Biohacking Inflammation and Immunomodulation Using Genomic and Nutritional Insights Transcript

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Introduction to Bryce Wilde and the grocery store tour

All right guys, today we are joined by Bryce Wilde, aka the Wild Doctor. And this is not a joke. It's actually on his license plate. I saw him driving away from our office once, and it said the wild doctor was like, this guy is like, you know, putting it right in our face.

First of all, thanks for joining us here. Police often mistake that as while driver. It makes me know it defeated the purpose. They pulled me over all the time for speeding as an excuse.

So people are probably wondering what's going on here because they can hear the shopping cart. They see you moving around, and it doesn't look like you were prepared for a recording today.

But. Well, we need to tell everybody is that this was the intention, that how many people talk to us, ask us about food and labels and, you know, what do I eat?

How do I eat? When do I eat? We're going straight to the source. And we're lucky to have Bryce with us today. He's literally going to walk us up and down the aisles and show us all of what he's learned the last few years, and it's going to blow your mind.

Thanks again for joining us. Thanks so much for having me. I really appreciate the DNA summit, invite and being a part of the as the group of, wonderful lectures.

So we stumbled upon this one. We are right here, in Toronto, Ontario, where I was born and raised, in one of my favorite, grocers, the organic garage.

I love shopping. But every time I end up in the grocery store, it really reminds me of, one of my passions, which is to always Revere and think of the idea of evolutionary biology.

You know, how did we get from Hunter gathering, to just being able to pop into a grocery store and just grab whatever we want, or for that matter, maybe end up at a drive thru and then all of a matter of five minutes be able to wolf down our full daily caloric load.

So this always has me thinking. Obviously, I'm very, very astute as to, selection process what I want in my body, in the body of my family. So looking at labels is everything, but I thought maybe we would start off with the whole idea behind, evolutionary biology, or at least touch the tip of the iceberg as it pertains to what we maybe want to consider insofar as our genetic aptitude.

Right. And where this all kind of comes from. And so I kind of distill this down to four points, you know, what we're made of is essentially due to our genetic mutations, the discovery of fire, believe it or not, had the most impactful, you know, decision on how we ultimately evolved to what we are today.

Right. Having and that led to having more time on our hands, which ultimately then led to agricultural practices. So this is a really interesting concept.

And I'm gonna I'm going to weave this in as it pertains to DNA and genetics. So this goes back about 5 million years where a gene called our gap or a our age gap, 11 B a single point mutation on this particular gene sequence allowed some folding of the brain to occur.

Evolutionary biology and ancestral eating

So let me take a step back for a moment here. The idea that our brains and we have evolved essentially due to our ability to think and to conceive, and that personality, and to be able to be conscious of ourselves evolved only because we were able to grow larger brains.

And that only happened because our ability or this mutation in this particular single gene to fold, the brain material, the head obviously couldn't just continue to get bigger and bigger.

So this one point mutation allowed for this expansion due to surface area and folding and rippling within the brain, particularly in the prefrontal cortex.

Okay. Right. So that's that's the first sort of thing that happened about 5 million years ago. And because of that, of course, ingenuity and creation and again, personality and self conscious awareness, was allowed to happen and flourish.

Now, fast forward about 2.5 million years. We started to eat meat, particularly meat, marrow. Turns out probably the fat, in this particular, new, evolution of food consumption was probably one of the most important to fuel the brain, but also the B9 folic acid and B12, right?

Found in meat. At this point, though, it was still raw. And so perhaps one day a lot of, you know, theory suggests we started throwing meat on the fire and we saw it sizzle.

We enjoyed the aroma. Perhaps we came across a brushfire where there were animals, you know, literally being cooked within the fire. And we sampled that.

Eating cooked meat now turns out to be essentially digesting outside of your body. So this was part and parcel to the evolutionary process. We ultimately were able to digest, you know, prior to digesting.

So this saved a whole lot of time. And that goes back to, as I mentioned, we have bigger brains now. We have more time on our hands because we're not eating all day.

You see, right at the end of the day when we're consuming like our primate ancestors, still to this day, those that didn't evolve or didn't have that point mutation.

Ultimately, through natural selection, this idea, of natural selection being one of the biggest influences on, on genetic evolution, but also point mutation, this one mutation, that's our group 11 gene smarter.

Now we're cooking food. We have a lot more time on our hands. So what do we do with that time? We explore. We learn that we can get lazy. We learn that we can sort of essentially plot the land and agriculture ensues.

But there's a big irony here, and there's a big conundrum here. Soon as we realize that all we have to do is grow the land and seed and hoe the land, and now we have access to all of these grains, and we learn to pulverize these brains.

This is now only going back about 30,000 years. We get lazy and, we ultimately, you know, don't do the level of exercise that our ancestors were used to.

We're not foraging. We're not consuming a lot of berries and nuts. We're not. There's no variety in our diets, this this monoculture of grain and starch and carbohydrates, which at the end of the day is not conducive to the millions of years that led up to that point.

So what we have here is a situation where 30,000 years ago, where agriculture really blossomed and it became sort of the modern way of consuming a lot of grains and starches.

The the genetics within our body hadn't had the chance to evolve, to be able to accept this new way of eat it. And hence, this even even further to that sort of irony, here we are in a health food store today, and a lot of the

solutions are to get away from carbohydrates, to get away from refined foods, to get away from processed foods, go back to the way we used to eat, the way our ancestors age, which is closer and more adaptable to their genetics.

So we have, you know, held up within our with our biochemistry, within our body. So that's kind of a quick, full circle as to the evolutionary biology and sort of fast forward, to today.

So, yeah, that was a full circle. You literally made a circle around the floor. I was I got to see the view there. And it's interesting because when you talk about ancestral, the way you talk about it, even just that first step, people don't realize how far back you have to go to understand what ancestral means.

Meaning that if you look at our DNA, which is hundreds of thousands of years old, it's not, what did grandma do? What a great grandma do? That's a tiny blip versus how old your DNA is and the practices, you know, the duration of what was done versus what we're doing now.

And that's the gap that people aren't filling. And when we say ancestral, they're picking on the wrong stuff. That's right. Exactly. You know, so, you know, evolutionary biology takes us back, you know, hundreds of millions of years.

But some of these focal points, as I alluded to, are really only the especially those that disrupted us most and taken us off the trails have only recently been, in the last few, tens of thousands of years.

Right. You know, most experts believe that this, and and again, if we understand the idea of genetic mutation and natural selection, the pressures the environment puts on us so that this, you know, essentially encourage is those genes that are most favorable, to, become part of the story, but that I just bumped into a fellow customer there.

The genes that allow us to adapt and become most favorable to the evolution of our species, that's the general one way of, you know, understanding, evolution at large.

But these point mutations and again, taking us back just 50 million years ago to that our gap, 11 B it's a single mutation. And as we look at, you know, with the DNA company and the idea that these are single nucleotide polymorphisms, when you kind of put them all together in this big story, this may be sort of that one single nucleotide polymorphism on that one gene that perhaps allowed us to at least be able to conceive of our own DNA.

Think about that one for a second. So the idea to conceive of ourselves as individual and masters of our domain, what we did with that information, however, is probably not as ideal as it could have been.

You know, but but this has led us to a new day and a new age where we now can understand that genes and DNA are not our destiny. We're in a new age and understanding where although you can't change your DNA, you can't change.

Ultimately, what our ancestors have, you know, developed through, both natural selection and mutation. You can, however, manage genetic expression. That's what this is all about.

Today's discussion on what do we what do we potentially take to wash over our genes? I like to call it to better manage genetic expression. So I know that you've already been doing some shopping.

And whether people believe it or not, you're actually pushing a cart right now and there's some stuff in there. We're going to dive into that and see what you got.

But one question about ancestral diet. I know, often when you when you write in, you talk. So by the way, everyone should check out your books. There's a lot of amazing information there. Just look them up.

You'll find there's several of them. You talk about also fermented foods being a pillar of ancestral diet, which again, we take as more of a garnish or a supplement.

But if you look at, again, going past grandma to our true ancestors, fermentation was really important, no question about it. So the idea was that when we were hunting and gathering and foraging and eating primarily what we see behind us, you know, vegetables, berries, nuts, seeds, and of course, you know, the occasional bit of meat.

A lot of these foods, as soon as we were, you know, able to find them, had already entered their fermented phase. They were already degenerating and essentially molding and fermenting.

And, what we've come to learn about that is science is caught up. Is that introduction of those molds and bacterial sort of fermented foods. So meat that was already turning or berries that were already fermenting, is what added in propagated, a microbiome.

And we know how important the microbiome is. These are bacteria that live in our gut and they're called friendly, not because they're our friends per se, but because ultimately it's all about real estate down there.

And when we have too much of the wrong bacteria, perhaps, or too little of diversity, that's really the key diversity. So the more of the variation of strains and species that confer health benefit, the better.

And because of this monoculture, or mono agriculture rather of diet mostly, you know, you know, processed foods with a lot of those micronutrients gone, certainly not fermented.

The variety of that has been lost over time, ultimately destroyed a large part of the gut microbiome over the last, you know, maybe even just a few thousand years.

So, we got to get back to our roots and eat like our ancestors ape. Which was essentially people misunderstand this idea of Paleolithic or Neanderthal or, you know, the diet of pre 30,000 years ago to mean meat, you know, eating, you know, bacon for breakfast and, you know, a hamburger for lunch without the bun and then a steak for dinner.

That's entirely a misconception of what paleo means. Paleo ultimately means foraging or going back to the way that we ate at a time when, we had to work for our food.

Right? And, you know, and we we ultimately also experienced a lot of what we now try to do, more and more. And this is more of a fad than anything but intermittent fasting.

So we didn't necessarily have, food in our bellies at all times. So we had to work for it, and we had to find it, and we had to learn, how to find it.

So that engaged our brain and, all systems, our, our, our, our intuition was involved in this process as well. So, so we're talking about a lot of berries, the rainbow of, fruits and vegetables weren't even yet accessible to us.

And so especially berries, the, you know, deep red purple variety is the most important for us, for our immune systems and, you know, for our DNA, for that matter, a lot of polyphenols or bio flavonoids.

So consider eating the, rainbow fruits and vegetables every single day. Make sure you do get that in, because now we have it available to us and we have adapted to, consuming that way.

Fermented foods, paleo eating, and intermittent fasting

But for the your, your, your ancestors, millions of years ago, we're talking about the occasional bit of grass fed organic beef. Chicken, it turns out, is, you know, it's sort of more recent on the timeline.

We have quite adapted to that. Lots of berries, lots of, you know, nuts and seeds. And that's really what made up most of, of our diets. And if we, if we eat that way, especially if we're considering, managing a condition, a condition for which we may it may have a, you know, it may have dawned on us that relates to our genetic ancestry and or our family history and or something we're contending with today.

It's my firm belief that eating like our ancestors ain't reverting back to that manner of eating is going to heal a lot of what ails you. Right? And when you talk about fasting, I know, people are thinking in between meals, right?

They keep your stomach empty, but you even go so far as to talk about the habits of centenarians and even during the meal, like how much should you eat?

You know, what's that level? What does full mean? So, so full means, and this is one thing that the Japanese have really nailed. They refer to this as Hari hachi food or eat as if you are, you know, 20%, full, or, eat as if, you know, you have filled your stomach.

Let me take that back now. 20%. Well, eat as if you're 80% fuller. There's still a bit of a of a gap left in your stomach. I'm going to give you an illustration on that, actually.

Okay. So imagine this bag here. Actually, this bag here is your stomach. All right. And if I were to go and fill that up and do I just have not working.

So if I were, if I were to go and fill up this bag. Yeah. 20% fill with for example, fiber or fiber and water non caloric entities. Okay. 20% full. There's 80% space available.

And if you were to then fill up the rest of that during a meal time, you'd essentially be emulating, what the Japanese referred to as Hari hachi bu or eat until you're 80% full.

It's a hard concept for a lot of folks to get, but if you just follow that one little trick which is filling your stomach, which is approximately the size of, you know, two fists, 20% full, you only have 80% left to, to fill up.

And so by doing that and by honoring that practice, it's almost as if you are ultimately managing the slower your, release and your, your better, your better adhering to your caloric demand.

Right. So ito your 80% full leave, a 20% gap and then that's and we don't even know yet what that does in terms of digestion and the load on your body.

And you know, but if you look at the outcome, these people are living to over 100. That's right. The other thing that they really understand and that they honor is glycemic index and glycemic load.

And we we appreciate, you know, there's many genes that we're looking at now, TCF, you know, 702, which is the, you know, insulin, responsible for insulin sensitivity.

Many others as well. But the idea that glycemic index was always revered of, in these populations that live beyond 100 centenarians and glycemic load, they intuitively understood this, this concept that the more refined a product or foodstuff is, the quicker it's going to enter into your bloodstream and the quicker it enters into your bloodstream, the harder the more of a challenge it is for your body to adapt to that sugar load.

One example I like to give, by the way, that I consider is both like scenic index in place, scenic load as a watermelon. Certainly if you're watching your calories and your sugar as a diabetic, you may be a little bit weary of watermelon.

It's got quite a high glycemic index. However, if you consider the glycemic load that is the total sugar that ultimately is within each serving size, it's quite low.

So a glycemic index of approximately 80 glycemic load of approximately five. So the average person non-diabetic watermelon is a wonderful thing to have.

But if you look this these charts up, everyone can find these on Google glycemic index and glycemic load. It turns out that centenarians in these pockets Sardinia and Italy, Okinawa and Japan, you know, in parts of, Costa Rica, for example, you know, Loma Linda and California, without thinking about it, these people are revering glycemic

index and glycemic load, decides what they consume, which, by the way, speaking of, okay, now in Japan, there's a lot of things that these people eat, but shiitake mushrooms and green tea, among other things, they love their bitter melons, their tofu, they love brown rice.

And you might be thinking, well, that's a grain. And you just talked about how bad grain is. If you're going to consume a grain and this population's adapted to it over time, because, you know, this culture has been eating rice for a lot longer than most other cultures.

So again, that's a little bit of the adaptation that goes along with that. But the idea is that the brown rice as a whole whole in a sheath around it, the fiber intact versus a piece of polished white rice.

This is a really good sort of illustration as to the idea that this is going to take so much longer. The brown rice with a full sheath intact, that whole to digest and therefore to enter the bloodstream compared to a piece of white rice, which is boom, just like sugar, to the body, you've got, you've got the Greeks, that ultimately love, you know, their, their, a goat milk.

And this is not like dairy at all. And they're honey. So you have these individuals that are, Why do you say that? Because some people, are confused when it comes to the dairy aisle and think that in general, stay away.

But, I mean, people that lean on goat milk just seem to not have a hard time. So there's a lot of things about dairy that again, our, you know, through evolution or bodies lactose particularly found in dairy from dairy cows.

Our bodies have a problem with. And it's not found is in higher concentration. Invoke milk at all. I again I think, I think it's demographically or where it is that you live in the world.

This factors in because these individuals have been doing these things for longer periods of time, sometimes thousands of years, sometimes tens of thousands of years.

So there's a degree of adaptation. But the type of dairy that we're consuming today, being that it's from, the cow, a dairy cow, most of us. And we look at this at the DNA company, MXM six this idea that you know, lactose is nothing, that, you know, the average individual, probably about 52 or 53% of the world is actually lactose intolerant.

And of course, what we're feeding cows, I mean, these little liposomes, these, little fat, you know, pockets that ultimately, you know, we find in dairy that hold, a number of different things, such as, you know, particles from the, grains that they're consuming.

So if you're sensitive, certain grains or gluten, you might actually have exposure, in some small, subtle ways to consuming dairy and hormones and all kinds of other things that we probably shouldn't be feeding cows antibiotics.

So this goes beyond just lactose. It goes beyond just the inability to digest dairy. And this is something of consideration that, you know, we're also overconsuming dairy.

We're over consuming gluten and dairy. If we could get rid of two things that our genes or not have not adapted to, it would be great gluten containing grain.

So that is barley, rye. Some oats, particularly wheat, and dairy, which is cheese, you know, milk from cows, with the exception maybe of yogurts, you know, organic bulk and style yogurt in most folks.

You know, that's probably a good thing. Nicoya, Costa Rica, another pocket squash. You know, yams. This is their preferred starch. And they do really well with that.

I know we think about Italians, and this is Sardinia and Italy. They love their pecorino cheese. Speaking of dairy, but it's fermented and it's processed in a different way.

The outcome is so high in essential fatty acids. So taking a step back to the evolution, we talked about our gap

gene. We talked about, you know, developing a prefrontal cortex.

Due to that, getting smarter, eating meat for more B9 and B12 than cooking the meat, which is like digesting outside of the body, all of which then continue to expand and grow the brain.

There's another evolution that happened. This is only maybe about, you know, 40 or 50,000 years ago. And it was the fad one and two G. And this stands for the fatty acid desaturate gene.

So this allowed us and this is another one of those sort of point mutations. This allowed us to take things like fish, omega three fatty acids, some seeds, pecorino cheese.

More recently, you know, from those I mentioned, Sardinia in Italy, they eat a lot of this and extract the omega three fatty acids and use that for, you know, enhance brain function and growth, particularly EPA and DHA.

Ecos Pantanal acid and and doco has an orgasm. The other thing that they love in Italy, by the way, locally grown wine. Yeah. And milk facility. And I'm imagining perhaps milk thistle tea because we know this to be very important for, helping detoxification.

Maybe deals with, you know, the, the wine that they consume in that region. I don't know for sure, but that's a it's a good thing to keep in mind when we're talking about, diet and lifestyle of the modern age.

And that is detoxification is so important to enhance that process. And that bottle you just raised up, you know, made me think of the oils and how people think of Mediterranean foods and olive oils, but they're not knowing how to understand what's on a label.

And, you know, is it there's a whole racket behind that industry of cutting oils with other things, and not knowing what you're actually buying. So how do people know what's actually proper?

It's quite simple, actually. You know, just like grains are refined and pulverized and denatured to become the powdered sugar that they basically are.

So which is why we want to avoid cookies, cakes, breads, pastas, and anything that's ultimately originally a grain and pulverized into that very, very high GI index.

As I mentioned, once you take a particular a seed or a vegetable oil and you're refined, that, you're in trouble, you are ultimately just adding fuel to the fire as it pertains to inflammation.

Portion control, glycemic load, and centenarian diets

And inflammation is a medical buzz term of the day because it's essentially, at the end of the day, at the cellular molecular level. What causes all disease.

And so, refined oils can be essentially eyeballed and identified, as translucent, transparent. You can see through to the other side a yellow, corn oil or a very, very pale cottonseed oil.

All of these have a lot of the omega sixes in them, by the way, as well, which are very pro-inflammatory. You know, starting from linoleic acid. We talked just now, but the sides to Gene, this is a gene ultimately that allows us to convert some, alpha like acid into, steroids and acid, then downstream into EPA ecosystems.

Depends on oil, gas, and then eventually DHEA, which is just downstream, ultimately what we want. And so the oils that, you know, are very colorful and are rich and ultimately not processed.

So in that case, we're talking about extra virgin olive oil. I mean, it's dark green, right? Yeah. This is the this is the stuff from the first press, not ten presses later where there's still oil, but it's it's basically light yellow, maybe a tinge of green.

And and then we're talking about things like, red fruit, palm oil, you know, so this is the from the miso carp, not the central part of the palm, which is white and very, very saturated.

Not that saturated fats are back, but it's very, very, you know, on its own, saturated with calories, without any of the, antioxidants that are ultimately beneficial for us, for our health.

So, red fruit, palm oil, extra virgin olive oil, coconut oil, that's another one as well, although it's not pigmented. This oil and it's it's highly saturated, a lot of clay or conjugated linoleic acid in there and other healthy benefits.

Just entering the oil section here that, we can consume, that can ultimately wash over our cellular mechanics, especially the lipid membrane that controls the, you know, you know, nutrients in and out of the cell, hormones, cholesterol, which is, you know, overly promoted as a dangerous, thing.

So for whales, we really have to get a handle on oils. I mean, we can cook with them. The other thing to keep in mind is if and when it's a low smoke point, you want to make sure that you don't with it.

So fish oil is of course you can't cook with it. One of the healthiest oils, olive oil really shouldn't go more than 375 degrees. Breadfruit palm oil has a little bit of a higher smoke point, as does avocado oil, as does, you know, coconut oil.

So look at the smoke point of these oils and do not use them beyond, their ability to not smoke. That's what smoke point comes from, because as soon as you do now, they're denatured. And they're really messing you up.

Not just promoting inflammation, but also oxidative stress. So that's the that's the, that's, you know, top line on on oils. So I saw you know, I've been watching the background.

He's been walking around. And by the way I haven't had lunch yet. So I've been trying to pay attention and see maybe what I should go grab. And I notice, you know, lots of snacks and nuts and that type of thing.

I keep hearing such conflicting with, like, adamant belief news about nuts, which is absolutely like you said, that's what our ancestors aa. They just picked it and ate it.

And as absolute as that, to stay away Omega six it's going to make you sick. So what's the truth there. So I think it's all, you know, the age old adage, everything in moderation, including moderation itself.

And whereas I believe, you know, the idea that think about how this effort must have been for our ancestors to locate and find a stash of nuts which ultimately are, by the way, themselves, fruit, it wasn't an easy ordeal.

You don't you don't just come across an almond grove, or a bulk, you know, stash where I am here and just, like, scoop it out. And it's it's that concept of more than a handful.

Your own handful of nuts in any given day, isn't probably very good. Let's not forget, no matter what we're talking about here, calories are still a thing, right?

Most people dismiss calories so long as you have the right amount of, micronutrients, vitamins, minerals. I'm not of that camp. I think we do have to understand our basal metabolic rate.

I think we do have to have a command as to how much energy output. It's not all about calories in, calories out. We're not bom calorie meters, by the way.

This is where calories came from. The idea that you put a food like nuts into an oven essentially blow it up. And that's the kilojoule energy release.

That's how we know calories, right? The idea that this amount of food causes this amount of energy released, but that's not how we operate. Our digestive system is quite different than that.

We're not Bom calorie meters, but the idea that the 449 rule applies for calories per gram of carbohydrate, four calories per gram of protein, and nine calories per gram of fat.

These are very, so nuts and anything like oil, meats and fatty meats, of course, you know, count for this as well. This these are contributing nine calories per gram to your diet.

So a they have to be in moderation. Because, you know, you just can't if your body desires, approximately 1800 to 2000 calories a day for the average sized male without exercise, 1500 calories of, fat and nuts is no longer healthy.

So again, that moderation a handful. The other thing we want to consider is how long are these nuts sitting around? Where did they come from? Are they irradiated?

Because at the end of the day, a lot of nuts are to keep bacteria off. And are they contaminated? So you want organic non irradiated non contaminated.

And often what that is is aflatoxin. Aflatoxin is a very very dangerous spore. That ultimately, you know, grows on things like peanuts, which is by the way, actually not even a nut.

Peanuts and, and cashews are a boom of the legume variety. But nuts are notorious for carrying aflatoxin and other, you know, contaminants. So I know that's a long list to, to, to keep aware of, but to summarize your own handful of clean, non irradiated non contaminated nuts.

And that's really all our ancestors would have consumed. You know we're talking we're really not talking. Most of us way over consume food. We're way over consume calories. Bottom line.

And to get a hold of that it's really to appreciate again we'll get into that. Maybe next is whether you have predispositions to desiring to overeat, you know, and of course what kinds of genes play a role, in that, you know, executive function, that mental and emotional process, as well as just generally satiety.

There's a lot of hormones ghrelin, leptin, adiponectin, these are hormones that are control of telling our brain, you know, that we want more food. And and when we when we had just all of this stuff all around us.

Notice that I'm in a health food store, and so much of this stuff is refined. A lot of the stuff that's gluten free, by the way, has a higher glycemic index and a higher glycemic load than than average.

I mean, so you just got to be aware of these things and calculate in your head, have a good understanding of your genetic aptitude, along with, as I mentioned, you know, the amount of calories that your body needs to function effectively and optimally, as well as how much energy expenditure on top of that that you're producing on a daily basis.

Yeah, there's people like you described that often. There's a vice, meaning that there's the one thing that they just kind of let go, but it could be the Doritos, it could be the sugar, it could be some kind of drink that's caloric, some juice or something.

So there's one thing to understand if it's genetically driven, meaning your inability to feel satiety, you know, leaning on food emotionally as a coping mechanism.

Once you're aware of those things, it becomes a little easier to cope. But how does somebody I think everyone agrees with all of what you're saying, but to actually do it in practice, like how do I not eat ice cream at night, right.

What do I do? Is there do you replace it? Is there a habit you adopt? What's the thing that actually helps people build the plan and stick to it? So as you well know, there's a few genes that we look at that you know, we can determine what predisposition, as you alluded to earlier, we might have an understanding is power.

Knowledge is power. So we will look at D2, the dopamine receptor, relationship to the saturation of the dopamine

receptors on postsynaptic, nerve endings accounts for a large part of how we seek pleasure and reward as a huge source of pleasure, huge for, huge source of reward understanding that is, is power understanding, also the degree at which that dopamine might sit on that postsynaptic receptor, and all of the, other catecholamines is to play a role.

So Comt or kind of a little methyl translates plays a role in the the length or duration of time we might feel that reward. So understanding just those two genes, as you well know, is going to determine whether or not somebody, seeks, regular concert reward and at what rate and at what amount.

And then this interesting gene, the MC4, RG, which is the snacking, gene, we affectionately refer to it. Right. The desire to constantly, you know, binge or have snacks throughout the day.

So the dopamine this relates to bingeing, and snacking throughout the day. So your question is, is pointed.

Dairy, grains, and ancestral food adaptations

And it's interesting. It's also loaded. So understanding our genetic susceptibilities, there are some supplements. I'll get into that momentarily. But I'm a huge believer in, the art of forecasting and what I mean by that is, is this is actually borrowed largely from Ericksen in psychology and Neuralink, neuro linguistic programing, NLP and if you know, you have this propensity or predisposition, both genetically and characteristically to to snack and binge on those foods that are, you know, the late night ice cream as you, as you put it, or bag of chips shouldn't dive into is the night before.

And this is a very simple exercise. The night before the next 24 hours ahead, you take a piece of paper, three columns. It's very simple on the first column, and it's like you're an editor of a movie.

So on the first column, what you're going to do is write a list of maybe ten different items that you're going to call preconceived notions. So that's one column.

The second column is where you're going to put the title edit. And again, you're the editor of a movie, so you're making a movie here of your day ahead, 24 hours ahead.

Not next week, not next month, not next year, just 24 hours ahead. Then the last column is called outcome. So in the first column you're going to list preconceived notions and we all have them.

If I asked you what you had for your day tomorrow, if I asked you to sit and focus for five minutes, what do you have on your schedule for tomorrow? What emotions will you have related to those elements or, items within your agenda?

What are the outcomes that you predict or or preconceived most of us are very, you know, resourceful. And we would know we would know those at least ten items, how we would respond to them emotionally and what we might do about them as you know, reflexively.

And so if we know those things and we mark this out, it's very powerful. So in this first column where you put preconceived notions, it's all those items with emotions attached.

Then the job is to edit them. So what about them? Didn't you like you didn't like going to the fridge at 11:00 at night and bingeing on that tub of ice cream?

Okay, so that's the behavior. The edit is what you're going to do about it. And so you can decide what you do about that. It's either and most likely, a healthier snack, maybe not even having a snack, but rather going outside, taking a deep breath of fresh air, doing a five minute meditation, maybe it's doing 20 push ups instead. Go figure.

I mean, just engaging the brain in some type of a feel good reward, scenario actually works. Whatever it is you decide to do, that becomes your edit, and you do that for each of those items.

You play that over in your head. We speak to ourselves, by the way, this is another interesting gene. Fox £0.02 this this gene is related to language.

As soon as we develop that ability to communicate language, we speak to ourselves, try to have a thought. Without language of some sort, it's impossible.

So because it's so powerful and it's so ingrained in our neural networks, speaking to ourselves in that edit column and playing it over and over and over, this new reality, like, I will not go for the ice cream.

I will instead do a focused, you know, five minute meditation with deep breathing. And you play that over and over and let it go. Takes, you know, five minutes.

Guess what happens the next day? It's, much more likely that your default mode network will go to that new edit versus the preconceived notion. And this is where it gets even more powerful.

And the brain is incredible this way. So I don't care whether you have the lesser, you know, optimal variant of the DD two dopamine and the, you know, the poor variant of the Mk4 are now you're a, you're a seeker of, reward and you're a snacker.

Doesn't matter. This will still work for you. But what you want to do is you want to practice. It's more of a if you have those genetic predisposition and maybe even consider some supplements that I have at the end of the day.

Then next day, this is where it gets very powerful. When you study your expectations and edits the preconceived notions and the edits, you will notice there's no miracle here six, seven, eight times out of ten, what transpired were the edits, not the preconceived notions.

That's where, again, that's where your brain starts to change. That's where your brain starts to realize this is this is possible. And it's very powerful, you know?

And so there there is interesting. Number one, I just pulled this off the shelves over here. Hydrazine, put back up hydrazine and see any these two essential, or non-essential rather amino acids can help the brain make more dopamine.

So in the case of tyrosine, there's a limiting factor B6 production hydrochloric hydrochloride. So hydrazine and B6 makes dopamine. So if we've learned that we have the lesser optimal variant of the DRD two.

So we have less dopamine receptors. And maybe our Comt activity is fast. So it's disengaging that dopamine variations to that as well where we we're more likely to desire reward.

And that comes in the form of snacking and food. Often taking tyrosine might actually help to fill the gap. And the other thing is theanine, most of us who are in that state depending on our Add or two BG by the way, as you well know, as it pertains to adrenaline and the hamster wheel and maybe overthinking some things and, fight or flight.

So that's the variation between going from sympathetic to parasympathetic and back. See any feelings? An incredible amino acid, that helps to create more focus, attention, alertness and concentration while remaining relaxed in alpha wave activity.

That's what we want. If we're an individual, you know, with the lesser optimal variation of the outer tube and, you know, the individual who perhaps relies more on, on and the reward, that combination, can be dangerous.

So those two right there or what I recommend for, for that scenario that makes so much sense if you think about the context of snacking, it's usually there at home.

Kids are asleep, you know, sitting there time for yourself and you get bored because you just went through this high paced day that we live through, and you're used to a certain pace and all of a sudden it's Netflix and chill or

something along those lines, and you're you're looking for pleasure and it's so easy to get it from your pantry.

So if you can turn that need off by supplementing, which is a big question for people like, how do I feel good, how do I I'm not hungry, I'm bored, or you know, it just that simple tweak can help somebody with that.

Whereas often very difficult to let go, you know, and where and where and where you get the biochemistry right to begin with. So the foundation we start, we talked about at the top when it comes to diet and maybe considering to eat more like our ancestors.

Eight because that's how our bodies have evolved more in line with those foods. So that we're not creating this imbalance and influx of sugar, which in and of itself is going to cause turbulence.

And, you know, ups and downs and installations of our blood sugar, which in and of itself causes, cravings. So that's a that's a double edged sword. So first, getting that biochemistry right in a transition especially by the way, is, you know, if we learn about the TCF, 702 gene being a suboptimal variant and we're more predisposed to insulin insensitivity.

Alpha lipoic acid, Alpha lipoic acid, this moonlights like vitamin C at night, by the way. It's a water and fat soluble antioxidant, caffeine and outside of the cell.

Oils, nuts, and avoiding refined foods

But incredible for sensitizing insulin. We also as you know, we use this at the DNA company and the detox optimizer as it pertains to helping us flush free radicals and flush toxins, along with, selenium and NSC cysteine.

Another really good one. This is, you know, just recently, you know, on the map and in terms of managing insulin, managing sugar, in the body has actually been, compared to metformin in some studies.

Berberine. Berberine. Yeah, it does as well or better in some studies to managing insulin, and helping to upregulate insulin sensitive, insulin sensitivity as well.

It's incredible. So how do people know dosage. You know often there's this what it says on the bottle. But then when you go talk to a natural functional medicine doctor, the ignore that this is what you actually need to do.

So, you know, this is the good the good news of today is that a lot more naturopaths and people in my line of work and profession are coming to understand more about the power and the application of genetics and genomics.

So I think it really does start there. I have to say, you know, your health is an investment, never an expense. And a few hundred dollars, that it would cost you to learn about your genomic profile, to engage with your genetics and your DNA, to know best what to take in the first place.

Will also help somebody like a natural path inform on the dose. Right. So it's a little because there's two different things here. Sometimes we're looking to solve a problem.

So there are individuals out there that are looking for solutions. And okay, we'll look at blood work. And this is a live snapshot of the day, the week, the last month, the last few months.

That's all it is. It's a snapshot. And if A1 C levels, for example, aren't looking so hot, which, which is looking at, you know, basically sugar attached to hemoglobin over time.

If you're fasting insulin or you're fasting glucose levels or your insulin production are looking so high, we might go to things like berberine and we're informed about the use and the dosage given your body, size, your height, your weight.

But when you're using this for genomics and this is much more powerful to, you know, understand the, the

variations of these genes that you have so that life long dose at the right dose for you of that particular ingredient, like we do, at the DNA company.

That's where the magic happens, because that's going to help to prevent these things from occurring in the first place. You can supplement without the pork acid and you can supplement with berberine.

And so and the like just by knowing genetic aptitude, you don't have to wait until there's a problem to find that solution. You can manage genetic expression.

That takes me right back to what we were saying earlier. You can't change your DNA, but you can manage genetic expression. So just learning about what these susceptibilities are and then washing over them with the right diet and the right ingredients.

And by the way, lifestyle as well, we just talked about one very powerful besides exercise lifestyle, to engage with the power of forecasting, behavior.

So while you're there in the, you know, supplement section, you talked about, you know, it's really cool because your approach is functional, where it's not just here's the berberine to deal with, insulin and glucose. Right.

But here's also the supplement that will help you with your perception so you don't have the craving. So it's a sort of double edged attack. You're coming from two fronts.

So we dealt with the starch and glucose. Is there anything you recommend on the fat side in terms. Yeah. So yeah. So, so when it, when it comes out. So there's the whole the advantage to optimizing macronutrients and micronutrients. Right.

So when we're talking about macronutrients we're talking about fats proteins and carbohydrates. You know some of the things that we study at the DNA company, is our, my one, that is, you know, going to do well from a particular macronutrient diet or not.

One of the most faddish diets right now is the keto diet. Huge focus and concentration on fat consumption. This was originally, studied as it relates to individuals who had, seizures, grand mal seizures.

And it was it was determined through research that if we were to feed these individuals high amounts of fats in their diet, 80% and higher would cure the seizures, seizures would go away.

That's, of course, not for everyone. But we also saw as a side benefit, in some cases, was weight loss. So fast forward to today. This is now surfaced as a bit of a, of a weight loss fad.

However, it turns out perhaps even upwards of 25% of the population has a gene, known as the ApoE a2 gene. Should you have the non favorable variants of that gene and consume a high fat diet?

Your body doesn't know what to do with the fat as well as the average individual you put on weight. So there's ways in which to I wouldn't say trick or advantage that you know, would never recommend somebody with the ApoE A2 variant we're talking about consume high amounts of fat, but even the healthy amounts of fats they consume, they might want to consider taking a lipase, an enzyme that ultimately helps break down and manage and deal with fats, in their diets better.

And that's not going to that's it could prevent them from store storing fat. But there's a relationship here as well as it relates to macronutrients and enzyme, production in the body.

The same with light. The same with amylase is, by the way, so and why, the and why one gene. This is the idea that, you know, some individuals are more sensitive to a high carbohydrate diet.

And the propensity to have fluctuations with blood sugar as well as, you know, weight, storage and so forth. This

individual, with this genetic propensity to a poor breakdown of the fat from the amylase starts in the mouth.

That's where the breakdown of carbohydrates start all the way through the digestive track. They might actually, theoretically benefit, from taking amylase.

So I, I believe that there are these macronutrients that we can supplement with, not just in, you know, enhanced digestion, but as it pertains to potential predispositions found within our genetic susceptibility, and our and our aptitude and for that matter, you know, there's, you know, individuals that are on all sorts of diets and have all sorts of goals and, and weight loss, aspirations, getting all of what we described, you know, right, to begin with, understanding our genetic susceptibility, getting, you know, a hold of, the right frame of mind and it becomes, I wouldn't say easy, but it becomes something manageable.

You know, for these individuals, there's no such thing as a fad. It won't work for you. You know, don't take my word for try these different, you know, methods.

I believe that if something seems too good to be true, and we've heard this age old adage before, it is, you know, there is no one single ingredient or one single diet or one single miracle cure that's going to bring you to your right state of mind, energy and weight.

It is entirely the overarching, genetic susceptibility predisposition environment and, day to day. And I know you were you've been working on the project recently where you've been studying, researching and trialing how to improve people's cellular health because I the thing you talked about earlier, inflammation being the root cause of so many things, everybody talks about that.

And so where is it when it comes to weight. You know. And macro macros we can get very precise. You took a step back and said, you know, when it comes to sort of their health, here's what kind of everybody needs to be at their optimal.

Right. And so what are those things that if, if I were to just walk into that supplement section and say, here's a 2 or 3 or 4 or 5 things that you should be doing, what are those things?

Well, so, here we go again. This is real life, folks. Walking in a grocery store, bumping into things. Yeah. So great question. So, some of the research that we've done and the thousands of genetic samples, through the DNA company, we saw some general themes.

We so we don't actually speak about this at large. But it relates to something I said earlier around how humans started eating meat, at this point in evolution, about 2.5 million years ago, still raw, but nonetheless, the access to B9 and B12 played a huge role in our, you know, mental and cerebral development.

And that's because B9 and B12 are so crucial for something called methylation, which can also almost synonymously be related to inflammation. So without these two micronutrients, it's hard to, you know, essentially satisfy cellular, inflammation and processing, even DNA repair and protection of the DNA itself.

Genetics, cravings, and supplement strategies

So getting methylation correct, as we saw, these trends in a lot of individuals had methylation defects in their DNA. The other thing we see is a trend of poor detoxification.

And so when you're and by the way, this is not just referring to the ethereal, you know, industrial plumes of smoke that come out of, of manufacturing hubs and, cities, or, you know, chemicals that you might clean your home with or wash your clothes with.

We're talking about just the day to day process, the metabolism of our breathing and our eating on a day to day that we make chemicals that we have to then detoxify or metabolize out of the body.

So we saw these trends of poor methylation for detoxification, and also some additional trends of cellular, mechanics, in this case, energy, mitochondrial function, being a bit of a challenge.

So if you address and optimize methylation in the average population, if you address and optimize detoxification in the, in the average population, and if you can help manage downstream mitochondria, by the way, this is the currency of energy in your body ATP.

This is the centrality of this organelle. There's hundreds and thousands of them. And every single cell of the trillions of cells in the body, by helping and supporting mitochondria with the right antioxidants and and support mechanisms, you're going to attain more energy, which means metabolism, as well.

So that was sort of that, that trifecta methylation, detoxification, mitochondrial support, energy, metabolism, the average individual by supporting them.

And these so these are some of the ingredients that we're looking to, you know, study in a population at large. We are continuing to study to propagate more mitochondria, PCU, ubiquitin, all these two things will protect the mitochondria and help them divide.

And then downstream, something called NM, nicotinamide mono nucleotide will actually help create more ATP. So now we've got more energy and metabolism to get rid of the toxins and control inflammation gluten file and curcumin which is the extract of turmeric.

And these things together separately and together, as you mentioned will manage the, the biggest contributing factor of all disease, Barnhardt, which is inflammation.

It's it's a term of the day for that reason. So now we're controlling and managing cellular inflammation, producing, more energy and enhancing, detoxification.

Here it is right here. This is this is this is turmeric. It's that bright yellow color there. That's that's turmeric. This stuff here. This is an extract curcumin from this.

And, your controlling, cellular inflammation. So this is this is the learning. So we've gathered and garnered from thousands and thousands of, of customers at the DNA company, and so that's, that's a non personalized yet from obviously these big numbers extractions.

But I still recommend anyone who cares about their health and anyone who understands the notion your house an investment not an expense. They are still and have one.

They're still an individual and they still should get their genetics, identified through the DNA company to learn exactly what they should do about their predispositions.

It's funny, because as I'm listening to you, I'm reminded that last night I was looking at some data because we're we're working on a project, with this sleep tracking company that everybody knows, but I can't see the name yet until it's actually live, about how to improve people's sleep through their genetics.

And so I was looking at some of the data. We have our detox pathways, and we have about 5000 people that went into a study, where we looked at their detox pathways.

And the thing that I didn't know, we just never looked at the data from this perspective. The Stem one gene, which is one of your key, you know, genes in the glutathione pathway, it's possible to have what's called a copy number variation, meaning it's not just the snip you were talking about are the variant of mutation where you're literally missing a copy, right?

Or two copies. The thing that blew me away is only 8% of those 5000 people had both copies. So right close to I think it was 49% had zero. It shocked me.

I didn't realize how big and prevalent this problem was, and then the balance, you know, close to somewhere around 40% had one copy. So that like 50% capacity.

So if we think about what we're wired for, again, going back to exactly where we started, who are our ancestors? Our ancestors aren't last generation.

They're tens of thousands or hundreds of thousands of years worth of ancestors who are not designed for this current reality. And that's why only 8% of the people in our 5000 data pool.

But there's a lot more people who've been through with this particular study. We've done around a thousand, had both copies of the just One gene. You know, 92% of people that are out there walking around with no proper defense system.

And you wonder why people have so many laboratory issues. Right? At the end of the day, the most simplistic view is that we really didn't need them as much as we now rely on them.

Yeah. And same thing with, you know, it's another example, the, Apple E variation that we study, at the DNA company. There's a lot of Revere for this in cardiovascular, medicine health world for a pertains to the acronym, the apolipoprotein E.

It's kind of like a vessel, a ship, a carrying molecule for cholesterol. So it's very important as it pertains to cholesterol distribution. But we now also know through extrapolation studies that this has a lot to do with potential, for the predisposition to Alzheimer's.

Right. So it's not one equals the other, but the variation of either carrying a three for a four for slight increase your chances, from retrospective studies of developing Alzheimer's by anywhere between 30 and 40% or more and upwards of 80%, respectively.

So I'm saying all that only to mention that it was that there was a time in evolution where the Apo E four variant was actually beneficial. You know, walking the savannahs, stepping on, you know, some kind of, you know, projectile that ultimately caused an infection.

Having that for either three, four, four, four variant had a huge role to play in our ability, to engage our immune system to attack those foreign entities.

Right. Whereas whereas today we turned those guys on and, there's a whole mess that ensues. Autoimmune kind of process, inflammatory process that ultimately ends up in part in the brain, and, that that can cause a large part of the pathology involved in Alzheimer's.

So it's interesting how this revolution, these are favorable, and then ultimately can sway the other direction. So there wasn't the we didn't deal with a lot of toxins as we're dealing with today, and we didn't have to contend with them in the concentration levels that they're on today.

So probably, you know, we it'll be another, you know, a few million years until we ever catch up. Those of us who have double copy variations, I guess, I suppose, are lucky.

And that brings me back to the idea that if there was anything that we could do, the average person, it's to first test ourselves so that we know that we have this no variation to be that much more conscious and aware, of toxins in our heart, because we talk about detoxification.

Is this new, you know, this, this broad reaching concept that we should go to the health food store and reach for these detox elixirs or take this detox drink.

It's so much more important to understand your predisposition and then avoid the toxins in the first place, right? Right. So versus trying to triage it by putting something in your system to hopefully, detoxify.

So again, that's another perfect example where knowledge is power. First understand your your genes and your, sod two genes and all the others that are responsible for, enhancing detoxification in the body.

This is this is awesome. You know, first of all, I think you should check your Fitbit because the number of steps today is going to be off the charts.

You're probably right off your shoes as a business expense. You know, because you wore the right through them today. I did want to ask before we jump off, I'm sure a lot of people are going to love what you have to say and the way you think.

How do they, you know, get access to your books? And, is there a website people, people can go to to learn more? Yeah, sure. Thanks for asking. So wild on health. Dot com features.

You know, half a million pages of free information. I'm a huge proponent. Of checking, you know, supplements with maybe drugs you're taking. So we offer an interaction checker on there, that people can, that people can look through.

All kinds of blogs and, diets and recipes and so forth. So wild on health.com. And, they can learn more about, the books that I've written, at the same place.

Great. And while just everyone knows is w y Wilder. Right. So while com. Thank you. Bryce, this is awesome. Thank you for living out there and giving us this live tour that's so meaningful and and so much more impactful.

This is great, man. Appreciate it. Thanks so much. Cash.