From Leaky Gut to Longevity: Understanding Gut Health, Inflammation and the Path to Better Health Transcript

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Introduction and Guest Background

Welcome to Energize and Revitalize with Dr. Amy. I'm Dr. Amy Coopersmith, a doctor prepared nurse practitioner, and this show is about empowering you to live a radiant, healthy, and balanced life.

I'm very excited to welcome back today's guest, Dr. Angelo Ippolito. Dr. Angelo is the owner of Palm Coast Health Chiropractic and brings over 30 years of experience in chiropractic care, providing patients with an effective alternative to injections, surgery, and medications to resolve pain.

Dr. Ippolito completed his undergraduate studies at Yale University with a degree in molecular biophysics and biochemistry. He continued on to New York Chiropractic College, where he received his doctorate of chiropractic graduating magna cum laude.

Dr. Angelo focuses on personalized treatment and advanced technology. He ensures that each patient receives comprehensive care tailored to their unique needs.

Welcome back. Dr. Amy, thank you for having me. I could not have said that about me better myself. Awesome. Well, I asked you back here today, you were here before and we talked about myokines and how muscles act as messengers to tell the body to magic muscle molecules.

Yes. And it was such a great conversation. And during that time, we talked just for a moment about the gut. And I said, we need to explore that topic more.

It's incredible. All of that talk about muscle and just a few lines about the autoimmune disease and the gut. And I think you told me that perked the most interest.

Yes. So here we are revisiting that topic. We're going to expand upon it. Excellent. So why is gut health so important? So let's, I will put this in context of I'm a chiropractor.

Now in general, we could talk about gut health, but I should talk more, at least touch upon why as a chiropractor, this is an important topic. So as a chiropractor, I see people with chronic pain.

And it turns out that I'm sure we'll get into there's a connection between having ill health in the gut, primarily the small intestine, the barrier that is supposed to protect circulation from the contents inside the gut, and when that is faulty, something people will hear mentioned as leaky gut, when that happens, That could be a driver of chronic pain.

Why Gut Health Matters for Pain and Autoimmunity

So that's where I come in. That's my interest. And it's not just something that can lead to chronic pain. It can also lead to autoimmune disease. Yes.

Yeah. All kinds of things are impaired when our gut is just not happy. So are there certain, do you feel like we're having an increase in gut, we'll use the word dysbiosis, when the gut is not healthy?

Do you feel like that's worse now than it was, say, 20 years ago? I would have to just take a guess on that. I would say yes, only because the triggers for the leaky gut seem to be more prevalent.

And we can touch upon three particular triggers. We could talk a little bit about gluten. And I would say there's

probably more gluten in the diet now than there used to be.

Alcohol consumption. Alcohol is another trigger. And I can tell you as a chiropractor over the years, and it's very, very disturbing, more and more people are reaching for what are called NSAIDs, nonsteroidal anti-inflammatory drugs like Advil, like naproxen.

More and more people are reaching for these things. And that also can be a trigger for breaking down the gut barrier. Well, let's start with gluten. So gluten is the protein found in wheat and certain grains.

So how does gluten affect the gut? All right. And before we jump into that, I think it's important for people to understand. When I was in biology in high school, we learned about the digestive system.

And it turns out that that's only one part of this whole gastrointestinal system. Exactly four parts. So it starts with eating, which is ingestion. And there are enzymes there.

We need to chew. This is a very important component of how we process and absorb our food. Then there's the digestion part, right? So then you get your digestive enzymes in the stomach from the pancreas.

But I think the most important part of this process is the absorption. That's where things now either get in or don't get in to the circulation, and that happens at the small intestine.

And then finally we have excretion. So there's many systems going on at once here. So again, when we say gut, what we're going to be talking about is absorption and what happens there.

The three elements that we should mention are the cells themselves. So the small intestine is an organ, and it is lined with cells called enterocytes, and that's the first line of defense.

It's a single layer of cells, and just like any other cell, they're supposed to function, they're supposed to make energy, okay. Now, those cells line up in a certain way where they're tight packed together.

How Gluten Weakens the Gut Barrier

It's called a tight junction. And it's a very important thing that they line up in that way because if the tight junction, as we're gonna see, is disrupted, you're now letting things go into the circulation that shouldn't.

And keep in mind, anything inside the gut is technically outside the body. So, you should allow nutrients and water to pass through, right? Disaccharides, monosaccharides, amino acids, fatty acids, etc.

What you don't want are things like bacteria, bacterial fragments, we're gonna talk about one in particular that's really a problem and drives pain, and just large protein molecules in general.

Because when these molecules start to pass through into circulation, the immune system is triggered and that is, and we'll get into this a little later, that's the start of autoimmune, right.

All right, so we have these. I went off on a tangent. That's all right. We started with gluten. Yeah, so we have these tight junctions inside the intestine.

Right. And so how does gluten disrupt those tight junctions? So as you said, gluten is actually a family of proteins, a bunch of proteins that we find in wheat, barley, and rye.

And the one protein in that family that's been studied the most is called gliadin. So gliadin is a protein molecule. So imagine now this gliadin is in your gut and now it's going to interact with the enterocyte.

Here's what it does. It makes that enterocyte, it makes that small intestine cell make a protein more than it should. And the name of that protein is zonulin.

So yeah, we're throwing out some technical terms, but it's important to know this. These are things people have heard, though, and they're like, oh yeah, I've heard that term zonulin.

There you go. So the zonulin is made by the enterocyte in response to being subjected to the gliadin. The zonulin then leaves the enterocyte and attacks the tight junction.

As zonulin is upregulated, you're more likely to get a disruption in this barrier. And I like a better term for leaky gut is increased intestinal permeability.

It's supposed to be selectively permeable. So that's, in the case of gluten, that is what is gonna cause that tight junction breakdown. Now, do you think that's modern processing and the American diet?

I've talked with other guests. When you go to Europe, for example, you can eat bread and you don't get that yucky feeling that you get when you eat bread here.

So is their gluten different than ours? So I'm not an expert on that, but it's very funny you just said that because I think Well, we could take a real detour into pesticides and glyphosate and those kinds of things.

And then we could also talk about the history of wheat and how it's been hybridized and it's not the same. But you know something? My opinion, gluten is gluten.

You know why I know this? A patient of mine brought me some bread last night. She came in for treatment. She went to this local place. Apparently the baker uses flour from Europe.

And wow. Was it delicious? It was, but it pretty much had the same effect on me as any other bread. So this is another interesting side light. When people talk about being gluten sensitive, top of the food chain there is celiac disease.

So there are people, you've seen them, we know who they are. One morsel of gluten and they're in trouble. And this is all dictated by our genetics. So some people are genetically predisposed to be super sensitive to gluten.

And now, over the years, I've heard people say, well, this is a myth.

Alcohol, NSAIDs, and Microbiome Disruption

And I'm going to tell you that, again, 30 years of experience, including myself, and i believe there's some sort of a spectrum and it's probably genetically influenced where everybody to some extent has some kind of gluten sensitivity it might be mild it might be moderate might be severe but gluten is something that I think affects everybody on some level.

It actually affects the nervous system. That'd be a great topic. But yeah, gluten is, and then when you start to talk to people about, well, I don't care about gluten, it's not gonna affect me.

I point out, let's take a step back and let's just examine the foods that have it, like a bagel. So maybe you shouldn't be eating that food in the first place.

Forget about the gluten because it's refined flour. But again, I went off on a tangent. I'm not sure. I think gluten in Europe is still gluten. All right.

Well, I was kind of hoping that we could get away with having the gummy stuff from other places. You can't escape it. My fiance and I were having the bread last night and she even said, why does this have to be a problem?

So I think, again, moderation. So we know unless we have celiac disease where we can't have any gluten, if we have some degree of sensitivity to just not overdo it and make sure it's good stuff when we do have it.

Right. And that's a great point. And the problem is there are so many other things. So maybe some delicious baked sourdough bread or, you know, once a week shouldn't be an issue.

But if this person is having three beers every day, and because of the knee pain, he or she is popping Advil like it's candy, so it's a cumulative effect.

So in a perfect world, if nothing else was a trigger, have your gluten, have it, and enjoy it. But for a lot of people, it's a multi-pronged attack on our gut barrier.

And I think the cumulative effect, like you mentioned, things do build up over time. So you mentioned alcohol. So how does alcohol affect our gut and our pain?

Talk about something where you said, why does this have to be a problem? So at the end of the day, alcohol is, it's the ethanol that's in alcohol. So when you take that in, Ethanol is converted to something called acetaldehyde that is the molecule that is a real problem that is the it's much more toxic than ethanol and Again, there's a lot of genetic predisposition here, too.

There are some people that don't have the enzyme to metabolize the acetaldehyde, so it stays in their system longer, so these people are gonna be affected by the alcohol longer.

Anyway, just like gliadin, same thing, but worse. So the acid aldehyde is now in your system. Number one, it's going to go after the tight junction and break it down.

Number two, it's also going to affect the enterocyte itself, up regulating oxidative stress and inflammatory stress. So that's a problem for the cell itself.

Three, We haven't mentioned yet something that is probably more important than anything we've talked about regarding the gut, and that's the microbiome.

So the bacteria, which are not in the small intestine, they're mostly in the large intestine, they play a crucial role in our overall health. Guess what alcohol does?

Does it disrupt the microbiome? It alters your microbiome. And what it'll do is, A healthy microbiome, you know, we've heard the terms good bacteria, bad bacteria.

At the end of the day, with so many other things in health, there's a balance. So you cannot get rid of the bad bacteria. You need a balance of both. It turns out Most of the good bacteria are from the strains Lactobacillus and Bifidobacterium, and there's lots of different sub-strains, but you want those.

What you don't want are something called Gram-negative bacteria. Alcohol destroys the good and it upregulates the Gram-negative, And we'll come back to the gram negative because there's something about that type of bacteria that has something on it that can cause chronic pain.

Fascinating. I'm going to have you hold that thought. We're going to pause for a break from our sponsor. You're listening to Energize and Revitalize with Dr.

Amy. Don't go anywhere. We'll be right back. Welcome back to Energize and Revitalize with Dr. Amy. I'm Dr. Amy Cooper-Smith and my guest today is Dr. Angelo Ippolito.

Before the break, we were talking about gut health, the microbiome, and how certain outside things that we ingest can disrupt our microbiome. So we talked about gluten and we talked about alcohol.

So what else can disrupt our microbiome? well there's a ton of things but what you know i think the most common i came up with for the for the for the show the gluten of course alcohol and n says yes non-steroidal anti-inflammatory drugs people know this as advil naproxen there's another one diet Diclofenic, that's voltaren.

So that's the prescription version. Right, okay. And this is such an irony. So people take these things for musculoskeletal pain. And how this works biochemically is they inhibit a pathway called COX-1, COX-2.

These are enzymes that drive the production of prostaglandins. Now, this gets a little more complex, but one particular prostaglandin is called prostaglandin E2.

And when that gets too high, that can trigger Pain, it activates nociceptors, pain, okay. So you take the Advil and you shut that down.

How Leaky Gut Drives Inflammation and Chronic Pain

It turns out, and again, what we talked about before, balance. Well, you don't want too much prostaglandin E2, but you still need some because it actually regulates the integrity of the gut.

So it will support blood flow to your gut. So when you shut it down completely, you now lose that benefit from the prostaglandin E2. So now NSAIDs are contributing to this whole leaky gut thing.

The other thing that NSAIDs are, they're molecules, they're chemicals, right? We know what that is. So they are considered weak acids. And it turns out that if you subject the enterocytes, those cells that line the gut, to weak acids, it gets into the cell and it disrupts the mitochondria, which is where ATP is made.

And those, and the enterocytes, I'm pretty sure they have the most turnover than any other cell in the body. So these cells require a lot of ATP to function, okay?

So if you take that away, their energy starved. They're tired enterocytes. And you know what a tired enterocyte can't do? Maintain a tight junction. It weakens.

By the way, this is fascinating when we're talking about because I did a little extra homework for this, and there are things in cells that mimic little muscles.

It's called cytoskeletons, and they give cells structure. that requires energy. And if for some reason the cytoskeleton is deprived of energy, it just gets tired and you now get a loosening of the tight junction.

So yeah, so the sad irony is you're taking this for the musculoskeletal pain, but At the end of the day, you're perpetuating it. So maybe we, at some point, should now talk about, well, how exactly are these things that are getting into the system generating pain?

Yes, I think that's really interesting. And, you know, the NSAIDs, you know, I was a primary care nurse practitioner for many years. I think people feel like they're safe because they're over the counter and they just can maybe overuse them and then it doesn't just disrupt the gut, it can cause ulcer and it can affect your kidneys too.

Dr. Amy, just like anything else, and we talked about it earlier, you wanna have some delicious bread every now and then, go right ahead. You wanna have a glass of wine, fine.

Every so often, two, three days of Advil is perfectly fine. And it's a wonderful pain reliever. It is, it works. I take it for a headache once every two months.

Right. Well now more recently, I take them more frequently now because the Giants are playing. Oh no. But anyway, but again. in moderation every so often.

But I've had patients where, like you do, I ask them, what do you take? Oh, I'm not on any prescription pain medication. Good. Well, what do you do? Well, I take Advil three times a day.

For how long? 15 years? What? So it's a problem. It's a problem. So education is important, like what we're doing, both here in our practices. So you mentioned, right before I cut you off, so what does happen when that junction is

compromised and things get into the blood?

What happens? So this is just a very specific component of everything we're talking about, but this is, as a chiropractor, very important for me to know this.

So we talked about some of the bacteria, the good bacteria, the bad bacteria. The bad bacteria are the Gram-negatives. When they break down and die, they have dead fragments.

Healing the Gut and Supporting Recovery

One of the fragments that'll come off a Gram-negative bacterium is something called, it's a long, great Scrabble word, lipopolysaccharide. It's just something that's on the cell wall of this gram-negative bacteria.

That should never get into circulation, because when it does, it is now gonna interact with immune cells. So one immune cell, we might know something about a macrophage.

It's one of the white blood cells. It's an immune cell. And when the macrophage interacts with the lipopolysaccharide, it signals the macrophage to make more inflammation.

Once again, the word balance. You need inflammation. You need a balance between pro-inflammatory and anti-inflammatory molecules. But that's not the case for a lot of people.

So now these immune cells are making a lot of pro-inflammatory molecules. Well, that inflammation is in your system. It's triggering pain receptors. And what it does is it lowers the threshold.

So what should normally not be painful is now all of a sudden painful. And it has to do with a term called sensitization. Things get sensitized. And it can happen in the periphery, in the joints.

It can also happen in the spinal cord. And basically all this means is things that shouldn't hurt now hurt. And you, I see a lot of these people. And yeah, sometimes I'll get somebody that lifted something heavy and I kinda know, well that's what caused the back pain.

But a lot of times, there's no trauma in the history. And this has been going on for years. Chronic pain. Chronic. So now I have to now look at something like gut health.

Because this person, by the way the term is endotoxemia. So the lipopolysaccharide is a toxin. and you don't want it in the blood. So it's a toxemia. And over time, and this is what probably is causing fibromyalgia, you know, this catch-all diagnosis.

What is it? Nobody knows. Well, it's probably coming from the gut. It's so fascinating how what's happening inside our intestines can affect so much on the outside.

Right, especially when the stuff that's inside is allowed to leak out. It's not supposed to. It should stay put. Right, so we know these three things especially can disrupt the gut barrier, so we should maybe limit those or have them in balance like we talked about, but what else can we do to heal our gut?

So I have a nice list, by the way, I'll tell the audience full transparency, I have notes here. I was so fascinated by this topic that I had to go back to school and learn.

We like to do homework, it's okay. And it's such an important topic, and I wanted to make sure I was prepared. But if we came up with a very basic gut health protocol, so the first thing, as you just said, remove the triggers, okay?

Eat less gluten. Don't drink as much. Don't take NSAIDs. Believe it or not, another diet component which is fascinating is either a super high fat diet or a diet that's super high in sugar.

And the fat, that caught my eye because there's a lot of keto people out there. Well, it turns out that if you're only eating that and you're subjecting your microbiome to too much fat or too much sugar, It alters their chemistry.

So at the end of the day, you need a balanced all carbohydrate, fat, protein, and we'll leave that there. The other thing you're gonna do is you're gonna repair the barrier.

Okay, so glutamine is a very inexpensive, you can get it in powder form, five to 10 grams a day, it's tasteless. Interestingly that an enterocyte can use glutamine for fuel.

So most cells use carbohydrates, fatty acids. The enterocyte can actually use glutamine to make energy. So you wanna do that. So you get a powdered source and you just kinda add it to.

Oh yeah, I drink it all day. Okay. Vitamin D, omega-3s, they're gonna also factor in. There's an interesting form of zinc called zincarnosine. And for some reason, that has an affinity for gut health.

And then, as you and I spoke during the break, there's a peptide out there, BPC-157, that is supposedly phenomenal to heal the gut. And no side effects.

No side effects. It's a wonderful peptide. What else do we want to do? Well, if we think that our microbiome is altered, you can get a good quality, and put a star next to that because that's not easy to find, but a good quality probiotic that has a nice assortment of the lactobacillus and the bifidobacterium.

What's your opinion on does it need to be refrigerated or not? My opinion, and this is totally opinion, the better quality over the years that I've used need to be refrigerated.

Now I'm sure there's a company out there that's gonna tell me, well no, we have some patent on that, good. I feel better when it's in the fridge. Another way to get good quality bacteria back in the system, eat fermented foods.

That's really big right now. And people are catching on. So sauerkraut, kimchi, those are my favorites. I'm not a kefir person. I just ordered some pickles that were specially fermented and they have to be in the fridge.

I'm glad you said that. There's a company called, we're not pushing a company here, but it's called Olive My Pickle. And a lot of people think a pickle, no.

And just because it's dill, there are certain pickles that are fermented and they are absolutely delicious and loaded with good bacteria. And then finally, anything that you would do and I would do to reduce inflammation, of course, vitamin D, omega-3s, turmeric is a great herb for this.

And then, do you know anything about systemic enzymes?

Closing Remarks and Contact Information

So have you ever heard of a product called woob enzyme? No. I'm learning. Okay, so we know enzymes, usually we associate it with digestion. If you take proteolytic enzymes on an empty stomach and there's no food around, they get absorbed into your system, and they gobble up things and they actually chew up inflammation.

So systemic enzymes would be a great topic for another show. So how can people learn more about you? How can people contact you? Oh, okay. Best way would be PalmCoastHealth.com.

I am extremely excited to announce that I'm moving my office in two weeks to the city marketplace. I ask, you know, it's funny, I tell my patients, I'm going to City Marketplace, they say, what the heck is that?

I say, I'm going near Dominic's Deli. Oh, of course, I know exactly where you are. Well, that's where we're going, ground floor, but the website will have all that information.

Congratulations. Thanks again for joining us today. Thank you for having me. Thanks to our listeners for tuning in to Energize and Revitalize with Dr.

Amy. If there are topics you would like to hear about, please send an email to radiantpodcast2025 at gmail.com. Check out our past episodes on Amethyst Wellness YouTube, and we're now featured on Apple podcasts and all your favorite platforms.

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Until then, stay healthy, and here's to your best life.