Eye Health

with Sarah Myhill

1st June 2022

TRANSCRIPT

Please note, this is not a verbatim transcript:

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

Steven Bruce
Ecological medicine, is that open to all medical practitioners of any persuasion?

Sarah Myhill
Well, anybody can join the BSEM. But to be the secretary, you've got to be a particular fool, but there's an awful lot of hard work, completely unpaid and completely unthanked to organise meetings.

Steven Bruce
So, osteopaths and chiropractors could become members of the Society just as conventional doctors can.

Sarah Myhill
Absolutely. And you know, just like naturopathic medicine, we are asking the question, why, we're trying to work out the root causes of illness. And that should be the basis of all medicine. And in fact, you are chiropractors and physiotherapists and osteopaths, and you are the engineers, and engineers are very logical, you know, they're asking the question, why does that person have that particular pain, disability, inflammation, and then you look for the root causes, and that makes you much better doctors than most of the people in this country who call themselves doctors.

Steven Bruce
Which is, of course, a slightly controversial approach that you have, which has led to, I trailed you in the email this morning from the Academy as the most complained about Doctor in the British Medical register. I know you're not on the register now. But I think you have 30 complaints, none of which were stood up in...

Sarah Myhill
The current score is Myhill 38, the General Medical Council nil. So good record so far.

Steven Bruce
But of course, significantly, most of the complaints, if not all of them against you were from your fellow medical practitioners, weren't they? Which is, you know, those are tough complaints to answer. And I speak as somebody who's had to answer one myself from a fellow osteopath.

Sarah Myhill
There's never been a patient complaint. In fact, one of my techniques, in my defence was to do a freedom Information Act search of the GMC records. And there's a very telling comment from one of the GMC advisors, Mr. Tom Karch who said, the problem with the Myhill cases is that all the patients are better and none of them will complain about her.

Steven Bruce
You know, if you'd had one patient who hadn't gotten better and had complained, that would be nothing by comparison to the statistics of any other doctor, because you can't avoid it, can you? But I suspect that that would have been evidence against you. And I think actually, while we're introducing you, we ought also to introduce Nancy, who's now sitting behind you on the back of the chair.

Sarah Myhill
This is my best friend, we do everything together, she looks after me and I look after her, now that my daughters have left home, I need something to pour my loving to. And that's my best friend.

Steven Bruce
She was a very active participant in the last shows as well. So we look forward to her contribution this evening. Sarah, we're gonna talk about ophthalmology, about non-medical treatment of eyes. So this could be a bit controversial, I imagine as well. So how long have you been pursuing this line?

Sarah Myhill
Oh, well, of course, what makes one really interested in conditions is when the pathology happens to you or your family or your best friend. And, you know, eyes, you don't realise how precious eyes are, until suddenly you can't see as clearly as you should do. And from an evolutionary perspective, if you lost your eyesight, you were toast, you just could not survive. So eyes are extremely precious, and aged about mid 40s I found I was struggling to look at foreign bodies, because if you've got somebody comes to you, with a foreign body in their eye, obviously, you have to have very good eyesight to look at that. That was the first thing I suddenly realised oh, you know, I'm not seeing as well as I could. And then of course, there's reading. And same thing oh, I can't see the text. And you go along, you have your eyes tested, or you pick up a pair of glasses. Oh, that's much easier. Now I can see more clearly now. But to do that, is the start of the rot. Because spectacle glasses make your eyes lazy. They stop them working hard in order to focus. And we are told by everybody, you must wear glasses, you must see things clearly, bla bla bla bla and yes, obviously. I did this presentation a while ago and somebody said, oh, what about driving? Well, obviously you know, you don't change whilst you're driving. Yes, of course you want the best eyesight that you can muster. But you can improve your eyesight by exercises, by working your eyes, by taking vitamin C, by doing a paleo ketogenic diet, by not wearing glasses. And all this has been very well established. There was a wonderful ophthalmologist who improved people's visions using eye exercises. It's well documented. Yes, it's hard work. But not only do you improve your visual ability, you also prevent major pathology of the eye. And the three common causes for blindness these days are cataract, macular degeneration and glaucoma, and all of those three pathologies can be changed by putting action in place now.

Steven Bruce
That's interesting, because you know, the standard, as you've said, the sort of standard doctrine, dogma about eyesight is that roundabout your mid-40s, your eyesight will start to deteriorate, you become more long sighted. And I can speak as somebody who I think round about 40, I had to get glasses, I was still serving in the military, I couldn't read, I needed to be able to read. But when you look this up, it's not just about the muscles not working, isn't it? It's about a hardening of the lens. And now, how do you change that with exercise?

Sarah Myhill
It's the whole thing. So let's start with just the business of focusing light on the retina. Now, we are taught at medical school that the only thing which does that is the lens. And when you look at things in the distance, the lens flattens, and when you look at things nearer to it, it becomes more fixed. But it's not just that that does it. All the muscles of the eye are involved. So the eyeball itself changes shape. So

when you're looking at something in the distance, and I'm very lucky, I live in my conservatory. So I can see a horizon. When I look at things in the distance, then the eyeball will shorten and flatten. As the lens itself flattens, it becomes spherical. And that's because the light is coming in almost parallel, and it doesn't have to be bent too far to land on the retina. By contrast, if I'm looking at something near to, then the light is much more divergent, the lens becomes fatter, and the whole of the eye elongated, it becomes egg shaped. And again, that's because it gives a little bit more room for those very divergent light rays to then focus on the retina itself. So it's not just the lens that's changing shape, the whole eyeball is changing shape, too. And for that to happen, it needs to be very flexible, the connective tissue needs to be good quality, and it needs to be soft. Now, one of the problems with modern Western diets, as we discussed before, is they are very high in sugars and carbohydrates. And sugar is markedly pro inflammatory, and sugar and carbohydrates stiffen the tissues, you lose the elasticity of the tissues. So the first thing we have to do is a paleo ketogenic diet in order to stop that or slow that process from happening. The second thing we have to do to keep the tissues soft and elastic and pliable, is take a good dose of vitamin C. Now, us humans are particularly susceptible to eye problems, because we can't make our own vitamin C. So the reason that dogs, for example, don't develop diseases of the eye like we do is because they can make their own vitamin C. And dogs, they can synthesise their own vitamin C, up to 15,000 milligrammes a day if necessary, in response to need, such as an infection, goats the same. All mammals, except humans, fruit bats, and guinea pigs can synthesise their own vitamin C. And so what that means is that humans, unless they are taking good dose of vitamin C, are in a state of chronic mild vitamin C deficiency. Okay, enough vitamin C may be stopping them from getting scurvy, which is, you know, obvious growth deficiency, but not enough for optimal eye function and connective tissue. So, vitamin C softens the tissue. And then we have to exercise our eyes and make them work. And we do that by not wearing glasses, making ourselves focus on things. And for things nearby if necessary, get very bright light, and that helps the eye to focus because that constricts the pupil, and again, helps exercise all the muscles of the eye. So of course, people don't come to me with eye problems until they're already wearing glasses. And typically, it's for short sightedness. So you don't just cast away your glasses and start doing the exercises. You start by using glasses slightly weaker. So look at your reading glasses, and it will tell you how many diopters of magnification is there and it might be plus two, it might be plus three, or plus two and a half, whatever. And you choose yourself a pair of glasses that are slightly too weak, half a diopter too weak for perfect easy efforts. And then you exercise your eyes. So here am I sitting at the computer, looking at the computer, which is something near to, I can see it in perfect focus. Every so often, look at something in the distance and keep looking at it until it comes into focus because it takes fractions of a second for the eyeball and for the lens to change shape. It's not instantaneous. And if you can't see then do that, squeeze your eyes. And we all know that that often improves vision. Why? Because it massages the eyeball into the right shape, and also puts a smooth layer of tears over our eyes because that's also involved in the focusing process. So work at it. And what you will find within after a few weeks is that you can see absolutely fine with half a diopter too weak and then you go half a diopter too weak again. And you keep at it until your eyes become perfect. And you don't need glasses for reading, you don't need glasses for distance vision, and you're eating obviously a paleo ketogenic diet, and you are taking vitamin C, at least five grammes a day, possibly more. So that's how we actually do it. And there's another reason to do it. It's not just about vanities, not just about, well I don't have to wear glasses anymore. These three interventions protect our eyes from going blind. And the three big pathologies are cataract, macular degeneration and glaucoma, but other benefits as well. So let's think about what happens when we start to use glasses, the eyes get stuck in the wrong shape, they get stuck

in an egg shape. So the eyes should alter between egg shaped when it's looking at things close to and spherical when it's looking at things at a distance. And if you get stuck in that shape, then the linings of the eye don't quite match or there's a tension there. And if the vitreous layer starts to pull off, then we get floaters in the eye and damage within. If the retina gets doesn't quite fit, it gets pulled off, and we risk retinal detachment. So there's the obvious early symptoms of the eye shape not being correct. Another problem that happens then is that the retina is supplied by blood vessels from the back of the eye, those blood vessels are stretched, because there's a tension there. And that is the prodromal to macular degeneration. Again, if the eyeball becomes, say, egg shaped rather than spherical, the angle between the lens and the anterior chamber is compressed. And that's the pathological lesion that results in glaucoma. And then, of course, the back of the eye is doing a huge amount of work, the business of accepting a photon, converting that photon into an electrical signal that the brain can read is enormously demanding of energy. So just to put that in perspective, you know, at rest, although the brain weighs just 2% of body weight, it consumes 20% of all the energy generated in the body. The retina of the eye uses energy 10 times faster than the brain, it's massively demanding of energy. So there's an awful lot of oxygen that's required to supply the retina in order that it can do its job. But the oxygen of course, is very damaging to the lens. And that is the relatively low oxygen environment. So there's an oxygen gradient across the eye. And if you upset that oxygen gradient, by leaving the eye in a permanent egg shape, then that is a risk factor for cataracts. So as we can see, the three major pathologies, the three things that can result in blindness are all driven by sugar, high carbohydrate diets and of course, we all know diabetics tend to get retinopathies, insufficient vitamin C, and by our eyes being lazy, and what makes our eyes lazy are spectacles and glasses. And the point here is it's never too late to start. Whatever state of vision we are in, we find ourselves in, it can be improved by attention to these details.

Steven Bruce
So I got some questions for you. I got a feeling that there are some people watching this who already started on the bank holiday gins and tonics because these are not entirely serious remarks that are coming in from some of them. Somebody says, won't squeezing our eyes give us wrinkles, or we'll ignore that one. You won't be able to see them unless you work your eyes hard enough anyway. Mischief Maker, this system gives them funny names sometimes, the problem is as you get older, it's a matter of your arms, you can't read because your arms get shorter so you need to get a more powerful dog to stretch your arms. And Christiane has said to give you a laugh, Sarah, she herself has glaucoma, which has now stabilised in inverted commas after four years. She has been taking oodles of supplements including carnosine, lutine, lion's mane blah, blah, blah. The ophthalmologist at the last meeting told her that she didn't need to take supplements, just have plenty of fruit and veg, completely the opposite of what you've just said of course.

Sarah Myhill
Doctors who say that sort of thing, we call them nutritional flat earthers, they are people who still think the earth is flat. So absolute nonsense.

Steven Bruce
Isn't there a possibility that they would call you a paleo fundamentalist? Because, you know, and I'm not dismissing your arguments at all, but very often your answer to the problem is the Paleo keto diet.

Sarah Myhill
Well, but I'm very happy to be called the Paleo ketogenic fundamentalists, but what I have on my side is hundreds of 1000s of years of evolution, and that cannot be wrong. And humans evolved over hundreds 1000s, millions of years eating a paleo ketogenic diet. Western diets today are so different from paleo ketogenic diets. It's apples and oranges. They are two completely different things. The Paleo ketogenic diet can be perfectly delicious, and perfectly satisfying. And guess what, I'm no paragon of virtue. And tomorrow evening, when we have a bonfire to celebrate the platinum, yeah, I should probably have a couple of pints of cider and eat the wrong things and behave badly. And that's fine. We have a metabolism that can cope with that. But it's relentless sugars, carbohydrates, three meals a day, plus snacks for decades, that drives so much of western pathology, you know, heart disease, cancer and dementia. Dementia is now being called type three diabetes. And it's also driving eye disease. You know, we are seeing epidemics of eye pathology, so much so that it's almost become an inevitable part of ageing. Oh, you'll get cataracts, oh, you will be blind before you get to 100. I don't think so. I want to live to the right age. But I want all my facilities to be intact, so that I can enjoy my life to the full.

Steven Bruce
So you said earlier on, I think that your eyes had started to degenerate at 45. Do you not wear any form of eye correction now?

Sarah Myhill
No, I don't. I don't even think about it. When it gets dark, I might need a bright light to really see. For very fine writing, yes, I'll need a magnifying glass, or I put on my old glasses to see something that's very, very fine. But I don't use them routinely. And if I can't see, then I work at it. I just need to screw up my eyes a little bit, look, look, look. And then it all gradually comes into focus. I don't rush to grab the glass at the first bit of fuzziness.

Steven Bruce
I'm a victim of the vanity you talked about earlier on. I wear contact lenses because actually I can't bear the bar of the frames at the side of my eyes, just can't get on with it. And I was panicking recently, I called my optician in a panic yesterday, Monday, because I haven't brought enough contact lenses to France with me to see me through until next Tuesday when I go home. And of course without them I feel I can't read, now I understand from what you've just said that I'm not going to go instantly from contact lenses to being able to read but it’s more difficult to change the contact lenses. I got to get the optician to agree to do that.

Sarah Myhill
Yes, that's right. And guess what, opticians don't want that. I mean, if you go to an eye appointment with an optician, an optician wants to sell you pairs of glasses. So he's going to be incentivised to say yes, you really do need some glasses. Oh, yes, sure. He's not going to be incentivised to avoid things. And this is one of the problems with doctors, many doctors are in the pay, in the pockets of the drug companies. They're incentivised to prescribe.

Steven Bruce
Do you think that's entirely fair? Because I wonder, yes, I'm sure that lots of doctors are incentivised by drug companies, but also a lot are presumably, their whole process of education is one of, these are the answers. It's drugs. It's the artificial correction, and they genuinely believe this.

Sarah Myhill
Doctors are supposed to be you know, the very clever people, they're chosen from the students who get three A's at a level and get good grades, they are supposed to be clever and intelligent. And the problem with medical education these days is it's not an education, it's a brainwashing. And there's massive input from big pharma. And a friend of mine, his daughter is a medical student. And it's all about the treatment of hypertension, you know, it's drug A and then drug B, and then drug C, and then A, B and C. You know, treatment of asthma is first the blue inhaler and then the brown inhaler and then both. There's no thought at all goes into causation. Nobody is asking, you know, why is this person diabetic? What can we do to reverse this? Why does this person have heart disease? What can we do to reverse that? It's just drugs which manage the situation, and of course in the short term, you may get relief of symptoms, but we have symptoms for very good reasons. Symptoms is how nature tells us something's going wrong, and symptoms should make us look for reasons why. And the two big drivers of pathology are poor energy delivery mechanisms, which we talked about in previous and inflammation. And inflammation occurs when the immune system is busy. And we need to ask, and that often presents as pain, we have to ask the question, why is the immune system busy? And as I say, you guys, working with physical medicine are much better at looking at symptoms, mechanisms, and the action to take. Doctors don't do that anymore, shamefully.

Steven Bruce
Playing devil's advocate, you and I both have grey hair, I have a little bit of grey hair, you've got quite a lot of it. And we can argue that that is a symptom which is inevitable in growing old and therefore it's not an indication of ill health, so could not failing eyesight be the same sort of thing?

Sarah Myhill
No, because grey hair won't make me any worse a hunter or a gardener or a gatherer or a looker after my family, but sight is absolutely relevant. By the way, there is a cure for grey hair. It was invented by a Frenchman as described by Peter Woodhouse, it's called the guillotine.

Steven Bruce
I thought you were gonna say it was Mr. Gillette. Yeah, well, maybe I'll resort to one of those remedies for my grey hair. Carry has asked whether wearing glasses which are too weak or not at all can cause eye strain, which could lead to headaches and should we just ignore that.

Sarah Myhill
Well, we have to do it slowly. An eye strain that causes headaches is probably lactic acid burn of the muscles of the eye. And you've got to get them fit just like any athlete. So what you do is you wear glasses that are half diopter to weak and work at it, obviously, but do the PK diet and vitamin C, and hopefully you won't get eyestrain. If you do, then you exercise for a shorter window of time. So you wear those

slightly weaker glasses for just one or two hours a day and build it up gradually until your eyes become strong.

Steven Bruce
So over what period should we be doing this? I mean, you drop them by a couple of diopters you said?

Sarah Myhill
Well, probably you're going to go down about half a diopter every couple of months, is a rough rule of thumb. So we do it slowly. So if you're at two diopters, then you're going to be looking at about eight to 10 months of wearing the right glasses, doing the exercises to restore normal vision without the need for glasses at all.

Steven Bruce
I suppose the obvious question that people are going to ask here is, you know, this is all very well, Dr. Myhill telling us this, but where's the evidence? Have we got any reliable evidence that this actually works?

Sarah Myhill
Absolutely. There's a wonderful book written by an ophthalmologist whose name won't come into my head in the 1940s. And in fact, there was a well-known novelist who wrote a book about his progression to good eyesight, and again, the name won't come into my head, but it might in the moment. So yes, there is evidence but as I keep saying, this is not a study that the ophthalmologists and the opticians wants to do, because doing them puts them out of a job. And this is so much the case for so many issues. You just have to work it out for yourself and do it yourself. In fact, on that theme, I've just finished writing a book which will come out shortly about the underactive thyroid. Now the underactive thyroid is incredibly common. It's massively misdiagnosed and is responsible for a whole panoply of....

Steven Bruce
I can feel another broadcast coming on.

Sarah Myhill
We look forward to that. But I've decided to call the book the underactive thyroid, do it yourself, because your doctor won't and it's a little bit like that with the eyes. You know, do it yourself because your optician won't, your optician and your ophthalmologist is drawn to prescribing spectacles because that's what makes them money. I mean, who sponsored the last lot of cricket, Specsavers. I couldn't watch a test match without Specsavers coming up. So the answer is, they're making lots of money doing it.

Steven Bruce
Yes, and I think I've mentioned on a number of these broadcasts before possibly when you were on one of our previous shows that I read, I think it was in one of Malcolm Kendricks books that he points out that the pharmaceutical companies spend more on advertising and marketing than they do on research and development. It's all about selling, or more about selling than it is about development.

Sarah Myhill
And it's worse than that they often steal research from government sponsored institutions such as universities, either by, well, let's not go into the wicked things that they do. But you're absolutely right. I mean, I remember being told as a medical student in the 1970s, that on average, Big Pharma spends 20 pounds per week on the doctor, and that was in the 1970s. Now, what does that scale up to now? I hate to think that'd be a lot of money.

Steven Bruce
Yeah, indeed. I mean, talking about the research, before we started this broadcast, I did do a cursory search for what there was out there, I found one paper by, I think Uri Polat from Tel Aviv, is a single author on a paper talking about the eyes response to training methods, most of which are about covering one eye and focusing on different patterns. And in one trial, and I have no idea of the quality of his evidence, whether it will stand up to scrutiny or not. But in one trial, they took some 20-year-old students and some 70 year olds, and after a week of doing this, the 70 year-olds had reached the levels of visual acuity that the 20-year-olds had been at when they started the trial. And the 20-year-olds have also got better, but it's quite an interesting phenomenon given that there is some hard research out there to support it.

Sarah Myhill
Well, absolutely. Yes. As I keep saying to people, everybody's unique, and everybody's different. You have to convince yourself, you just got to do it. And for me, eyesight is so precious, I'm not going to wait for the right study to come along. I'm not going to wait for somebody to prove it or otherwise, I'm going to jolly well do it. And you know, is it painful or hard work to do it? No, not at all, eat your paleo ketogenic diet, take some extra vitamin C and just slowly make your spectacles a little bit weaker and weaker and weaker. And use it. Now I don't particularly advocate eye exercises, because people hate them here. But just keep it simple. And what that's all about is never spend any length of time just looking at one distance. Every so often just glance up, look into the distance, make sure that's absolutely focus, allow the eye because then it's changing shape it's going more spherical. And then as you come back to look nearby, it's going more egg shape again, so the muscles are working. And the eye, the connective tissues of the eye are staying flexible, that's the key to it.

Steven Bruce
I guess, you hit on a point there, didn't you, because I guess I'm not alone in the fact that I spend 90% of my life staring at a bright light two feet away.

Sarah Myhill
I spend much of my life doing that. But I'm very privileged, I see to my conservatory, I've got lovely full spectrum light coming in. And of course, that's what primitive women were subject to. And I have a lovely vista to look at. So I'm constantly looking up, having a quick look around. And then back at the screen. That's very helpful.

Steven Bruce
Can I take you back a little bit? James has sent in a question, he said, could you explain what you were just saying about the O2 gradients a little more, please.

Sarah Myhill
Yes, oxygen is very damaging to the lens because oxygen is free radicals. The back of the eye has to be very oxygen rich. And there is there is an oxygen gradient between the back of the eye and the retina. And that is disrupted. Now, I'm ashamed of it. I don't know what the mechanism of that is. But that is the fact of the matter. So what that means is, too much oxygen will get to the lens, and that has the potential to damage it. So it's all about oxygen damage. But again, what is highly protective against that, is good old vitamin C, because much damage of oxygen occurs through free radicals and Vitamin C mops up those free radicals and neutralises them.

Steven Bruce
Somebody else way back when you were talking about vitamin C to start with, what was the amount and how often should we take vitamin C?

Sarah Myhill
Well, the bare minimum I reckon is about five grammes a day, that's 5000 milligrammes, but our requirements for vitamin C changes enormously throughout life, from day to day, and maybe from week to week as well. So if we have an upper fermenting gut, and the major cause of that is high carbohydrate diets, we overwhelm our ability to sterilise the upper gut and it becomes a fermenting gut, then our need for vitamin C increases enormously in order to deal with those toxic upper gut fermenters. If we have an acute infection, for example, we pick up COVID-19 or Epstein Barr Virus or influenza whatever, our need for vitamin C increases enormously. As I mentioned earlier, we know that dogs can synthesise their own vitamin C up to 15,000 milligrammes a day, goats, we know that they can synthesise their own vitamin C up to 20,000 milligrammes a day, and a very useful way of determining how much Vitamin C we need, is by taking it to bowel tolerance. And in the event of an acute infection, you want to do that as quickly as you possibly can. Because vitamin C contact kills all microbes, 90% of microbes come in through the mouth and the nose and are either inhaled, stick to sticky mucus, coughed up and are swallowed, or we ingest them directly. The point being is that these microbes end up in the stomach, in the upper gut. Now, the stomach should be an acid bowl and acid contact kill all microbes, it's a majour defence against all infections. And if that stomach is also full of vitamin C, then that will further help to kill any microbes that get in there. And when we have an acute infection, our need for vitamin C increases hugely. So the key is, with any acute infection to take vitamin C to bowel tolerance and what I advocate in the event of any respiratory infection, whatever that may be, so a little bit of a sniffle, that itchy feeling you get, oh, I got a cold coming, a sneeze, runny nose, take, I advocate 10 grammes every hour. Every hour, you take 10 grammes until you get diarrhoea. Now that in the acute situation will abolish symptoms of that infection, whatever it may be, for two reasons. A, you physically wash out those microbes in the gut by having diarrhoea and B you saturate with vitamin C so you kill them and you massively reduce the loading dose. And that means that the immune system doesn't have to deal with a huge dose of COVID, or a huge dose of Epstein Barr or a huge influenza frenzy. It just has to deal with a small dose, which you can do fine, you can manage that fine. There's an antibody response that builds up slowly and knocks off those remaining viruses, which then renders you immune to those infections for life. And that's how we should be treating all acute infections.

Steven Bruce
Because I think in medical terms that's described as a sort of a lot of vitamin C, isn't it?

Sarah Myhill
It's relative, I mean, Vitamin C is much safer than sugar. And yet people are perfectly content to have, you know, 50 or 100 grammes of sugar at one sitting. But Vitamin C is extremely poisonous. That dose is only relative to what we consider to be the norm, and the medical profession considers the normal dose of vitamin C to be 30 milligrammes. Well, that might prevent scurvy, but vitamin C, that load is going to be a majour risk factor for cancer, for heart disease, for dementia, for eye disease. So, you know, what we consider as normal, it's different for naturopathic doctors, as it is for other doctors, and again, who educates the doctors, Big Pharma, what do big pharma want, sick patients, you know, remember their mantra, a patient cured is a customer lost. We're not going to see doctors advocating, you know, respectable dose of vitamin C or indeed doses of any vitamin C, any other vitamins or minerals, and we call them nutritional Flat Earthers. You know, they will turn around and tell you, oh, you can get all you need from a healthy diet, rubbish.

Steven Bruce
Interesting stuff, though. I mean, yes, I'm staggered by the amount of vitamin C you've just mentioned there. But I'm also, I think back to things I have read in the literature about this, where there will be people saying, well, we don't know what the adverse effects of vitamin C in high doses might be. But if you're getting diarrhoea, then clearly it has an adverse effect. And of course, it's a very convenient excuse, isn't it, to say, well, I stopped taking a vitamin C.

Sarah Myhill
Stop there. Diarrhoea is not an adverse effect. It's an inevitable result of taking too much vitamin C and as I say, in the event of an acute infection, you are reducing the gut infectious load of that microbe which does a big favour. In the chronic situation, then I don't expect people to take vitamin C to bowel tolerance. If I have somebody who has some sort of chronic disease, whatever that is cancer, heart disease, dementia, chronic fatigue or whatever, I recommend they build up their dose of vitamin C slowly. Some people are very sensitive and can only tolerate 500 milligrammes, but that's rare. Most people can tolerate five grammes absolutely fine. And I recommend they gradually increase their dose of vitamin Cuntil they start to get guts symptoms, which might be rumbling in the tummy. It might be a loose bowel motion; it might be a foul smelling wind. But when they get that, then they draw the dose back. And when you're on the correct dose of vitamin C, you should have no bowel symptoms whatsoever. You shouldn't know you're taking it at all. So it's different from the acute and the chronic situation as to how you get to your optimal dose of vitamin C.

Steven Bruce
Thank you. Now, I will drag you into some different areas, if I may, because there are a number of questions. Bernie says, what about astigmatism?

Sarah Myhill
Well, that's slightly different. That's when the eyes don't work in parallel. Now I have no experience of working with that. But now my guess is that exercises would do no harm. And it seems as if one eye isn't lined up, then it can naturally become lazy, then you may well need surgery in order to start to line the eye up. So it's almost there, but then use it. And then the brain will suddenly say, oh, we can see through both eyes. And we'll start to use the eyes in parallel together. So, again, if it's caught early enough, then

my guess is that the exercise that I'm suggesting, and the intervention I'm suggesting, would fix it. But all too often it's diagnosed late, and there's a lazy eye and then yeah, you may need surgical correction to get somewhere near.

Steven Bruce
You mentioned that the brain will say I can see through both eyes. One of the major findings of that study that I mentioned, I believe, if I remember it correctly was that a lot of the changes which are occurring are within the brain, not simply mechanical around and within the eye. So moving on, what about blepharitis?

Sarah Myhill
Blepharitis is fungal infection of the base of the eyelash, and that should be easily treated. Now the best treatment for blepharitis is iodine. But iodine stings the eye. So don't use lugol's iodine, but betadine, which is povidone iodine, should work very well. So blepharitis is a fungal infection, so put the iodine on, ad lib on the eye. But then we have to ask the question, why does that person have a fungal infection? And again, if you have somebody who's otherwise fairly well suddenly develops a fungal infection. You know, most doctors think they've probably got diabetes, sugar feeds fungal infections. And so what we have to do is yes, get rid of it with povidone iodine. But secondly, stop feeding it. And again, what's that all about? What all the stuff we've been talking about, it's back to the Paleo ketogenic diet, isn't it? Which is low carbohydrate, low sugar. So that's blepharitis.

Steven Bruce
I'll tell you what, I suspect that in the audience, we will have a lot of sceptics about the Keto or Paleo approach to eating, and of course, that's healthy and natural. We should have sceptics and we want them. But one of the things that struck me with the talk I did with Gary Taubes on the subject purely of the keto diet was well, it's not going to kill you if you try it for a few weeks, and you will almost invariably see the benefits after three weeks or four weeks of doing a keto diet, or a paleo.

Sarah Myhill
You should see the benefits but some people don't. And I warn people about this routinely. Because when you start to do a paleo ketogenic diet, you are massively changing the body in many ways, and you can get reactions, what I call DDD reactions, diet, detox and die off reactions. So the first things pertain to the diet itself. Sugars and carbohydrates are extremely addictive. And as with any addiction, when you give it up, you get withdrawal symptoms, and that's called keto flu. So almost everybody gets that, that's very common. That should pass after a week or two weeks, if it doesn't pass within a week or two weeks, that often points to the underactive thyroid, because in order to fat burn, and when we're in ketosis, we're in fat burning mode, we need thyroid hormones. If you haven't got the thyroid hormones to fat burn, then the body will fat burn with adrenaline instead. And that gives you that horrible feeling of being wired but tired, you can't sleep because you're full of adrenaline. It feels like you've got low blood sugar, but of course the symptoms of low blood sugar are actually due to adrenaline rather than low blood sugar. And so if the keto flu persists, think underactive thyroid, and then you can get detox reactions, because as soon as you start to run on fat, you mobilise your own fat stores, and we dump toxins in our fat stores. Those toxins are pesticides, volatile organic compounds and the like. And if you mobilise those fat stores, you can get an acute poisoning, and people often say, and I feel poisoned. And then the third problem that can arise, of course is you know, as we've already discussed, sugar feeds infections. It

feeds fermenting microbes in the upper gut. It feeds fungal infections on the skins, it will feed any systemic bacterial infection like bronchiectasis, chronic sinusitis, you know, whatever. And if you stop feeding those microbes with sugar, then they will die or they will reduce their numbers. And as they die, they break up and you get allergic reactions to the dead microbes and that's called a Herxheimer reaction. So it can be a bumpy ride. And the more severely ill somebody is, the more likely they are to have a bumpy ride. But if you're otherwise functioning fairly well, then as you say, you should see the benefits of a paleo ketogenic diet within a few weeks. And once you perceive those benefits, and once you realise how well you can feel, you will not want to go back to your wicked ways, just because of carbohydrates. The fact of the matter is everybody does. Everybody does the Paleo ketogenic diet, they feel better. They forget how awful they felt, they go to a party, whatever, they start eating sugars and carbs, they get addicted and the whole thing goes downhill again.

Steven Bruce
I'm one, I was doing keto for the better part of a year and then dropped off the wagon for a little while, and I still haven't got back on it. And it has made a massive difference.

Sarah Myhill
Welcome to the human race. We're all addicts, you know, I think humans are characterised by their addictive tendencies. And if we can get something that gives us such a short-term fix, we will do it and we all know what the addictions are caffeine, alcohol, smoking, you know, it's not rocket science.

Steven Bruce
Let me get back to the questions that have come in from some of the people here. Cautious Creation is the name given to this particular person. I've no idea who you are Cautious Creation. So I'm going to call you they. They have asked, have you any thoughts on patients with Mears Irlen syndrome, which is otherwise known as visual stress scotopic sensitivity syndrome? I have never heard of that myself. Apparently, they have this syndrome, and they rely on tinted glasses to read easily. Would you advise patients with this syndrome to stop using the glasses?

Sarah Myhill
Well, no, if the tinted glasses help, that's fine, that's absolutely perfect. But the tinted glass won't have any effect on the rays coming in. It's not changing the angle of the light that's coming in. So if you find the tinted glasses helpful, please use them but do everything else that I'm suggesting, the paleo ketogenic diet, the vitamin C and exercise the eyes, look into the distance, see things clearly. And then look at things near to you. So that the eyes constantly go from that spherical, the egg shape, you're keeping your eye moving all the time.

Steven Bruce
Well, getting back to exercises and eye treatment and so on, two people have now asked about laser treatment. Lawrence has simply said, what's your opinion on laser treatment? Vlad has been a bit more complicated and said, what about people who've had laser corrective surgery? Also, can you comment on how to work with the meibomian gland dysfunction? The person also has AS because it's in.

Sarah Myhill
Okay, well, laser correction is a little bit like wearing contact lenses, you know, but it's permanent. So it's never too late to start. And I can understand why people have laser, but it shouldn't be necessary. If you could know about this stuff early on and do it early on. You should obviate the need for laser surgery. Just in the same way to obviate the need for wearing spectacles and glasses. Ankylosing spondylitis. Now that's fascinating. When I was at the Middlesix Hospital in 1970s, the professor of rheumatology there was Dr. Alan Ebringer. And he demonstrated then in the 1970s that Ankylosing Spondylitis is a case of molecular mimicry. This is going to become a big issue in the future because we now know this underpins much of autoimmunity. But the idea here is that people who have Ankylosing Spondylitis have a particular tissue type, which is called HLAD 27 positive. If they get the wrong microbe in the gut, ie Klebsiella, then the body makes antibodies against that Klebsiella which then cross react with the ligaments in the spine. And there's inflammation there, you get inflammation and calcification hardening. And Allen Ebringer in the 1970s was treating patients with low carbohydrate diets, ketogenic diets, because that starved out the microbiome, the gut, the klebsiella, and it improved their back pain. And of course, on top of that daily exercise is essential. Stop the back stiffening up and ankylosing up and going solid. So it's the same principle. And we now know that rheumatoid arthritis is a similar pathology, probably driven by Proteus Mirabilis, a microbe in the gut. And my guess is that many cases of autoimmunity are driven by the gut flora, we should look out for an abnormal microbiome, that microbiome is abnormal because our diets are evolutionary incorrect, and that the wrong microbes are flourishing in there. And that is driving autoimmunity. In fact, I listened to a fascinating podcast recently by an American doctor called Dr. Craig Shikisuka, who pointed out that this is probably the mechanism of much brain pathology. And the classic example of course, is pandas, which some of you may have heard of, but pandas is an autoimmune condition in children characterised by neurodegenerative conditions and often very obsessive-compulsive disorder. And that's driven by streptococcus A infection, and it's a case of molecular mimicry, that patient or that person has had that infection and hasn't dealt with it adequately maybe, got too many antibodies against a strip of protein on that streptococcus, which then gets into the brain and cross-reactive brain proteins to drive inflammation in the brain. And this mechanism of molecular mimicry, I think, is going to be increasingly discovered and recognised as being a major driver of autoimmunity and inflammatory pathologies, like ankylosing spondylitis, like pandas, maybe like dementia.

Steven Bruce
While you were saying that I was just thinking to myself, it is extraordinary that, I don't know if you're the only person talking about this, but I certainly don't hear it for many conventional circles that maybe this is a route we should be taking to look at ankylosing spondylitis, or other autoimmune diseases.

Sarah Myhill
Of course, of course, let's look at the gut microbiome. And we have two major tools that we can use, which we know are very powerful, that treat a whole range of pathology. First of all, we have to restore normal gut function I and for most people eating a Western diet, which is full of sugars and carbohydrates, they have an upper fermenting gut. Now the upper gut, of course, should be a sterile, acidic, digesting gut to allow us to deal with meat and fat and protein. But if we overwhelm that, we have an upper fermenting gut, then we come up with all sorts of microbes that shouldn't be there, like yeast, like streptococci, like klebsiella, like citrobacter, microbes that should not be there. And of course, we know

they get into the bloodstream, and then can drive inflammation. So the first thing we have to do is sort out the upper gut. And we do that by starving that with the Paleo ketogenic diet, getting rid of carbohydrates, go into ketosis, and then we kill with vitamin C to bowel tolerance. Another very useful tool is take iodine last thing at night. So I use lugols's iodine, 15%, 3 drops last thing at night and a small glass of water. Again, iodine, like vitamin C contact kills all microbes, and that helps keep our upper gut clean and tidy. So that's the first big technique to sort out the upper fermenting gut. And then we have another fascinating technique to sort out the lower gut. Now the microbiome should be present just in the large bowel. And we should have hundreds of grammes, if not kilogrammes, of microbes fermenting in the large bowel. And they have all sorts of very important functions. They ferment fibre to produce short chain fatty acids and ketone bodies, which again help the power us, they educate the immune system. They teach the immune system to react to the right microbes, not the wrong microbes. They ferment to produce vitamins, neurotransmitters, there's an awful lot of good that goes on in the large bowel microbiome. And we don't know much about the large bowel microbiome. But what we do know is that the more diversities, the more different species there are, the healthier we are. And it's my guess, and this is his only a guess at the moment, but it's biologically plausible, is that in the large bowel, there is a predator prey relationship, just like there is in the whole of the rest of the natural world. And there are microbes in the large bowel that are specific for a particular food, which might be land cress, it might be cabbage, it might be cashew nuts, or whatever I eat. The more variety we can bring into our diet, the healthier is going to be our large bowel microbiome. But the trouble with western world is we are very good at messing up our large bowel microbiome with antibiotics, is probably vaccinations with not sufficiently diverse diet with having not a natural childbirth. So caesarian sections, the baby doesn't get a dose of mom's microbiome at the point of delivery. And there is a technique called faecal bacteria therapy, which, okay major yuck factor associated with it, but actually, it's been used widely in the veterinary world for many decades to treat a range of gut disorders, particularly in horses and the way it works in horses, if you have a horse with chronic diarrhoea, then you wash out the gut from the horse, you go down for naffy yard and when the next dead horse comes in, you take the dead, the microbiome of that horse and you run it into them via the nasal tube. And you re colonise that horse with healthy bacteria. But this technique has been widely used in the human world. Now in human worlds, we don't give them by mouth, you'll be relieved to hear, it's given per rectum, and it is a proven benefit in bowel inflammation. So for example, Clostridium difficile, which kills many people, curative in about 90%. Ulcerative colitis can be cured by faecal bacteria therapy. Clostridium difficile, colitis can be cured by faecal bacteria therapy.

Sarah Myhill
Can I just ask the obvious question where are we getting it from in humans and we stripping it out of cadavers as well?

Sarah Myhill
No, no, we find a healthy donor. And that's the difficult bit, finding a healthy donor. But there is a centre in Melbourne in Australia run by Thomas Bardi. Now Thomas Bardi and Barry Marshall discovered Helicobacter pylori, so this centre has credentials for thinking outside the box. And they use faecal bacteria therapy routinely for a wide range of conditions. And of course, as some of you may know, my special interest is patients with chronic fatigue syndrome. They did a study of 60 patients with chronic fatigue syndrome, where the only treatment they gave them was faecal bacteria therapy. 70% from the

store worthwhile benefit from that. He didn't speculate about the possible mechanism. And of course, there are many possible mechanisms by which that might be helpful. But that just blew me away that study. And it just shows what a profound effect that the microbiome has on our health. And this is a very easy, simple tool that's available to anybody. And in fact, there's a gastroenterologist in America called Dr. Silverman, who produced the paper detailing how anybody can do this at home, and the details of that paper are on my website, if anybody's interested. But it's a very simple technique to do. And it has profound effects on our health. And it may well be, and this is just speculation at this point, it may well be that faecal bacteria therapy and of course, sorting out the upper fermenting gut can have a profound effect on our immune system. Now, we don't have many treatments for autoimmunity, it's one of those things that's increasingly common, it's more than one in 20 of the population now suffering from an autoimmune disease. We don't know how to switch it off. And it may be that by using these gut therapies, treating the upper fermenting gut, helping sort out the microbiome can massively reduce the inflammation in the body, and thereby switch off these autoimmune diseases. So this is speculation at this stage, but it's biologically plausible. And anybody can put these techniques in place themselves at home.

Steven Bruce
Blimey, I didn't think we'd get down a route like this when we were supposed to be talking about the eyes. But yeah, I would commend your website to everybody watching the show this evening, because there's such a massive information there. One question first of all, you talked about taking iodine. Is iodine going to cause any damage itself?

Sarah Myhill
No, no. Iodine has been maligned, just like vitamin C has been maligned. It's a fantastically useful, multitasking tool. And people think, as soon as I mention iodine, they say, oh, isn't that going to make any thyrotoxicosis? Oh, isn't that going to cause autoimmunity? And the answer is no. What happened early on in the iodine journey, let's say, is that some people who had an underactive thyroid were treated with big doses of iodine and very often the underactive thyroid, especially 50 or 60 years ago, the commonest cause of the underactive thyroid was iodine deficiency. Nowadays, it's probably autoimmunity, but then it was iodine deficiency. So the thyroid gland said yippie, at last we've got some iodine, went into overproduction, and there was a window of time and that it could become thyrotoxic. And that is called the Wolff Chaikoff effect, but it's self-limiting. You know, the body is intelligent, it quickly works out oh, we don't need all those thyroid hormones. The rate of production came back down to normal, and normality was restored. But the Wolff Chaikoff effect is drummed into the head of every medical student who all and all doctors therefore now think that big doses of iodine are going to be dangerous. But the fact of the matter is, the vast majority of us are profoundly deficient in iodine. And it's not just necessary for the thyroid gland. It's necessary for normal health with the breast tissue. It's necessary for skeletal muscle, without iodine in the heart you can get dysrhythmias, the immune system, it's essential for good immunity. In fact, the immune system concentrates iodine in the mucous membranes, which is the front line of defense against any infection. So it's necessary in the gut, it's necessary to make oxytocin and oxytocin is the empathy, it's the love hormone. Oxytocin is what Puck dropped onto Titania's eyes, when she woke up she fell in love with Bottom.

Steven Bruce
I don't think that counts as medical research.

Sarah Myhill
It counts as good observation, it's Shakespeare. Shakespeare obviously observed that mothers, when they see that disgusting pink, screaming, noisy thing in a cot next to their bed after they have just given birth, they fall in love with it. And the reason they fall in love with it is because of oxytocin, and Shakespeare, observed that and I'm quite sure that was how he came to write Midsummer Night's Dream.

Steven Bruce
Good old Shakespeare. Chris has asked about thyroid function. He says if someone has confirmed low thyroid function, but not low enough to be diagnosed, underactive or beyond thyroxine, what would be the best way to proceed with a paleo ketogenic diet?

Sarah Myhill
Well, the paleo ketogenic diet is a no brainer. We all have to do that. But Chris, I assume is a guy, could be a lady, forgive me. The underactive thyroid is massively under diagnosed. And so many people are maltreated as a result. And that's why I've written this book, and I'm calling it thyroid, do it yourself because your doctor won't. And it tells you how you can correct an underactive thyroid yourself, effectively, and most importantly, safely. Because the last thing in the world we want to do is overtreat, and I go into some detail in that book, it will be out in the next few weeks. So look out for it. And that will do it for you.

Steven Bruce
So let me know when it's out. And I'll tell everybody because I'm sure that a week after this, they'll have forgotten but they'll still be interested. And I certainly will be, I'd like to read it. So if you let me know, then I'll make sure everyone else knows about it as well.

Sarah Myhill
Better, I'll send you a copy.

Steven Bruce
Anyway, getting back to eyes. Andrew says and Andrew, I'm pretty sure is male. Andrew says if the eye pressure test is on the high side, is there anything that can be done to improve that?

Sarah Myhill
Yes, all the things we talked about, I mean, if it's on the high side, that's the early stages of glaucoma. And glaucoma is caused because the eye's the wrong shape, it becomes egg shaped. And therefore the anterior angle, the angle between the ciliary body in the anterior chamber is narrowed, and so the liquid of the eye can't drain out and therefore the pressure in the eye increases. So yes, all these things. Take vitamin C to bowel tolerance, do the Paleo ketogenic diet, wear spectacles that are weaker and weaker and use your eyes, look into the distance, change the focus. As I'm looking into distance now my eyes are going spherical. And as I look back at the screen, they're going to egg shape and I can now focus very quickly on what's nearby and what's in the distance. And you must do the same and that will help to massage the fluid out of the eye, it will improve the drainage and thereby reverse the glaucoma. In fact, there's a very interesting study done by ophthalmologists with cataract surgery. And of course, with cataract surgery, what you do is remove that lens and you replace it with a plastic lens, which actually,

the business of doing that also opens up the anterior angle. And sometimes cataract surgery can be used to cure glaucoma. If you do have a patient who has got both those pathologies and really can't see and really does need a new lens because a cataract is like boiling an egg, once the white of the egg has gone white, you can't undo that. And cataract surgery is highly effective. And if somebody has severe cataracts, I would certainly recommend they had cataract surgery, but it also helps prevent subsequent glaucoma. So just bear that in mind.

Steven Bruce
Well, you just answered a couple of other questions, because a few people have asked, can cataract be reversed. But I recall, and my source of information for this, I'm pretty sure is Qi the television programme, that actually there is some weird procedure by which you can unboil an egg.

Sarah Myhill
Well, if there is such then I don't know about it.

Steven Bruce
But we don't recommend it for cataracts.

Sarah Myhill
Now, you're using Stephen Fry as your basis, I'm using Shakespeare. So, who do you think is the best?

Steven Bruce
Kind Individual, the system is calling this person, asked, is it a different process if you're long sighted because you did talk about myopia a little while ago.

Sarah Myhill
I think it's the same thing, you know, exercise the eye, make it work. Again, I hate to see people wearing sunglasses, because we should be allowing that full spectrum of light to come in to our eye. And that exercises the iris of the eye and so our pupils become very pinpoint. And that's how we normally cope with bright light. Did primitive man wear sunshades? I don't think so. I would say, don't wear shades, don't wear glasses and make the eyes work. And that long sight has a good chance of correcting.

Steven Bruce
Devil's Advocate again, we don't know what sort of eye problems primitive man had as a result of not having sunshades or whatever else. He might have been eaten by a Stegosaurus. And don't tell me he didn't live at the same time as dinosaurs. I know that.

Sarah Myhill
The point, okay, but the point is, it would have been an evolutionary disadvantage. And natural selection, the survival of the fittest is a crucial tool. And as soon as your eyesight starts to fade, then you can't see the predators, you can't hunt efficiently, you can't interact, that's going to be...

Steven Bruce
But, natural selection takes place at breeding age and your eyesight deteriorates much later in life. So you've already bred by the time your lights your eyes deteriorate.

Sarah Myhill
Fair comment, I do see that but don't tell me that having a wise old matriarch like me at the head of the tribe isn't going to be an evolutionary advantage to that tribe.

Steven Bruce
Indeed. Let's get to some of the questions here. Lulu says, what about people with varied focals? Is your advice any different? I mean, she's talking I presume about reducing the power of glasses.

Sarah Myhill
They're even worse, they make the eye even lazier. As far as possible, don't wear glasses. But as I said before, putt on a pair of glasses half a diopter too weak and make your eyes work until things come into focus. And then go half a diopter weaker again and again. And it will be a process of months, not only will you not need to wear glasses, but you will also be protected from macular degeneration, glaucoma, detached retina, cataracts and other eye pathologies.

Steven Bruce
Thank you for that. That's actually reassuring. This is an interesting one here for some several reasons. Dave has said, thanks so much for a great broadcast. He was told ages ago; he had a risk of macular degeneration. And that broccoli was good to eat. I'm not sure where they're connected those two things, is that true or false. But if he's been watching any of our broadcasts with Nitu Bajekal, he'll know that she advocates using pretty much nothing but broccoli and green leafy vegetables. So yeah, her answer will be broccoli is great. What's yours?

Sarah Myhill
Well, my answer is, is that this is not a battle. It's a war. And it's siege warfare. And when we have a pathology, whatever that pathology may be, we throw it at every tool at our disposal. So when Henry the Fifth was trying to extricate the French from Harfleur in 1415, you know, he didn't just starve them out, he poisoned the water, he used battering rams, he used siege ladders, he used arrows, he used a lot. And it's the same with any pathology. And so if you've got eye pathology, no, you don't just eat some cabbage. You cut out the sugar. You do the vitamin C, you do the exercises, you do whatever it takes in order to restore normal eyesight. And yes, green leafy vegetables are great things as staples, the Paleo ketogenic diet, but that on its own ain't gonna do it.

Steven Bruce
Right. Well, David, I mean, that's a beautiful answer there, is there's more to it than just broccoli. But yeah, I'd agree with you that the green leafy stuff is going to be useful. Simon, you sent in a question about the abducens nerve. I'm not quite sure what question you're asking. Can you give me a bit more information? You asked about, what about the syndrome where the lateral abducens doesn't develop correctly. And I think perhaps he's asking, will the exercises still work, but let's see what Simon comes back with on that one. Philip says, we're gonna test your physics now, Sarah, Philip says, any idea why

I can make a tiny pinhole with my fist and it makes my long sight crisper. And he's got very bad long sight and very strong and clear short sight.

Sarah Myhill
That's the pinhole camera effect. And that's why you can see much better in very bright light, because if the pupil gets very small, then you turn your eye into a pinhole camera. So that's a very well known physical effect. In fact, you don't need a lens to focus if that hole is fine enough because it produces an image upside down your retina just like a lens does.

Steven Bruce
So perhaps wear a pair of plain glasses and tape something over them with a tiny hole in the middle?

Sarah Myhill
Wouldn't give you much peripheral vision though, would it?

Steven Bruce
Could become fashionable, who knows. Jolly Chesa wants to know whether kelp is a good substitute for taking iodine.

Sarah Myhill
There's not enough iodine in there. There's a bit of iodine in kelp, but not enough compared to our need.

Steven Bruce
It got all over the press recently, didn't it? I mean, maybe in the last few years about eating kelp.

Sarah Myhill
Well, it's a delicious seafood. But if you're going to get any advantage eating kelp, you're going to have to settle down and eat a pile of it, like you do your greens and your brussels sprouts and having a bit of kelp in a capsule, it just ain't gonna do it. It's just not enough there. It's a bit like people rant on about the benefits of spirulina and yes, it's great stuff. But this is based on work of the tribe of Lake Turkana, where they harvest, you know, spirulina by a kilogramme and eat large amounts of it and yes, they are healthy, but so the dose is as critical as you know, whatever it is that you're consuming, and my guess that kelp, well, I know a few kelp tablets ain't gonna do it.

Steven Bruce
What sort of dose were you talking about? You said four drops per night. What is that in terms of micrograms, milligrammes?

Sarah Myhill
That's three drops of 15% Lugol's iodine give you about 50 milligrammes of iodine, and it's one of my favourite multitasking tools, iodine, because it helps to clean up the upper gut, it's essential for all those parts of the body that I described. It helps take out toxic metals. It's essential for normal immunity. Oh, gosh, it does lots of very important things. So iodine, these days, I'm looking for two tools that are available to the man in the street, the woman in the street, which are inexpensive and very safe. And I

love things like iodine, like vitamin C, exercise, like Epsom salt baths. You know, all these, like the Paleo ketogenic diet, like sunshine, when we can get it. These are all things that are within the grasp of everybody, are extremely safe, and have profound effects on our health in the short term and the long.

Steven Bruce
I'm struck as you're talking about this, Sarah, to think, well, it's all very well you saying this, you are a veteran of 38 complaints by your fellow professionals, some of which will be based on your unconventional, not unconventional, but your nonstandard medical approach to treatment. If an osteopath or a chiropractor or physiotherapist says to someone, oh, look, this is what you need to do to prevent the flu or God forbid, they mentioned the COVID word or anything like that, do this because I saw a broadcast was Sarah Myhill, we probably stand ourselves into great danger. Because if someone were to complain about that, and say they're giving bad advice here, it's not backed up by evidence, we'd find ourselves in front of our professional conduct committees.

Sarah Myhill
Well, what you have to do is you have to say, the evidence for this being an effective treatment, you can find at Sarah Myhills website, and I'm in the throes of updating it as we speak, there's lots of huge information there, and I do the same with my patients, you know, I don't say you must do this, I say this is the evidence base, you know, you choose. And if you want to choose to take thyroid hormones, and I can help you with that choice, then that's how we do it, if you choose to take vitamin C, I mean, the trouble with the medical profession is, there's this kind of, doctor patient, I will tell you what to do, and you will do it. That's not the way it should be, it should be a partnership. And whenever I engage with the patient, we have a conversation, we have a discussion, we're working at the same intellectual level. And they are understanding completely and fully what I'm suggesting and recommending and proposing. But it's their choice, whether they do it or not. And if they choose to do it, that's fine. If they don't, that's fine, too. We can look for other ways around it. So you know, you're not prescribing, you're not dictating, you're not telling your patients, this is what you must do, you're informing them, and then they can go away and make an educated, informed decision. And that's how you guys need to manage it. Because you want to give your patients the best possible information. And then it's up to them to decide.

Steven Bruce
Am I right in thinking, Sarah, that etymologically the word doctor stems from teacher?

Sarah Myhill
To teach, correct. We should be teachers. But we're not anymore. We're directors.

Steven Bruce
Yeah, well, I mean, there's a lesson in the etymology there, I think, isn't there? Anna's asked whether you have any suggestion for dry eyes.

Sarah Myhill
That's difficult. Dry eyes are so often an autoimmune condition and we touched upon that earlier. And my guess is much autoimmunity is driven by Western diets, upper fermenting gut and abnormal microbiomes. But I wish I had an easy answer there and I don't. Sometimes high dose vitamin A is helpful.

Funnily enough, and I learned this from a lovely friend of mine, who sadly died recently and well into his 90s, he described how farmers assess the health of sheep. And what they look for is a shiny eye. And what gives you a nice shiny eye is an even layer of tears that sort of cover the eye in a uniform layer. And to do that they need B 12. And vitamin B 12, again, deficiency is very common, because as soon as you have an upper fermenting gut, you're mal absorbing B 12. And again, B12 is another one of my favourite multitasking tools. So the two things I try routinely are vitamin B 12 by injection, and anybody can do that themselves. You can buy that from the shop, and vitamin A, 10,000 iu daily, well worth trying. But as I say, my guess is an awful lot of dry eyes is autoimmunity. And that's all about the gut.

Steven Bruce
Interesting that you say that too, because if you're interested, there is a recording on the website of an interview I did with Tracey Witty, which is all about B12. Really fascinating. And there's an awful lot to be learned about B12. We are certainly never taught in college. And as you said, Sarah, it's the culprit behind so many problems in people's health. Simon's come back with a follow up on that question. He says his wife has an abducens nerve that didn't develop so she has an eye that can't focus.

Sarah Myhill
Well, my guess is that's some sort of astigmatism but I'm not sure an what an abducens nerve is. So you've lost me there already, I'm afraid. Or ask him to spell it out.

Steven Bruce
A, b, d, u, c, e, n, s.

Sarah Myhill
Abducens? Okay, that's probably a fourth cranial nerve palsy, which stops the eye moving laterally. Well, that's got to have a surgical fix, probably, if the eyes don't move in parallel, then the brain is going to ignore the lazy eye. So that's a whole different ballgame. Not sure I can help you there.

Steven Bruce
I thought for a minute there you're going to test me on my cranial nerves, and I was getting very scared. Corinne asks whether bright sunlight causes cataracts to accelerate?

Sarah Myhill
No, absolutely not. That's another complete fallacy. Bright sunlight is very, very good for our eyes, because it exercises the iris and our pupils go pinpoint. And if bright sunlight was painful to us, then we'd be looking away from it. Now, I'm very mindful that some of my patients who are severely afflicted with ME and chronic fatigue syndrome are markedly light intolerant. And I think that arises because they have such poor energy delivery mechanisms that they cannot process those photons of light bits that are landing on the retina. And the brain cannot convert that into a useful signal. But no, bright light is not bad for the eyes, it's good for the eyes. Obviously, you don't want to stare at the sun, you will run yourself blind if you do that, you'll get an awful lot of eye pain before that occurs. Again, we have symptoms for very good reasons. Symptoms protect us from ourselves. And yes, you know, the reason we don't stare at the sun is because it's so damn painful. But don't wear sunglasses, and your eyes will learn to adapt

to that very bright light and the pupil will shut down to pinpoints and in doing so, you'll be exercising your ciliary bodies and the iris.

Steven Bruce
There's a predictable question here that comes up very often when we talk about supplements, Bob says, does the source of vitamin C matter? Is Holland and Barrett as good as Solgar, which is obviously much more expensive.

Sarah Myhill
Oh, yeah, it's fine. It's fine. Ascorbic acid is ascorbic acid, it's the same molecule. And the cheap preparations are just as good as the expensive one. I mean, there's been a lot of talk about liposomal vitamin C, which is horrendously expensive. And when that came onto the market, I got in touch with the manufacturers and I said, can you show me the evidence base by which you're promoting liposomal vitamin C? You know, how do we know that it's increasing blood levels? Oh, they said we did a study. Oh, can you show me that study? And the study was two people. Both of them took 35 grammes of vitamin C, one took ascorbic acid and the other took 35 grammes from liposomal vitamin C, both of them got diarrhoea, and the blood levels of the one with liposomal were marginally higher than the ones who took ascorbic acid. So I said you've got to be joking, you've got to have a better evidence than that, at which point they cut off all communication with me. So that was that. So I don't think liposomal vitamin C is any better than ascorbic acid, and it's a darn sight more expensive. Now, the people that I deal with, probably the same people you deal with, well, I see patients with fatigue syndrome, and they can't work, they haven't got any money. If they can't afford the cures, then they're no good to them. And that's why the interventions I recommend, they've got to be not just doable and accessible, they've got to be affordable, too. And ascorbic acid is cheap and inexpensive. Now, some people don't like the ascorbic acid, it's a weak acid. And some people think it might dissolve the enamel of their teeth, or maybe give them indigestion. And you can easily add magnesium carbonate to that, magnesium carbonate is very cheap. The recipe is two parts ascorbic acid and one part magnesium carbonate by weight. And that gives you a neutral solution. It also gives you a nice dose of magnesium. And guess what, we're all magnesium deficient. So again, it's a nice, cheap, simple intervention, available to everybody with the added bonus of having some extra magnesium.

Steven Bruce
I think one of our previous speakers said that if you're going to take vitamin D as a supplement, as we all should in this country, I'm in France at the moment, but in the UK and most of Europe during the winter months, you should also take magnesium citrate as well, I think to help it absorb.

Sarah Myhill
Well, Vitamin D is a fat-soluble vitamin. So the key thing to take it with a fatty meal, and it will be much better absorbed. But absolutely right, we should all be taking 10,000 IU of vitamin D daily for life. And if you think that's a big dose of vitamin D, it's equivalent to about an hour of Mediterranean sunshine. Now, guess how much sunshine primitive woman had, you know, she had 12 hours of African sunshine, 365 days a year. So you know, you're not going to overdose, it is impossible to overdose at that level. In fact, some physicians reckon it's safe to take up to 20,000 iu vitamin D daily, it may be, but my experience is

10,000 iu, take with a fatty meal, assuming you can absorb it well, gets levels up very nicely to near 200 picomoles per litre, which is where we should be.

Steven Bruce
A lot of people won't be surprised to hear you saying all of this, but of course there will be some watching and there will certainly be some patients who we deal with who will be horrified at taking levels which are so far in excess of what is the recommended daily intake.

Sarah Myhill
But ask yourself, before you go any further, ask yourself, who sets the recommended daily intake? The answer is Big Pharma. The last thing big pharma wants is healthy people. So of course, they're going to dumb down the normal ranges. Of course, they're gonna say, you can get everything you need from eating a healthy diet, because, as I say, they want sick people. So it's the old story. Follow the money.

Steven Bruce
Indeed. Gavin, this is an interesting one. Gavin says in your mid-40s, your citric acid cycle becomes impaired. For an energy intensive organ like the eyes this leads to the mitochondria going into hibernation, which leads to that drastic drop in vision in the 40s. He's a big fan of red-light therapy for this. Do you agree? You're shaking your head there, Sarah.

Sarah Myhill
The loss of vision in the 40s is all about the lens stiffening up. It's not about the mitochondria at back of the eye. Now, you're absolutely right, mitochondria are implicated in the ageing process. And as some of you are aware, I published a paper together with John McLaren Howard and Professor Norman Booth from Oxford in 2009, looking at mitochondrial function in patients with chronic fatigue syndrome and ME, and to cut a very long story short, those who are the most fatigued, have the worst mitochondrial function and vice versa. And to compare, we then compare that group with a control group, I think there are 49 patients in there. And, of course, the control group had no mitochondrial function. But one of the tests, or what we tested has been done to assess mitochondrial function was called ATP profiles, developed by John McLaren Howard. And we could objectively measure *audio problems* if we produced the mitochondrial energy scores, and looking at those 49 people, there was a whole range of people from their 20s up until their 70s, and there was no age decline in otherwise healthy people in mitochondrial function up to the age of about 70. Now, I don't think anybody has done that study on older age groups, but I think it's very likely, and it's just certainly my clinical impression from doing mitochondrial function tests in older people that probably after about the age of probably mid-50s, 60s, and certainly 70s or 80s, mitochondrial function does decline. But that doesn't explain the loss of vision in the mid-40s. But coming on to infrared light, yes, we know that is very good for mitochondria. And there are lots of studies and I often recommend Far Infrared Saunas for my severely fatigued, chronic fatigue and ME patients and many find benefit from that, again, heating regimes, far infrared saunaing, sunshine, again, that's another one of my favourite multitasking tools, inexpensive, available to us all and does lots of good things, detoxes us and stimulates mitochondria.

Steven Bruce
Right. I actually didn't realise that we were talking about infrared there. I forget who asked the question, but he said red light therapy, and I just assumed that was ordinary red light. There's a big difference in red light that you can see and infrared light obviously, which you can't see. Kind Soul says, do pinhole glasses work to improve eyesight, just kind of going back to what I suggested earlier on.

Sarah Myhill
My guess is they make the eyes lazy, because the focusing is all done by the pinhole camera effect. And so the lens doesn't do anything at all. So I don't think that's a good idea.

Steven Bruce
Well, we got time for a couple more. Jennifer says, is metal toxicity associated with glaucoma. She has recently had two patients with hemochromatosis, and both have glaucoma. If so, have you any suggestions for them?

Sarah Myhill
Well, hemochromatosis is massive iron poisoning. That's not just any old heavy metal and yes, that is markedly pro oxidant and that causes liver damage, diabetes and it doesn't surprise me in the slightest there are two with glaucoma. But hemochromatosis, the treatment of that is, you've got to get the iron down. And that's often done by bleeding, by phlebotomy, but the problem is every time you take a pint of blood or somebody, you're losing all the other goodies. Red blood is extremely nutritious stuff. So with hemochromatosis, yes, do the phlebotomy to get the iron down. But then you've got to use lots of supplements in order to replace the other minerals and trace elements and goodies that are lost as a result of phlebotomy. The toxic metals we normally deal with on a day to day basis and things like lead, mercury, arsenic, aluminum, these are the toxic metals that come up you know time and time again and poisons which are very common. Now, I don't know if those are associated with glaucoma, but having heavy metal poisoning is like throwing a handful of sand into a finely tuned engine. It messes it up in all sorts of different ways. And wouldn't be in the least bit surprised to find that those heavy metal poisons are associated with all sorts of eye disease. And yes, we must get rid of those heavy metals. And yes, the Paleo ketogenic diet and vitamin C are will all be protected against that.

Steven Bruce
Sarah, we've got loads and loads of interesting questions coming in which we haven't got time for and everybody who's watching is loving, not just what you say, but of course the way you put it across as well because it's always a real treat listening to you. Possibly one more, we'll see. Wallace says, Sarah, I have a patient with Kikuchi Fujimoto disease and lupus. Any advice? I reckon I can answer this question for you.

Sarah Myhill
One of the good things about naturopathic ecological medicine or whatever is, it is not disease specific. The basic workup to treating patients is exactly the same. And I call these regimes groundhog regimes because like the film Groundhog Day, which is a comedy where our hero comes back to beginning, it's a time loop, comes back to the beginning and relives that day over and over again, I call these groundhog regimes, because I keep coming back to them over and over and over again, the details are what they

are on my website. But essentially, as groundhog basic, which is what we should all be doing all the time. But guess what, I've never had a 17-year-old come to me, fit and healthy and say I want to live to 100. It's yet to happen, and it's never going to happen, is it? So I rarely talk about groundhog basic, but it is the theoretical starting point. And then we have groundhog acute, which is what we do in the event of acute infection because we now know that acute infections drive many pathologies. We know that all cancers are associated with an infectious driver. We know dementia is associated with multiple infectious drivers, ditto heart disease and increasing now within the autoimmunity is driven by infection, if not by direct infection then by molecular mimicry and epitopes. So, groundhog acute is what we do in the event of any acute infection to get rid of it before it becomes chronic. But of course, most people come to me and will come to you with a chronic disease. And in that event, we put in place groundhog chronic which is a package of treatment which does it all. All my favourite multitasking tools, paleo ketogenic diet, sleep, iodine, vitamin C, B12, tools to switch off the inflammation. And herbal preparations, maybe homoeopathy, and we all have different favourite tools that we learn to use, learn to love because they work, but if there's a difficult situation, apply groundhog chronic and then all the tools that you have found from your own experience that you know are effective. And guess, what we all learn by experience. And guess what? I'm certainly and continue to be on a very steep learning curve. I know I will never get there, but of course the fun is in the journey, it's not in arriving there. And if in the process, we cast off some healthy patients, well, that's a great bonus, isn't it?

Steven Bruce
Brilliant, yeah. Mysterious Habitant, you asked about hyperthyroidism, we haven't got time to go into that one and it wasn't the subject for this one. But we'll come back to it and another broadcast in the future. 30 seconds Sarah, on helping Mike with suggestions for vitreous detachment.

Sarah Myhill
Well, that is a medical emergency. And you have to do what the surgeons tell you to do. And for some people that's for vitreous detachment, I'm presuming retinal detachment, and in the short term, what the surgeons tell you to do, and maybe get it stuck down or whatever. But in the longer term, you do all the stuff that we have talked about tonight, and restore the normal softness of the tissues, the movement of the tissues, the shape of the eye, and prevent that from happening again, because you're risking blindness with a retinal detachment.

Steven Bruce
Sarah, thank you. It's been a treat, as always, and I'm sure everybody agrees with me that it's such fun talking to you and hearing what you have to say, I'm very sorry that Nancy got bored, but then she's probably heard it so many times before anyway.

Sarah Myhill
The reason she skipped off is because we go out ratting last thing at night, and she's trying to tell me that it's time to go out and do some proper work.

Steven Bruce
I was thinking she's probably as well qualified as a medical practitioner as you are after listening to you talking to so many people so often about these topics. But anyway, it's been a real treat. Thank you. And

as I say, I think we can probably expect that we're going to approach you again to talk about the thyroid at some point in the future after what you said today.

Sarah Myhill
That will be fun. I look forward to that.

Steven Bruce
Thank you again. Well, brilliant. I hope you've enjoyed that. And who would have thought we were to start off talking about the eyes, but we bring in Shakespeare, we bring in Henry defeating the French, we bring in all sorts of other stuff, including faecal therapy, which I don't recommend you practice in your own clinic without a little bit of training. That was all history. Let's have a look at what's coming up in the future. Next week, I'm going to look at my crib sheet here because again, I don't have an auto cue. 8th of June we've got a case-based discussion, that's next Wednesday lunchtime, Tuesday, the 14th on the evening, I've got Tone Tellefsen Hughes, who's coming in to talk to us about building an ethical tribe. In other words, building a successful practice but doing it ethically. Lunchtime on Monday, the fourth, we've got Christina talking, Christina Raven, talking about cranial matters. Now I know you're all aware of cranial issues, but she's going to be illuminating the topic even further on how it can help us and help your patients. And on the sixth of July in the evening, Miranda Clayton is going to be talking about neonatal feeding issues. So there's the forthcoming broadcasts. A couple of other things, we launched our app today, the APM app, if you go to the App Store on Apple, or whatever the Android equivalent isn't, look for APM you'll find our app, it's really worth having because it gives you a great reminder when the show's coming up. So you don't have to rely on emails, which often go into the wrong boxes, you can watch the shows through the app, it's more effective than watching it through certain other means on small devices. You can access all your certificates on there, it really is good. We put a lot of work into it. And we're really pleased with the results. So recommend you download that. And the other thing of course is the Simeon Neil Asher course and the Bob Gurwin course, which is the dry needling trigger point course that we're doing in September, it filled up really quickly. I'm sorry that so many people have been disappointed by that. We are opening a waiting list. If you email us, email Ana at apmcpd.co.uk, Ana with one N, then we will get you on the waiting list and I will try to change the webpage tomorrow because Ana won't be at work until next week because of the holiday. I'll try put it on the webpage so you can register there for a place on the cancellation list if there is one. And of course, if there are enough people we might be able to talk Bob Gurwin and Simeon Neil Asher to come in again for a course in the future. Anyway, that's it, I'm off for a martini with my wife. I hope you're going to enjoy the start of your long bank holiday. And I seriously hope that you aren't stuck in a queue at Heathrow or some other airport waiting for British Airways or Ryanair or EasyJet to get their act together. Hope you have a lovely time this weekend. We'll see you again soon. Thank you for coming to this broadcast.