Introduction to MTHFR and the guest

Hello everyone, and welcome back to the Mastering the Menopause Transition Summit. I am your host, doctor Sharon Stills, and I've got a big smile on because I'm super excited for my next guest.

We are going to learn so much about an important topic that you've probably heard about, but that we're really going to dive deep in to with the master.

So I have with me today, Doctor Carolyn Lindquist. She's coming to us from Australia, and she is a health scientist and research and Natural path and herbalist and nutritionist.

She's she's got it all going on. She's super brilliant, super smart. And she is going to share her expertise with us today on MT FA. You can see it right there.

She is all about the MT gene and mutations and what it means and how you can work with it if you have it, and what you need to do. So I'm just thrilled to have this conversation with you today.

Thank you so much for coming and being here with us. Thank you so much for inviting me. It's my favorite topic in the world to talk about. Yay! Yeah. So I guess before we dive into all the science and all the juicy stuff, I'd love to just hear how how did it become your favorite topic?

Is there a is there a story behind that? There is a bit of a story, yes. And I 12 years ago, it started and I'm a real stickler for understanding blood work.

And so I used to check bloods, I check folate, check B12, and I used to see half of my population had a high B12. So I saw a high folate. And so I contacted the lab and I said what's the significance of this high folate.

And everybody that I spoke to said, you know what? That's a great thing. It means they have a lot of leafy green vegetables. And I thought, no, actually they're not.

So I know my patients and they're not at all. So I it took me maybe six months researching research.

How Carolyn discovered the folate connection

I couldn't find the answer. And I was at a conference in Adelaide and a doctor happened to mention that the bad gene was associated with high folate in the blood.

And I thought, oh, that's the answer I wanted. So I made a beeline for this, presenter after the conference and said, okay, tell me what, my ovaries. And she said, look, it's the gene that controls, like, just Google it.

You'll find some research. And I did, and it became an absolute obsession because what was really interesting is if I change the form of so like these people were having their blood folate levels can down and they start to feel better.

And I'm thinking, oh, there's really something in this. And I also started to see patterns with their family history. So there was often a family history of miscarriage.

There was often a family history of mental health. And more than likely a family history of cardiovascular disease. So I thought, oh, okay. And then this got me to not only folate, but then to understand the other genes in the methylation cycle.

And so now my real forte is genetic susceptibility. Looking at a patient's susceptibility where do they fall down. And then environmentally what influences those genes more to stop them recovering and getting to good health.

And that's, that's, that's a real like that is getting to the absolute records, which is what we are all about. So let's just dive in. And I love I could really relate when you, you see something and you just become obsessed with it, and then you see someone talking about it and you're like, I need to talk to you.

I need to know exactly, exactly. My husband, you know, what I believed in is so much in the space of one week, I, I literally changed. I decided I'm going to change the name of my business to and Transport Australia.

My husband thought I had seriously lost it. He said, who on earth is going to come to a place named after an obscure gene that no one goes, no one knows anything about?

But much to my excitement, the patients were way ahead of us. I quadrupled my business within the space of three months, and I now have ten practitioners doing this whole genome susceptibility methylation all day, every day.

Like because patients want it, they want to know, you know, if they because I see someone have the same condition as them and they improve and they don't and they go, but how come I was given the same supplements?

I had the same problems, they're better and I'm still struggling. And I think that's where it becomes so powerful. So I do a lot of practitioner education too, because I believe that every practitioner on the planet should be doing this to be able to look at someone's, you know, family history and say, well, we don't want you to end up with cancer or we don't want you to end up with endometriosis or whatever it happens to be.

So how do we how do we stop it? And understanding where your genetic susceptibility is, is 100% the way that you stop it. And exactly what do we say in genes load the gun.

But the epigenetics pull the trigger. And so the more knowledge we have and the more we know, the better our health outcomes are going to be. So oh, I'm so excited. Where do we get started?

I guess let's just do some definitions for everyone watching, just to make sure we're all on the same page. What is my AFA? What is methylation? You hear methylation.

So often I wonder if people really know what it means. Methyl tetrahydrocannabinol like reductase.

What methylation and folate actually mean

So more active is just the enzyme that takes folate. The folate you eat. And we're particularly talking about folic acid. Can I actually I'll take a step back and just say it's really important that people understand that there are different forms of folate before we even get started, because there's folic acid and that's made in the lab.

It doesn't exist in our body. It's it's man made and it's it's a form that they fortify food with. Now, the important thing to remember and know about folic acid is unless your body genetically can use it, it's a waste of space.

And the other thing to remember, which is part of my PhD project at the moment, is to really understand if we are getting too much because of the supplementation, because in the US and in, in Australia, we fortify foods with folic acid, and we're only meant to get a little pinch of it, but we're getting so much now that the theory is we're actually inhibiting our good folate pathway.

So we got folic acid. We then got for clinic which is a metabolically active form, but the only biologically active form, which means this is the form the body uses for fertility and health, mental health and detox is methyl tetrahydrocannabinol.

Hence the cheaper it's methyl tetrahydrocannabinol light reductase. So it's the enzyme that takes that folate and makes our biologically active methyl folate.

Now methylation, however, is just a methyl group, is a carbon, and it's surrounded by three hydrogen atoms. It has one arm that is left open, and that open arm is meant to grab on to amino acids and proteins and actually allow the body to do what it needs to do.

So these little methyl groups, they're floating around our body and we use use them 100 million times a second. Stress is one of the things that uses methyl groups more than anything.

So our methyl folate donates its little methyl group into where we need it. And then it's recycled again and we make it again. So the important thing is we have to be not only making methyl felt like, but we have to be recycling it and utilizing it because it does everything it supplies.

You know, Sammy, so we can make creatine for our, our muscles and our, our brain glucose. It helps us detoxify toxic estrogens, which really does become a big problem during menopause.

It also allows us to, create, foster title calling for our brain function so we can remember things. It also helps us break down histamine so that we don't.

Right. You know, we don't have a lot of histamine reactions. And as you know, Sharon, so many people have used to me problems. So these little methyl groups and that when we say methylation, it's our ability to make them and use them.

And that's what methyl ation means. Wonderful. Thank you, thank you. That is very clear and very helpful. So just going back to the folic acid. So if someone what what are your thoughts for the ladies listening on supplementation.

Should they be taking folic acid. Should everyone just take five method tetralogy of for folic acid. Because you're just going to assume they need the activated form.

How does that how do you what are your views on that. My views and particularly because I'm, I'm right in the thick of the research right now, I've, I've spent so far, you know, three years researching about folic acid and how it's used and compared that to methyl folate.

And I honestly don't believe we need it. If we so what the research is saying and what I'm about to do, literature review on is that if we eat leafy green veggies, which is the good folate, by the way, it doesn't need to be convert.

It does. It is converted in the gut, but it doesn't need this. DHEA far ends on to do it like folic acid. So if we eat leafy green veggies we get really good metal folate, which is great, but people don't eat enough leafy greens to get the minimum amount we need.

So then you say, okay, should we have it be having foods with full folic acid? Well, in my clinical experience over the last 12 years, people with more of our polymorphisms, which by the way, Sharon, can be up to 55 to 60% of the population can have some sort of polymorphism.

Folic acid vs methyl folate supplementation

Generally, they don't feel as well because their problem is they methyl deficient. And so they really need to encourage a eating lots of really good leafy greens.

But the research says not many people actually get what they need. So then the question is you probably need supplementation, but folic acid is not the form to be taking in a supplement.

And particularly in the enzyme that uses folic acid, it only deals with a tiny little bit of folic acid at a 200 to 300 micrograms max. Then it gets inhibited, whereas metal folate, there's no problem.

And so the researchers say in the US and in Australia, people are regularly getting above the upper tolerable living limit that they think is safe. And so this build up of folic acid, it's now being linked with cancer.

It's been linked with a decrease of natural killer cells. It's being in mental health. We also know that these metabolize folic acid does cross the placenta.

And most babies who are breastfed in a fortified country have levels of UN metabolized folic acid. They did a research study that said 93% of babies have it in their system.

Wow. Yeah. And that is a big wow. Yeah. And and I have to say to myself, not only is this potentially a fertility problem, but it is potentially a mental health problem when the good form of folate that our brain uses is methyl folate, not folate, folic has to be converted.

And this is what I guess a lot of people forget in the argument about folic acid versus methyl at the end of the day, folic acid can only be used if it's converted to methyl folate.

And so why would you take something that's at the top of the chain when we need the bottom. And most people aren't going to convert it. So so for the later listening, should they be going through their supplements and making sure they're not taking folic acid?

They should. Yes, they should, because and it doesn't mean that you need a lot. So we we have a a prenatal multivitamin that we use as a multivitamin.

And the dose for prenatal women is three caps. And we sort of post load for people who have our and give them more above that. But as a multivitamin, you could take 1 or 2 of those a day and together with your leafy greens, that's really what you need.

In the US, you tend to go for really high doses of everything and you don't necessarily need them as long as you are feeling good. And what we usually find is those people that get off folic acid and swap to methyl for like they actually feel an increasing energy and increasing vitality.

Their mood improves like they they physically see really good benefits from the swapping, particularly if I have an empty gene polymorphism. But it sounds like even if they don't have the polymorphism there's still going to be benefit.

I, I that's what I personally believe. Yes. And you mentioned mental health issues. I'm just curious is it depression. Is it OCD. Is it all. Is it all sorts of mental health issues or do you see just one sort of issue with.

No, it's all sorts of mental health issues. And we but we particularly see, lifelong depression when we see a combination of a couple of genes. So our homozygous and Comt catcher Col oh methyltransferase Comt gene, if that's fast, we see usually people saying I've had depression my whole life and I've tried every antidepressant and it just does not work.

So the combination of supporting dopamine and also methyl folate can be phenomenal life changing for some people. And they now doing really good research studies with using high dose methyl for like for mental health patients on antidepressants to improve the efficacy.

So and that's the great thing. Even if someone is on an antidepressant it can augment and make the results even better. So it's not contraindicated if you are on already an antidepressant.

So someone who's watching, who doesn't know their status, I'm sure they're thinking right now, how do I find out? So is there what what is the preferred way of finding out if you have this polymorphism, if this is an issue for you, that can go on to our website and have opportunity.com.

And in the shop they can just down, they can just purchase the gene test, hit the Mt5 gene test Tisket and they do it at home. It's a swab test. They send off the kit the, the the swab, and then it comes back with the result.

And so you can and I look, I really believe, Sharon, that it's vital for everybody to know whether or not they have a

problem in making folate because it is affecting their biochemistry at almost every level.

And, and I think it's something because it's so important to our health, it doesn't matter if you're 5 or 85, you still need to know if there's a nutrient that is actually causing you to feel suboptimal.

And it's something that we were we just like we're taught, you take your folic acid, right? Your you're pregnant, take your folic acid. It's kind of it's so it's so opposite of what we have been taught in mainstream.

And that's exactly why I'm doing the research because I, I've come to this conclusion myself. So we, I started off testing dosages with my patients 12 years ago.

And so I use higher doses, particularly in preconception and pregnancy, because I'm trying to get these women pregnant. But it then got to the stage where none of the doctors were on board, because the medical fraternities turn around and say, this is irrelevant, but how can just tell me, Sharon, how can a by biochemical pathway be irrelevant?

Mental health, fertility, and testing for MTHFR

It doesn't make sense, and it's only relevant because they don't know what it means. Exactly. And so I did, I did my first research project, which was a series, a case series, and we took 12 women with diagnosed infertility by medical specialists.

They had we took them all off folic acid. We gave them all methyl folate or a combination of methyl and Fellini. And guess what? We had 11 pregnancies and ten live births.

Well makes so much sense. And some of these women had had ten miscarriages, eight failed IVF. I mean, we shouldn't be even considering anything but methyl folate in preconception and pregnancy when you're getting more and more infertility, there's 17 million couples with infertility.

And yet we say just keep trying. It's not it's not the answer. Exactly, exactly. So before I move on, I just want to go back to the testing. Is it something that could be done in the blood work?

It can be done in the blood work? I believe so. In the US, it's much harder to get it done here. It's easy. Medicare, will fund it if someone in the family has actually got an MD polymorphism.

But I don't believe in the US. It's as easy, as easy as that. Maybe you can tell me. Yeah, because I've I've run it on patients in the. Oh yeah. Okay.

Well then you ask your medical practitioner and they should be able to get it done for you. Yeah I think, you know, insurance is always so different, but it's not.

They can just get it right from you and no problem. So you don't have to argue with a doctor who's not willing to support you in your journey towards health.

So so let's talk hormones and and GFR. And how does this, you know, for the women listening. So important. Because as you're going through perimenopause and menopause you may have daughters or nieces who are struggling with infertility.

So this is such important information that we share and pass on just for women who had throughout the the ages and throughout the generations. But for someone who is past wanting to get pregnant or childbearing, how does MT FA relate to them as they're going through perimenopause and menopause?

And why? Why should they know? And what should they be doing? Well, I think the key things, for me at the estrogen dominance, and I know that you've had other people talk about estrogen dominance, but I'll just say that not from this perspective, not from this year. Yes.

So remember we said methyl groups are really important. And methyl folate makes that. And the gene makes methyl fall like if you don't have enough methylation you can't get rid of toxic estrogen.

And so most doctors consider that because someone is no longer menstruating that they can't have a high estrogen. But it's actually the opposite. I find that most menopausal women have excess toxic estrogen in their system.

And so what happens is that depletes the good estrogen and they end up with an excessive toxic estrogen, which then predisposes them to all those things that we know post-menopausal women have, like fibroids, not so much endometriosis, but definitely fibroids and definitely cysts and definitely breast cancer.

And in men it's, it's and they have the same problem. It's more prostate cancer. So we need to get estrogen under control. And if metals are deficient, then you don't get rid of toxic estrogen.

So when you say toxic estrogen I just want to are you talking about the metabolites like a four hydroxy or. Yes. Okay. So you're talking about what we're how we're metabolizing our estrogens.

Correct. Correct. And so we get because Comt is so important for that particularly the four hydroxy you get these excessive. So they start to get these signs and symptoms of white gain around the middle.

They start to get sleep disturbances. They also and this is one of the things that I really want to stress with post-menopausal women is that if you're getting hot flushes or you say hot flashes, if you're getting hot flashes through the through the night, do not assume it's a lack of estrogen and go on to hormones hormone replacement, because a lot of the time it's histamine causing you're flushing or at night and or sulfa.

So the three things that I think, most most trigger the hot flashes are not estrogen. It's usually a histamine response because between a grant about 3:00 in the morning is when we release histamine and sulfur sensitivity.

So if you're taking things like gluten side and thiamin and, you know, garlic and all those things that rise so far and you can't get rid of sulfa, you will flash, you will get hot, and you think, oh, well, I'm having a hot flash.

But that's actually not the case. So I think any of the hot flashes first thing to do is reduce your histamine. Now why is that?

Menopause, estrogen metabolism, and histamine

Because histamine needs metals to clear it. So he's not only got the estrogen causing a problem, but you've also got a histamine increase. So if you've had any exposure to mold or you've had Lyme or you've got gut bacteria, the chances are you can have histamine being released.

That is then hard to control. And if you are then genetically not able to clear your histamine bang off guys, the flushing. Wow. Very interesting. So is that not clearing the histamine going back and related to the MT HSR, or are we talking about another.

Well, it is now it is because the Beijing makes methyl folate that gives you your metals to clear histamine. So I often say all roads lead home to stress.

And stress is such an underlying cause. But I feel like now I can also add to that all roads lead home to MT fa issues. It seems like that it's so far reaching, but are 100% right in the stress response because the more stressed you are, the more you deplete your metals.

So why? I don't know if you know this, but why is the MT fa snip? Why is it so prevalent? You said 5,060% of the population. Do we know why it's such a large amount of people?

The highest, percentage of the home is, I guess. So two copies of the gene is actually Mediterranean and Mexican

populations. They have the highest. And so here in Australia we have a huge percentage of, Mediterranean, not so much Mexican, but you would have a lot of Mexican, population in the US.

And I heard a really interesting, podcast that basically said, because our environment is changing, they believe that the more our gene is expressing more.

And I'll explain what that means, and it starts in your mother's womb. And in actual fact, what they believe now could be three generations alone. But it actually started.

So let's say folic acid was introduced, in well, here it was 2006. It was early it was 1998. In the US. And slowly but surely, we're increasing our folic acid intake because almost every food on the supermarket shelf is now fortified.

So instead of getting a little bit, we're getting a lot. I think that's one reason because we're ending up to be methyl folate. So deficient mostly. Also stress is increasing.

And when you think of our mental stress, our environmental stress as in the toxins and pollutants we are now exposed to and our ability for the liver to cope with that, then that's what we call an epigenetic effect on a gene, and it's actually making it express.

So if mum, let's take two scenarios. Mum is pregnant, she's taking Metaflow like she's getting enough sleep. She's well supported at home mentally by a partner.

She's got a great job, she exercise is the chances of that child having an expressed interest is minimal next to none. Even if she's homozygous. If, however, you take a mum who's homozygous, she's taking folic acid, she's stressed to the hilt.

She's working 14 hours a day. She's struggling to just, you know, get food on the table because she's so busy. She's not exercising, she's eating crappy food.

Then that expression of the gene will be upregulated, and that child will be born with more of a gene expressing. And so we'll be checking this in the little ones.

We should be, particularly if you see kids, you know, those terrible twos where kids try themself on the floor and, you know, have tantrums and just lose the plot?

I look at that as, okay, that's potentially in our gene and we need to address. Interesting, interesting. My my granddaughter is two and she has these very, very dramatic tantrums.

But where she like doesn't want to throw herself on the floor. She lowers herself down gently and kind of. But and that's good because some of them, you see them absolutely losing the plot and screaming their kids off.

And I think, okay, there's something wrong there that, that that's not that's actually not normal. And so I think we put it down to being normal, but in actual fact, I've seen, do you know what's the most amazing thing?

And and it it's just beautiful to see is when we have what I call an fa baby. Right. So someone's come in. They've had multiple miscarriages. We see we see people in the US as well because we're all aware 100% online, clinic.

And we, we've had so many women that have had what I call more of our babies. So they've really well supported with mental folate. They've had a beautiful pregnancy.

They may have had six miscarriages before, but they've had a beautiful pregnancy. And these babies, they, I hate to say it, but they, well adjusted. They progressed really well.

So they start crawling faster, walking faster. Their brain function is better. By the age of two. They're fully talking to see, that is absolutely, absolutely, quite phenomenal.

And if you put a baby beside at the same age, you would swear that there were no any ages. I love that you said that, because I say that all the time about my granddaughter around.

Yes, here. But she has crossed every milestone and fully talking before to and and I know that it's. Yes, she's smart, but I know this is just a healthy expression and that our children and not reaching milestones that it's it's an issue.

It's not it's means something's out of balance. And so this is such a a good piece. So now I want to go back because I have a question still lingering my head.

So you were talking about the toxic estrogens. And I think something that's really common is, oh, if your estrogens aren't metabolizing properly, take them.

And that's just thrown at everyone. But I would like to hear what you think is important to do, because time is not the be all, end all answer. And there's a lot of other things that I think are more important or definitely equally important.

Yes, I agree, I think looking at the diet is critically important. I'd rather people, you know, put things like flax seeds in. And one of the things that I really look out for is exposure to mold.

And I think this is probably one of the most important things, because what most people don't understand is that mold, mycotoxins need the glue coronation pathway to clear.

And so when you see someone who has a very high mycotoxins level, the glucagon sedation pathway is jammed and they become more estrogen dominant. And so supporting glue coronation with the likes of calcium deep Brooke.

Right I think is probably my favorite first thing go to.

Environmental toxins, mold, and lifestyle support

And then if someone was I tend to use the dean and combination of indoors more pre pre because that's when you need sometimes to go in hard and fast because these women are getting super painful periods, very, very heavy periods.

Mood is going a lot of anxiety. So, you know you've really got to go in quite hard. So I'll probably do all of that. But I think post-menopausal, there's so many things that she say that you can do.

But I think supporting Glue Coronation methylation and glue to buy a nation of the three phases that I would preferably go for, can forget about me saying, no, you can't.

And so environmentally it's the mold. Other other things. I remember being a young medical student 25 years ago, and one of the doctors saying, we're just swimming in a sea of toxic estrogen and that always that term, always stuck with me.

So I'd love to hear your thoughts on that. It's unfortunately very true. And every credit card receipt you pick up, I think of that as something that is going to cause an endocrine disrupting something or other.

So, you know, that's potentially estrogenic. Every plastic water bottle, every plastic container in a supermarket shelf that you buy your food in, every personal care product that you touch needs to be clean, sulfate free, satellite free.

Look on the look on the label. If you don't understand what's in it, don't put it on your body. You know Polysorbate 80, which is in so many personal care products, is a carcinogen.

You know you have. I looked at a thing the other day. It had aluminum in it. Oh yeah. Great. So everything and they

they say by time a woman gets up, has a shower, puts her makeup on and walks out the door.

She's been exposed to over 300 toxic chemicals and and so therefore not going to going to a health food shop. What do you do? You don't call them health food shops. Pretty cool.

We call it the health food store. We just call it retail. Yes. Or something like that. And just by the most simple, basic product you can find, do you know all I use on my skin, and I've only used it for 20 years, is pure 100% rosehip oil.

That's all I put on my skin. And so thank you. So it's really important that we just look at every, every product that we're cleaning within our house.

Check. Is it? I mean, you can use vinegar and water for nice cleaning. You can make your own. There's great recipes online for making your own products.

But whenever you're buying personal care or makeup, just really check that it's organic if you can. I think that's really important. I think another thing that we don't think about a lot is Wi-Fi.

And Wi-Fi exposure in the home can also be very detrimental to ourselves and our detoxification, and particularly kids who have had mold exposure. You can actually make them almost autistic, having that exposure to the Wi-Fi violet hue in the house, if they've got mold.

So I think it's such a shame people sleeping with power boxes on the outside of their bedroom wall, things like that are really detrimental to health.

And you may well say, well, look, you know, everything's a health hazard, but it almost is. I think 5G is going to be a nightmare. You know, how do we stop 5G, you know, entering our homes other than to have shutters on the outside and lock it up every night?

It's almost impossible. I won't be buying a 5G activated phone. I'll never do that. Same, same. Yeah. I mean, there are just so many things. So I think clean water, plenty of sleep, eat really well as organically as you can possibly afford to do that.

Cleaning products that are clean and natural. Everything that you use in the house. Avoid Wi-Fi. Just if you have to use Wi-Fi, turn it off when you go to bed.

It's simple. And obviously it's you don't want to be living on a highway, a freeway, you know, with lots of pollutants either. If you are, then something like a Hepa filter to help clean the air would actually be really good.

So I think there's a lot of things that we can do. We just have to be aware of it. But that's what we need to do, right. Exactly. I think you bring up so many good points in it.

I just think it can be overwhelming. But if you take it from the attitude with with which you're bringing it is that there are just so many stressors and so many toxins.

It's just the society where we're tapped into right now, and this is where this is how it is. And so being aware and making good choices and lowering your load for the things that you have the capability, not getting crazy and anxious about it because that creates a whole nother set of toxins if you're stressing and anxious about it.

But just going about it in a methodical way, maybe taking your bathroom to start and cleaning out in there. And the other thing I was thinking, because you mentioned with food that all the processed food has folic acid.

So that really speaks to the benefits of eating non processed foods for another for yet another reason. And cooking and shopping. We always say shop the perimeter of the store, don't go up and down the aisles where all the box foods are.

And for many reasons. But this is another really important reason is what I'm hearing you say 100%. Sharon and I. I tell my patients, if you want a cake, fine, make your own.

And I like to think that post menopause Lee, you know the kids have left home. You've got more time. Like my my, daughter and her husband just got Covid.

And so I've got a thermomix. I love my thermomix. And I just I said to them, well, I'll make you some food. And I made a beautiful chicken and vegetable soup on the weekend and dropped that over.

I made a beef casserole for them and some rice, and I like I make my own tomato sauce in the thermomix. I try and do everything myself. We pretty well don't have any really any processed foods, maybe some crackers, but I quite like to make my own flexi preference. So.

But I eat them so fast I can't keep up. So I've got, I think, you know, post-menopausal. We've got some time and I think that's really nice. Even if you're not a great cook, just get back to basics and, you know, just play with some really nice recipes.

We've got a a fabulous website here in Australia and it's called the Healthy chef.com. And she has some really wonderful recipes and they're not particularly hard to make, but they just use really good basics solid ingredients that anyone really can make.

And as you say, and I think it's such an important point, you don't have to get stressed about it. You know, as one project finishes, you swap it with something that is better and you don't have to go and throw everything out at the moment.

Just be aware that you want to try and replace every product that you have for something that's clean. And I will say something about my own stress because I, I'm sure you would have a lot of listeners who say, oh yeah, it's all very well to reduce your stress.

And I think with my polymorphisms, it is a catch 22 in that if you don't have enough metal folate and methyl groups, you are going to be more stressed than the average person.

And so you will work harder to get stress under control. And sometimes you won't be able to until you fix the methylation. So it's like if you're I would say if you're working really hard to keep yourself under control.

So I've got some patients that have moved to the country. They don't have any involvement in the city anymore. They stay on the farm, they make their own products, they do it.

They've almost dropped out of society because that's the only way they can cope with life. So it's I would say that's you can check for more if, and check to see if you've got an issue because that's also not normal.

And we don't want people isolating themselves and having to remove themselves from everything that's going on just to survive. That's such, such good advice.

Good advice?

Stress, children, COVID, and methylation support

I'm just curious if you have any correlations with Covid and for what you've what you've seen. There's a there was we did I did about eight webinars over the last two years on Covid, and it was extremely stressful because the people with our polymorphisms, they do believe that they are at greater risk for everything, pretty much, because there's so much talk on the internet and everything else.

And I think one of the most important things was just letting them know that, like everybody, they had to do their due diligence and they had to make sure that information was under control, that their vitamin D was good, that

they were taking quercetin and they were making sure they've got good levels of zinc.

And I think the vitamin D story for me was probably one of the most important. But we we actually had a protocol that we developed for all our, our patients to get the vaccine, because here you had to get it.

You actually couldn't even leave your house without having to have it done. So it was incredibly stressful. And I'm really pleased to say that we did not have really any major incidences, with people getting the vaccine, which was great.

However, there was a really fantastic research paper written last year that said they believe that methylation is signifi quently depleted when you get Covid.

And one of the things that they believed was happening, and which I could probably concur with a lot of my patients, is that vitamin B12 is just wiped out.

And so you get people post-Covid not recovering. And their theory was that this is because methylation was deficient when they got Covid interesting. And it's really interesting.

So so it's those those typical methylation based nutrients of vitamin B12, metal folate and you know, B6, tri methyl, glycine, Sammy that can all be incredibly helpful to get people out of this post-Covid.

You know, long Covid, they call it. So I think yeah, I think anything where your immune system is potentially compromised, and we know that having a lack of methylation compromises the immune function, you're going to be at risk.

But as long as you're folate levels are good, the risk goes away. So I have two questions. Do you think that everyone should be taking these Maxwell donors that you just mentioned?

B12 in the B6 and. It's a really, really good question. And I don't ever like to answer something to say, yes, everyone should. But I think coming out of Covid, where we've all had many people have had vaccines, there's been a humongous amount of stress financially, socially, physically.

I think it would probably be wise to just it doesn't mean you have to take them for a long time. But I think if you're not quite feeling where you need to be and your energy's a bit low and your mood isn't the best in your, you know, you just struggling.

I think it's an awesome idea until you get up and running. But if you have more polymorphisms, I do believe that the B12 in the fall should become a regular thing.

You may only need to take it 3 or 4 times a week. You don't necessarily have to take it every day, but I do think it's, again, it's your pothole that is dug out.

And if you keep driving the car over the pothole, you're going to get damaged. So that's how I liken this genetic susceptibility. If your pothole is because you can't make methyl folate, then for you to go forward, if you plug up that pothole, you you take a long quite well, you know, you'll you'll be able to weather the storms that come at you.

And so that's how I liken that susceptibility. If you know where you're deficient and you can take those supporting nutrients on a regular basis, you then act like everybody else.

Exactly, exactly. So going to the doctor and me is like, I gotta ask her more questions. I so if someone has a high homocysteine in their blood work, does that mean they have a problem with the MTA so far?

Is that pretty much is that or could well be. So when you look at why homocysteine is not being eliminated, there's recycling routes for homocysteine and they rely on methyl folate and B12 and zinc.

And you and try methyl glycine. But the only way you get it out of the body is B6. B6 stimulates that pathway to help remove homocysteine. So that's why we say there's a combination of nutrients to get it down.

And that's the B12 folate B6, trimethoprim seen. But so many people who are chronically ill have a low homocysteine. And so that's the other thing. We need to be in.

This nice, fine sort of 7 to 8 is my mild ideal range, but we don't want it too low because that means you haven't got the substrates to support methylation.

So either end of the scale, we have a problem. I'm so glad you said that because I agree with you 100%. So many people drive have these low homocysteine and they think that's good, but it's always the the Goldilocks effect, right?

Not too little, not too much. That's right. And and you know, all these people that are on these pyro packs, for pyro Luria, you know, I've had kids that have homocysteine levels of 2.6 because they're on these massive, massive doses of B6.

And that's not good either. Right. Exactly. And then another question that just floated into my head. I remember being in medical school and being taught, like, when you give B12 shots that you have to combine it with folic acid, because otherwise you can mask and create a folic acid deficiency.

No not true. So that is false thinking. It is false thinking because the B12 is required to pick up methyl folate and use it. So if you had and normally the problem is the other way round, normally people have really good levels of the folate, but they can't use it because their B12 is low.

And folic acid isn't the way to go anyway because it's not going to necessarily help you if you can't use it. And that's another thing I think. I don't know your stance on this, but I, I really do struggle with people that are vegans and vegetarians because I look at them and I say, okay, if you're susceptible particularly to having a low B12 or you're susceptible to having, a problem with methylation, you are doing yourself a great harm by becoming vegetarian.

And that's because things like creatine and the thiamin and B12 that you can only get from meat, protein, it means you're deficient and straight away your methyl methylation capacity is gone.

And so I think if you have to be vegan or vegetarian then you have to be an absolutely best vegan and vegetarian. And you've got to be taking a B12 injection.

Exactly. Yes. All the time. And there are some people who, you know for philosophical reasons and they embrace it and it you just have to be really careful and know what you're doing.

I know when I spent a couple of months in India, I was vegetarian. But they we ate so healthy, you know, it's so easy. You could be a junk food vegetarian or you can really be, aware and.

Absolutely, I have all my vegan or vegetarian patients make sure they're getting a B12 shot.

B12 forms, homocysteine, and aging well

So one last question, because our time is on the stuff, but just in B12, the difference between methyl Kabbalah, I mean hydroxy Kabbalah, I mean science salami.

And I just love to hear you share that. Okay, so I love this a lot. I'm a biochemistry geek, so I love it. I just like you have different forms of folate.

You've got different forms of B12, cyano Kabbalah. It's like folic acid. It is manmade. It doesn't exist, but it's actually Kovalainen, which is B12 connected to a cyanide molecule.

Why would you use that? Like seriously, why would you use that? So you have three forms of B12 hydroxide Kabbalah. Which is our precursor to our two active forms a dental cup element is our active B12 for energy.

And Methyl Kovalainen is our active B12 for the brain and neurological function. So again depending on your genetics and depending on what is going on environmentally, you may have a lack of methyl B12 and a dinosaur B12.

And if you expect methyl B12, you know, to to top up your citric acid energy cycle, it's not going to happen. And people look at NMR, methyl methyl melodic acid and say, oh, well, I've get methyl catalent.

It's got nothing to do with Methyl Kovalainen. It's got everything to do with a DNA. So Koppelman, all you can do is hydroxy because it's the precursor.

So it's important to remember we don't just like folic acid. We don't necessarily want to use the cyano compound form. We want to try and use actives.

And it's if I was to generalize and say if you have depression then methyl cardamom is the way to go. If you have high blood pressure, methyl carbapenem is usually the way to go.

But if you have low blood pressure, then I would go Hydroxycut element. And low blood pressure can be such I see it's so commonly with chronic illness and not feeling gets.

You think low blood pressure is good. But again Goldilocks too low just like the homocysteine. Not so good. I remember one of my mentors, my biochemistry mentor, saying low blood pressure can be the hardest patient to get feeling better.

So yeah. So that's fantastic. Any last tidbits before we finish? Because I can keep you on all all day, all night. I know, I know, and I could keep talking to you all night.

Sharon. I think I think one really important thing to remember post-menopausal is that you'll often get told. Oh, that's to stage. Can I just tell you that that is rubbish.

Like, do not put anything down to age. If you have a problem, go and find out what it is and even look at your genetics to work out whether or not there's something you can do about it.

Never put anything down to age. That's a cop out. You should be feeling as good at 90 as you do today, and I think there's no get off the medications if you can.

You know, the minimum, you know, medications that you can take as you get older, the better off you're going to be. Because we have these polypharmacy thing.

Now that, you know, you take one drug and then you go take a second drug to counteract the side effects of the first and the third, for the second and the fourth for the fifth.

And before you realize that you're on eight medications, and that's when things really start to go downhill. B-12, if you were to say to me, what is the number one nutrient for people over the age of 50?

B12, B12, B12, B12 because we get it reduces naturally. Plus we don't have enough hydrochloric acid in the gut to ensure that we, you know, we can use it and make it.

And generally as we get older, we just we're not as efficient biochemically. So I would say if you've got a good doctor that can give you a B12 shot on a regular basis, go and get it done.

If not, take B12 and that shot hydroxy Kovalainen or methyl. Again it depends if, if if you've got high blood pressure and mental health issues, the methyl carbapenem is going to work for you better.

But if you've got high anxiety, you've got to be careful of methyl because you may just get a bit more anxiety. So you might be better off with hydroxy if and if I'm certain use hydroxy.

Okay. I'm doing it right. Yeah. Yeah. Amazing. So, how can how can ladies keep keep learning from you? Well, please see our website for support.com or you, we have lots of we have our fertility Instagram.

We have our global Instagram. My personal Instagram is miscarriage HD. And that's all about my, PhD I'm doing and my trial. And I update people regularly on how I'm going with my clinical trial.

So there's there's lots of different ways to connect. We have our fertility.com for those that are interested in fertility support. And I also if there's any practitioners listening, I actually do practitioner mentoring and mastermind programs to teach them this stuff that we do.

I love it, it makes such a difference. Very, very necessary, very needed. Well, thank you for for reminding us that there's so many different things to look at when we are transitioning and on our hormonal, journey, and that this is such an important one that you don't necessarily think of when you're thinking about menopause or perimenopause.

Mt5 doesn't really come up, and it should. So I hope for now for change in the story around that right now. And this has just been fantastic. So thank you for taking the time out of what I know is a very busy schedule and everyone's going to want to listen to this one again, because there's just so much richness in here and thinking about the pathways.

And this is something you just need to keep digesting and digesting and make sure you're connecting, with Carolyn and your if you don't know your status, find out because it can really be a game changer for you as you age gracefully.

So thank you everyone, and I look forward to seeing you soon.