

ACCP Australian Chapter – 2015 March Conference

Breakout 3 Transcript

Now the executive committee had a short meeting outside and we made an executive decision to change the format for this last session. So instead of having the breakout session that we talked about the questions in very small groups, I think it will be more useful if we heard more from Paul, rather than from ourselves. Well, Paul doesn't have a formal presentation prepared. He has agreed to take a very extended question and answer session. So that's what we will do. We will have floor runners.

Question: Sorry Paul. Could you run through some probiotic foods? The only one I can think of is yoghurt. Just want to know if you could suggest anything else?

Paul: Yoghurt is the one that I think most people ring to mind. We were just talking about this earlier. You can actually get different types of them. So you want to look for yoghurts that have life. You know bi-cultures and stuff. Those will be the best. But there is now they dry it, make it a powder so you can ingest it as well. But one of the things that is becoming a major thing on the street is bone broth bar. have you seen this? I actually saw this advertised in the airport or somewhere. They were talking about this. Another one to think about is the basics again like chicken broth, things like that. We are talking about really basic food groups. Basic food substances here. Like the bone broth thing has really taken off in New York. They are selling it on the streets. They are basically swearing by it. Like oh yeah. So good. Comments? Yes. Go ahead.

Audience: I can talk for half an hour about bone broth. But if you want a recipe on it, I'm happy to forward it to Charlotte. And she can forward it onto you guys.

Paul: So what do people in the room, when you are talking to your patients, what other things would you consider giving your patients that you think could be a probiotic?

Audience: Fermented miso. So miso paste. It comes in a variety of colours. It comes as a white colour right through to a very dark brown. And it is a natural probiotic. So instead of having coffee to keep charged in the afternoon, I tell patients go get some miso paste. Some organic miso and ideally in the lighter range because it is particularly strong. And then you just put a teaspoon in your mug and mix that up with boiling water and you can drink that. Kombucha tea but please don't drink a mug full of it. It's designed to be diluted. Don't drink the whole lot. Every indigenous diet has some form of fermented food that they add into their diet. I was talking to some people recently but the fermented food is used as a condiment in the diet. It acts as a probiotic in the stomach to get the enzymes to work to keep the bacteria balanced and the flora in action. Apple cider vinegar. A teaspoon or half a teaspoon to a third of a glass of warm water first thing in the morning. But if you are going to buy apple cider vinegar, don't buy the one without the "mother" in it. The mother is the thing when you look at in the bottle and you go "Oh what's that? That's no good. I will put that back on the shelf." That's actually the good one. Ok? It has a mother in it. It's what all vinegar actually has. It grows the vinegar. Those things all produce natural probiotics.

Paul: that's great. One of the things we were just talking about. We were talking about vinegar and how it is very helpful as well. We started talking about this, thinking about from an evolutionary point of view. We talked about this before that we have built our tolerance against alcohol. Right? Because again matured foods, fermented foods are going to produce alcohol. What's the other they are going to produce. Vinegar. So basically all kind of goes back to... you almost have to get yourself in the mindset of thinking about what was the world like 160 thousand years ago when our grains actually evolved this way. And what were the things we were eating.

And one of the things I want to bring up is the thing with weed and stuff. And I think this is a fun story. Because if you look at the Greeks and the Romans and you look at the cultures in North Africa, they actually talk about wheat as being from the Gods, right? But is that wheat the same kind of wheat as we are using today? No, not at all. And so what happen right, is when they were eating the wheat, they were eating a weed that looked very different from what today's wheat looks like. And basically the grains were very different but they were actually eating the grain part, the actual kernel. And then the endosperm as we call the sperm, the starchy part that is on the inside. But when they really were doing was getting the

nutritional benefit from the outer core. Right? That's what the benefit was. Kind of like the same problem we are having in China. And different cultures, that we are processing the rice that we are making white rice. But with white rice again you are basically de-husking it and then using it. Does anybody know why? Or how that came about? And why that came about? I was at a food conference when that got discussed. Especially the relationship with wheat. Why this became an issue? And that's what it came down to. I think it was in the 1700s. We have the French to thank for this. It last longer. Yeah, so. Around 1700s, I guess there was basically commercialisation of bread. They were trying to figure out how to commercialise and distribute bread out to the masses and everything. And so one of the things that one of the engineering people came out with was they basically de-husk the wheat and they just use the endosperm, basically the white part, the starchy part that basically did not get mouldy as fast and everything lasted much longer. So you can transport it further. So if you think about how French loaves are made right. Hard on the outside, soft on the inside. But they can last for a long period of time in that condition, right? And so they basically didn't really care about nutrition. It was all about commercialisation. So the way it was presented it was not a decision based on is this really healthy for people but it was more economics. And then what happens in the countryside after that. To finish the story as it happened in France is that basically after they did this, what happened to the small farmers. They all went away because they all started building bigger and bigger processing plants and mills and stuff and so again when we talk about the cultural, the agricultural revolution, one of the things that happened in it is that once they started doing this with the bread then the small farmer cannot compete anymore.

Question: I have a little difficulty in coming to terms with reverting back to a primitive diet, because it didn't make them live very long. In fact they only live a fraction of ...

Paul: I would tend to disagree. One of the things I have to talk about was the idea of indigenous people. I think we really are naïve about the world that half of the Europeans caused on the planet. I mean if you think about the aborigine people without getting too political here, what percentage of the population was decimated after Europeans came in? 90%. Pretty much the same thing happened in America. So what I want to point out is one of the things maybe I am disagreeing with you about is that there are cultures on this planet where people live into their 90s with pretty much good health in isolated pockets. Ok, so one of the things I have to ask and I brought this up to somebody before. It sounds like kind of a weird story but I don't know if you know the story of Ponce de Leon and the fountain of youth? OK, so the Ponce de Leon story. So basically there's an explorer that came over. And when he encountered the Indian people in this region of Florida, what he found was the average height of the males were 6 foot 6. The average height of the women was 6 feet. They had incredibly bronze skin. They had no signs of infection. There was no evidence of major diseases in these people. There was actually, seriously pockets of population of people on this planet that still lived pretty much like we did thousands of years ago. And again it's when white man comes that the problem comes because a lot of time when we come into places, we bring diseases they can't deal with. But what happens here is where the fountain of youth comes from.

When Ponce de Leon found these people, he was just dumbfounded by it. How could he have these robust people and what he did was he went to the fountain where they were getting their raw water and that's where the fountain of youth came from. Because he was so amazed at the longevity of these people and how robust they were. And then he named it the fountain of youth. It's because of the water source they have. So the history of that is if you have ever been there, I tell it's one of the worst smelling wells that you go near. Do you know what the smell is? Sulphur. What they had was an incredibly mineral rich spring. So it had tremendous amounts of calcium, magnesium, manganese. I mean all those nutrients and minerals that we talked about you need. It was right there for those people. And so all of a sudden they were in the right environment to get the height. They have plenty of wild duty, they have the ocean to fish and stuff. They had the fresh water right there. So they had abundant food. So when I talked about a primitive diet. That's the diet I am talking about. I am talking about diets in parts of the world when it was really rich. If you think about the Rift Valley, it didn't look like it does today. It was not a desert. There have been 4 major migrations out of Africa. When that whole region of Africa was actually very fertile and then it allowed people to move out of the central part of Africa, out through that region and such. So when we talk about the really good diets we were really talking about then. When I talk about the primitive diet, people think of the dinosaur diets. It was very rich in protein, vital foods,

nuts and vegetables, and things like that were readily available. So yeah, just you know. So that's what we were talking about. Yep.

Audience: I just want to ask about the methylation, the DNA methylation, the folate and B12 and the existing relationships. Can you elaborate on how that will affect methylation? And how it affects the DNA and epigenetics?

Paul: well, do you have something to share specifically? Do you know about it as well?

Audience: no. Well, I know what the cycles are. Just for the benefit of the attendees.

Paul: Do you want to elaborate? To be honest with you, I don't know much about the mechanism. I just know it's beneficial but do you know the mechanism yourself?

Audience: Yes. So basically the dietary B12 and folate is used in the methylation pathways whereby homocysteine is converted to methionine, and methionine is converted back to homocysteine again via cyanocobalamin. And cyanocobalamin is a great methylation, methyl donor. So that's how DNA, the methyl groups are connected to the DNA and that's how hyper- hypo- methylation happens. So if somebody is deficient in B12, then these methylation cycles won't happen. Somebody is deficient in folate, or somebody's got MTHFR gene problems. They would not actually methylate properly. So that's why they get a lot of genetic problems. And the question is if somebody has pernicious anaemia, then they will not get B12 in their diet. So how does that affect methylation as well. So we need to be careful of diagnosing these people. B12 deficiency right now is also just like Vitamin D pandemic. We need to be very careful about diagnosing these people.

Paul: This is a very great point. I think one of the things we talked about on the sides and stuff was folic acid. You know trying to get enough folate in the diet and such. So getting back to your whole thing. We were talking about all these deficiencies. Like vitamin D deficiency, and talking about all these nutrient deficiencies. Why is this happening? The food source is changed. But what is the root of that? So that's a very bad pun. The soil. So really what it comes down to is we have been farming the same lands for long period of time. And we really haven't rebuilt soils. Think about in America and I don't know if it's true here as well if you guys worry how fertile lands are. Where do we grow most of our iceberg lettuce and all the vegetables and stuff. Some of it we do hydroponics but what's the most of it done? Do you know? It's basically out in the deserts. It's like in California. Some of these regions. We actually have the ... hydroponics ... yes, irrigation. So when you think about this. We have to divert. I don't know if you guys know about this but we have to divert water from the Colorado River that comes out of the Rockies. A huge percentage of that water by law has to go to that San Diego basin because that's where the fresh water comes from for all our agriculture. You know to maintain all those farms and stuff. And we almost had a crisis a couple of years ago because we had two years in a row in the United States especially in Colorado where they didn't get enough snow. And if you actually flew in Denver the big lake that's supposed to be there, it's all like a mud puddle. They were in really dire straits wondering if they were going to have enough fresh water to actually get through. Because by law they have to let the water go to that part of our country. It becomes really kind of crazy. Luckily they got record snow falls, you know. Some prayers were answered they think. And then basically they also back up. But like outside of Las Vegas it's like way down. I mean it's incredibly low. So again, when you look at this, we are growing crops basically we have to fertilize the heck out of them. But we are not putting minerals back so we are putting a lot of organic matter back in. but that organic matter is not really very nutritious to begin with. So where do you get your minerals in your body. You know all these things. Basically like I said. You are going into soils that are not very rich. We are fortunate where I grew up was in North (?) and the farmland was great, we have nearly six feet of top soil. Because a glacier came down through that region and deposited an incredible amount of top soil. So we have some of the richest farmland in the world. And literally when we go out and shovel, we go down six feet before we hit clay. We have a phenomenal base, so a lot of the big food companies like Delmonti and all those big producers, they have a lot of seed corns growing in our area, and again all through Iowa and that whole band we are really fortunate because we have some really rich farmland there.

But the question is, why do we keep building cities over it? You know, again, it's some of the richest farmland in the world, but we build a lot of major cities right over top of this farmland where we really should be using it for better use of things.

[inaudible chattering in the audience]

Audience: back to the previous question about longevity. We are told we are living longer. And that's based on statistics. What people are ignoring is that in times gone by, statistics were that about 50% of children died in their first year of life. And so that brings down the average lifespan medically. Also a lot of mothers die in childbirth which also brought down the lifespan. But those who survived childbirth and survived the first few years of life tend to live very long. John also asked earlier about the lifespan of the Chinese. Why aren't they living longer than anybody else? But we could also argue if western medicine is so good, why is it that so many of the population rely on massive doses of drugs?

Paul: well actually I don't. again I don't know the statistics that were just released recently on longevity and such. And what they have shown this is kind of a sad statement. Because I teach a lot of neuroscience classes. And I actually teach classes on neurodegeneration and such, and it was actually various students who made this observation. I already knew it and had thought about this. We were having this class, this discussion, and one of the things that they were into was the idea that in America the actual average age is going down. We actually peaked and now it's going down. We have so many people who are pre-diabetic. We have so many people with major medical conditions. In other words, we have kind of peaked out. We are probably going to be like what the maximum you know the average life span was. We are now coming back down to almost 10 years off that. This is what they are predicting. One of my students said to me. Why are we spending so much money on Alzheimer's and Parkinson's disease and all these degenerative diseases when we are not going to live long enough to even see that happening. In other words what they were really astute about was seeing we are funding all those research on Alzheimers and Parkinsons and all that stuff. But they say if we aren't going to live any longer than probably mid 70s again, most of the population will get there. You know.

[audience speaks]

Paul: I don't think that is accurate at all. How many in the room believe that we are actually going to increase the life expectancy versus going down? No, I am just saying in general. Even in your own population. So you do think it's... you are that optimistic. What about other people? You guys are that optimistic that you think you are going to get there just with medical intervention, without the patients doing anything?

Audience: The trouble is American population is 50% of the population. There are many other countries where they are not that situation. [inaudible]

Paul: Yeah, I think I am probably not. Question? Go ahead.

Audience: Back in the good old days of Louis Pasteur and Robert Koch, they postulated the germ theory. There was a contemporary at that time called Antoine Bisson (?). And he challenged them on this germ theory. One germ equals one disease. And he said it's the terrain, not the germ. What do you think of it?

Paul: Do you want to come on that first? What's your opinion on that?

Audience: I think it's the terrain. Yes, because if we built up our terrain, the germs cannot attack it. Because the terrain involves the microbiome and it protects us.

Audience: this is common in chiropractic. Because it is about the ecology. So chiropractic looks at everything like that, with ecological systems. In chiropractic, we sit there and say how healthy is your soil, if we start talking about the disease.

Paul: Question back there? That's a very good point.

Audience: So coming back to the soil. Now in ... coming back to the bacteria in the soil. And we know that in several plants, now they are giving bacteria back to the soil. You can buy cultures for soil bacteria now. And of course the humic acid and the fulvic acid which are so important for getting the minerals from the soil for the plants. The bacteria are actually doing that job for feeding the plants. ...

Paul: That's a great point.

Audience: ... comes back to the metabolites for the plants that have been produced by the bacteria. Come back to bacteria.

Paul: Yeah, that's a great point about the terrain and everything like that. Because one of the things that is interesting about this is actually there are companies in I don't know if it's happening in all the world but in America that are actually talking about packaging seeds. That you will have a seed that is sprayed with bacteria that actually help it when it goes into the ground. Helps to assimilate the nutrients that it needs. And that's the technology we are going to, because what we realise as you said, if we put the right things in the soil, but we don't have the right bacteria in the soil, basically the nutrients aren't going to get there to the plants. Because the plants are again in a symbiotic relationship with the bacteria. The bacteria are the ones that can metabolise things. This is kind of a fun story with cocoa because again we went to this huge workshop. Not surprisingly it was sponsored by Hersheys. And it was kind of interesting because what they did was they brought together all these world experts on cocoa and they were talking about different things. It was the American Chemical Society meeting a couple of years ago. And they brought all these people together and one of the fascinating things that I learnt was they brought people that actually basically produce cocoa. And what they were talking about is why can't we actually mass produce cocoa in a lab almost like in a green house situation? The Spanish tried for years to bring the trees to Spain, never were successful doing that. But it was really interesting that they looked at how bacteria were involved in the fermentation process of the cocoa. And what they did is this. Hersheys and these other companies paid huge dollars for scientists to understand the fermentation process. What really happens? So if you go out to these plantations, basically what they do is they dig a pit in the sand, right? And at the right time, they go ahead and they pick the cocoa off the tree. And they throw them in the ground, they put banana leaves down first, they throw the things in there, they throw banana leaves and then just leave them. And that's what they do. The scientists will come in and they say what is the first thing that comes in and then they look at literally what micro-organisms come in to the process. Like what fungi, what bacteria came in. and what they found is that there was a real progression about which things came in where. And basically they have different food sources. So as they were using the cocoa, basically the pod, and they were actually breaking down producing new products. And what they found through this fermentation process. This is what really gave them the medicinal benefits. So if you have the cocoa just without this whole fermentation process, this curing process, basically you would not have the same flavour components, you don't get the same benefits, health benefits from the cocoa. So what they did is again, they went through and they actually looked at all these bacteria, all these different stuff, and they try to reproduce that in like basically a factory situation, not successful at all. They wasted millions of dollars trying to get it to work and they still were left with this idea that you just have to throw it in the ground and let mother nature take care of it. Because the right things come in at the right time. And if you try to accelerate the process, you don't get the same benefit. You don't get the same flavour components, you don't get the same medicinal components. So again, I'm always kind of amused by the fact that we call these cultures primitive, right? And I kind of sit back and laugh and go they are a lot smarter than we are. You know in some ways. They knew how they actually cultivate this stuff and how to cure a process in a way that actually enhance the flavour and enhance the benefits of it, rather than losing benefits of it. And even with technology, we have not been able to basically make this any better and speed up the process. So again, it's kind of interesting.

Audience: Paul, I have been asked to ask if you can comment on the effect of microwaving on the nutritional value of food?

Paul: Oh that's a good one. I think at least what I have read on this topic is the old microwaves, right, basically almost destroyed the food. And almost all nutritional components of the food and such. My understanding is now with the new microwaves and with the convection technology and everything. They really basically in some cases depends on the food type and stuff. But they are showing like I have seen articles that are like, if you want to heat up broccoli or something. Vegetables. You can steam them that way. You can do that really quickly in your microwave and it doesn't seem to be any different than what you get on the stove. The major thing is you just don't want to overcook things. You know so I don't know if anybody else has any thoughts on this or any comments. But I think what I have been

seeing is that using the microwave, the new microwave that has all these features and basically heat things much more even and such. And with all these sensors. At least as far as the vegetables. Making them in there is not any different than on your stove. One of the biggest things that we talk earlier about when we are preparing food is a lot of people actually boil like we are talking about preparation of vegetables and stuff. You really just want to steam them, right? You really don't want to cook them. And a lot of people get lazy and they just throw like a bunch of broccoli in a pan and they fill it almost full of water and they just boil it for ... and they walk away from it and they boil for 5 minutes or so, or 10 minutes or something. That's not really how you want to prepare it right?

[audience speaks]

Yeah, so what they are actually saying is if you have minimal amounts of water like you are saying, and you do it the way. You can go online and there's actually 2 ways to prepare food that actually helps maintain it. And there's actually some arguments and some thoughts that maybe actually because of the microwave reactions, and stuff that it may actually enhance the release of something because we will gain access to things that you won't be able to do just in a normal boiling process or such. So you know yes it's kind of one of those things that we see, but I know that when I was growing up in the (?), and those microwaves we had, those were pretty scary.

Audience: hi Paul, about soy beans? My understanding with soy beans is it's an oestrogenic food. It's a highly oestrogenic food. And that in TCM (traditional chinese medicine) we don't actually eat it unless it's fermented. Because if it is unfermented, there are papers out there to talk about the poisonous nature of soy bean. So is it within the stuff that you have been talking that we are actually looking at fermented forms like tempeh, and tamari, and soy sauce, and miso, rather than the actual edamame bean.

Paul: well, it has to be actually basically processed. I don't know if you guys eat much cashews. Cashew is another great example of that. It is basically toxic if you pick them off the tree and eat them. They have to be basically ...

Audience: yeah, originally they were grown in China only to put nitrogen back in the soil because it's such a fast growing plant. And they will return the whole thing back into the soil to increase the nitrogen and the nutrition of the soil.

Paul: yeah, but the thing that is interesting about a lot of food is that you know, we always think that maybe we eating them raw is better. But that's not always the case. That there are plenty of examples of ... like you said... given like nuts and stuff. If you roast them, a lot of times you get more the nutritional value out of them if you actually do that. American Indians have something really clever with nuts and stuff. They would actually make a paste out of them. So the way they survive their winters and it's kind of sad thing if you ever heard of the trail of tears. It's the American Indians, we took them out of the Carolinas and Georgia and all that, and we literally march them across the country and put them over at Oklohoma and these reservations. If you want to talk about uplifting people and putting them somewhere, they might as well put them on moon, right? Because they came from down and then we set them off to basically desert regions and say good luck try to survive the winters over here. They didn't really have winters down there too much, and so what they did is they are really ingenious in the way they made paste out of the nuts. So what they do is they boil it, they take the pine nuts and stuff and they made balls basically these balls that were full of highly enriched proteins and the right omegas right? So high in omegas and such protected their immune system. What else did they plant? Squash. Pumpkins. And what do they use? They use the seeds. to get through the winters. So what they did is they very clever. They knew that these things were coming. And if you look at a lot of indigenous people across the globe a lot of them use seeds because seeds were a great way to store things and honestly what they recognise is the seed is what? It's the future plant. Right? You got to protect it against fungal infection. You get to protect it against these things. One of the superfoods that I think is overlooked tremendously but used a tremendous amount by our family is honey. We ate a tremendous amount of honey when we were kids. My mum believed in it. If you said you had a scratchy throat, you are getting honey. It was an interesting thing. Think about the sugar content of honey, right? And you don't refrigerate it. I don't know if you guys know this? But actually the honey from Australia is actually really in high demand. You know in what area? New Zealand. And actually some of it from Australia as well. Do you know what the ones in

Australia are used for? Wound healing. Yeah, I went to these hospitals and asked so what do you actually put in these wound healing poultices. Actually we put in honey. It's actually honey is incorporated in the bandage. I am like... really? And I talked to Roger Cady who is trained at the Mayo Clinic. And he said back in the 60s, Mayo clinic which is one of the top clinics in United States. Right? They actually almost exclusively used honey to heal wounds and such. So again I think it's interesting that we kind of sometimes forget some of the really basic ways to actually to heal ourselves and the way to protect ourselves.

Audience: Paul, a couple of questions. First, on the cacao and the grapeseed extract. Is the therapeutic effect dose dependent?

Paul: Yes.

Audience: And what is that dose?

Paul: Dose is actually pretty low. What we always say is from a human side it will be basically what fits in the palm of your hand. I was sharing with some other people that this is I think a really important point. It's that we think with all these things, this is again getting back to that more primitive structures. We actually overeat tremendously, right? So a year and a half ago they looked at cardiovascular disease and the effects of cacao and what they found was you only had to ingest the cacao about 3 times a week to actually get the cardiovascular benefits. So you don't need to necessarily eat something everyday to see the long term benefits of it. But it's the consistency of it. Just having it in the system for a long period of time seems to be what is responsible. And again...

Audience: Is overdose a problem?

Paul: I don't know. I don't think they tolerate very well if you started eating too much of it, because it's so bitter. I think you probably ... I think if you eat too much bitter of anything, it's really going to start upsetting your stomach.

[inaudible speech from audience]

Paul: Much like dogs. Yeah... they can't metabolise it.

[audience says something]

Paul: will shut down... right. I think basically your body will tell you that you are consuming too much because you will start cramping as well.

[audience says something]

Paul: that's pretty much what I would say. You want smaller is better. And then usually we have people like ask about this we always say start off with like a half of the palm of your hand, like a very small amount. And then just kind of over the next next week or so just bring it slowly in your diet and see how you tolerate it. Because again, everybody is a little bit different. And what I always say is go slow and steady, rather than try to jump right on. You know. More is not better because if you think about what this is, this is steroid, right? If you think about dexamethasone, they have bi-phasic response, right? So there is inhibitory at one concentration, when you get too high, it actually becomes flipped. So with a lot of these drugs, these compounds, like you said. The bi-phasic kind of things. Getting the opposite effect which you want. And I think the problem is that for most of these things, yes, almost again, assume what would have been an environment, a normal environment. You know that you probably would not have overeaten it. So eating a small amount is much better than eating a large amount of it. Because again, we don't want use it as an abortive. Because what it is doing is increasing your fast taste and stuff. So you want it to work with your system to help protect you. Like I said, when we put this in, and we do that jaw injury model, ...

[audience speaks inaudibly] So? It is not the same?

Paul: No, this is. I don't know if you have heard this. This is sad. Did you hear about the resveratrol story? How much of it is true? It's way overstated. Yeah... the guy was totally a fraud. He lost all his funding and stuff. He got basically stripped. A really terrible thing. But he

basically was running the largest clinical trials. Right, cardiovascular disease and stuff. He basically oversold the resveratrol story. He is saying it did work. And so what he was doing is fighting the letter and institution and stuff and his ego got too big. And we were talking about this before is that I have been over to china and one of the things that we were trying to do, like everybody else, take these things like ginseng. And they were trying to take the medicinal product, the plant products and they were trying to actually purify it out to get a compound they can either patent or do something with. And the bottom line is over and over again, we went down these roads, what happen is we lost the efficacy. You know, so when you try to purify out, basically you lose the efficacy. The combination. And actually in China they were incredible about bringing this together. We were sharing stories about how, not only do they have plants, but they have it from different regions of the country. And they had it from different years, because they actually knew that there was a drought or something, it was going to change the composition of that product. That plant. It was incredible to watch. It was just a complete art of how they actually were able to come up with this and how effective it was.

Audience: sitting there thinking about grapeseed extract. I thought might want to find out about it. Now just one thing. This was a single case study and it's got a double blind random. So that's right. Exactly. However the product was a healthy care and it was called grapeseed 12000. And what basically they were small capsules of about 150mg capsules and I was taking 2 a day. It was sort of recommended 3 times a day. Not on the packaging but just a general assessment. So go for it.

Paul: awesome. Thank you for sharing that. You maybe have something?

Audience: we talked about in our gut, we got good bacteria and not so good bacteria. And then quite often, when we go to pharmacies, we go to the health foods. They have products called cleansing. Dietary cleansing. Clean the gut. So what is your comment regarding that in terms of helping nutrition absorbed to the body.

Paul: the thing, the biggest thing we were talking about is case studies. Most of the problem we have talked about before with a lot of these nutritional type of stuff is not evidence based medicine. Right? There is nothing really backing it up. And so that's what becomes. So what I do is I tend to look at what happens like when I was in China for example, there is a 5000 year history for some of the uses of some of these plants and such. So I don't really need to read a research article to know that that is beneficial. You know? And that's what I tend to look at. If somebody comes with something that is totally off the wall and out of the blue. Then I actually really back off it until I see more results. Especially when they are trying to purify. So we all know right? It's the red wine paradox. The French paradox as they call it. So how can the French possibly eat white bread, do all these rich dishes and stuff. But they don't die, you said, with all those going to second-guess them, they still live longer than we are in America. Right? And how are they doing that? Well they said they are drinking this red wine. But when you think about it. The red wine is much more than resveratrol. So when you were talking about the grapeseed extract. The thing that we went down the road was we thought it was going to be resveratrol. So we round up these seeds and we were it's going to be resveratrol. What else can it possibly be? We did that. We looked at it, we couldn't find it. Epi-catechin, catechin, all those things that everybody said would be the most beneficial coming out of wine and stuff, was not found in our grapeseeds at all. What we found was a tremendous amount of antioxidant ability. Put this in perspective. We actually have looked at it and we compared to Vitamin C which is a very potent antioxidant. Grapeseed extract was better than vitamin C. I mean we have not seen anything in our hands that has actually more antioxidant. The incredible thing about grapeseed which is fundamental is it has a tremendous amount of polyphenolics. One of the things that it does which is really remarkable is it pretty much blocks the COX-2 enzyme versus the COX-1 enzyme. So think about how important this is. You guys familiar with the COX enzymes? The ones that generate prostaglandins and stuff? What do you have when you take aspirin? Why is aspirin not good for you? Because it's blocking what? The COX-1. You guys ever heard of viox? Right, what was viox? COX-2 inhibitor. So think about how remarkable this is. grapeseed, we have not seen anything do what grapeseed does. The benefits are enormous. But think about what we use to treat rheumatoid arthritis. Viox was incredible. I mean it was like a miracle drug. It's not banned. I know we can't get it in the US which is incredible. That was a big pull up by Merck to pull that drug. The FDA I don't know if you know the history of that. But FDA did not tell them to pull that drug. They pulled it on their own. And they basically sunk it for America

because now we can't get it back. So we have no COX-2 inhibitors. Specific COX-2 inhibitors that I know of. That line is gone for us. And yet it's one of the most potent things that we know for treating rheumatoid arthritis. But what I would say the thing we found in our lab is basically grapeseed extract. It's the most potent thing that we have seen for blocking COX-2 activation. So it basically blocks that whole cascade. So it's better like I said almost like taking viox on a daily basis. And again you are getting all the benefits to all these polyphenolics. If you think about grapes, have anyone thought a lot about this? Why do grapes happen to have this much and this is something that is important. I am glad that the grapeseed that you are using is working. The grapeseed that we have in our area comes from a different type of grapes. It's an oregon grape. It's actually a hardy grape. The wines aren't as good. But what we found is that it actually has more polyphenolics and higher antioxidant potentials than even those normal seeds that you get commercially. And one of the things we found was that basically when you think about this. Why do they have all these compounds? I love a student's answer. Oh it's to help us. Basically the students perceived that the plants are actually making these compounds so that we can stay healthy. I am like this is kind of a bit biased maybe. But what are they there for?

Right, they are protecting the grape itself. Think about something that is more sweet than a grape. Right? When I look at fruits that are very sweet, they are really susceptible to fungal infections, bacterial infections, all these kind of things, because we have all these energy sources there right? So they have to protect that seed. Some of the fruits that are the most beneficial, you really want to be looking at the seeds in those fruits. Because they have to protect themselves when they are going through the whole ripening process, right? So for me, the grape was kind of a fun choice. We looked at them and one of the things we said we found is that it was remarkable to study with Mandy (?). she's now got her PhD from the university of Washington. But when she was in my lab, she did a study where she compared the grapes during different seasons. And one year we had a really great season, the water all came at the right time, everything was great. Bountiful amounts of grapes and stuff. What we found was polyphenolic levels were good. Everything was fine. The next year we had a drought. When we had that drought, everything went out four fold higher. So the medicinal benefits in the seeds in the grapes were much better during the year of the drought. And you know what was interesting about that was when I was in China, they knew that too. So they had a drawer, which they call the super ... something like that which they translate it. It was you don't touch unless you need it. And then they basically knew that those were going to be highly enriched in those compounds. So again the plants are responding to the stress in the environment. And they respond by actually increasing the polyphenolics and increasing all these antioxidants because they were trying to protect themselves. Right? And we just get the benefits from using them. But I am always amazed at how we don't make use of things like pumpkin seeds, and all these things. We throw them away. We basically throw all these seeds away. The grapeseeds. Who eats grape seeds, right? You know? Go ahead?

Audience: on a slightly different subject, when you were talking about the microbiome, you were talking about the bacteria and the virus and the fungi. Parasites? And the by-product of those? Do you have any comments on those?

Paul: parasites? I think it depends on what part of the world you live in. because as crazy as it sounds in the US, we don't really talk about parasites too much. Do you have specific examples?

Audience: we have borrelia species... [lymes disease]. We all have parasites. So back in the 70s in Australia, parents routinely wormed their kids. And we will eat a little of sugar but we weren't desperate for sugar. And these things they don't have sugar. And I do a lot of paediatrics, so I see a lot of kids that come in and they are coming in with behavioural disorders. They come in with sleep disorders. They come in with gut disorders. And so I have over the years, I no longer treat those things. I actually treat them for worms. I actually deworm them. The biology of their stomach and the function of their stomach improves so I was just wondering is that something you will consider in that process. Because the after effect of the impact of the ... we need parasites... they are precursors for enzymes. So we need them. We need worms, but we only need them in a very finely balanced environment. If you had actually considered that process?

Paul: no, I think that is a great point and I think when we actually put that slide up about human biome. I was kind of surprised it had things in them but they didn't have parasites. I

need to go back and look at whether or not they are actually going to look at parasites. But maybe that's something that's overlooking because we don't really talk about that much in the United States.

Audience: well, we are very obsessed with cleanliness. We are very obsessed by having anti-bacterial things. I talk to mums about something as innocuous as thread worm and it would be like I am saying to them you are feeding your children faeces. That's how unhealthy your house is. it's got nothing to do with that. You worm your animals every month. But you don't worm your kids. So this ends up causing a massive dysbiosis in their gut. Because they have an overgrowth of a particular parasite inside their stomach.

Paul: I know in Africa in different parts especially in the jungle areas, they have a lot more issues with like parasites and such.

Audience: yes, we have huge in our western world.

Paul: in western here?

Audience: oh, absolutely. You go into little schools and you sit there and I read with the kids at school. My kid is in primary school and I would be watch kids move their bumps backwards and forwards across chairs.

Paul: oh wow! Yeah.

Audience: because I don't do it, so they cause this massive dysbiosis and sleep disorder and in chinese medicine one of the first things you do with someone teeth grinding before you send them to the dentist is you worm them.

Paul: umhm... I think that's probably a great point. And probably overlooked.

Audience: I did an automimmune conference and this Israeli professor, I can't get his name at the moment, but he wrote a book on autoimmune diseases and he classified about 81 autoimmune diseases and they did experiments because they know that worms help with the autoimmune disease. They modified the T1, T2 response because they somehow send a signal to modify the response. And so they found out how to put those worms into people without putting the parasite into them. So they finally worked out how to ... it was the eggs of the parasites so they eventually worked out the compounds in the eggs. And that compound is ... so they started... now there is a compound which you can get from Metagenics which is basically a fish oil which is beneficial which behaves like vitamin E as well. And the ... is essential for fixing leaky gut.

Paul: does anybody know the function, or can you elaborate on the function of the _____ & _____? What would that be used for?

Audience: well, I think just modifying the immune response which is basically the T2 response.

Paul: and those are actually the major components of the lipid membrane. So they are actually really part of the epithelial membrane. And such.... That's quite interesting.

Audience: oh, it's omega brain plus. It's a concentrated form of fish oil. It's 70% omega 3 but it's got a few things. It's got vitamin D in it as well. So it was developed for this problem.

Audience: what's the effectiveness of concentrated fish oil?

Paul: I don't know if I know the answer to that, you know? I hope it's going to work the same way. Yes, you take less of it. But the question is always I think it's about bio-availability, right? So sometimes...

Audience: does it have heavy metals in it? Any toxicity?

Paul: yeah. This is an interesting one. When we talk about it. You know. Fairly large African American population. And one of the things again is it speaks to the epigenetics of it all. It's

that basically what they found is that when the African American came over to America, basically what they came with is a certain genetic predisposition towards cardiovascular disease. Basically a lipid disorder. because again they have very low fat in their diet. They really won't really do this, to metabolise this way. And one of the things that is interesting about some of the African Americans population is they don't have the ability that Europeans do to actually convert omegas. You know like we can actually take a bad omega and convert it into a good omega. They cannot do that. And so what this professor at Case Western University showed was basically when you look at African americans, when they go into a high fat diet like the western diet, they don't metabolise things as well. And what they do is they create an inflammatory state because they lack the omegas to function correctly. They actually drive up prostaglandin synthesis. So what they are using those lipids for is actually to generate prostaglandins. And what they look at in their serum, they have almost a 10 times higher level of prostaglandins than what you find in other people. So then all of a sudden you start asking yourself, why are they so at risk for cardiovascular disease. And you realise they are basically swimming in a bath of cytokines and inflammatory molecules. And it's predisposing them. Now the reason I bring this up is because that when you are in this environment, the western diet is really detrimental to them. You go back over... what these investigators did was they went back over to the bush. In Africa, and what they did was they looked at individuals that were living in their 80s and 90s, and they actually took DNA analysis of them. And what they found was that in these people that lived in the bush, that they still have that mutation, they still have that disposition towards this lipid disorder which doesn't allow them to convert the omegas in the right way which means that they have a predisposition then to have elevated levels of these prostaglandins and cytokines which tends to predispose them to cardiovascular diseases. Ok? The bottom line is that when they went over to look at these individuals, they have the DNA, but it was so heavily methylated that it was never turned on. And how do they accomplish that? They said it was by their diet. So basically their diet, even though they had that gene, they methylated that gene. It's never activated. And then they don't have that predisposition of cardiovascular disease. So again I think there are lots of examples like these across the globe. If you really understand your genetic background, and where your food sources come from, then what we are learning is we need to go back to our roots so to speak and probably get more back to basic diet that really is going to keep us and our gut microbiome in harmony.

Thank you very much.