

Your Genes & Weight Management

Chrissie Williamson, PhD



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Rebekah Kelley: Welcome to the Humanized podcast, all about personalizing your health. I am your host, Rebekah Kelley, and today we'll be discussing Your Genes and Weight Management with Chrissie Williamson. But before I introduce Chrissie Williamson, I want to remind everyone to subscribe and get all the other variety of casts in audio, video and transcription at HumanizedHealth.com. I'd also like to thank our lead sponsor, Village Green Apothecary, at MyVillageGreen.com.

So, Dr. Chrissie Williamson is a master of the biochemical and nutritional sciences. As the owner and founder of the Nutritional Genomics Institute, she has dedicated her life's work to revolutionizing personalized medical nutrition. Chrissie's systems medicine approach encompasses both cutting edge genomic technology and functional testing, offering the highest level of metabolic evaluation, and lights a path for lifelong healing and wellness. Dr. Chrissie, thanks for being with us.

Chrissie Williamson: Thanks for having me. Excited to be here.

Rebekah Kelley: So, I am so excited to talk about this subject. And I know that this is very much within the context of what we are about at Humanized Health, personalizing your health care. And you actually do that, down to the snip [SNP, or single nucleotide polymorphism], right? So we're really getting into something that's really, really personalized. So can you explain how genes can impact metabolism and weight?

Chrissie Williamson: So that's a question we get all the time, is how do your genes and your blueprint impact your metabolism and weight, and is a genetic? And gosh you know, everybody in my family's overweight, and this must impact me, so I'm just gonna sit on the couch and eat bonbons and chips and not worry about it cause it's in my genes and, I'm just, why bother?

So, part of that is true and part of it isn't true. We inherit a lot of things from our parents, some good, some bad. One of the things that babies inherit from their parents is actually their microbiomes, especially if it's a vaginal birth. So, we do get our microbiome obviously that way. And then we also get it from living in the same environment as our brothers and sisters and our parents. So that's one thing that actually strongly influences our metabolism and our weight regulation. So the bacteroides and firmicutes ratio is something that's been studied quite a bit in terms of whether or not we are going to have a weight loss pattern or not.

Testing is important for that, as well. But we also pick up a lot of our parents' bad habits. So, if mom and dad happened to go and stress eat, then we may go and stress eat, too. Now, are there genes that are associated with stress eating? Of course there are. Are there genes that are associated maybe with dopamine deficiency that might cause us to maybe want to eat a little bit more from time to time? Of course there are. But then there's also cultural things, as well.

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So, to answer your question, can genes impact metabolism and weight? Sure. But I think your epigenes or epigenomics have a much larger impact on your metabolism and weight. So, your environment, how you're actually going to make those genes express themselves, have a bigger impact on your true weight, final weight anyway. So it's the environment loading the gun, or sort of the genes loading the gun and the environment pulling the trigger kind of thing.

Rebekah Kelley: Right. Wow. Fascinating. So, what are some key snips that can influence an individual's response to their diet, like fats, protein carbs... are there some that influence body weight, appetite, blood sugar, diabetes risk, circadian rhythm, all of these kinds of things. Can you share more about that?

Chrissie Williamson: Sure. Yeah. There are some that have been really well studied that really do impact whether or not you should or should not eat certain macronutrients or that really truly do impact your risk for certain diseases. There's a study that just recently came out just a couple of days ago that reinforced what we call the classic yang study of 2007, about saturated fats. Because of course we hear all the time, oh, saturated fat is good for us, and saturated fat is bad. We're not really sure whether we should eat eggs or not... you know, all these different things. And it suddenly came out...

Rebekah Kelley: It's so confusing. There's so many messages and it's hard to know how to take care of yourself, and you hear this and you hear that. But you're saying it might depend, right?

Chrissie Williamson: It does depend. None of the studies, or most of the studies, do not control for genotype. So, this study actually came out, it was a cardiology study and thank god, finally they said it depends on your genotype. Woo! Oh my gosh! So, it's the APOE4. So, if you've paid attention to Alzheimer's disease or cardiovascular disease or playing in the sandbox at all, you've heard of this snip. But heart disease and Alzheimer's are basically controlled by the same gene, and so it's the saturated fat gene or it's a fat carrier gene. Um, and the way I describe this is that, when you – and I said, um [laughs]. I was trying not to say um [laughs]. When you have this fat carrier gene, um – I did it again. You have this fat carrier gene... and we're going to laugh about this. For those of you who are watching this, I was really trying not to say um this time, um, it is a habit of mine and I'm really trying not to.

Rebekah Kelley: I think it's adorable. Keep it up!

Chrissie Williamson: I'm going to blush and turn red this time. So the fat carrier gene, if you have a broken fat carrier gene, or you carry the number 4 allele for this, when it has fat on it and it gets blocked or lodged in your brain or in your arteries, when this happens, then that's when it causes inflammation. And that's how we get, essentially, Alzheimer's or cardiovascular disease. So the way that we prevent that – unfortunately, we don't know how to modulate this particular gene – we just don't eat saturated fat. Pretty simple, okay? So this decreases our risk for those two diseases and things like type 2 diabetes, et cetera, ad nauseum.

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If you're luckier you carry the neutral allele, the number 3 allele, then saturated fat's not such a big deal for you. Now interestingly, the APOE2 allele actually carries some risks. So you don't quite get off the hook if you're one of those rare people, and I actually have this gene, too. If you have two of those, then you're in big trouble, then you have something called beta dyslipidemia. So that can be problematic, too.

But I guess the point here is that when we're looking at whether or not fat is good for you or bad for you and how it can actually express in terms of your disease risk, you really do have to look at genes.

Now, how does that actually translate into weight? Well, we end up looking at a whole bunch of different genes. So one gene does not equal disease in most cases. We end up having to look at hundreds of different genes. So the super nerds over at NGI [Nutritional Genomics Institute], we tend to look at these giant algorithms, and then we look at biomarkers that correlate with these algorithms. So when we're looking at things like whether or not you're at risk for yo-yo dieting, for instance, we look at a certain gene called ADIPOQ that regulates adiponectin. So, if you happen to have variations and a gene like adiponectin, then if you happen to even get overweight at one point... So let's just say you've lost 30 pounds or you're those people that happen to have been on The Biggest Loser and you've lost a 100 pounds, and you have issues and this adiponectin gene, your fat cells are literally like Kate from the Titanic, "Come back, come back!" and they're crying and screaming and throwing a hormonal hissy fit. Now that gene plays with the leptin receptor gene, who also plays with the ghrelin gene, and it literally will sit there and say, oh, we're going to make you be really hungry. And then we're going to make you be cranky if you don't get fat or sugar, that we're throwing up in your stomach right now. And so it will give you this hormonal cascade, make you feel miserable, if you don't get that. And you don't want to be around anybody who is feeling like that, I promise you.

So there are all kinds of things that can actually influence your weight. The good news is, is that we do know how to modulate a lot of those genes.

Rebekah Kelley: Thank god!

Chrissie Williamson: Yes, thank god for that. So, there are all kinds of little tweaks that we can do to play with the leptin genes or play with the ghrelin genes, play with adiponectin genes. There are all kinds of what I'll call aces in the hole, like ashwagandha and astragalus. There's all kinds of cool little things that we can do, depending on your particular cascade of genes.

So, all of those things impact your weight. All of those impact your weight maintenance, which is also super important. It's not just your ability to lose weight, it's your ability to maintain that weight loss. That's really important for longevity and health.

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Rebekah Kelley: Wow. Wow. So how can then genomic testing help determine the best diet for somebody, or what eating approach they need for their body, whether they're losing weight, whether they're maintaining. I mean, you've kind of given an example of the cascade that can happen. How has that then best determined?

Chrissie Williamson: To be honest, I think it all starts with inflammation. And for me, there are five pillars of inflammation when it comes to diet. One of those is fats, which we touched on. The other ones are oxalates, salicylates, sulfur and histamine. Those last four, most people have never heard of before.

We can't really measure a lot of those in traditional testing. Histamines, you might be able to measure if you have true mast cell activation disorder. So plasma histamine, elevated IgE tryptase levels, those types of things. But histamine intolerance? Most people don't really know. You know, a lot of times you're going to have some anxiety. You might have a little interstitial cystitis, or for women, you might feel like your bladder is kind of quivering all the time. You might have diarrhea after you eat, more often than not. Most people don't necessarily think about it that way. Most of them think, oh, histamine, rash, and they're going to be covered in hives. That's not really what histamine intolerance is.

We have other things like oxalates, for instance. So unless you have a history of kidney stones, most people have never heard of oxalates. But oxaluria ends up causing fibromyalgia-like symptoms in most people, and osteoporosis. So, there are all these things that we can see on some of our "fancy" functional testing and those are things that are nice to see, but really and truly, when we look at genetics, we're able to have some predictability on those things. So we're able to go, aha, we see this pattern in our genes and we're able to identify some of these inflammatory pillars without having to necessarily use some of those fancy tests that may not be available for most people. Direct-to-consumer genetic testing is cheap, effective, and really easy and accessible to just about everybody. It's one of those things where, if we can identify what some of these inflammatory pillars are, we can decrease our disease risk astronomically.

Rebekah Kelley: Wow. You know, I have one more question and this is a question that, we didn't discuss, I'm just throwing it in here as a surprise for you [both laugh], but I would love to kind of know, what's kind of your vision for the future of personalized nutrition? Because that gets to kind of the essence of what we're talking about at Humanized Health. And I think it also gets to what you're really focused in doing, with your business. So what do you think the future might look like?

Chrissie Williamson: Hmm. So, there's kind of a blend between like what they were trying to do at Theranos, and that is one of those things where we do need to scale. We need to have a, I would say, a blend of AI, that kind of goes forward, but we also need to, as a society, make sure the snake doesn't eat the tail. We have to make sure that the AIs don't kind of out-rule, and the robots don't end up ruling the humans here. So I think that's something we have to be really cautious about. But we do need super computers that are able to compute all of the different

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algorithms that go along with looking at, okay, this one gene here, this one alteration and this gene spins off 15, 20 different biomarkers and how all of those things interact. And we need to be able to have a patient walk into their primary care's office that takes insurance. They need to be able to do that without having to come to a specialist, and for that doctor to be able to say, oh, you fill up these three buckets of inflammation. You should be able to have this particular diet, and by the way, you are allergic to these types of medications or you have impairments in this types of medications, and this is your optimal exercise. These are the things, these are the basic things that you should be doing for optimal health. And that should be a basic, first initial appointment with any physician that you go to see. This should not be a specialty appointment. You shouldn't have to come to a specialty practice to get that kind of information.

So ideally, that would be, what I would like to see as the future of medicine.

Rebekah Kelley: I really love the sense of empowerment that that would give somebody, where you're not just guessing, because you look around at your family and you think, oh, I may or may not have to be dealing with this. But you actually know what that looks like and what the steps might be to take charge of your life in so many ways. I love that. That's beautiful. Thank you, Dr. Chrissie. Those are really valuable insights. Chrissie Williamson can be found at www.NutritionalGenomicsInstitute.com. I'm just going to spell that N U T R I T I O N A L G E N O M I C S I N S T I T U T E . c o m . So Nutritional Genomics Institute.com. Just to make sure they can find you.

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Chrissie Williamson: Thank you.