



The power of combining nutrients: how to combat poor mental health, anxiety, depression, ADHD and stress with diet and multi-nutrient therapy

with Prof. Bonnie Kaplan & Prof. Julia Rucklidge

[The MindHealth360 Show](#)

Episode Transcript

Host: Kirkland Newman

Guest: Prof. Bonnie Kaplan & Prof. Julia Rucklidge

The MindHealth360 Show - Prof. Bonnie Kaplan & Prof. Julia Rucklidge

Prof. Julia Rucklidge:

We live in a society that looks for that single nutrient magic bullet. So you hear about vitamin D, or vitamin C, or you need to just need to take some magnesium. And so we're trying to shift the reader away from thinking about it in that context, and to appreciate that there isn't a magic ingredient, that our bodies have evolved to use them all.

Kirkland Newman:

Welcome to The MindHealth360 Show, I'm Kirkland Newman. And if you, your loved ones or clients suffer from mental health issues, such as depression, anxiety, and so poor memory, poor attention, mood swings, exhaustion, et cetera. I interview the leading integrative mental health practitioners from around the world to help you understand the root causes of these symptoms, many of which may surprise you and suggest solutions to help you heal. If you like this interview, please do subscribe and forward to others who might find it helpful. If you want further information, please go to www.mindhealth360.com, or find us on social media.

Kirkland Newman:

So Bonnie Kaplan, Julia Rucklidge, welcome to The MindHealth360 Show. Thank you so much for being here. And we're here to discuss your wonderful book, which is in Bonnie's background called The Better Brain, and how nutrition will help you overcome anxiety, depression, ADHD, and stress. And it's a fantastic book. That's just come out and I highly, highly recommend it. And would love to talk a little bit about what's in it. And there's some really wonderful research that you've both done. You both have PhDs and have done some wonderful research into nutrition and nutritional psychiatry in particular. So just very quickly, I'll put your bios in the show notes, but Bonnie Kaplan, PhD, you're a Professor Emerita and the coming school of medicine at the University of Calgary. You've published widely on the biological basis of developmental disorders and mental health, particularly the contribution of nutrition to mental health. Your efforts to include nutrition, knowledge and the care of people with mental health challenges has earned you a variety of awards, including the Dr. Rogers Prize. And you are selected as one of 150 Canadian Difference Makers in mental health and honour of Canada's 150 birthday. Your book, The Better Brain, which is written with professor Julia Rucklidge from the University of Canterbury, who will introduce next, was published last month. And then meanwhile, Julia Rucklidge, you're Professor of Clinical Psychology in the School of Psychology, Speech and Hearing at the University of Canterbury. And you're the Director of the Mental Health and Nutrition Research Lab, Te Puna Toiora. I hope I said that right!

Prof. Julia Rucklidge:

Well done, yeh.

Kirkland Newman:

And co-author of The Better Brain. You're originally from Toronto, Canada. Both of you're from Canada. And you completed your PhD at the University of Calgary and clinical psychology followed by a two year Postdoctoral Fellowship at the hospital for sick children, Toronto. In 2000, you immigrated to New Zealand. And in the last 10 years, you and your lab have been running clinical trials investigating the role of broad-spectrum micronutrients in the treatment of mental illness, specifically ADHD, mood disorders, addiction, anxiety, and stress. So I could go on, but I'm going to put that in the show notes. And what I wanted to do was really to start by asking you, the field of nutritional psychiatry as an emerging field and

I think you both have been pioneers in researching the effects of nutrients on mental health and lack of on mental health. And I'd love to ask, for the layperson and we have a mixture of laypeople, but also clinicians in our audience, how would you summarise that mental health can be affected by our nutrition and what is the mechanism in which it does so?

Prof. Bonnie Kaplan:

Well, you've just asked us to tell you all about chapter two Kiki. So I can't read it to you, but I'll summarise it. I want to make an overview statement that pertains to it first. And of course, Julia, jump in anytime. People have asked us... There's so many books on nutrition and mental health. I mean, I personally would say that nutritional psychiatry is beyond emerging. There is so much evidence, it's vast now, but I know why you say that, in the public's consciousness or awareness, it is still emerging. But there are all these books about nutrition and health. Why another one? And in fact, in the last few years, there are more and more books about nutrition and brain health, including mental health, cognitive health, dementia, et cetera. Again, what's special about ours? And you've just asked the question that really relates to one of the unique aspects of our book Kiki. And that is, that we don't just tell people, oh, you should eat this and, and this and this, and don't eat that, and that, and that. I think of it as the shake your finger kind of book, just telling people what to do. We're telling them why, we're educating the general public as to why these things matter. And so we teach them a bit about brain metabolism. We teach them a bit about mitochondrial function. We teach them about the microbiome and how micronutrients especially, and maybe we should define that term before I turn the floor over to Julia, but why these micronutrients are really needed in your diet every minute of every day. So I'll just give a quick definition if I may, okay?

Prof. Bonnie Kaplan:

Macronutrients are the big categories of protein, carbohydrates, fats, things that everybody knows about. And frankly in Western society, we're not short of them. We're getting enough protein in general. We're getting enough fats, not necessarily the good fats, too much saturated fat, but fats are there. And carbohydrates, getting tons of carbohydrates, again not the right ones. We're getting mostly refined carbs, but those are the big categories. The micronutrients refer generally, the way we talk about them, they mostly refer to minerals and vitamins. And they're roughly 30 of those. You could say that also the phytonutrients, another few hundred, you might include omega-3s. The point is these are not the large categories, they're the smaller amounts and sometimes we just need them in trace amounts, but that's what we're referring to as micronutrients.

Kirkland Newman:

Absolutely. And there were so many fascinating points in your book. And I think, first of all, your point about the fact that there are quite a few nutrition books on nutrition and mental health, but it's really the mechanism. Why are these micronutrients so important? And the other thing is that they're not getting into mainstream psychiatry. So while there is an increasing public awareness about it, if you go see a psychiatrist, you're still a lot more likely to be prescribed an antidepressant, or a sleeping pill, or an anti-anxiety pill than you are given a stool test or told to improve your diet. And in fact, in England, what's really shocked me is that psychiatrists are not even allowed to give dietary recommendations. They're not allowed to prescribe nutrients, and this to me is quite shocking and really needs to change but that's a whole other story. So in terms of how these micronutrients affect and impact our mental health, what is the mechanism behind it? I mean, you mentioned the mitochondria, what is the mechanism? Why are these vitamins and minerals so important for our mental health?

Prof. Julia Rucklidge:

Okay. So what do the micronutrients do? Is your question. And why should we care about that? Once you engage in the science of what micronutrients are doing in the brain, you realise, of course, I need to make sure that I eat foods that are going to contain these micronutrients. The interesting thing is that for the longest time, and it continues to this day, is that when people eat, they don't think that it's primarily to feed the brain. They think about it in the context of feeding, making sure that they grow tall as children or that they're strong or healthy or that it's good for their heart. And what we're overlooking is the fact that the brain is the most metabolically active organ in the body. We like to call it the hungriest organ because it consumes 20 - 40% of the nutrients that we eat. And so they mostly go towards brain metabolic activity. So in that context, what they're doing is that they are assisting with making neurotransmitters.

Prof. Bonnie Kaplan:

So your audience... Everyone's so familiar with neurotransmitters because of a wide use of antidepressants. So we know that an antidepressant is an SSRI, which is a selective serotonin reuptake inhibitor. And that's usually explained to patients what it is that they're doing, they're affecting the serotonin serotonergic system. But why aren't we taught that micronutrients are essential and required in order to make those neurotransmitters, like serotonin, dopamine or adrenaline, that for all those enzymatic reactions, all those reactions that are happening, they all need co-factors and those co-factors are those vitamins and minerals. So maybe another way to think about affecting and supporting the serotonergic system, is to make sure you're eating nutrient dense food that is going to provide those essential co-factors in order to make serotonin, for example, or to make the energy molecules in your mitochondria, they're completely nutrient dependent.

Prof. Julia Rucklidge:

So that's what we're trying to get our readers to really shift in their thinking; is that I need to eat in order to feed this metabolic activity. And that's where I then need to start looking at what foods am I eating. And so the other side of what we're doing as part of the book is educating the reader that you're not going to get those nutrients from ultra processed food. They're in tiny amounts. Some of those foods are fortified with niacin or zinc or iron, but they're not fortified with the full array of 30 or so minerals and vitamins that we need. And that's where we're really trying to educate the public to move away from those types of foods and eat the foods that have those full array of 30 or so essential micronutrients. There's a few exceptions, like vitamin D we can make, if we're out in the sun, or the bacteria can make some B vitamins, but outside of that, we can't make them. So we have to consume them. And the best place to get those nutrients from is a whole food, real food diet.

Kirkland Newman:

Yeah. And I mean, it's funny because in your book you were saying, for instance, that to make serotonin, you need four vitamins and seven minerals. So you need 11 co-factors.

Prof. Bonnie Kaplan:

You need more than that. Pardon me.

Kirkland Newman:

Really?

Prof. Bonnie Kaplan:

Well, there was just one tiny little corner. I don't want us to over generalise... a tiny, tiny little corner of all of the steps that are involved in all the precursors of serotonin, as well as the breakdown products. So I'm sure if we added up all those other steps, and there would be hundreds of thousands probably, that you'd end up with a lot more than that number. So thanks for making the point, but that's why I interrupted you.

Kirkland Newman:

Absolutely. No, you're right. So basically what you're saying is you need all these co-factors, all 30 of them essentially to make serotonin and dopamine and GABA. And so that's why-

Prof. Julia Rucklidge:

And just to interrupt you, there's no special one. That's the other emphasis of the book, is that there's no special nutrient. And we try really hard to emphasise that because we live in a society that looks for that single nutrient magic bullet. So you hear about vitamin D or vitamin C, or you just need to take up some magnesium. And so we're trying to shift the reader away from thinking about it in that context, and to appreciate that there isn't a magic ingredient that our bodies have evolved to use them all.

Kirkland Newman:

And I think one of the things you show really well in your book and in your research is that, essentially, a multi nutrient is much more important and is really the only way to tackle brain health, essentially. And that part of the problem is that a lot of research studies study these nutrients in isolation. And if there is any funding to do nutrient research, which is always quite hard to come by, it'll be on one particular nutrient in isolation. And I think one of the big points in your book is that you need all these nutrients together in order to have the required effect. And I think you've both been notable for studying these and doing research studies on these various multi nutrients. And one thing I would like to say is that neither of you have any commercial affiliation with these products. And I think that's a really important point, I was reading about the research, the multi nutrients that you have been using. So D, for instance.

Prof. Bonnie Kaplan:

There are two formulas that were developed in Alberta, which have the most research behind them so far. Although, we hope there will be others. One is DEN, which stands for daily essential nutrients, and we give the website for it in our book, and the other is EMPower or EMPowerplus, which is made by Truehope. And we give their website in the book. But the reality is, I'm so grateful for you pointing out early in the interview that we have no commercial affiliations, because I remember when that's how science was done. And it was the pharmaceutical companies and the so-called psycho-pharmacology revolution, which really changed things. And now the norm is that the companies fund the research. That was not the norm when I was in training. And I'm so glad we, in the nutrition world, are getting away from that.

Prof. Julia Rucklidge:

Not everyone is doing that. That's only us. I mean, all the other research that's being done on the broad-spectrum micronutrients have been funded by industry.

Prof. Bonnie Kaplan:

Not at all, not of the Alberta formulas, but other formulas.

Prof. Julia Rucklidge:

Correct. And we talk about those in the book. So the ones that are being done in Australia and Austin the U.S.. You have to remember that.

Kirkland Newman:

There were 50 peer reviewed papers on the effectiveness of these two formulas in particular. And can you tell us a little bit about the results of your research because there's some really good examples in your book of case studies where these particular formulas have been incredibly effective. First of all, they're very well researched. As I said, at least over 50 peer review studies have shown their effectiveness. And also you have some great anecdotal case studies where really they've shifted the needle, gotten people away from psychiatric medication and been a lot more effective than psychiatric medication without the side effects. Can you talk us through a little bit about your research and about the case studies that you mentioned in the book? Because they're very powerful.

Prof. Julia Rucklidge:

To answer that would take me hours, to really fully give you that picture of all the things that have been done on researching the effectiveness of these formulas. But I think what might be useful is just to say that when you're trying to prove something in science, you need to use a lot of different methodologies, a lot of different experimental designs. And what we walk the reader through is to show that all of those different experimental designs have been used and have shown the benefit of these nutrients. And so when you start, you might do some single cases and observe people taking the nutrients on and off. If there's some powerful effect, then we move on and we might expose 10 to 15 people to the nutrients and see what happens, because you don't start with those big clinical trials because they're expensive.

Prof. Julia Rucklidge:

So you first want to establish whether or not there's anything worth investing in to do those other big longer clinical trials. So then you might compare the nutrients to our standard treatment and compare people who've happened to take the standard treatment, happen to take the micronutrients and see how that goes. And so for an example of that, was the study that Bonnie was involved in looking the effects of the nutrients on symptoms associated with autism and found that, while there were some similar outcomes for people who had chosen to take medications versus micronutrients, there was some really startling benefits of the micronutrients over the standard care, for example, fewer side effects and less self-harming, which is something that's really debilitating and very hard to treat that occurs with some people who are struggling with those conditions.

Prof. Julia Rucklidge:

So that's an example, and we've got a few of those types of examples where we've compared to standard treatment. And then you do the randomised control trials, which are where you're quite selective who and who gets into the clinical trial. And they're monitored for a fairly short term because you can't put people on a placebo for an extended period of time. And then you see whether or not the active nutrients outperform the placebo. And so the first one that I did was on ADHD and it was with a

group of adults who had ADHD. And we observed that the people who took the micronutrients had much greater reduction in their some of the symptoms associated with ADHD as well as other benefits that were observed, like those who came into the trial, who were depressed, for example, were more likely to go into remission in their depression if they'd been randomised to the active nutrients versus those who had been on the placebo.

Prof. Julia Rucklidge:

But another observation that came out of that study, and we keep seeing it over and over again, is that we use a measure that's very standard in psychiatric research, it's called the Clinical Global Impression. And it's trying to get an overall picture of... Is my patient better? Because at the end of the day, that's all we care about. We don't care about whether or not they reduce a certain number of points on a scale. We want to know that they are functioning better. Their relationships have improved. They're better able to work. They're not taking as many days off sick, that their lives are in a better place than they were before. That's really hard to capture, but that's what the CGI tries to capture. And that is probably the strongest observed benefit is on that measure, of just, "am I better?" And that I think is more important to me than change on these measures that got a whole host of challenges associated with them in terms of... people get better when they go into clinical trials, they always reduce their scores. We call it regression to the means. So it's very hard to necessarily see whether or not people are getting better based on those. So that's an observation that we've seen. In replication we did another study with children with ADHD, another controlled trial, and observed that similar benefit and these kids were happier. They were calmer. They were less aggressive. They were less dysregulated in their emotions compared to the children who were on placebo. So those are an example of some of the trials. We've also done studies on resilience, but maybe you want to talk about that separately. And so that gives you a broad picture of the different types of designs that we've used. So then you feel pretty confident that we've got a signal, not just a signal, we've got a pretty striking, repeated and replicated effect observed not just in our lab, in New Zealand, but observed by others as well.

Kirkland Newman:

Completely. And Bonnie, I don't know if you want to add to that or...

Prof. Bonnie Kaplan:

Well, I could elaborate on a related topic that I think ties in some of the things we're talking about. So I like the way Julia couched her answer in terms of different types of evidence. If you pull back from the supplement research, the multi-ingredient research, and just ask, well, overall, what is the research base to prove that nutrition is even relevant to mental health? Because believe it or not, even a few years ago, I had people saying to me, what do nutrients have to do with brain function? Because it's all a matter of education, Kiki. I mean, physicians aren't even taught about co-factors. I've had physicians make that same comment to me. And it's just a matter of how we're educated. These aren't stupid people. It's not in the curriculum yet. And that's why people don't know. So anyway, at the broader level of, well, how do we know that nutrition is relevant?

Prof. Bonnie Kaplan:

I tend to think of it as kind of four segments, or four kinds of evidence. One is correlational. We have 10 or 12 epidemiologic correlational studies from large populations around the world showing that how people eat is correlated with how they feel. And more specifically a whole foods, what we consider now

to be Mediterranean style or healthier diet, is associated with having fewer mood and anxiety problems than eating more of the ultra processed stuff that we call ultra processed food, but isn't food at all. The packaged stuff is correlated with having more mood and anxiety problems. So that's one type of thing. There's so much correlational research that it shouldn't be funded anymore. It's clear and it doesn't prove causation. Correlational work is important in that it often gives us clues as to what should be studied, but enough already.

Prof. Bonnie Kaplan:

So the second thing, or second evidence, is prospective longitudinal studies. And we have a number of them now, where people are evaluated for how they eat and they're evaluated for their mental health at a time when they have no mental health problems. And then people sit back and just watch for a while and wait and see who's diagnosed with depression. Or in one study from Japan, who commits suicide. And there is again, a predictive value of eating a whole foods, or I should say predictive benefit, of eating a whole foods, real foods, true foods diet, because it protects you from mental health problems and from dementia, we now know, and from suicide. Okay, so that's very important longitudinal prospect studies. Then we have a very few studies that have changed people's diets. And they're really interesting because I've had psychiatrists say to me, my patients are too depressed. We can't teach them to cook better or whatever. We can't teach them to eat better. That's not so. Even people who are depressed can educate themselves and can improve their diets. And so now there are a few studies that show that that is associated with improved mental health too. And then the fourth category is really what Julia was reviewing, which she and I have focused on more, which is the need for supplementation. Neither of us thinks that people should start there. First you should be cleaning up your diet and we can talk about that some more, but some people do need additional supplementation. And I sometimes think that a lot of our research has been proof of principle showing that if you add nutrients in pill form, which sometimes is quicker and easier than changing dietary habits, yes mental health improves. And Julie has done more of that kind of research than anyone in the world. So that's another way to look at it.

Kirkland Newman:

Well, that's amazing. And I'm really glad you made that distinction because there are two things. One of them is the whole foods diet, and the importance of good healthy diet and lack of processed food for mental health. And then the other one is the supplementation. Because the two are slightly different and a lot of people will agree that it's important to eat healthy, et cetera. But I think there are some barriers to that. And that's often where supplementation can be helpful. First of all, I know that if you have teenagers, for instance, or kids who are super picky eaters, like my two boys are, then they're just simply not getting the nutrition that they need because they refuse to eat a whole food nutritious diet. And there's only so much I can do as their mother. Second of all, there are absorption issues as well. So if people have gut issues or if they have chronic stress and they have gut dysbiosis and leaky gut, then even if they are eating a healthy diet, they may not be absorbing the nutrients as well. And so that's where supplements can be helpful. And I think as you both point out in the book very well, there are times in people's lives where we have a greater need for nutrients than others. For instance, during times of extreme stress during times of transition. So puberty, maybe menopause, ageing, illness, all these require an increased amount of nutrients. And the other thing that you point out in the book is the depletion of our soils, which means that the foods that we are getting are a lot less nutritious than they used to be. And so you have this perfect storm where our soils are depleted. We have less nutritious foods. Our guts are more compromised due to high toxin levels and the use of antibiotics and NSAIDs and contraceptive pills, which has only been happening in the last 50 to 80 years, plus a very stressful

lifestyle. And this, I think, is where supplements can really be helpful. This is what's so interesting about the research that you've both done is it's really mainly on the supplements as opposed to the diet, is that correct?

Prof. Julia Rucklidge:

Correct. Yes.

Prof. Bonnie Kaplan:

That's right.

Prof. Julia Rucklidge:

We haven't done any dietary interventions per se, but there are many people who have been doing that research. And that's the studies that Bonnie was referring to. Mostly from Australia, but from other places as well, like Spain and the UK.

Kirkland Newman:

Showing that the Mediterranean diet is incredibly good. But given the compromise to our food systems and also to our own absorption issues, et cetera, would you say that to optimise people's resilience and mental health, should we all be on supplements?

Prof. Bonnie Kaplan:

I don't think either one of us could conclude that. There are reasons why some people may absolutely need supplements to become better mentally. There's certainly experience from both of us and other people too, of people who are eating very good diets and yet they still benefit from taking nutrients in supplement form. And Linus Pauling predicted this in the 1960s. We take for granted that mental challenges run in families and it's just like, oh, it's genetic. Well, oh, it's genetic has never explained anything on earth. All that it means is there's some kind of genetic predisposition, but for what, what are the genes doing? And what he predicted was that what is being inherited involves the genes that are having some control over the metabolic processes of the essential elements in the brain, the nutrients in the brain. Element is sometimes used to refer to the minerals. So at any rate, he predicted it many, many, many years ago, and we still don't have absolute proof of it. But we have experience with people who do derive an additional benefit from taking nutrients in pill form over and above their regular diet, even a good diet. Now, may I pause and go back to something that you glossed over? How old are your two boys?

Kirkland Newman:

15 and 12.

Prof. Bonnie Kaplan:

So did you see the section on picky eaters and the thank-you bite?

Kirkland Newman:

Yeah.

Prof. Bonnie Kaplan:

I love that. I thought I'm going to try that. I thought it's brilliant.

Prof. Bonnie Kaplan:

I hope you will.

Kirkland Newman:

Tell us about this thank-you bite, because I thought this sounds amazing. I'm always telling my boys, you've got to try it and they refuse to try it, but this wonderful thank-you bite, which I thought was brilliant. I don't know if you guys want to explain it. I thought it was really smart and I thought I'm going to try that with my boys.

Prof. Bonnie Kaplan:

Okay. I'll summarise it real quickly, Julia. So this is not empirically based. It would be great if we could get some dieticians to do some research on this, but there is a little bit of empirical data to suggest that there is a habituation of our taste buds to flavours that we don't initially like. And we all know kids who won't touch anything green, certainly not asparagus who end up loving asparagus as adults, right? And it's with constant repetitions, and there's one or two studies I think that even say, you've got to have 10 repetitions. Well, the problem is how do you get the repetitions if you put it in front of the child and they say, no. So the thank-you bite is what gets you over the hump and simply begins to enable them to get the taste flavour in their mouth.

Prof. Bonnie Kaplan:

So here's how it works. And it was introduced to me by a pediatrician, or maybe she was a family doctor, whose name I never got. She was in a discussion group I was leading. And she said, "You take at dinner time, maybe two or three or four times a week, you have a little bowl next to their plate. And they are required to put one bite of something that you've put on the table that they don't like, put it in their mouth, chew it up, but tell them they are not allowed to swallow it. You must spit it out and say, "thank you", spit it out without the all "blah" sound, but just quietly deposit it in that little bowl and say, "thank you". It takes the stress away from the meal time. And it takes the pressure off of them. They don't have to eat it. You're not going to let them eat it, but it also enables them to get their flavour buds maybe tuning up. So somebody please study this.

Kirkland Newman:

I love that. I'm definitely going to try it. Julia, is there anything that you want to add?

Prof. Julia Rucklidge:

Not on the thank-you bite, but did you want to talk about stress or resilience a little bit more?

Kirkland Newman:

Yeah. I mean, one of the things that when I talk to people about supplements for mental health, I was very interested in you saying that you really need the full spectrum. Because I always tend to say, okay, well, there are some key supplements or key nutrients for mental health that are absolutely the basis and that will increase your stress resilience and will help with anxiety and depression and focus, et

cetera. One of them is the B complex. So the full spectrum of Bs, the other one is omega-3 and then Magnesium and Zinc and vitamin D. So that's what I say, but after reading your book, I think, okay, well, that's wrong. It needs to be a lot more than that. But if you talk us through, would you say that everybody always has to take the full spectrum? Or would you say that there are some vitamins and minerals that are more geared towards mental health than others?

Prof. Julia Rucklidge:

Hard question to answer. I think though that what we do know is that the single nutrient research that has happened over the last a hundred years hasn't revealed anything magically stunning around, you must take this particular... There are some studies that show benefit, but on the whole, it's some surprisingly modest effects of the single nutrient on the single nutrient research. And that's being summarised actually very recently with meta-analysis looking at the single ingredients. So the B vitamin complex research has a small effect overall, when you look at the meta-analyses on stress specifically. And it comes and goes about how whether or not there's a strong effect for people who are struggling with anxiety and depression. I would say it's probably not... It's not going to be enough of the nutrients to have a benefit there. And so those effects are either smaller that signal isn't even detected. But it is detected when it comes to stress. And that's where we talk about the B vitamins as being really, really useful as a first step, potentially for some people, especially because they're easily available, you can go into your supermarket and get a B complex formula, whereas the broad spectrum approach that we've been studying is not as easy to access. You can access it through the internet, but you can't just go into a health food store and purchase it. So for those people who are under a lot of stress, that's a good place to start. And it's supported by research and it's also supported by our research. But what we found as well is that people who take the addition of the broad spectrum, nutrients, the effect is larger. So yes, we see an effect with the B complex, but in some areas of where we've studied, the effect is stronger with the broad spectrum of nutrients.

Prof. Julia Rucklidge:

And so I guess the bottom line there is if you want to have the most opportunity, I've seen change, then you might just want to go straight to the broad spectrum approach. But the B complex can certainly confer some benefit for many people. And many people tell me they just take one a day and that seems to be enough for them to feel able to cope with the ongoing stressors that are in their life. But it makes sense to me that again, the broad spectrum would be more advantageous and that's because what we're doing there is that we're supporting, again, metabolic activity, we're supporting the fight flight response, we're supporting that whole system by giving the extra nutrients. You think about it like your car that's run out of fuel. It's not going to run no matter... even if it's like a Mercedes, it's still not going to run. So we need to give extra fuel, in this case extra nutrients to support the system, when the demands are much higher. So when you are under chronic stress. Like I was talking about earlier, it's like you're constantly triggering that fight flight response. And all of your nutritional resources are going to go towards supporting that system at the expense of other systems that aren't required for short term survival, but are certainly pretty important for long term benefit. So that would be things like your regulation of your sleep or regulation of your mood or reducing your anxiety or those types of systems. So it always is going to favour our body as I was going to favour supporting the fight flight response first. So we deplete quickly and nothing is left for the rest of us. So by giving the additional nutrients, all of them that we now need are required for brain metabolic activity. I think we're just going to get... hopefully confer a bigger advantage.

Kirkland Newman:

Yeah. One of the other things, you mentioned the genetics. I mean, I know that as you were saying, Bonnie, Linus Pauling was saying that essentially, the genetics, it's more about how you metabolise, how you process these nutrients for the brain. And we know that some people have genetic snips that mean that they don't process the nutrients as efficiently as other people. And one of the most well known genes is probably the MTHFR gene, which means that you don't metabolise some of the B vitamins as effectively. And so you need a certain type of B vitamin, which is a methylfolate essentially, so that methylated B vitamin so that you can actually absorb them better and that can improve your methylation cycles. And so would you advise that people should have their genes tested and to see if they have more of a genetic need for certain types of nutrients?

Prof. Bonnie Kaplan:

I'm going to only answer part of that and then defer to Julia, because she's actually done some MTHFR analysis, but I'd just like to point out that virtually every laboratory test of metabolomics, et cetera, from any sample, comes from peripheral blood. We're not tapping what's in the brain. And more importantly, there is no test on earth that I've ever heard of that determines what your brain needs for optimal daily function. We don't have norms. We don't know how to evaluate that. But Julia, why don't you address MTHFR?

Prof. Julia Rucklidge:

Sure. I mean, I'm certainly very familiar with MTHFR. People bring it, raise it with me all the time. Should I get it tested for that? And I know that it's out there on the internet, there's millions, you put that into your Google search and there's millions of hits. So it certainly has gotten a lot of attention and there's some other snips as well that have gotten some attention. And so what we were able to do with our research was that we were able to say, okay, if you have these differences, these genetic differences, does that mean that it should? I mean, if it's so important, that one snip, then that should predict who's going to benefit from taking the methylated B12 or methylated full light, which is in the formulas that we've been studying over people who don't have those differences or that those specific snips. So it was an empirical question, and there wasn't a strong signal. Some people who had those differences, those genetic differences benefited from the nutrients, some didn't. Some people who didn't have them benefited from the nutrients and some didn't. And so to me that says it's not surprising, to be honest, because we haven't done very well at finding the candidate genes that predict mental illness or help us explain the expression of mental illness. So it's not surprising that we're not finding it with one, just that one difference in the genetic code. And so my genetic colleagues didn't even want to look at it. They just said, "You're not going to find anything." And I said, but we have to look at it because everybody asks about this. So at least we were able to look at it within the context of one of our research studies and say, not much here. And so not surprising. I mean, it could be that someone has been tested, and then they're told to take some B vitamins and they feel better, but was it because of that? We don't know. So the only way to do that is to get an entire group of people and test them. And it doesn't matter about what their snips are saying. And then you expose them to those nutrients and see who gets better. And that's the only way you're going to do that. But I don't know if the people who are selling those tests have actually done that.

Kirkland Newman:

So interesting. And the other thing is that a lot of the genetic tests test your vitamin D pathways, and they'll say, you know what? You need more D because genetically you're less able to absorb D so you need to supplement, have you tested that?

Prof. Julia Rucklidge:

No, haven't tested those pathways, no. But I think we're so early in our understanding of the genetics that we just simply are stabbing in the dark really looking at a few pathways, and there's just so many pathways that are involved. So to think that we've just hit on those magic couple of pathways that are going to make it or break it when it comes to the expression of mental illness. We know now with the genetic wide association studies where they're looking at the entire genome, and they're just seeing that the signals are everywhere. There's these small little signals across the whole genome. It does surprise me that we would find those few pathways that are going to be essential.

Kirkland Newman:

Yeah, completely. And another fascinating thing I found in your book was that you were saying that there's no point essentially in doing blood tests to see if there are any nutritional deficiencies, and that people can have normal blood tests with no deficiencies. And yet they make huge improvements when they're taking the supplements. And that really struck me as being very interesting, because a lot of family doctors et cetera will say, or clinical guidelines will say, well, you have to test and see if you are within the range or not. And if you are then why take any supplements? Your research has gone beyond that and debunked that. So tell us a little bit about...

Prof. Julia Rucklidge:

Yeah. So I went into that agnostic. In fact, I thought like others, we would find that those who were deficient in say their vitamin D or deficient in B12 would be the ones who would benefit more from the treatment. So I held that same belief, but at the same time, we were able to study it because we had done the serum testing before they were exposed to the nutrients. And then afterwards, so we could ask lots of questions about, well, if you're deficient, are you those the people who do better, and the answer is, no. Yes. Some of them do better and some of them don't. And some people who have no deficiencies respond and others don't. I mean, there's still different ways that we can study this. We could study it with single nutrients and look at whether or not that's predictive, because we were giving the broad spectrum. There are limitations associated with this. But overall, what we were able to show was that it seems that those numbers are only so useful, they're quite limited. And some nutrients, what people may not understand is that yes, B12 is, for example, is something where we can identify potentially a deficiency, or vitamin D. But there are so many of the nutrients where, because of homeostasis, it keeps our blood levels in a very confined level. So that it's very hard to detect whether or not there's a deficiency because our body adapts. If they're getting low on calcium might take it out of the bones so that it can be at a normal level in the blood. So I think appreciating what's happening in the body and that as Bonnie was saying, and all we're doing is we're testing what's in the blood.

Prof. Julia Rucklidge:

And again, I'd say, are those doctors testing the full array of those 30 essential nutrients, vitamins, and minerals that we need? Of course, they're not. And I don't even know if we can, or they even have the blood assays to study our levels of molybdenum. Are we at the right levels? So we're taking these very, again, we're taking some very select nutrients, there's maybe, I don't know, six or eight that they do

standardly, that's it. So to just take a look at that picture, you're just seeing just a small piece of the picture of which some of the nutrients aren't going to ever show any deficiency anyway, unless you're at an end stage deficiency. So that's where we realised, and having also spoken to lots of people and just getting that bigger anecdotal picture as well, was helpful to go actually, why is my nutrients levels... When it comes to the serum testing, what we've concluded is that that average is maybe not helpful for the individual because we all have different metabolic needs, as we've explained, is that some people may need more nutrients than others, and that's not going to come out in the testing, necessarily. I mean, the one benefit bit of the testing is that if you really do have a deficiency, then we can correct it. But we miss... for those who are average, we miss the opportunity if we take that as being the signal of whether or not we should intervene, we miss the opportunity of seeing whether or not nutrients can benefit their mental health.

Prof. Bonnie Kaplan:

I was pointing it out that your doctor may decide to test for certain things, for reasons having to do with physical health. But I just wanted to point out the intelligence of plants and animals. A really good regenerative, healthy food producer knows that you just want the soil to have an abundant amount of all the minerals, roughly 15, that plants need. And then the crops themselves, very intelligently absorb the ones that they need at any given point in their growing cycle. Well, we humans are really similar. If we have an abundance of all the nutrients in us, going through our brain all the time, that greedy little organ is going to pick out the ones that it needs at any given period of time. And the vast majority of our nutrients are water soluble. If you have too much, you just pee them out. And so our job is to provide the abundance so that our bodies and brains, our brain is part of the body, but anyway, if our physiology, which is so much smarter than we are in a sense, can decide when to use what. And that's empowering.

Kirkland Newman:

Very. And then there are a few things with the multi nutrients, a few questions that I have. So first of all, if you're doing this multi nutrients and you're taking these multi nutrients, so that you're getting this whole broad spectrum, there are a few things, one, how do you know which ones are having the best impact on you versus which ones aren't. And I presume that's quite hard to answer, but could some people have an adverse reaction to a certain nutrient within that whole broad spectrum, but actually do well on the others?

Prof. Julia Rucklidge:

So you're talking about side effects in particular, I think. So there are some people who shouldn't take a supplement with iron, if they have hemochromatosis, or that they shouldn't take a supplement with copper, if they have Wilson's disease. And those are people who identified genetically that they can't metabolise that particular nutrient. And so therefore they can end up with a toxic buildup and make them very ill. So that can happen. And we don't always know that we have that, but often there's a family history. And so they tend to know that that's something they need to be mindful of. So those are some specific examples. And you would know over time that you're feeling unwell, that you're reacting to something. And we've had some people who get really dramatic rashes. This is very unusual. It's very rare, but it does happen. And that when they stop the nutrients, that goes away. It's hard to know whether or not they were reacting to the nutrients per se, or they might have been reacting to the capsule, what it's encapsulated in, the actual plastic, not plastic, but the...

Prof. Bonnie Kaplan:

Gelatin.

Prof. Julia Rucklidge:

... The gelatin. Thank you. Gelatin capsule. Thank you. I knew that. So the gelatin capsule, maybe that's what they're reacting to. It's hard to know. But we've looked at side effects, the headaches, and the rashes, and the stomach aches in our control trials, where everyone's reporting on whether or not that's happened. And we tend to get an over-reporting of that because people are really focused on, "is this a side effect?" And so they tell us about all kinds of things. And we're agnostic about it. We can't presume that it's not related to what they're consuming, it very well could be, but we haven't seen any group differences between those who are taking the placebo versus those who are taking the micronutrients on the reporting of those side effects. That is really reassuring because you don't tend to get that with a drug trial. There tends to be more people on the active who are reporting side effects. And the side effects are minor transitory. We've never had a serious adverse event. That's where there might be hospitalization as a consequence of a reaction to taking the nutrients. That hasn't happened to us in our trials with hundreds and hundreds of patients, participants. So that's also reassuring that that hasn't happened. I can't guarantee it. We can't guarantee that. There won't be some kind of adverse event, but the chances of it are incredibly rare. We've also followed people up over long periods of time. Bonnie and I have both done that over years, where we've looked at blood work to see whether or not there's anything that's coming through on your liver activity or your kidney activity that could signal to us that taking these nutrients over long periods of time may be dangerous. And again, nothing's come out. There's no signal there that's suggesting that something adverse is happening.

Prof. Julia Rucklidge:

So the way I like to say it, put it to people who are wondering about the adverse events, is that while I can't guarantee that that's not going to happen, we're not telling the healthy consumer to take the nutrients. We're telling people who are struggling with serious mental health issues, not telling them, but we're giving them information... of people who are struggling with a serious mental health issue. So they have a choice. They can go for the medication option, where we know there could be some positive benefit on their symptoms. Although we know that that is not as frequent as we would hope, and that we know that it carries the side effect profile and long term issues with withdrawal, if they were to come off that medication, versus the micronutrients where we've got clinical trials that show it could potentially confer positive benefit, not for everyone, but for certainly a significant number of people. We've got this fairly minor side effect profile that may or may not be caused by the micronutrients. And we have nothing in the long term data that would suggest that it's going to be harmful. So that's the choice that people have to make, is putting it in front. And they need to make that ultimate decision.

Kirkland Newman:

And I presume that the balance of these supplements is super important. So not all micronutrient mixes are the same, right? And so I would hesitate to say... Presumably, you would hesitate to say that all sort of micronutrient mixes are equal and that some are better than others, but presumably you only know the value of the ones that you've studied, but it's really important for people to choose the right supplements. Now, I know that you both have no commercial interest in any of these supplements, but would you recommend, or would you be able to say certain brands are better than others in terms of the multi nutrients, because presumably, the balance of these multi nutrients is really important in how it's formulated, the amount of each micronutrient within that combined multi nutrient formula.

Prof. Julia Rucklidge:

Well, it's the balance and it's also the dose, is probably important too, when you're taking it in that capsule form. And so that it's very difficult to get the dose that we think seems to be conferring the benefit for mental health. That seems to be part of the picture. And you just can't get that dose from, in most cases, from supermarket variety. And there are reasons around that, particularly to do with the regulation of these products in different countries, that the dose is not allowed, it's capped, which is something that lots of people don't even know that our governments are capping our ability to have the best benefit from taking nutrients from a supermarket variety type of product. And that's just a fight and it's another story in itself, but that's why you may not confer the benefit from something you purchased in the supermarket. And in this stage, we can't say yes or no, is it going to work? I get sent all kinds of ingredient lists of products out there, and I'm asked, is that going to help? And I look at it and I go, "Well, I mean, the breadth is there. The dose might be similar or not. Up to you." But I mean, if it was me, I would be trying something that's been researched at the end of the day. And that's where the most research has been on the Alberta formulas. If somebody else, some other labs could do more research on other formulas, that'd be fantastic, that'd be great. It's not that we're against that. I don't know if there's anything else you wanted to just say, Bonnie, to that.

Prof. Bonnie Kaplan:

Well, it's so funny because as you said, breadth or balance and dose, I had just written down balance and dose. I wanted to make the same two points, but I would like to say, I sometimes say to people I'm an academic snob. People often ask me, "Well, do you take these things?" I'm an academic snob. If I'm going to take something and I have the choice, I'm always going to take something where there's research from independent scientists, people who were not commercially affiliated. So in chapter 11, and Julia really wrote most of this, so if you want to embellish on this, feel free, Julia. But she reviewed all of the multi-nutrient formulas in the world, which had been studied by some independent scientists and which showed benefit for mental, not physical, but mental health. And so that chapter alone probably is worth a lot of your listeners reading it.

Kirkland Newman:

Yeah, absolutely. I mean, I was looking at it. I was fascinated. Don't want to name any brands, but I was fascinated that one of the brands that my kids actually take was on there for stress resilience. And I thought, "Great, that's fantastic." It's been researched and it actually works. So that's really good. Well, that's really fantastic. I'm trying to think. What would you both have as your wish for people to take away from this in terms of action points for people who are struggling with mental health issues, what would be your desire for them to walk away with after this interview?

Prof. Bonnie Kaplan:

So I love talking about this. Julia knows that. And I wrote a lot of chapter 12, which is our vision for the future. I mean, this book is written to try to change the world. And it's not because we're arrogant. It's because we think we're close to a tipping point. We didn't write it because we want to be famous. We didn't write it to make money. A lot of the money, if there is any profit, which is always in question, will go toward one of the charitable funds that is supporting research by people on this topic. So we wrote it because we want to change the mental health system, which is not working well enough for enough people.

Prof. Bonnie Kaplan:

So in chapter 12, we talk about our vision for tomorrow. Our vision for the future is number one, people educate themselves and understand the importance of eating properly. Pardon me, that's judgmental, but a whole foods diet, why you should care about it. And they do something about cleaning up their diet in that way. Number two, we go through all the steps. If that does not resolve their mental health challenges, consider adding nutrients in pill form. Maybe in addition, medication. Psychiatric medication helps some people. And I like to think of it as a supplement. That's why I have trouble talking about nutrients in pill form as a supplement. They should be the primary treatment, especially for children. It should be the first thing we do, is give them better food and then nutrients in pill form if they need it long before we ever consider exposing those developing brains to psychiatric medication. Anyway, and we also say a few words about all the other things that we know are important: exercise, social support, taking care of people, being cared for by other people, volunteer work. I don't know, all you can think of. They're all important, our support networks. That's why people are suffering so much in the pandemic. That, plus they're giving themselves the license to eat the so-called comfort foods, which are mostly very nutrient poor. So our vision for the future is optimistic if we can get the word out. But it's all a matter of education.

Kirkland Newman:

I thought that was a really, really good point. And, Julia?

Prof. Julia Rucklidge:

Bonnie has summarised it really well. We need to get governments to change what they're doing. We need them to get them to pay attention. Bonnie and I have both tried. So far quite unsuccessfully at getting that attention into this area. And that's unfortunately partly because they seek advice from people who hold the medical world view, that model of thinking about psychiatric problems. And they look at the nutrient research and they immediately dismiss it without engaging in the science. And that's very frustrating when they refuse to even look at the research. But hopefully over time, that's going to change with the book. I hope it could bring it to the tipping point. We can only be optimistic.

Kirkland Newman:

And why do you think that is, that the governments are not picking up on this? I mean, if the resource is there, why are they ignoring it?

Prof. Julia Rucklidge:

It's hard to know, it's not patentable. It's not a pharmaceutical. Pharmaceutical companies are really powerful, but the food industry is really powerful too. They don't want the ultra processed food to stop being sold. They don't want regulations on that. They don't want taxes on sugar. I mean, they're incredibly powerful. That's what we're up against, our really massive multibillionaire, trillion dollar industries that don't want this information to be heard and will do their best to smear it, unfortunately.

Kirkland Newman:

And back to Bonnie's point in terms of the other things for mental health, from exercise, meditation, social engagement, et cetera, one of the points that you made in your book, which I thought was very well made was that you will have the motivation to do that more if your nutrient levels are up to par. And so it's like a baseline, you get your nutrient levels up to a certain baseline and that will then help you

do the other things that are good for your mental health. It'll increase your dopamine levels and your neurotransmitters, which will give you the energy essentially. And the motivation to do the things that are daily practices for your mental health. And I think that's really important. And I do think you're absolutely right. And so just on a final note, I mean, I came away thinking, "Okay, I've got to get my kids on supplements. I should be on supplements." And I mean, I am on supplements, but my kids, especially because they eat so much junk food and so much processed food, I mean, their diets are terrible. And there's always this problem of swallowing these pills. And I know you address that in your book and you say that people are working on these powder formulas, but I'm hoping that that will happen sooner rather than later.

Prof. Julia Rucklidge:

Oh yeah, it is happening. And they've certainly come a long way in terms of making the powders more palatable.

Kirkland Newman:

And is this the Alberta formulas that are working on the powders?

Prof. Julia Rucklidge:

Mm-hmm (affirmative).

Kirkland Newman:

Okay, fantastic. Because I'm such a believer that kids with their developing brains should be getting these nutrients and a lot of the time they're not.

Prof. Julia Rucklidge:

But in the big picture Kiki it's that, in the big vision, you're talking about at the individual level, your children, which is of course what we're all concerned about, but the big picture is that we just get it right from the start and that these foods are no longer the primary source of nutrition for our brains and our bodies. And that's a big ask. We're asking for a lot to move away from this social experiment.

Kirkland Newman:

It's a big ask in the sense that even if we know what's good for us or what's not, there's so much advertising and there's so much stress and people do go towards comfort foods. And so even if you have that knowledge, you don't always put it into practice, and that's a challenge. And that's why I think this multi nutrient idea is actually a very good one because it means that even if your diet is not completely perfect, you can actually get the benefits from the supplementation. And I think that's super important.

Kirkland Newman:

Well, I must say you've both been absolutely fantastic. Thank you so much. And for all the work that you do, and the research that you do, and the awareness that you're promoting and your passion for this field is really wonderful and I'm very, very grateful. I think your book is fantastic and I would highly, highly recommend, it's a fantastic resource. And we're all on the same page in terms of trying to improve people's mental health and getting away from some archaic clinical guidelines and trying to move the agenda forward in terms of better mental health for all.

The MindHealth360 Show - Prof. Bonnie Kaplan & Prof. Julia Rucklidge

Prof. Julia Rucklidge:

Well, thank you for having us.

Prof. Bonnie Kaplan:

Thanks a lot.

Kirkland Newman:

Well, thank you so much, both of you. I really appreciate it. Is there anything that we need to add that we've left off or no?

Prof. Julia Rucklidge:

Read the book.

Prof. Bonnie Kaplan:

Read the book and you'll learn that all you're learning is what your ancestors already knew. And that is that nutrition is the foundation of your resilience, physical and mental.

Kirkland Newman:

Completely. Totally agree. Fantastic. Well, thank you both so much. Really appreciate your time. Thank you. Take care.

Kirkland Newman:

Thank you so much for listening to The MindHealth360 Show. I hope that we've helped you realise that mental health symptoms have root causes that can and need to be addressed in order to sustainably heal and have given you some ideas about steps you, your loved ones, or clients may take to start their healing journey. Please share this interview with anyone you think may find it helpful, and don't forget to subscribe to keep up to date with our latest interviews on integrative mental health. If you want further information, please go to www.mindhealth360.com or find us on social media. This information is for educational purposes only and is not intended to diagnose or treat any disease or to replace medical advice. Please always consult your healthcare practitioner before discontinuing any medication or implementing any changes in your diet, lifestyle, or supplement program.