



Expert Voice - Dr Teresa Mitchell-Paterson CONTENT EDIT.mp3we

Victor Hello, I'm Victor Tuballa and this is Expert Voice, Eagle Natural Health's podcast and your partner in natural health well-being. Joining us today in the studio is associate professor Teresa Mitchell-Paterson. Associate Professor Mitchell-Paterson is a nutritionist and naturopath with over 25 years' experience in natural therapies. She is an associate professor and program director for Bachelor of Health students both in their naturopathy and nutritional medicine. Teresa has also embarked in writing and reviewing for evidence-based naturopathic texts and journals and is a spokesperson and advocate for a naturopathic healthy lifestyle. For the past 6 years, Teresa has been a nutritional adviser for Bowel Cancer Australia and health and medical panelist for the Memorial Winston Trust Fund who allocated funds for exceptional Australians to travel overseas and bring back the latest research in medical practice and science. I'm pleased to welcome Teresa into the studio. Teresa, thank you so much for your time today and welcome to Expert Voice.

Dr. Teresa Hi Victor I'm really happy to be here today.

Victor Today we'll be talking about gut health and its role in supporting our overall health and wellbeing. It's an area of health that is starting to be embraced by the public and especially with the popularity of certain foods that had become rather trendy. Foods such as kombucha, for example, and will no doubt touch upon the role of foods in gut health in today's podcast. My first question Teresa is the role of the GATS in overall health is firmly on the agenda for Australians looking to achieve and maintain optimal health. Could you

take us through the physiology of the gut and how it functions optimally and when it is deemed to be dysfunctional?

Dr. Teresa What an amazing mechanism the digestive system is. It's such an incredible machine. It starts off with the mouth, and then of course you've got that mechanical chewing in the mouth and then you've got the tube that goes from the mouth down through the oesophagus which leads into the stomach. After the stomach, we've got the small intestine, with food moving into the small intestine and finally into the large intestine. Along with that we've got something called the accessory organs. The accessory organs are the pancreas, the liver, the gall bladder. All of these organs help the body to digest the food that we eat and make energy from the food that we eat. It's just amazing that it all functions together. Apart from that mechanical digestion of food deep in the gut there are over 400 trillion different types of chemicals and hormones. There are bacteria, there's fungi and there's other organisms and they're all really hard at work helping you to digest your food. They also help to make essential nutrients that you can't produce on your own.

Victor What are some of the signs of a dysfunctional gut?

Dr. Teresa In practice the majority of signs that I see are pain, discomfort, burping, wind or reflux. Sometimes diarrhoea and/or constipation and also some people present with nausea. That's an indication that there's something untoward happening in the gut. Any disturbance of the microflora from the mouth to the stomach, small intestine through to the large intestine or disturbances in the chemicals being produced in the gastrointestinal tract can cause dysfunctional digestion and upset the gut process. People will tell you about it. A dysfunctional gut may cause food intolerances or allergies but a food intolerance is the difficulty to digest certain foods, and that's very different from being a food allergy. A food

allergy is caused by an immune system reaction, but what we're finding more and more in clinical practice is there are more food intolerances generally caused by an upset gut process. Food intolerances are linked to poor quality of bacteria in the gut and this can lead to difficulty digesting the trigger foods and it can cause unpleasant symptoms and as I mentioned before they're mostly bloating and gas.

Victor In particular if these types of functions are occurring that it could be potentially an indication of something potentially more serious when it comes to gut health. With that in mind in terms of the male and female aspects, is there a difference between the two?

Dr. Teresa There certainly is. There's a difference in how males and females produce microbiomes. Men and women react differently to the same type of diet. Researchers think that hormones associated with each sex might affect the composition of the gut microbiota favouring the presence of certain strains of bacteria over others even if they're fed the same type of diet. It might also be to do with the immune system, which functions differently in males and females and that also could affect the microbes that live in the gut. This particular study that I looked at was in stressed male and female lean mice. They were both being fed the same type of diet. They were both on a very high fat diet. In both the male mice and the female mice their microbiome changed. The difference was how the body reacted to the high fat diet.

The microbiome in the males changed and it made the male mice very anxious, but what happened to the females was completely different. They were still stressed obviously but they didn't have higher levels of anxiety. But what happened to their microbiota was that it changed to that of an obese mouse. The take home story from that is that when you put men, not men but male mice, on a very high fat diet they become more anxious and get changes in their microbiota. But if you put females on a very high fat diet, their microbiota

changes but they gain weight rapidly, not a happy ending. It seems that probiotics for men and women in the future may actually need to be more tailored.

Victor There are two particular conditions that are known as gut dysbiosis and leaky gut. For the benefit of our broader audience could you take us through the differences between gut dysbiosis and leaky gut and how one can manage such conditions?

Dr. Teresa It's a very interesting area and leaky gut is getting a lot of attention in medical blogs and the social media lately. Leaky gut is also called intestinal permeability and it's somewhat new and most of the research occurs in basic science. What I mean by that is it's in test tubes and animals and not so much in humans at this stage but there's a growing interest and that growing interest is going to help us to combat the effects of this problem. The two terms are associated with a chronic unhealthy gut dysbiosis and leaky gut. This dysbiosis comes first. I'm just going to explain this dysbiosis first of all because it's a term that is used for microbial imbalance somewhere in the body and it can be anywhere. It can be in the skin. It can be in the respiratory system. It can also be in the reproductive area and also the gut.

Generally what people think when they hear dysbiosis is the gut and it means that the healthy dominant species of the bacteria are under-represented. There's less of them and they're out competed by other not so helpful species, which can upset the tissue in the gut where it's presenting. Gut dysbiosis can result in what we call small intestinal bacterial overgrowth, which is an unhealthy bacteria in the small intestine or it can actually be small intestinal fungal overgrowth. Lots of people are bandying around the term SIBO, which is small intestine or bacterial overgrowth or SIFO which is the fungal overgrowth. Now we need a healthy balance in the gut because the beneficial bacteria help to aid digestion and reduce bugs.

If there's too much nasty pathogenic colony of bacteria, those bacteria will give off a waste and they'll cause gas and bloating and that's linked to inflammation of the bowel, the gut, chronic fatigue, even obesity, some types of cancers and reproductive inflammation.

Dysbiosis itself is a chronic condition. The problem with dysbiosis is it then leads on to leaky gut. A healthy gut is where the integrity of the tissue, the intestinal lining, is really strong. It's not compromised in any way and it's got really tight junctions. The material or the skin type material in the gut is very strong and the gut itself is over 4,000 square metres large and it helps to digest food. It blocks toxins and little microbes and bugs from getting into the tissue underneath it and then going from the tissue underneath that into the bloodstream.

In leaky gut that strong surface area has lost the ability to hold the tissue tightly together and little cracks start forming, and that triggers inflammation under the top layer of that tissue. Then what happens those little small cracks that appear, small particles of protein and bacteria from food get into that underlying tissue. The body then sees those proteins as a bug or a pathogen and then they mount an attack against the gut lining. They don't know that it's not anything but just food. They just attack it. A leaky gut is caused by a poor diet or a diet where people eat the same thing all the time. Our bodies actually don't like that. We were meant and designed to eat a cyclically low fibre diet, a high sugar diet a high saturated-fat diet. Unfortunately, the other thing that helps to create a leaky guard is alcohol. So that's also out of the picture and leaky gut can play a role in celiac disease, Crohn's disease and IBS.

Victor Whilst it might sound dire at first, the good news is that a simple change in diet can be a start of what we can do to help our patients and the public when it comes to addressing such conditions. Thank you so much for bringing up that that area when it comes to understanding what dysbiosis and leaky gut is all about. Now we've touched

upon this before about the weight and the male mice that you spoke about before. We understand healthy weight is linked to a balanced lifestyle, which includes factors such as regular exercise and a healthy diet, but recent studies have shown that our weight may also be linked to gut flora or the microorganisms in our gut or the microbiome. How is our gut linked to the way our metabolism performs?

Dr. Teresa Believe it or not, good healthy bacteria in the gut can actually help you to lose weight. Moving in with a family that's thin might actually help us to lose some weight. I'm not suggesting you leave home and do that but there's a reason behind that. A good healthy bacteria in the gut helps us to make vitamin K and some B vitamins. These help us to break down fibre to make something called a short chain fatty acid, which is called butyrate.

Butyrate feeds two main families of bacteria, the bacteroidetes and the firmicutes. Human and animal studies suggest that people with normal weight have different bacteria to those who are overweight. Overweight people tend to have more of the firmicutes and less bacteroidetes, which is quite interesting. The other thing is that the beneficial bacteria may also release a hormone and this hormone is called glucagon-like-peptide or glucagon-like-peptide-1, (GLP-1). This little hormone is a gem because it's an appetite reducing hormone and it can help you to burn more calories and fat. It also induces satiety, which means you feel fuller for longer and that's leading to reduced weight gain. In the pancreas the GLP-1 helps to balance insulin levels so it helps us to manage our blood glucose levels.

These are the healthy microbiome, which also have another hormone called an angiotensin-like 4 chemical (AGL4). This is an amazing protein and it's made in a healthy gut and what this one does is it leads to decreased fat storage. If that doesn't make you want to run out and get some probiotics, I don't know what will.

In a study that was done in 125 women who took a lactobacillus rhamnosus probiotic over three months, they lost 50% more weight than those taking the placebo. What's astounding about that is the women who continued to take that probiotic also continued to lose weight during the weight maintenance period. If you've started to gain or lose weight without making any changes to your diet or exercise regime, this could be a sign of an unhealthy gut.

Victor The fact that our microbiome could potentially be a factor or actually even call it an X factor in regard to our potential success in weight loss, is something that a lot of people will embrace when it comes to our patients or the public who are having problems with weight loss. Consider the use of probiotics. It could well be the factor. Apart from weight loss, another key important area when it comes to health and wellbeing is the role of our immune system and that gut health can play a key role in its improvement and maintenance. Could you take us through gut health's role in overall immunity?

Dr. Teresa It's a very interesting role and it's a new area of research so we just have to bear that in mind. But they are increasingly discovering and recognizing that other body's systems are influenced by the gut microbiome and these links are gaining attention as possible factors in numerous immune diseases as early as prenatal. The placenta has bacteria. Once upon a time we thought that it was sterile but it's not. It transfers its microbiome from the mother to the foetus. What happens then is the antibodies from the mother and the microbiome from the mother teach the foetus's body how to protect the foetus when the mother's antibodies are gone. When she stops breastfeeding and the baby's on its own, it's the microbiome and the implanted antibodies that takeover and protect the immune system.

Microbes and probiotics teach the immune system how to work if it's functioning well. If there are too many unhealthy bacteria in the gut, there's a shift in the immune function where the gut environment becomes unstable and starts attacking the gut lining. That leads to the increasingly inflamed state in the gut. And that leads on to the inflammatory diseases elsewhere in the body.

Victor We have immune function. We have the obvious digestive issues that may occur or cause, there is the concern about weight loss. Are there any other health functions that the gut may affect?

Dr. Teresa Something that we've touched on before is the brain and how it affects the mood. During the development of the central nervous system right from birth it's suggested that balanced microbiota help to mature the central nervous system. This is the area where the brain starts to develop, as well as developing that central nervous system. It helps to develop the immune system and it assists with the different mental developmental states of infant right through to adolescence.

In other words, healthy microbiome from developmental stage as a foetus right through to a developing adolescent will improve the mental state of that person. Interestingly the gut and the brain talk to each other and they do this through something that's called the gut brain axis.

The gut brain axis allows the gut to send and receive signals to and from the brain so we can influence the way that the gut talks to the brain by influencing the microbiota in the gut. It was found that the good bacteria talk to the brain via a nerve that runs from the gut to the brain called the vagus nerve. Good bacteria or probiotics and fibre from prebiotics can increase gut hormones, help with serotonin production and serotonin is our happy hormone.

Victor Once again, considering the use of prebiotics when it comes to treating a lot of our mental illnesses as an adjunct treatment could prove to be a decisive or an effective factor when it comes to relieving a lot of the symptoms and the distress from such conditions. What evidence is there supporting foods for better gut health?

Dr. Teresa As both probiotics and prebiotics, we've got a lot of evidence for probiotics, but not so much for prebiotics. That's kind of an up and coming area. We do need probiotics because the prebiotics support and feed the probiotics. If you're wondering what probiotics are, they are yogurt, sauerkraut, tempeh, kefir and kombucha. The most important thing is to avoid a high fat diet.

With the study mentioned earlier, where it was found that a high fat diet affected the mice, but in humans it's high fat diets that affect the microbiome. You can enjoy the good fats not the saturated fats, have a higher carbohydrate diet with fibre and avoid what I call the SAD diet. Actually it's not just me, lots of people talk about the SAD diet. It's the standard Australian diet where there's lots of sugar. There's lots of fatty foods, fries and sweet things.

It's well known that Australians do not eat enough fruit and vegetables. Only 5% of Australian population gets their five serves of vegetables a day. Additionally, fibre helps to make short chain fatty acids. We talked about how beneficial that is to the bowel and also in reducing inflammation in the gut. To prove a point, a diet rich in carbohydrates, whole grains and vegetables was shown to ameliorate dysbiosis and create a larger diversity of the type of microbes that are in the microbiome in particularly in type 2 diabetics as compared to untreated patients.

Victor Some good advice there Dr. Teresa when it comes to prebiotic foods. What other probiotic foods could you suggest?

Dr. Teresa There's some interesting foods that have been bandied around: Jerusalem artichoke (I'm not sure that I'm going to have that for breakfast), dandelion greens, which are a little bit difficult to come by. Something that we can all eat is garlic, leek, onion, wheat, bran possibly not for everybody but you could also use oat bran, asparagus, bananas that are really rich in prebiotic fibres, apples (throw those into your lunch), barley oats, flaxseed, (lots of people put flaxseeds in their smoothies and seems to be a bit of a trend these days), and seaweed. They're putting seaweed in their soups and things so that's another really good prebiotic food. Other healthy gut foods include dark chocolate. I'm not suggesting you eat a whole bar. We are talking about two squares of dark chocolate. A little bit of coffee perhaps once a day, extra virgin olive oil and all of the fermented foods of course. Just a little word on the fermented foods - avoid vinegar fermented, salt fermented. You need to look at that on the label of the food.

Victor I'll be thinking twice when I mow the lawn next time and see that odd bit of dandelion growing in my lawn thinking I might be a bit nicer to it knowing that now that the greens from the from dandelion can certainly feed my gut bacteria. A beautiful array of foods that you can certainly incorporate into your diet on a daily basis. We know that one of today's modern challenges when it comes to general health and wellbeing and especially when it comes to gut health is that the diet and the good intentions in eating a healthy diet may be difficult to achieve. In your opinion Dr. Teresa, can natural supplementation help to support gut health and if so, what ingredients do we look out for?

Dr. Teresa I think there's definitely a line where gut dysbiosis and leaky gut become a problem that just can't be fixed with food alone. That's when I use supplements in clinic. Once people are up and running, I can certainly say, 'look here are the foods. This is what you do.'

You do need to use some supplements to help people along the way, particularly when it's a really sort of nasty wind or pain in the gut. In some cases, you might need to use an anti-microbial, I'm saying anti-microbial not antibacterial. There's a distinction.

An antibacterial or an antibiotic kill the biota antimicrobials from herbs are slightly different. When we're talking about getting the pathogens in the gut under control, there are a couple of herbs that we look at that are sort of broad spectrum and they do help to reduce the amount of pathogenic gut bacteria. These are herbs like thyme or phellondendron, clove, nigella, clove, thyme and garlic. They help to get the overgrowth of the bacteria under control.

With leaky gut that there's also a level of inflammation. To decrease inflammation in the leaky gut, one of the best things for that from an evidence base is turmeric. Not all turmeric are the same. I just want to make a point about that because there are quite a few on the market and if you don't get quality turmeric, you might as well just be throwing it down the toilet. It needs to be the right potency and it needs to be the right dose and it needs to be taken at the right time. The good thing about turmeric is that it can actually help the pancreas to produce gut enzymes for digestion and it can relieve upset stomachs and stop the spasm and reduce stress also. It's a very important herb to use in an inflammatory condition in the gut.

Next thing we need to do is look at repairing the underlying tissue. I mentioned before that the tissue gets little cracks in it. We want to pull those two sides together and we want to make sure that we're giving the body a sort of a blanket, a healing blanket over that inflamed tissue. Deglycerised licorice will do that and there are some proprietary brands of

that that work better than others. Glutamine, which helps to repair the leaky gut, there's lots of evidence around that. The other thing about glutamine is it helps the gut to produce its own immune health. Secretory IGA helps the immune system in the gut help to repair that damaged tissue and it will also aid with digestion. There is Kiwi digestive enzyme, which helps with digestive function and some aloe vera. Don't forget the brassica sprouts. Brassica sprouts in a powder form are better for absorption and they help the good probiotics to grow in the gastrointestinal tract. There's been significant research discussing the benefit of herbs and nutrients in assisting gut function.

We do need to get the gut moving, so there is something called a migrating motor complex and it stimulates the excretion of toxins out of the gastrointestinal tract. Interestingly the longest known herb for that is ginger. Ginger also reduces flatulence and wind. It's going to help whether a person has diarrhoea or constipation, but it helps to modulate or control something called that migrating motor complex, which squeezes all the matter, poop basically, out of the digestive system.

I do want to state though, if you want to get on top of a gut issue and you're not having a lot of luck, it's a good idea to speak to a qualified naturopathic practitioner, a nutritional practitioner or herbal practitioner to ensure that you get the correct balance of like lactobacillus and Bifidobacterium species into the microbiome. Another note on that: quality, quality, quality. You pay for what you get. Some of the probiotics that are sold don't actually make it into the area that they're meant to go.

Having seen the difference between a good probiotic and been to a laboratory to see how a good probiotic will make its way through the different types of pH and reach the small intestine or the large intestine, I cannot tell you how important it is to get a quality product.

Victor That's important when it comes to evidence-based supplementation nowadays because there are some wonderful ingredients out there when it comes to nutritional and

herbs that can play its role when it comes to gut health. More importantly you want to make sure that those particular types of ingredients are being well-absorbed and therefore utilised by the body. In conclusion to today's excellent podcast on gut health, in your opinion, what are the top three things that Australians could start to incorporate into their lives to improve their gut health?

Dr. Teresa I think it's really simple and I don't think it's really rocket science. Firstly, don't kill the good bacteria. Avoid any unnecessary antibiotics. You know if you need to have them. I'm not saying don't, but avoid them for just the common cold and flu.

Try to avoid any chemically sprayed foods, any environmental toxins that you may breathe and eat organic where possible. I know that's not always possible for everybody, but if not, at least get a decent something that you can soak the vegetables into get rid of all the topically sprayed chemicals.

Try to go gluten free for a while and then reintroduce it. Don't ever not have gluten - ever - because you'll find that you'll react to it. If you've got a really severe gut problem then leave off it for a while. Don't feed the bad bacteria.

Avoid a diet with the unhealthy fats, the sugars, and processed foods etc. because obviously people are going to get more gas, discomfort, bloating and chronic inflammation.

You need to skirt around the outside of the supermarkets. You need to be looking at filling up your basket with all the fruit and vegetables, the lean healthy organic meats, pulses, grains, nuts and seeds and making meals out of that. Don't worry about the packet stuff.

On top of that, feed the good bacteria with probiotics and prebiotics. Using all those good healthy foods that we discussed: kombuchas, kefir, etc. and make sure that there's plenty of plant fibre in the diet. The more of those prebiotics you feed your probiotics, the more efficiently they're going to work for you.

Eat simply is what I'm saying. If you're going to get a good probiotic, get a probiotic, get a good one. It can be quite challenging to find something, so make sure you talk to a practitioner about that. Just a comment on when to take a probiotic because there's been a lot of contention over when to take a probiotic and the recent lot of research in a journal about beneficial microbes is suggesting that you take it within 30 minutes of eating.

Victor It's been interesting to hear about the important role that lifestyle and diet and in particular certain nutrients and herbs can play when it comes to improving and maintaining good gut health. There's a lot of good tips here to help keep our gut healthy and well to support our overall health and wellbeing. Dr. Teresa, thank you for taking us through these important points today and I thank you for your time.

Dr. Teresa Very welcome. It's been a pleasure.

Victor And we encourage you to consult with your health care practitioner for advice on whether supplements are suitable for you. If you've enjoyed what you've heard today, we'd appreciate you jumping onto iTunes to provide us with a rating and a review. If you have a topic that you'd like us to cover, we want to hear from you. Get in touch with us via the Eagle Natural Health website, which is www.eaglenaturalhealth.com.au in the Contact Us section. I'm Victor Tuballa, thanks for listening.