Tampons, Lube, and Laundry Detergent: The Everyday Things Quietly Wrecking Your Microbiome Transcript

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Introduction and Guest Welcome

Hi everyone. Welcome to the Future of Menopause Summit. I'm your co-host, Doctor Ben Stills, and I'm joined today by a very special guest, Kiran Krishnan.

Kiran is a research microbiologist who has spent more than 20 years studying the human microbiomes effects on digestion, metabolism, immunity and of course, hormones.

He's co-founded several companies, including Microbiome Labs and Endo Access. And I'm very, very excited to have him here today to share his immense knowledge and expertise with all of us on such an important topic.

Welcome to the summit, Kiran. Good to have you. Thank you so much for having me. What a poignant topic. I'm excited to talk about it. Absolutely. So yes, without any further ado, let's jump right in.

So we are a menopause summit obviously. So everyone knows or most people I would imagine are generally aware that in menopause, the ovarian production of several hormones, most notably estrogen and progesterone, really just kind of drops off a cliff.

But I was wondering if you could speak to how the gut microbiome itself changes during this time, and how that may contribute to some of the common concerns that we see in that population?

Yeah. So in fact, you know, the the, the reduction in the endocrine systems production of these endogenous hormones like estrogen and to some degree, progesterone and even testosterone in women, all of those actually have a direct effect on the microbiome and then the effect it has on the microbiome as a result further decreases the endogenous productions of the hormone.

So just to put that in context for people, so what starts to happen is as estrogen levels decline, less and less estrogen and progesterone are entering into the gut, right.

So now the gut becomes the endpoint of where hormones go to either be reabsorbed, recycled in some way, neutralize and excreted. Right. So that the gut and the liver play a very important role in that step of the process.

Now, as you have less and less endogenous estrogen being produced and going through the gut, that actually causes a reduction in the diversity of the gut microbiome.

How Menopause Affects the Gut Microbiome

And as a result of that reduction in diversity of gut microbiome, we start to get an increase in barrier dysfunction. So the gut becomes leak year as women go through perimenopause and into menopause, as the gut becomes leak year, that actually has a negative feedback effect on the ovaries and so on in terms of production of saxophones.

And so there is this ongoing continuous cycle where the effects of changing hormones has a direct effect on the gut as and the effect of the gut has a sequential effect on the production of hormones itself.

And as a result, there is a ongoing cyclical effect that has to be slowed down at some point. If not it, it just simply accelerates right. And it's really hard to stop it at the to stop the cyclical effect.

At the endocrine level, it's really hard to get your endocrine system to produce more hormones. One of the areas that you can then target is actually the gut.

And what happens with the gut. You can stop that barrier function issue. You can stop the diversity loss or at least slow it down. Awesome, awesome. Kind of a good segue. Question off of that.

Would you mind going into a little bit more detail about the Astro Bloom as it relates to just estrogen recirculation, how that kind of plays out, how that might interact with some a patient doing bioidentical hormone replacement therapy.

And just in a general sense, you know, what do you think every menopausal women or even just woman should know about the astro alone? Yeah. You know, the trouble is such a unique constellation of microbes.

It's actually a collection of numerous microbes that have a uniform capability. And that is the production of an enzyme called beta glucuronide. Beta glucuronide is a unique enzyme in that it can remove the cap or the neutralization of estrogen that is done in the liver.

So for people to understand what happens as estrogen is being discarded from the body, it goes into the liver and then it gets capped, if you will. That capping by the liver makes estrogen unrecognizable to the body, and it makes it so that it ends up through defecation leaving the body.

Now, when you remove that cap, which is the action of this enzyme, beta glucuronide, it makes estrogen reabsorbed, right? So it's one way of maintaining a certain level of estrogen.

But what you tend to see is that beta glucuronide activity starts to go down as diversity starts to go down. We mentioned earlier as endogenous hormone levels start to decrease, diversity goes down, which means beta glucuronide activity goes down, which means the amount of estrogen that the individual can reabsorb to try to maintain functional levels also continues to go down right.

And so this change in beta activity and diversity is very well hallmark by changes in things like vasomotor instability. Right. Because that change is also related to changes in the interior nervous system.

That's this very complex neurological system that covers the digestive tract and connects directly to the brain. As a result, not only does that interior nervous system, you know, changing basal motor function, it's also changing mood.

This is where a lot of the mood alterations come from. Then it also initiates things like an increase in chronic low grade inflammation so you can increase bone loss, increase cardiovascular risk and all the other symptoms that goes along with it.

Right. So what's important to note when you are when a woman is in childbearing eight is you don't want to have too much beta glucuronide function because that can lead to estrogen dominance.

Right. And dominance is one of the most common types of hormone dysfunctions in women of childbearing age.

Estrogen Recirculation and Beta-Glucuronidase

But then you want to maintain some degree of alone as you're going into perimenopause and menopause, because you do want to try to recycle some of your estrogen into the system.

So it's a delicate balance, which means dietary shifts have to occur at those different periods of time. And we could talk about if you're estrogen dominant and you have too much beta glucuronide, how should you eat to balance out that beta glucuronide activity?

And if you're in perimenopausal menopause and you're too little AstraZeneca, you're not recycling enough, then how should you eat? In that case, you're trying to optimize bit of glucuronide activity, right?

So there's there's little tricks on each side. Absolutely, absolutely. Thank you. That was such a great explanation in

a general sense. If you could change or list if you prefer two, three things that most women or even just people do that damage their microbiome, what rises to the top of the list for you?

Yeah. Number one is the lack of feeding your microbiome, right? So let's think about what feeds the microbiome. Predominantly there are really three categories.

One is fiber both soluble and insoluble fiber. Number two are resistant starches. And then number three are polyphenol. Right. And if you look at the standard American diet, those three components are made up of less than 10% of the total dietary intake from a day to day basis, right from meal to meal, which means that we're wholly, inadequately feeding our microbiome.

What I want people to understand is that it's so critical that every meal that you sit down to have has some components of fiber, polyphenols, and resistant starch.

And if at least 30% of that meal doesn't contain those macronutrients, then you're not feeding your microbiome adequately. You're going to lose diversity.

You're going to allow pathogens to overgrow. You're going to end up with leaky gut. And then that's going to create, you know, like a really profound risk for chronic conditions.

So that's number one is not feeding the microbiome enough right. Number two is stress. So stress has a profound effect on the microbiome. In fact there was a publication in the journal of called Frontiers of Immunology in 2015.

It was a prospective paper written by a number of experts in the field. After they were viewed research, they actually concluded that stress induced endotoxin, which is leaky gut, was the number one driver of mortality and morbidity worldwide, meaning it's the number one killer in the first world countries, right?

And the reason for that is stress actually acts like a little antibiotic in your gut, killing off beneficial bacteria, allowing for the proliferation of pathogens.

And then what we call pathogens. These are microbes that have the pathogenic tendency. Right. So every little bout of stress that you have that you can't come down from, acts like a little dose of antibiotic in your system.

And so managing stress becomes critically important. Now here's the other connection with stress. It's so important is that as your microbiome becomes more dysfunctional, it actually makes you even more susceptible to stress.

Right. There was a nine year long study in Netherlands called a Netherlands study on anxiety and depression. What that study showed was that leaky gut and the toxin that leaks through in leaky gut, called LPs, was the most accurate predictive marker for the for the presence and severity of anxiety and depression in individuals, which means it's the biggest biological driver of anxiety.

A leaky gut stress makes her gut leaky. The leak in us and you got makes you more stressed, right? So that cycle has to be arrested. And then the third part I would say overuse of antibiotics.

You know, we use antibiotics in our food systems. We, you know, prescribe too many antibiotics, right, for viral infection. I had many conversations with urgent care facilities because we were trying to change how they did things.

Top Factors That Damage the Microbiome

And many of those docs would say that they're prescribing antibiotics for flus and viral infections, that they know the antibiotics aren't going to do anything for.

But the reason they're prescribing it is, is they don't give the patient some sort of pill to make them think they're going to get better sooner than they simply won't come back to that facility.

They'll go somewhere else that's willing to prescribe it. Right. And so we overuse antibiotics. Of course, antibiotics can save lives when, when it's used in use in the right context.

But we over prescribe it. So those things I think are the biggest things out. There's lots of other things like, you know, our food system being loaded with antimicrobials and, and, you know, processing aids and all of these things are environment being loaded with microplastics and other toxicants.

But those three things are the biggest drivers. Gotcha. Yeah. No. And it's such a good point on the antibiotics. Just just yesterday I had a patient call into the office saying he had a sinus infection and he wanted antibiotics.

And I was just like, dude, you know, I'm not going to do that for you. At least not first line. Let's try some other things first. And I'm obviously very confident we'll be able to get that side of affection under control without destroying his microbiome.

So yeah, it is. It is such a thing. Even in the alternative medicine space, people are just they're so quick to just be like, let's not get out. I've got to get back to work.

And, you know, we want to be nicer to our bodies than that. Yeah. All right. Since, again, this is a menopausal summit, can you offer some insights onto how the microbiome, assuming it is well balanced, influences the response to bioidentical hormone replacement therapy?

Yeah. You know, so when we think about what bio hormone therapy actually is right. So we're putting in a hormone that your body is not making endogenously anymore.

So great. We've solved that first step in that error. But that hormone still has to go through a myriad of metabolic processes in the body to be utilized. Right.

So we know estrogen is broken up into many different subtypes. We know there's metabolism that occurs in the gut and in the liver. We know that in order for any hormone to work in the body, including estrogen or progesterone, they have to bind to receptors.

And so receptor expression for those hormones are equally important as the presence of the hormones itself. Now, all of those other parts, aside from putting in the hormone, all of the other functions of metabolism in the circulation of the hormones, the receptor expressions, all of those steps require functioning systems that get inhibited by chronic, low grade inflammation.

Right? So chronic, low grade inflammation completely inhibits the recycling, the metabolism and the utilization of many of these hormones. So putting it in is step one.

The next step is how do you get your body to utilize it properly. In fact, there's a study that I just reviewed very recently on a gut health product that is related to menopausal women.

And it was a study in menopausal women, actually. And what we saw is that when you modulate the barrier of the gut, the lining of the gut, and you bring down inflammation, and this inflammation is measured as HSC, including six alpha.

So these kind of global inflammatory markers, what they saw without adding in any additional hormone into those individuals, they saw a significant increase in free estradiol as trial progesterone, a significant decrease in cortisol, and a significant increase in D8 right, without adding those hormones in.

Additionally, so what that's showing you is that the management of chronic, low grade inflammation through the gut improves the utilization of those hormones that you do put in.

And so one of the messages I always give people is that it's awesome that you may do at some point. If you're not making the hormone, you don't have a choice but to put it in.

And if you're putting it in, you still have to manage how it's being utilized and if it's being utilized properly.

Microbiome Support During Hormone Therapy

That's where the gut comes in and becomes absolutely. I could not agree more. Love that answer. All right. So anxiety, brain fog, irritability, sleep disruptions, weight gain all very very common concerns in postmenopausal women.

Can you speak to the role that the microbiome will play in all or any of these symptoms, if any of them just really jump out to you? As far as the microbiome is the keystone, if you will, to how this symptom might play out in a person's body.

Yeah, yeah. In fact, all of them are, even though they may be seemingly different conditions presenting differently. Right. So you mentioned anxiety, depression, brain fog, you know, weight gain, some metabolic disruption in the body, even though you mentioned many of those things separately, they're all driven by the same pathology, same underlying pathology.

Right. And in part there's a gut brain connection that is becoming disrupted. And I'll explain what is becoming disrupted in the gut brain connection.

And then on the metabolic side, it goes in one one step further than the gut brain, where we're actually creating a disruption in how the body responds to the presence of food.

Right. And what's happening with their mitochondria and how much energy you're burning, muscle loss, all of those aspects. Right. So let me tackle the gut brain part of it first.

And this this part basically encompasses anxiety, depression, brain fog and also metabolic issues. So what is happening there is when your gut again loses diversity then leaky gut or endotoxin increases.

Now some people may be wondering what is this word? Endotoxin. Endotoxin is the clinical manifestation of leaky gut. When your intestinal lining becomes hyper permeable, meaning it's leaking in more things than it should because normally it should be semi-permeable.

You want nutrients and all to come through, but not toxins and not bacterial fragments and viral particles and all that. You don't want those things coming through, right?

But when it becomes hyper permeable, then what you get is a leaking in of bacterial components, especially one component called LPs lipopolysaccharide.

This is a very common component in the lining of your gut, where the microbes live, because it's made by a type of bacteria called gram negative bacteria, and about half of the microbes that live in your microbiome, that 40 trillion or so, about half of them are gram negative.

Right. And so they make a lot of this LPs. Now, if the LPs stays in the lining of the gut, it's not an issue because eventually gets defecated out on a day to day basis.

But if your gut is hyper permeable, it's going to leak through and it's going to end up in circulation and it goes to a few different places, a lot of it goes to the liver, starts causing havoc in the liver.

Right? It causes a lot of fatty nonalcoholic fatty liver disease, which is one of the reasons nonalcoholic fatty liver disease and hepatitis is so prevalent.

Now, over 65% of adults struggle with it, right. And suffer from it. And then and then that plays into the metabolic health, which I'll tie in. And then some of it also goes into the entire nervous system, which is at neurological system that covers the digestive tract, that also connects directly to the brain through the vagus nerve.

Right. And so this LPs not only creates inflammation in that vagus nerve, which means the gut and the brain are no longer talking to each other the way they should.

Gut Health, Mood, and Metabolism in Menopause

But this LPs can also enter the central nervous system, where it does three big things that affect mood and brain function. Number one, it interferes with serotonin and dopamine binding, so it actually interferes with receptor sites for serotonin.

Dopamine. Right. So you're happy hormone can't bind to its receptor and make you feel good right. The dopamine which is which is your reward center your focus hormone.

The thing that keeps you like kind of sharp and all that that can't bind to its receptor. So you lose that sharpness. Right? That's part of the reason why you walk into a room, you know, with some purpose.

You were going to grab something or pick up something or do something in that room. But the moment you walk in, you forgot why you walked into that room, right?

That's the kind of stuff that dopamine, you know, dopamine dysfunction creates. Also, that lack of motivation, that kind of malaise feeling. Right. All of that goes along with the dopamine side, the serotonin side.

You start to get more anxiety, more depression. The other thing it does is it creates inflammation in the central nervous system. When it creates inflammation in the brain, it takes the tryptophan, which is an amino acid that needs to be converted into serotonin and melatonin instead of being converted to serotonin, your happy hormone, and melatonin, your sleep hormone.

It converts it to something called Kinney, renin and acid. Those two compounds are neurotoxic, so they actually drive more inflammation and disruption in the brain, creating more brain fog, more anxiety, more depression.

All the while, you're not getting enough of your happy hormone and sleep hormone, so you can't sleep. You don't feel happy, you're not motivated, you're having brain fog.

You can't remember anything. All of these things are occurring because of this gut brain disruption, starting with leaky gut and endotoxin right now, the other part of that, the metabolic side, why that's tied in, is that the gut talks to the brain.

When you eat food. When you eat food, it's the gut that goes, okay, I have enough calories. I need to stop the hunger hormone and need to start up regulating something called leptin, the cited hormone, so we could start burning fat for fuel, metabolizing sugars, bringing sugars into the cells, and so on.

All of that doesn't happen effectively when you have a leaky gut. And this compounded this dysfunctional gut brain communication. So your gut is not talking to your brain, which means you continuously produced a hunger hormone even while you're satiated, actually physically satiated.

Right? So people tend to start overeating more than they used to. They even get cravings. Now, I also mentioned that the liver gets dysfunctional because a lot of that toxin goes to the liver.

Deliver is a very important part of your energy metabolism, right. Because remember the liver activates your thyroid hormone, right? That's how you get from T4 to T3.

The liver does that a lot. Thyroid is a master regulator of your metabolism. Once the liver is undergoing a lot of endotoxin dysfunction, you're not activating as much thyroid hormone.

So your metabolism starts to slow down as well. So that story keeps going on and on and on and gets worse and worse. This is why as you progress from perimenopause to menopause and further you feel more anxious.

You feel less happiness, you feel more brain fog, more memory issues. You know, it becomes metabolically, becomes harder to maintain your body weight.

You put on more weight and all of those things start to fall apart. But it all comes from the same exact dysfunction, core dysfunction, which is a loss of diversity and a hyper permeable intestinal lining.

That's what a fascinating answer. And honestly, not even just for women. I can't tell you how many male patients I have who fit that description. You just gave 2AT.

Yeah. And also, you know, male male menopause pause causes a very similar thing. So that's another reason why as men when we hit our, you know, mid to late 40s, we start getting more obesity, more muscle loss.

You know, you know, anxiety, all of those things. Oh yeah. And honestly I you know I see it far younger. I mean I've got patients in their in their 20s who you know are seeing these issues need testosterone replacement, need their guts addressed.

It's such a common thing I think, especially in today's world where like you say, it's antibiotics, it's hormones and all our animal products. There's all the, you know, inflammatory seeds.

I mean, we could we could spend the rest of the time talking about all the creative ways we like to poison our food supply and our population and the effects on the microbiome.

So I want to switch gears a touch here. So we hear about the gut microbiome all the time from experts such as yourself and, you know, numerous other sources.

But I was wondering if you could speak about the vaginal microbiome and what women can do to support that naturally as well. Yeah, that's so important. I'm glad you asked about that.

So the vaginal microbiome is very different than the gut microbiome. So I've talked about this word diversity when it comes to the gut microbiome, which is arguably one of the most important features to have a healthy gut microbiome is you want to have high diversity.

The vaginal microbiome is exactly the opposite. You do not want anything close to diversity in the vagina microbiome. In fact, most healthy vaginal microbiomes are predominated by single species.

So, like Lactobacillus is one of those that some women have as 98, 99% of the population, you know, there's there's gas awry and a number of other ones.

So there's about three different types of lactobacilli that women can have as their predominant microbe in the vaginal canal. Now, we don't want diversity, and we want to maintain almost a monoculture in the vaginal canal.

And what happens when you start to gain diversity and you lose that monoculture is, of course, the vaginal FR changes as a vaginal P. H. changes. And the reason the changes, which is the acidity in the vaginal canal, the reason that changes is because the predominant strain are all lactobacilli.

And lactobacilli do a fantastic job of producing lactic acid, and so they maintain a lower acidic for in the vaginal canal. But when their numbers start to decline and you start to get higher diversity, and we'll talk about what creates that higher diversity that you don't want, what starts to happen as if it starts to rise as a faster rise.

You start getting fungal overgrowth. You start getting pathogens from fecal matter, which is of course, proximately very close in proximity to the vaginal opening.

Absolutely. Right. E.coli and Klebsiella and so on. You start getting more of those organisms growing in the vaginal canal, and that they cause a lot of inflammation.

They cause a lot of irritation, and they can lead to infections that go all the way up through urethra, urinary canal, bladder infections and so on. But what the studies show, which is interesting, is that the maintenance of a healthy vaginal canal is a huge part of fertility.

The Vaginal Microbiome and Natural Support

And so for childbearing age this becomes important. But in perimenopause, in menopausal women, when you start to see an increase in diversity and so a dying off of that monoculture, you get vaginal dryness, you lose the mucosal layer of the vagina relatively quickly.

So you get a lot of pain from intercourse and a lot of discomfort. And it also has an impact on hormone vessels, you know. And so this is why Esther diol vaginal creams are so effective.

Because, you know, estrogen again feeds beneficial microbes, which is one of the reasons why when we talked about earlier, when estrogen levels drop, a lot of the beneficial microbes start to drop off in the gut because and as a result, diversity is lost.

Right. So one of the roles of estrogen and Esther diol especially is it makes its way through the mucosa into the vaginal mucosa and feeds the beneficial bacteria in there.

So what are some of the things that women are doing that that drives more dysfunction. And then what can they do to improve the vaginal microbiota. Right.

So some of the things that they're doing is if there's in their perimenopausal period, but they're still in their Parramatta Plaza phase and they're still having periods, right?

So they're still cycling to a certain degree. If they're using tampons, they are absolutely accelerating the dysfunction of their of their vaginal canal.

One of the reasons for that is because tampons and this there's been some studies on this showing that the high absorbing cotton in tampons suck all the moisture out of the vaginal canal and dries out that canal, actually killing off the beneficial lactobacilli.

So as much as you can, you should use pads instead of tampons, right? So that's one most personal lubricants on the market will hurt and destroy the vaginal microbiome.

Right. So you want to be very careful because all of these these lubricants are water based lubricants. And as a result of being water based, they have to put antimicrobials and all that in there to maintain shelf life.

You cannot have a water based topical product. It's still considered topical even though it's going internally in the in the vaginal canal. You cannot have that without harsh antimicrobials.

The FDA won't allow it because it'll spoil and it'll grow microbes very quickly. But those same antimicrobials will destroy your vaginal microbiome. So personal lubricants is another big issue.

The detergents you use can be very harmful if you're washing your underwear in detergents and fabric softener. Right. So you're conventional detergents that can have a negative effect on your vaginal microbiome.

If you're spending a lot of times in hot tubs and pools, all of that chlorinated water can also be an issue. And then the fifth thing is your gut health.

So your gut microbiome and your vaginal microbiome are directly connected. And in fact, your gut microbiome to some degree feed your vaginal microbiome.

And the immune system in your gut also plays a very important role in controlling the growth of bacteria in your

vaginal canal. So if you have a dysfunctional gut, you're more than likely going to have a dysfunctional vaginal microbiome.

So now on the other side, what can you do? Right. Number one, like I mentioned, tampons go to pads if you're still cycling. If you're not cycling, then that's not something you need to worry about.

Number two personal lubricants. Have we talked about instead of using the personal lubricants that you buy at the store, I would use organic extra virgin olive oil.

Right. It's not only is it not harmful to the vaginal microbiome, there's actually some indication they could be beneficial. Right. But just keep this in mind as there's one little caveat here is as no studies on use of olive oil, on with contraception, with with condoms.

So you don't know what happens with the integrity of condoms. So if you're still using that kind of form of birth control, then I would caution you not to use it.

But if you're not using it and you need a personal lubricant, absolutely. Look at something like extra virgin organic olive oil. And then the other part of it, you know, if you're if the vaginal canal is already showing signs of disruption, minimize your time in hot tubs and pools and things like that.

Clean up what you're washing your underwear with. I would, in fact, not even put your underwear in the in the washer. I would hand wash it. You typically don't even need any harsh soaps, right?

I would absolutely hand wash it and just line dry it or air dry it. That way it's not going in with fabric softener and all that. And then work on your gut health.

And then there are a couple of probiotics that actually have been shown with significant amount of studies to improve the vaginal microbiome. There is a Lactobacillus strain.

So g DS one is another strain. A company called Microbiome Labs has a vaginal health microbiome. That can also be very helpful as an add on. But do the other things as well.

The probiotic alone is not going to just resolve all the problems if you're not considering the other changes. Gotcha. Oh man, so many more questions.

I would love to ask you, but most unfortunately we are out of time here. Karen, this has been such an informative and fascinating conversation. I really do wish we could keep going, but unfortunately, like I said, out of time, places to be, things to do.

So I would just like to thank you once again for spending the time with us today and sharing your immense expertise. I know I and everyone listening are all the better for it.

Where can our listeners learn more about you and your work? Yeah, well, thank you so much for having me. First, I always appreciate an opportunity to share this kind of information and empower people with it.

And thank you for putting on programs like this, because this is the the keto program. Like this is it empowers people with knowledge and information so they can get like they can advocate for their own health, which is the most important way to achieve beneficial outcomes where people can find more information.

So I have a website called biome LC. So it's WW biome L, the letter L, as in Larry C is in Charlie. It is a.

Closing Remarks and Where to Learn More

It's the biome learning center community. You've got. If you come on there and you sign up for a free membership, there's no cost for that sign up. I'll give you a free guide on leaky gut, on understanding leaky gut better what all it

does in the body.

And then my five pillars that you can look at of how you start to modulate leaky gut. Right. We talked about how important it is to take take control of leaky gut.

We have we have access to that for you over there. And then you can also follow me on Instagram at Kiran Biome Kiran Biome. And in both places we put a lot of information.

But in that circle community it's great. We also have practitioners in there that are microbiome trained and answer questions, and this is a great little place to empower yourself.

Fantastic. Everyone go check out his website. Go get some of those free handouts and information that he's offering and follow his socials. Kiran is the king of the microbiome.

All right. So Kiran, thank you once again. And thanks, as always to our audience for again taking the time to learn more about your health. Please join us again next time for another excellent conversation.

But until then, everyone take care. Thank you. Thank you.