't want to divert into laser, but while we were doing our laser training the other day, our Cat 4 Laser, fibromyalgia responds well to lasers, and it's a mitochondrial effect.

Simon Billings
There you go, exactly.

Steven Bruce
Anyway, let's move on with this. I've got loads of questions, but I'm saving them.

Simon Billings
So again we talked about this it causes this self-propagating wave of depolarization. It's like a wave people talk about, which we've already mentioned that already. Okay, so we're now gonna talk about calcitonin gene-related peptide, which is the molecule which the drug companies, they love it. So this is the final common pathway. Potent dilator of the arteries, it makes the mast cells degranulate, so you get a sudden flux of histamine and inflammatory cytokine. That's why sometimes people will say if I feel a migraine coming on, if I can get my medication, I get some anti-inflammatories in or some triptan, I can nip it in the bud. And that's because they've just managed to bring it back from the brink of that massive inflammation, which is building and building, they can just suppress it enough. Now remember that because this calcitonin gene-rated peptide's being released from the nerve, that happens in response to neuro inflammation and nociception. So that's where again, we can help with the nociception part. And in the brain inflammation we can do nutrients, we can do that.

Steven Bruce
How many people are talking about CGRP? Because I don't know that I've ever heard of it other than...

Simon Billings
The drug companies. Yeah, they love it.

Steven Bruce
Can I just, I need to clarify one thing for one of our viewers, at least. Sarah says, are you talking more about trigeminal neuralgia than migraines? Because she's confused.

Simon Billings
No. So remember that the brain depolarizes and you get this sudden squeezing the arteries, edema in the brain. Remember that the trigeminal nerve supplies the dura and everything around. So the brain isn't pain sensitive, but the dura is very, very, very. Hence why meningitis, they get a bloody great headache. So we're absolutely talking about migraine and trigeminal is the nerve that the migraine is felt through, because the brain is really inflamed and all that dura and the nerve, all the blood vessels, that feeling, and the aftermath is wild hypersensitivity.

Steven Bruce
But I can see why Sarah was asking that because you've talked a lot about the trigeminal nerve and just yeah, we are talking about migraines.

Simon Billings
So just a quick summary, this is a summary of a lot of research. So the calcitonin gene-related peptide, we know definitely it's high in chronic migraine sufferers than controls, particularly it goes up during migraine. We know that you can induce a migraine experimentally by infusing patients with calcitonin gene-related peptide, but not in controls, meaning you have to be primed. So you can inject me and you with it, and we wouldn't get a headache, we would feel fullness in the head, but you wouldn't get a

migraine. Okay. We also know that it's very pro-inflammatory, and we have good evidence that if you block it, it improves migraines, which we'll talk about now. And I just put this in because it makes me laugh, because miracle medication, miracle drug. I'll give you one guess who wrote that headline and handed it to the news outlets. That's a press release from the drug companies, it's only 7000 a year. $6,900, it's an absolutely bargain. Let's now look at the results. And we're going to consider these and look at, we'll talk about our supplements. So in the treatment group, they went from nearly nine days to about five days.

Steven Bruce
Fremanezumab? That's what we're talking about?

Simon Billings
That's what we're talking about. So that's about a 45%. So they're having about nine days a month of headaches and went down to about five. So that's a miracle as far as the drug companies are concerned. So 45% reduction, let's remember that 45%. We're going to move on to the supplements and we'll see how we get on with our supplements. Okay, note also that the placebo also dropped, they got nearly about 2.8 days worth of reduction. So not a bad placebo response either on there. All right. So we mentioned earlier, we know it's underpinned by all those problems, inflammation, mitochondria and so on and can we ethically leave it, because we could squash calcitonin gene-related peptide for 7000 a year and they would improve by 50%. But we know that they are really way more likely to develop all sorts of nasty things that are going on and I would suggest that is wildly unethical. Given the research is so clear about that, I personally feel you can't call yourself evidence based if you're doing that. Can you call yourself patient centred if you're doing that? I would argue not, persinally

Steven Bruce
Isn't the counter argument to that, that would be used by those people who probably are more interested in the drug company's success, it's one thing to say the evidence shows that all those factors are part of it, but do we have the evidence to show that we can intervene in these other areas?

Simon Billings
Well, we're going to talk about that in a minute.

Steven Bruce
I thought we might.

Simon Billings
So we'll just mention secondary triggers here. So we got things like histamine, tyramine, nitrites, sulphites, MSG. These are commonly mentioned by patients. So tyramine, so chocolate, red wine, aged foods. Nitrites and sulfites are food preservatives, generally speaking. And the MSG, the G stands for glutamate. Now, it's important to understand that glutamate is your primary excitatory neurotransmitter. So it's very important. So glutamate then becomes your primary inhibitory neurotransmitter, called GABA. So it's like a ying and yang, that conversion is 100% B6 dependent, it's very important. So B6 deficiency is very common, particularly in certain subjects, like women taking the pill, it is almost universal, very, very common. And people who are very inflamed,

Steven Bruce
Interesting, the NICE guidelines specifically address women who are on the contraceptive pill, and it says if they're getting migraines or other headaches, try them on this other drug.

Simon Billings
Obviously, why wouldn't you? Take another drug. So that's important. We'll talk about B6 later, because that's really important. So just to let you know, glutamate and GABA, they are I think at least 50% of your neurotransmitters are one of those two. They way outstrip in terms of number serotonin, dopamine, all that, they're the dominant ones. And all your pain medication is based around blocking glutamate. So for example, pregabalin and gabapentin originally were thought to be GABA agonists, but they're actually antagonists to glutamate. So if you can improve your glutamate status, you can do a lot of good and what we'll find is that the natural endogenous blocker of glutamate is magnesium. That's why magnesium is good for muscle tension, it's good for nerve pain. It's good to relax you before bed, it's because it blocks glutamate from getting at the receptor. So if you can combine magnesium and vitamin B6 it's a beautiful thing. And we'll talk about that later. All right, that's people occasionally get a Chinese food takeaway headache, an MSG headache, it's because they've shoved the glutamate in, they're on the edge, too much glutamate, boof, tips you over and you get a migraine. So these aren't really big things. The reality is that your bucket's full and I would argue that the bucket is partly full because of food intolerance or food sensitivity. So we have foods that contain nitrites and sulphide and sulfites and so on. But I think a bigger thing is a food reaction. Because your immune system takes aim at that and says, I think you're a foreign invader, I'm going to attack you and that creates inflammation throughout the body. And the biggest five foods, I've done a lot of blood testing: gluten, all day long, half the population carry a gene for a gluten reaction, dairy, of all types but particularly cow's milk, eggs, nuts of all kinds. And then the problem is, if you remove dairy people go for nut milk. If you remove nuts, they go for soya sometimes and soya while isn't eaten a lot, it is very reactive. So those are the big five foods that we often look at. So just a clinical point here, if you start mentioning foods to migraine patients, they'll always go "I've tried that." And what they mean is, I've heard that chocolate gives you a headache or red wine, so I've removed some of these things and it's all based around the nitrites, sulfites and all those kinds of things. So what we need to do is be very specific and ask did you do it individually? Which doesn't really work, because if you've got more than one thing, of course, it won't give you a response, you must do all of them at once. And then did they do it? 100% Okay, and really be specific. Often they have not removed foods based on a food sensitivity, which we talked about there with gluten, dairy, eggs, nuts and so on. That's the one that is more important in my experience. So sometimes they're a little bit negative about food, "I've tried that, it doen't work." You've got to then pick into what did you actually do? What did you remove, for how long, did you all at once? Be really picky about it. So this is a little bit of research and you find a lot of the research on migraine and food is old, because the drug companies have got bugger all interest when they can push out a drug for seven grand a year. This was in 1983, so this was children with severe migraines and they just gave them one meat, one fruit, one veg, one carb. Done. And they had 93% at the end of the month had recovered from severe migraines. So that's pretty awesome, right? And it doesn't cost anything, all they've done is taken foods out that might be an issue and they've got a 93% response. I think, it's just so easily done right?

Steven Bruce
What does that mean, one meat, one fruit, one veg, one carb?

Simon Billings
Pick a meat, lamb, beef, whatever, you pick a fruit, pears, you might have one veg, whatever, and then one carb, whatever you want to have.

Steven Bruce
Okay, in whatever quantity you want to have it?

Simon Billings
Yeah, whatever you want. Yeah, it's an elimination diet really at the end of the day. So I just thought, this is we talked about associated things or comorbidities, patients, so before they had always that abdominal pain, diarrhoea, flatulence so that's your GI system and your immune system, really, screaming something is irritating me and I'm having a go at it. Behavioural problems, fits, runny nose, mouth ulcers, asthma and eczema, these are all just inflammatory things in different tissues, before the diet and then you see after. From 61 to 8, 44 down to 5. The fits from 14 of them down to 2 of them, a massive reduction in their "comorbidities or associated symptoms" have dropped. So we got rid of the cause of their migraine, or at least a big chunk of it, which was inflammation. And then at the same time, we've improved that they're no longer having fits.

Steven Bruce
That's massive, you've piqued my interest there, that out of 88 participants, 14 were getting fits.

Simon Billings
So again because now you begin to understand what underpins all this stuff. So you get asthma, what is asthma? it's just inflammation in the airways. Now I know there's other things too. It's breathing stuff and mouth stuff, but again, eczema, it's inflammation of the skin. What is IBS? That's inflammation in your gut primarily, why is it there? Well, food is at least one thing and maybe bacterial imbalance or a whole load of stuff? Fits, fitting is an excitation of the brain uncontrollable. There's a thing called B6 epilepsy. No B6, you build up glutamate, because you can't convert to GABA and you get so stimulated, whack, you get a load of fits. B6 epilepsy, it's a thing. In fact, when they can't control the fits with the epilepsy drugs, which again, almost all of them are blocking glutamate, they're getting at that. That's why if you get in the way of glutamate, you do reduce the fits down, but it really flattens people, their energy just goes right down, because you've taken away most of their excitatory neurotransmitter. So they've got no oomph.

Steven Bruce
Would you as a general rule, say to someone who owns up to being epileptic, have you tried adding some B6 in?

Simon Billings
I don't know about owns up to being epileptic?

Steven Bruce
Well, some people don't like to own up, they don't like to admit to it. And I'm not suggesting that all our patients hide their medical history from us, but we know that a lot of them won't tell us things that they don't think are relevant.

Simon Billings
So in terms of that, epilepsy is is important, obviously, so we don't want anybody stopping their medication or anything to do with the drug. But in those cases, absolutely, I say to them, listen, your drug, I write excite, here's a brain chemical that excites your brain and I do a line and make chilled. And then I say that's called glutamate. That's real name is GABA. And to get from here to here is B6, you have too much excitey stuff going on, and your drug blocks excitey from hitting the receptor. Okay, so I want to give you a natural blocker for excitey, and that's magnesium. And I want to give you B6 and I have a product has both in and you take that three times a day. Does that sound okay? You might get more energy as well, and it might improve your mood, and calm you down a bit. And so I'm trying to improve their lot, because what you might also find is that a lot of the drugs ironically deplete B vitamins. So lamotrigine, which is a common drug for epilepsy, will deplete B6 and other B vitamins. So you start the drug, works really well. And then you deplete B6, and then the drug doesn't start working, so you have to up your drug because your B6 has dropped. And this is where I think just knowing a little bit of nutrition really adds value. And you can get in there and say I'm gonna give you these nutrients to support and help your drug work better. It might mean you have to keep upping your drugs, it might mean if you really do well and you feel better, you might get to talk later on to your doctor about reducing your meds, if you do really, really well in a year or two or whatever. And again, the inflammation thing, I should say the number one thing that makes your nervous system produce more glutamate, which remember then can build up if you haven't got B6 is inflammation. So inflammation makes your nervous system produce glutamate. So if you get the inflammation down by removing foods, all of a sudden the glutamate will drop and that will improve all sorts of stuff.

Steven Bruce
And have you ever had any kickback from any conventional medics who are saying, what are you doing talking about these things, I've got a drug that deals with this, and you're interfering?

Simon Billings
No. I mean, I don't know how much my patients talk to their doctor about what I'm doing. So no, is the answer. I've never had any complaints or anything. And again, what I'm saying is all factually correct. I'm not saying to stop taking the drug, I'm explaining the neurotransmitter thing, which they have never been explained before. And I think it's very useful to understand that you are just a series of pathways and recycling.

Steven Bruce
I'm guessing, though, that they might raise the possibility that you know, I'm prescribing this particular regime of medicines for your patient, we don't know what the interactions are with the stuff that you're telling them to take. Now, I imagine your response will be they're bloody vitamins for crying out loud. They're naturally occurring things which we know we need, so there can't be any interactions.

Simon Billings
Because you get it from food. It's just that we're leveraging in modern stuff to increase the doses to get it in people because, the reality is people's diet is crap. I'd love all my patients to eat organic, grass-fed meat with organic vegetables and this, that and the other. The reality is when you're really ill, it's hard, you got to break the cycle and supplements is usually the easiest way. These are the foods that came up in that. I just want to flag up again, we talked about gluten, dairy, eggs, nuts, seeds and so on, the top food there on the far left is cow's milk, that's dairy, then egg, then there's chocolate. Now the chocolate might be because it's milk chocolate. So it might in fact be the dairy or it could be the tyramine, I suspect it would be a bit of both.

Steven Bruce
I was just trying to make sense of this. This is starting from here going down...

Simon Billings
Top down, that's the number of people, number of children in which, when they removed all the foods, said you can't have that, you would then reintroduce them and say which one causes a headache? Because something's going to trigger you into inflammation, which pushes you over the edge.

Steven Bruce
Some basically we've gone from most reactive, all the way up there, to least reactive at the right.

Simon Billings
Exactly. And then you've got orange. Now orange comes up now and again, that might be a reflection of the time, that is from the 80s and so people were chugging a lot of orange juice back then. Then there's wheat, which is gluten, cheese again, look that's dairy, tomato, that might be because of a food reaction but it might be also that tomato can release histamine, and then you got rye, that's gluten again, and then a selection of other things that come down. But if you'd gotten gluten and dairy and egg and nuts and soya, you would have had a good chunk of people's issues there. And then we'll talk from, when we're using this study and other studies, we'll see things like peas come up sometimes, and beans come up as well, you don't have to get every single one. So doing that elimination diet is quite hard, getting a patient to go four foods for a month quite a big ask. So when we look at the research, and from what I've done with food testing, we can get five or 10 foods out, you'll usually get a response for the most part. All right. Okay, let's move on. And when we talked before about triggers, and why would sunlight trigger a headache? Shouldn't do that. Heree, you see, this is the number of, you can't quite see the slide there but it says nonspecific provokers of migraine. And you see before on the 13 people with exercise would have produced a headache.

Steven Bruce
Out of 38?

Simon Billings
Yeah so 13 out of 38 found that before they did the diet, they would get a migraine come on with exercise, and after the diet is one. So all of a sudden, we've drained the bucket. And that means that that trigger, even though it's pushing something up, is not enough to get you over and into a headache, and the same

trauma down again, emotional stuff, no longer does it, and so on. So this is what I mean by, when they say, my triggers are too much sunlight, too much sleep, not enough sleep or whatever these things, they're not real things, in the sense of, they're not big, big issues. They're usually just a symptomatic expression of a system, which is primed and we're looking at why. And that's kind of what I mean, they're the buckets full on the left, secondary triggers push it. If we can drain the bucket down a little bit. You can't change the genes, we kind of work around them with some of the nutrients, get the supplements in, maybe go for the food and of course, do our neuro mechanical stuff, that I think is really, really nice combination. And you can say, listen, you got these migraines you've come in with, but I'm just telling you, you've also told me you've got IBS and reflux, and you've got a bit of eczema, and you've had mental health issues. I'm telling you, all of those things are up for grabs through your food and diet. I'm telling you, they're all linked, very likely, not 100%, but very likely I can improve some of them by doing this with you. Would you be interested in that? Nice and easy.

Steven Bruce
And how long does it take generally before a patient will recognise the difference?

Simon Billings
So we'll talk, we have got a slide coming up on that. But generally, I will say to them, we're gonna do a month trial. With foods it depends how many migraines they're getting a month. If you're getting one or two, you're gonna have to do it for long enough to see that. Generally with foodstuff, I'm doing food stuff for people that have got fibromyalgia and this, that and the other, or they've seen other chiropractors and osteos, nothing has worked. I then say exactly what I just said, that you've got all these other symptoms, they're all I think, related to inflammation. I would recommend you do a short sharp food elimination and I say two weeks for general stuff. Because if you get the foods right and you get enough of the big ones out, within usually two to five days something is very obvious. It's really obvious. They will just feel that much better, energy, mood, aches and pains improve pretty wildly.

Steven Bruce
Now, I'm gonna be very rude. One could be tempted to think that you are a single issue fanatic and that everywhere you look you see inflammation and therefore it's an opportunity to make people use supplements and I didn't say flog them supplements, but I know that you can help them to get their supplements if they want to.

Simon Billings
Wel, I do flog them supplements, that is a fair thing to say, I run a supplement company, but yes.

Steven Bruce
Okay. Well, I didn't want to say that. But I mean, presumably, you do also find other things wrong with people and you treat them in other ways as well.

Simon Billings
Yeah, absolutely. But you need to go for the stuff that's going to get them well.

Steven Bruce
And we are here to talk about migraines.

Simon Billings
Well, yes. But I mean, in general, again, like I said, when you really boil it down, they have deficiencies of stuff. So yes, I could ask them, if I think they're low in magnesium, which is common, I could say could you try and eat more fresh vegetables and nuts and seeds, if I think they're going to tolerate them, and la la la la. But the problem is that involves a whole load of hard work for some people, and they may or may not know me that well. But I know I can get the levels up by using supplements. So it makes it very easy for them. And what I have found is we try to make people do, removing food is easier. Just don't eat gluten and dairy, whatever that you can do. And that's quite easy, relatively speaking, okay, than adding foods in, because it's less thought involved, just remove that, eat some more meat, eat some more vegetables, eat some more fruit, have some honey, whatever. Or gluten-free bread, whatever you need to do, right, through that two weeks. So removing them is easy. And then with the supplements, you get to break the vicious cycle. That's what you got to do. A lot of these people are very tired. You put a supplement in like B vitamins and magnesium and D, those three. I commonly give multi, with a high dose B built into it, mag and D and I say look the chance is, if you're low on this, you're gonna feel better, a lot better, and within days, you'll notice something very obvious. So these will last about a month. But I'm telling you within days probably you're going to feel something, if not sooner. So, once they get more energy, then they're more up for doing lifestyle change. Then I go, right now I'd like you to start trying to add some of these foods in, maybe eat some liver once a week, if we can, maybe I want to go and start some Pilates, I'd like to go for a walk at lunch from work. If you try to do it at the start, when they're knackered, and they hurt and they're depressed, they're not going to do it. So therefore, at the beginning, you make it easy for them, you chuck some supplements in, you do some treatment, you maybe remove foods. Supplements first is what I do. If they're up for it, I'll get them removing the foods, do some treatment. Once they start to feel better with the treatment, they start to trust me a little bit more and then I can give them more and more, push the responsibility to them a little bit.

Steven Bruce
And it suits the modern psyche, doesn't it?

Simon Billings
Yeah it's a pill.

Steven Bruce
Yeah, exactly. People want an intervention. Look, I know you've got other slides and other things talk about, I've got a load of questions here and we've only got 25 minutes left. So can I ask a few of these questions? And I'd have to say for the audience that if you want to get your question asked, the quickest way to do it is get on that video link. Because as soon as we get one of those we're going to celebrate our first video question. I haven't read through these so excuse me, they might be random: my mother, says John C, has suffered migraines for many years, she went on blood pressure tablet six months ago and hasn't a single one since. Her blood pressure wasn't particularly high, in fact, for most of her life, it's been on the low side, she also has hypercholesterolemia. Any thoughts on this?

Simon Billings
Not really. It doesn't really make a lot of, high blood pressure, even if it does go that high, doesn't really give you migraine, it might be that she was right on the edge and that it's something I don't know. It doesn't fit with anything, particularly that I know about in terms of mechanisms or anything. So no.

Steven Bruce
Also I'm intrigued by the hypercholesterolemia. Is this familial or is this just the doctor has said you're a bit higher than we currently think is the optimum level for cholesterol.

Simon Billings
That would be a very good shout.

Steven Bruce
And I would suggest she reads Malcolm Kendrick's books on the subject.

Simon Billings
Yeah, exactly.

Steven Bruce
Malcolm Kendrick, The Great Cholesterol Con and a number of other books, all of which are eminently readable. The latest on is The Clot Thickens. Lovely book and a great title as well. Grateful mind says, I'd be interested to know if you have cross referenced your diagnostic categories with the ICHD-3?

Simon Billings
Never heard of it.

Steven Bruce
International Classification of Headache Dis...? I don't know, I'm making this up as I go along.

Simon Billings
I'll have a look.

Steven Bruce
Smiler says, I've been told that there is a relationship between migraine and the reverse curve in the dorsal spine. Are you familiar with this mechanical cause and are the sympathetic ganglia involved in this in some way?

Simon Billings
I think again, you just treat the patient as you find them and you're going to look at the upper cervicals and the jaw and of course, you want to know why the upper cervicals are producing a problem just, it's quite tempting to give them a whack, isn't it?

Steven Bruce
Always.

Simon Billings
But I find they're compensatory to other stuff usually. So yeah, I can totally believe that.

Steven Bruce
Now, this is a question which I imagine we will come on to at the end, a few people who asked, is there a specific vitamin brand you would recommend and the dosage for magnesium and B6?

Simon Billings
Yes. I run my own supplement company, so yeah, I developed a range, because I've read the research about things like B6 and so on, and I ended up giving patients before that a lot of supplements like a multi and an extra B and then a this and it got a bit out of hand, and it was reducing compliance. So then when we came to making the supplements, we could then build in all the stuff I knew I wanted, and particularly this is really important, the doses you find in the research are often quite high. So for example, vitamin B6 commonly 50, 75, 100 milligrammes of B6, the RDA is like one point something. But that's the research, so in things like PMS, they use 100 milligrammes, that's what works. When you then go to use supplements, the supplement companies, then will give you maybe a powder with some magnesium and some B vitamins, but they don't put in the effective dose because it costs more, and it puts people off, so you end up not getting a response. So I have made it so that we can get those doses with a relatively small number of pills.

Steven Bruce
This is quite important. And I hope that people trust you on this and believe this, that you're not here to flog supplements, but naturally, as you've said, you developed these because of what you found was going on. And again, I don't relate everything to personal experience, but I have quite a bit of it, I was doing what you described, I had one of those little plastic trays with 30 little canisters for my supplements to make me take them, I've still got it. I couldn't fit all the buggers in. They wouldn't fit in those plastic containers, which made taking them a lot more difficult. At the end of this, we will make sure people know where to go if they're interested in what you provide, and they can make their own decisions.

Simon Billings
Yeah, and the supplements are specifically for basically neuromechanical practitioners. That's kind of the way I phrase what we do, it's to support your treatment, and that was reflected in the dose, the B vits and the magnesium and you should always prescribe magnesium with B6, to get magnesium into the cell you need B6. So that's where it links again.

Steven Bruce
Nobody tells you this, do they? You go out and buy magnesium because someone says take magnesium.

Simon Billings
And you're not always low in B6, but the really chronic ones are, particularly the inflamed. So therefore, I've got magnesium with B6 built in and you combine it with a multi, and that way your total would be six doses, like 85 milligrammes, that's a therapeutic dose of the active form.

Steven Bruce
Nikki says, can you tell us how the triptan group of drugs work and why they're so effective in migraine relief?

Simon Billings
So traditionally, they were thought to be a serotonin agonist. And there was some evidence to suggest that people with migraine had low serotonin levels. So there was one or two bits of research where people are being given 5-HTP, which is the precursor to serotonin. But when I dug into the research, I mean, thin would be an understatement. So the more recent research suggests that actually the triptans may well be an inhibitor of calcitonin gene-related peptide. So that's when you feel a migraine coming on, you take a triptan and it can work really well for some people. So probably they're calcitonin gene-related peptide inhibitors. Nothing to do with serotonin probably.

Steven Bruce
I find it fascinating that in many cases, and anaesthetics are a great instance of this, that medicine doesn't always care how these things work. If they work that's great. And of course, from the patient's point of view it is great, if we can't find anything better to do to achieve the same end result.

Simon Billings
I do occasionally give 5-HTP to migraine patients but it's nowhere near the top of the list because there's so much other stuff there first.

Steven Bruce
I suspect I know who sent this one in, but I've been given no name, it says, chocolate, dairy and soya. A Keto vegetarian with migraines is buggered, then.

Simon Billings
That would be fair, yeah.

Steven Bruce
Well, Claire, my wife, is a vegetarian. I suspect she's the one who sent that, I keep telling her just to stop being a vegetarian.

Simon Billings
I would agree with that.

Steven Bruce
Aiela, apologies if I pronounced that name incorrectly, I beg your pardon, where would you send patients for blood gut allergy testing to see if certain deficiencies or imbalances are present to indicate migraine?

Simon Billings
That's quite a tricky question, that. So because in a chiropractic setting, I don't really, because I treat empirically. So we'll come on to that. I'll go over the supplement, the supplement stuff which coming up is not that long, it's quite easy to do it and we'll go over it. There are common themes. And like I said, we

know common things are common, and they produce certain things. So I treat empirically, and then I might occasionally run an organic acid test, but you'd need a bit of training in that. So because blood testing certainly isn't always reliable, cuz often it isn't in the blood, often it's in the cell, whereas organic acides, it's reflective of intercellular use, but that's not any good for an average osteopath or chiro, I'm afraid. So the answer is, I don't really do that very often these days.

Steven Bruce
I think in my show with Tracy Whitney, she did recommend a couple of labs for testing for B12 and talked about...

Simon Billings
She's probably talking about methylmalonic acid and homocysteine, I think is probably what she did.

Steven Bruce
She did, yes, but of course, that was very specific to B12 in her case and she talked about false results as you did earlier on. Jan says, I've suffered from migraines my whole adult life. After being diagnosed later, as an adult with type one diabetes, I find if my blood glucose gets too low, I get the classic visual disturbances and then a migraine. Why is that?

Simon Billings
Almost certainly because it's very stressful for your system. Your sugar levels are dropping through the floor, your brain is really dependent on that and that's sensitive, and it's probably just very, very stressful for you system. So again, if she can then do some food elimination diet, do some supplements, play around with it a little bit, she may find that then she's less sensitive to those changes.

Steven Bruce
Okay, something for Jan. SG says, I'm interested in menopausal migraine, as I never had them before menopause.

Simon Billings
Yep, so again, with that, it might be that you've had a very bad menopause and you've got a relative loss of, the most common pattern in menopause is not enough progesterone and you've got your oestrogen, which must be broken down in the liver, comes out as still a sort of slightly active metabolite form, which is then still effectively working as an oestrogen and you get an oestrogen dominance relative to progesterone. So women, particularly when they've had lots of PMS, PMT, and breast cysts and other things, when they go through the menopause it's bad. So it might be it's a very bad menopause and she needs to do some work around hormones. But again, it might be that her bucket was relatively full, and that she actually had a change in menopause, and that if she does the basic work, that might be enough to allow her to get through that. So I would always do the basic work first, because it's quick, again, and removing foods doesn't cost you anything. Handful of supplements for a month, I always recommend a month trial on supplements. You'll see in some of the research coming up in a minute, most of the studies last three months, but the bulk of the change often happens in the first month. So a month trial is always warranted and then I would do that and then you might look at your liver health and maybe have your progesterone and oestrogen levels measured.

Steven Bruce
Is your wife called Lucy?

Simon Billings
No.

Steven Bruce
That's interesting because Lucy's a big fan obviously. Lucy says, I love his supplements, makes it so easy to take meaningful doses in one multivitamin. It's the only one I've ever found that doesn't make me feel nauseous as well. So thank you for making them. So you have a fan.

Simon Billings
There you go. And also they're clean label, so there's just the nutrients in there and then any space, we just put a little bit of rice flour. Done. Nothing weird and wonderful in there.

Steven Bruce
Mary says, any thoughts on infrared therapy for vitamin D production?

Simon Billings
You won't get any with infrared. It's UVB or nothing, I'm afraid she's misunderstood that. UVB lamp will do it, I have one at home or you can have a sunbed or you can get natural sun between April and about September, between 11 and three, otherwise you get nothing.

Steven Bruce
Now we're getting back to the case history that you talked about. We've got 10 minutes left. Salame Olivia says, what's your approach for patients who present with an acute attack of migraine in the clinic?

Simon Billings
That never happens. They don't come in with an acute migraine. Well, I've never seen it, they don't come to me with acute headache. They lie in a dark room.

Steven Bruce
Yeah, that's what occurred to me. I wonder if Salame Olivia means someone who's in your clinic and gets a migraine.

Simon Billings
It wasn't after an adjustment? You didn't give them a stroke? I honestly wouldn't know. I'd probably tell them to take some anti-inflammatories and just keep my fingers crossed that it knocked it off.

Steven Bruce
Well, maybe some others have some ideas on that. But of course, what can you do when someone's in that state of distraction? And Vlad says I thought that pill-based B12 was not enough to supplement with and you can only do it with injections. And again, I think the B12 show that I did with Tracy goes into that in quite some depth.

Simon Billings
Sublingual works very, very nicely. I've got done before and after tests, they work fine. I've done hundreds and hundreds of patients. And also liposomal can also work, as well as an injection. In fact, I had ladies who were injecting themselves coming in for treatment. I said just try the liposomal and they discontinued injections completely.

Steven Bruce
Okay. All right. Did you want to move on?

Simon Billings
Yeah, let's move on. Because there's not that much to go through, I don't think. I want to go through the supplements bit and you'll see the changes with that. Okay, so the food thing I'll just mention. So when you're talking to patients, if they say, I've got foods that trigger me, just double check they're avoiding 100%. Because occasionally they'll say things like, well, I avoid it as much as I can. That means nothing, you've got to pin them down and say, how often do you eat it food X Y Z? I want to know. And they'll often be eating it in low amounts, still triggering themselves. So weird as it sounds, even though they know X Y causes migraine they're still eating it. So that has to go and then the protocol would be remove any known triggers and then on top of that the big five foods, gluten, dairy, eggs, nuts, soya and then if they're up for it, I would go corn, peas, citrus fruit, tea, coffee, chocolate, beans, yeast, and I would do that. You can do a blood test. But honestly, I've done so many blood tests, the same sodding foods come up again and again and again in some combination. Save yourself 50 quid and just do those big five and if they're up for it the other ones as well. And just say, look, it is a pain in the ass, I get that. You've come in with these things. I'm going to say look, it is a ball ache, but suck it up for a month, see how you get on and we'll go from there. You can always stop if it becomes a thing. Okay, supplementation. So that's the supplements, that's my company. So level one. So within the protocol that I have in the course, there's different levels, I'm not going to do level two, we want to keep it simple, but you go broad spec, multi nutrient, but you need very high B vitamins within there, for a reason we'll talk about in a minute. Then you need to complement that with magnesium. And I use, that's the magnesium plus that has B6 built into it. So you can double up on the B6. You need a dab of vitamin D and you want some K2 in there as well, particularly MK-4 is important, not just MK-7. And then the other bit is you want some riboflavin, so there's 50 milligrammes in the multi, which is a high dose, but in the research studies, they use 400, so you need to add on another 350. And then I would add in some CoQ10, which is critical for mitochondrial function, at 200 milligrammes. Statins block CoQ10, so if you get patients with horrendous muscle pain, aches etc, it's because of CoQ10. Or statins also, because they stop the production of cholesterol, your vitamin D is made from cholesterol. So sometimes they've dropped your vitamin D down, and that produced a pro inflammatory state as well.

Steven Bruce
Should get Malcolm Kendrick on the show with you, actually, we could talk about statins and supplementation.

Simon Billings
Oh god yeah, I love a bit of Malcolm Kendrick.

Steven Bruce
So hang on, how many bloody pills is this lot?

Simon Billings
That would be one, two... Well, it depends on the size of things, it might be five or six. One, two three... The vitamin D's a sublingual so you just suck it like a sweetie. That increases the absorption. It gets round, I had to guy with Crohn's, you can get all the nutrients in through the mouth if you just let it dissolve. Yeah, it's gonna be a handful, probably five or six, maybe seven. And again, you just say it's a month trial, see how we get on. And then, I've drawn a line there underneath the line, it says acetyl carnitine and B12. This depends on the patient. And if they're up for it and you want to go for it, then I'd add those two in as well. Carnitine is a shuttle to get fat from the cell into the mitochondria. So if you're on a keto diet or high fat, you must take carnitine. And B12 we know has a really important place in the Krebs cycle. Alright, carnitine is brilliant for depression. It's also brilliant for fibromyalgia because because it improves mitochondrial function, you get more energy. So my opening level one is those three plus extra B2 and Co10. That's a good level. If you want to up it then you go for the carnitine and B12. And then the foods, underneath that, we'd go for the foods we talked about just a moment ago. All right.

Steven Bruce
And is this specifically for migraines? Or would this be a sort of a general regimen for anybody?

Simon Billings
Those three would be more my chronic patients, they have to go on those, because they're buggered. The B2 and the CoQ10, that's specific to migraine because of the mitochondria and we've got good research on that and we'll talk about that in a second. So magnesium, this is a common one people know about, we know that magnesium is an independent risk factor for migraine, and that they have lower levels and so on. And we've got a few RCTs with a good reduction, you see here. The only thing here is they listed migraines per month, rather than headache days. So three migraines a month might actually be nine days of headaches. So it looks three to two, but of course, it's a relative thing. But anyway, a 50% drop and the intensity also 50%, which is pretty much what we got in the drug study, albeit they've talked about in a slightly different way. And then CoQ10, it improves mitochondrial function improves energy. And we know that for sure, we take a statin it can completely cripple people. And we've got four RCTs. And I'll give you a little sample there. Top one, that's a 27% reduction relative to placebo, the bottom one there, over 75% reduction, so it's eight headache days a month, which is similar as well in the drug group, down to less than two, which is bigger than the drug. Quite a big placebo response there, but if you note on the the second bit here, that's the severity of attacks, there wasn't that big a change in the placebo group, but there was again with the CoQ10. Again, easy low hanging fruit to pick for that stuff. Vitamin D. Again, it's just pro inflammatory, and it's so common. And you see here.

Steven Bruce
Vitamin D deficiency is pro-inflammatory?

Simon Billings
So common. Middle of winter, it's about 87%

Steven Bruce
Sorry, you just said vitamin D is pro-inflammatory?

Simon Billings
Sorry, yeah, so if you're low in it, you produce inflammation. That's the why it produces stuff. Yeah, so over 50% reduction in frequency and number of days and intensity and also it reduced CGRP, because it reduces inflammation in the brain and therefore it reduces the the production of CGRP. I'll show you a study of that in a minute. And then we get to the B vitamins and homocysteine. Now, little teeny bit of... So this is called methylation, which is incredibly complicated, I'm going to make it nice and simple. You take a piece of protein, amino acid called a methionine, and you take a methyl group and you make stuff and you make really important stuff. Myelin, pretty important. DNA. Your neurotransmitters get turned on and off. So it's a way of making stuff and breaking stuff down, it happens millions of times a second. Then once you've done that, you get homocysteine as an intermediary, you must then re-methylate it and you do that by getting the methyl from methylfolate, which is the active folate and you give it back. As long as you've got enough B 12. Then the enzyme is B 12 dependent. So those come together and you get methionine again, or you take B6 and you shut it down and you make other stuff. Brilliant. The problem is that homocysteine is incredibly pro-inflammatory. It pretends to be glutamate and hits the receptor. So it's neuro excitatory. It is a known modifiable risk factor for dementia. Fact. Drug companies do not like that and have put out some really crappy research to try and water down the good stuff. But it's definitely an issue. And it's a trigger of a hyper excitable nervous system. So think pain, and also it can produce osteoporosis and a whole load of other stuff and you just need B12, folate, B6 and it comes down very, very nicely. The genetic issues of migraine are around the ability to turn your folate on, it's called MTHFR. And that's why if you have children, people who've had headaches since they were a child, often there'll be a family history and it's often underpinned by that issue, and you can get around that by using high dose supplements, right? Because but if you've got that gene and you can't make methylfolate very well, and this whole system grinds to a halt. And the drug companies, they patented the first methylfolate they have a drug called Deplin, which is a high dose folic thing that they say, this helps your drug work better for depression. What they're actually doing is removing the cause of the depression and giving you a drug anyway. And it was Merck that patented and developed all this stuff originally. So B2, note here that we've got nine meta-analyses, they're using 400 milligrammes, note the RDA is 1.4. Okay, this will make your urine go very, very, very very yellow. It's quite normal, it's okay. But if you look at the mechanisms, it's all through Krebs Cycle. B2, and all the B vitamins really, are at various points really important. And note CoQ10, at the bottom there. And that HMG, statins are HMG reductase inhibitors. So they stop the conversion of HMG going to CoQ10. And the research is, here's just one of the studies on B2, that is vitamin B2 against Sodium Valproate, which is quite a hardcore headache drug. And again, both work there, from six or nearly six and half days a month down to about two, two and a half.

Steven Bruce
And I'm guessing that the cost of B2 is considerably less?

Simon Billings
Yes, peanuts, dirt cheap. So just a quick, when we talk about patients with aura, like we said, they're more likely to be a pure cellular thing, often with really big deficiencies and food sensitivities, and respond well to that kind of thing. They often will have a bit less of the neuro mechanical stuff contributing into that

trigeminal cervical nucleus. So when they turn up with migraine with aura, they're typically at the far end of the spectrum having a pure true migraine, without necessarily having a neuro mechanical input to that system, generally, I would say. And then patients without aura, they more commonly have a mixed pattern when they've got some deficiencies and some other stuff, foods, but they've also got that neck and jaw feeding into the system and they will tend to respond slightly better to neuro mechanical stuff when you combine it with them. All right. And you see here, this is the vitamin D study we talked about with calcitonin gene-rated peptide. So on the left there, patients with aura got a 43% drop in number of headaches per month. Patients without aura, got a 32%, which is still really good, but just the patients without aura didn't respond quite as well. Okay, that's what I said earlier, patients who've never had a headache as a child, never had a headache in younger adulthood, and then when they're 40 or 50, suddenly get a headache. Just be aware, they may lack the genetic predisposition through that methylation stuff, they might respond a bit less well and the things you want to be aware of is deficiency but driven through medication. So maybe they've become diabetic, they're on metformin, and metformin blocks the absorption of B12 and that grinds your Krebs cycle to a halt, which then makes more homocysteine and you start getting migraines. Maybe they're on statin, maybe they eat fish every day, because they've gone pescatarian and they're eating too much tuna and they're full of mercury. There might be something going on that wasn't there before. And have a really good look at their teeth. Have they had crowns put in, have they lost a few teeth, have they got the dentures in that are old? These things might contribute to a wonky jaw that then triggers more stuff and that then is a big shift and a change. And/or it might be that, if they're getting "migraine", that it's not a true migraine. Again, it's really important to pin them down. So the general protocol that I go through is I really screen the history, personally, look at colic as a baby, migraine as a child, abdominal migraine and then cyclical vomiting syndrome is just migraine with a different thing. Look for mental health issues, that's associated with neuroinflammation, look for insomnia, often neuroinflammation. Are they vegetarian or vegan? So it's harder to get high levels of nutrients in that group. Look for tummy stuff. So IBS, inflammatory bowel, reflux, anything like that, because again, might be a chance of inflammation in the gut, which is foods. Fibromyalgia, and then jaw stuff and any head and neck trauma that might increase the risk of peripheral nerve entrapments. Look at the family history for migraine. And then if they have methylation issues or inflammatory genes, they'll often have early onset or high frequency of dementia, stroke, heart attacks, osteoporosis, and cancer. So if everyone's dying early of certain things that should be that there's a genetic component. Strong history of mental health issues, history of relatives having B12 injections, or other bowel diseases and then the meds, so statins for CoQ10. Proton pump inhibitors are a real bugger because they're so commonly given out and they slowly reduce your ability to absorb minerals and protein and they lead to infections in the gut as well. Metformin blocks B12. And then we talked about triptans, like I said, traditionally triptans are thought to be serotonin agonists, we're not entirely sure if they are or not. So I don't use that, it's not a very... what's the word? It doesn't consistently give me results so I'm very selective in what I do with that.

Simon Billings
We've overrun already.

Simon Billings
Oh right goodness.

Steven Bruce
I'll leave it with you, are there more important slides here?

Simon Billings
I think we got most of it done. This bit is good. So the top left bit there, we screen the stuff, then we look at their symptoms, really dig in. Is it proper migraine, is it not? Then do the exam, look at their neck and jaw and I would just flag up this stuff here. So loss of molars or missing one molar where the tooth has then fallen in and it changes the occlusion. Flats where they lose the vertical height at the back and they get flat across the front, or very, very old dentures. Often old worn-down dentures, they have incredible neck tension. All you got to do is stick dental rolls on the back molars, dis-occlude them, and then get them to walk around the room, swallow a little bit and then sit down and then check all your findings and if the jaw is a big issue, it will massively improve. It's called the Mersemann test. And I think that's everything

Steven Bruce
It's enough for now.

Simon Billings
Done.

Steven Bruce
Simon, thank you for all that. And I let it run over because there's so much information in there. There was some chattering going on about how this is a sales pitch and whatever else and I think I'd have to ask, I'd have to challenge the audience and say, where am I going to get somebody who's got your level of knowledge about the nutritional deficiencies that you've described here, if they don't have a keen interest in supplementation in one form or another? And there's no requirement for people to go and buy your supplements, because you've told them what supplements. they can get them anywhere they like. The fact that you do them in a convenient form is great and if people want to use your stuff, then then they can.

Simon Billings
They're more than welcome.

Steven Bruce
Personally, I think there was an awful lot more science, research and information in that than there was just selling supplements. And I think people must have learned a phenomenal amount from that.

Simon Billings
It's all about breaking the vicious cycle. And like I said, food removal is one way, supplementation is another.

Steven Bruce
Well, here's a thing, Sue here says, please stop my brain's full! You just gave so much information.

Simon Billings
Yeah, it's quite a heavy topic, isn't it?

Steven Bruce
We will put out the slides as handouts so people can refresh their memories or research it more. I suspect that they can sign up to your newsletter and get more information from you that way. And again, we'll make all these resources available. But it's not compulsory, you don't have to do it.

Simon Billings
I send out a newsletter every Friday at five, I send out the latest research on a whole lot of stuff and a bit of clinical input and it's there for you.

Steven Bruce
And somebody, actually it's my wife Claire again says, we should get Tracey Witty back on the show again as well.

Simon Billings
Tracey's excellent, isn't she?

Steven Bruce
Yeah, she is, she's lovely. And she's not a medical practitioner, she just knows a bloody lot about B12 deficiency.

Simon Billings
Without a doubt.

Steven Bruce
Anyway, Simon, brilliant, thank you very much for joining us this evening. That's all we've got time for, as you can tell. I really hope you've got some useful clinical tips from this show. And I'll send out the handouts, as I've said, with links to all Simon's resources, and it's up to you, whether you use those or not. I'll probably do that tomorrow evening, because as I said, I'm on jury service, so I shan't be free until then to get it all done. Very quick look ahead, because I know we've overrun. As I said, because I'm on jury service, I can't be here for the lunchtime show on Thursday, which is why I'm handing over to my colleague Brooke, a fellow osteopath. She's going to be talking to Karen Grinter. About Pilates-based stuff, we have exercises that you can use in clinic, it'll be a great show if Karen's previous stuff is anything to go by. And you can either join in so you get some excellent rehab exercise of your patients or you can just join in for some personal Pilates. Or you can do both. There's a case-based discussion the next week, it was scheduled for Tuesday, but that's been shifted to Wednesday the 26th. That's lunchtime. And there's lots more you can see through the APM app. One thing I should point out, we haven't been able to find someone to stand in for me on the lunchtime of the 31st, I can't remember which day of the week that is, so we've had to cancel that, but as you know, we're very fond of adding in extra broadcasts. So you'll still get your 70 hours plus of CPD per year. I think we're well ahead of that at the moment. And whatever it was we were going to talk about then, which escapes me, we'll bring it some other time. I think we were going to talk about mindfulness for pain relief. So that's it. That's it from me. Thanks again

for taking part today. I hope you've enjoyed it. Hope you have a great evening and enjoy the rest of your week. Good night.