Blood Sugar, Ketones, and Brain Health

that blood sugar stabilizing diet plays a big role because if you're having these blood sugar imbalances, your brain absolutely needs a level of glucose in there.

But also you wanna be metabolically flexible to where your body can produce these ketones. Ketones are really beneficial because they cross the blood brain barrier, fatty acids can't, and they're an alternative fuel source for those neurons.

Also when ketones get into the brain, they actually act as something called an epigenetic modulator. What that means is, They help to actually modify how the genes express themselves.

And in particular, what we found is that when ketones are elevated in the bloodstream and they're getting into the brain, they actually shut down brain inflammation.

And typically with brain fog, we are dealing with brain inflammation. There's either kind of this, you know, this, this state of low oxygen or this state, which could be related to poor circulation, could be related to a number of things.

or a state of low energy production in those neurons. And so when we're getting the ketones, now we lower inflammation, right? We actually improve circulation into the brain and we improve the energy production in the neurons.

And we actually increase the amount of mitochondria. We call that mitochondrial biogenesis. Welcome to Vitality Made Simple. The following production is for educational and entertainment purposes only.

If you need medical advice, call your doctor. Now, let's go to Vitality Made Simple. Well, welcome to Vitality Made Simple. This is the podcast that equips you to feel better, look better, and to enjoy better relationships.

Life is all about relationships. And it's with joy that I introduce you to Dr. David Jockers. Welcome, Dr. Jockers. Well, thanks so much, Debbie. I know you're obviously an expert in holistic dentistry and that's a huge component of overall health.

And so I'm really glad you've got this podcast. You're getting this message out. Well, thanks for being here. If you all follow Dr. Jockers at all, you feel like he's one of your friends because he's so humble, so curious, so committed to accuracy.

So you know that what he says you can trust. And David, I thank you for just your humble curiosity. That's to me, your hallmark and what makes it such a joy to read your information.

Dr. Jockers has three books. I have two of them here. I think I've loaned my third one out. But we're going to just kind of jump around and talk about vitality, talk about inflammation, talk about metabolic health, just all these areas that he is a world expert in.

And so as we talked off camera, it's kind of hard to know where to start because there's so many great things to talk about. So David, let's start with, you know, just something you say very often, you talk about cellular energy is the currency of life.

So explain to our listeners exactly what that means.

Welcome and Podcast Introduction

Well, yeah, you know, basically for us to have energy to carry out all the, you know, trillions of processes that we do every second, we've got to produce that energy within the cell.

You know, so we have cellular energy, it's called ATP, adenosine triphosphate, and primary area where we're producing that energy is in our mitochondria.

And so, you know, we can burn glucose or we can burn fatty acids to produce energy. And, you know, we call that metabolism, right, in our metabolic rate.

And so, ultimately, what we want is a very efficient metabolism where we're really good at burning both sugar or glucose in our blood. It's called glucose, but really any sugar or carb is going to turn into glucose.

We want to be really good at burning that for fuel. We also want to be really good at burning fatty acids or ketones for fuel. Ketones are a byproduct of fat metabolism.

They're a water-soluble, smaller molecule, but they come from fats. And we want to be really good. We want to have a really efficient metabolism. And part of the waste, kind of like when we're burning fuel in our car, right?

We also have exhaust. Well, we also have exhaust when we are producing cellular energy and we call that free radicals or oxidative stress. And some level of oxidative stress is actually really healthy for a cell.

It actually is necessary, forces cellular adaptation, and it's really, really natural, right? However, we want to keep that under control if we are If we have a inefficient metabolism, we end up producing lower levels of cellular energy and higher levels of oxidative stress.

So that's whenever we're dealing with stressors, toxins, infections, things like that, all of that pushes us into this sort of dysregulated metabolism where we're producing less cellular energy and more oxidative stress.

And oxidative stress is the precursor to inflammation, right? And inflammation is something that ultimately leads to the symptoms that we experience, whether it's chronic fatigue, joint pain, brain fog, thyroid or hormonal imbalances, thyroid issues, trouble losing weight, skin issues, right?

You name it, all of those things are gonna come down to inflammation, right? And so having a healthy metabolic rate, healthy cellular energy production is the key to solving that.

Well, you kind of touched on flexibility. Also, I know in a lot of your information, you talk about metabolic flexibility.

Cellular Energy and Metabolic Flexibility

So tell our listeners how that relates to say your book on, you know, ketogenic diet, how that relates to fasting, how that and how that improves this cellular energy.

Yeah, for sure. So metabolic flexibility just means the ability to go from burning fat as a fuel source to burning sugar as a fuel source and kind of jumping back and forth.

So there are certain times where it's really advantageous to burn fat. So why would fat be so great? Well, number one is we can produce a lot, a robust amount of cellular energy from one gram of fat, a lot more than we can from glucose.

Okay, and it is actually a cleaner energy source. What that means is we produce less of that oxidative stress from burning fat as a fuel source. Whereas with glucose, we produce less cellular energy and a lot more oxidative stress.

So I call it a dirty fuel. However, there are certain advantages to burning glucose as a fuel source. One of the main advantages is we can use it without oxygen.

So in order to burn fat, we need oxygen. However, there are times in our lives, like for example, exercising, where we actually switch into an anaerobic state.

So if we're out and we're running or you're weightlifting or something like that, you're going to be huffing and puffing. We get into this state of oxygen debt where we've got to catch up on the oxygen levels.

During that period of time, we're going to produce the majority of our energy from what we call anaerobic glycolysis. And that's where we burn sugar and without the presence of oxygen.

And that gives us really quick fuel that supports us during that exercise, right? And that's really key. And so short bouts, short periods of time, being in anaerobic glycolysis actually forces really healthy adaptations, right?

Where we get all the great benefits that we get from exercise, right? We get stronger, we get better endurance, better oxygen extraction and oxygen carrying capacity, better fat burning, all of those kinds of things.

But we don't want to be in glycolysis or sugar burning as our primary fuel source throughout the day. Okay. And that's really critical. And there's certain hormones that can help govern that.

And so we want to primarily be burning fat as our major fuel source. Because again, it's the clean energy source. And so this key hormone is called insulin.

And insulin rises when we eat anything with carbs or pretty much most of the meals that we're gonna consume, we're gonna get some level of rise in insulin.

And that's normal right after a meal, but we want that to go down shortly after. And so a blood sugar stabilizing meal We eat that, and we could talk more about what that is as we go on, but we eat that, we get a rise in insulin, but then it drops back down, you know, within an hour, one or two hours.

And so in the beginning, we're burning a lot of glucose as a fuel source, right, that we may have gotten from the meal. But then after that, after, you know, an hour or so that insulin drops back below a certain threshold and we're back into fat burning.

So we're using fat as our primary fuel source during that period of time. And again, we want to spend most of our metabolic function. We want to be burning fat as a fuel source and be conserving glucose as an energy source.

Glucose is really advantageous for brain. our brain needs to run off of our neurons, depend on glucose. They can, we can get fuel source from ketones.

We'll go into more about what those are, but at least 50% of our energy needs to come from glucose for our brain. And our brain really takes up 10% of all the calories, right, that we're consuming.

So our brain really needs a lot of energy and it needs glucose. And then we want to conserve that glucose. And we can actually, like, if we eat an apple and we take in 30 grams of sugar, for example, from the apple, we can store that if we have storage space available and we have the right physiology, the right hormonal mix to actually put that extra glucose that we got into our liver and into our muscles.

We call that glycogen, stored sugar in our liver and our muscle. And exercise helps deplete that glycogen. So whenever We're training or exercising, we break down that glycogen, we use it as a fuel source to fuel us during that anaerobic state.

And then now we have storage space to put in that glucose. So when we eat the apple, we eat the sweet potato, some sort of ideally healthy carb, then that helps fuel that, helps fill up those glycogen reserves.

And that's really key, keeping insulin under control. And so that way we're not constantly dependent upon refeedings of glucose. But we want to have that metabolic flexibility where we're primarily burning fat and then

certain times, you know, like for example, when we're doing high intensity exercise, we're burning glucose as a fuel source and be able to be really efficient, really good at switching back and forth between those.

That's such a good word picture about thinking about using it up and making space in your muscles and liver to put back in that stored glucose. Well, go ahead and tell us then David about a, you know, blood sugar stabilizing meal.

Now you can see actually, when I pulled your book out, you have a robust recipe section in the back of the keto metabolic breakthroughs. So describe some basic components of a meal or meals that would stabilize blood sugar.

Building Blood Sugar-Stabilizing Meals

For sure. Well, when we're talking about blood sugar stabilizing, we want things that are not going to spike our blood sugar and spike insulin levels.

Again, insulin's job is to take glucose out of the bloodstream and put it into cells. And that's really important because when the blood sugar gets too high, those glucose molecules will actually bind to proteins in our blood and they'll create something called advanced glycemic end products, right?

So AGEs, these advanced glycemic end products, they are extremely damaging. They drive up inflammation in the body. Real problematic. So insulin helps protect against that.

However, when insulin is elevated in our bloodstream, we can't burn fat for fuel. So again, it stops our ability to burn fat. So we want meals, types of foods that are not going to spike your insulin levels, not spike your blood sugar.

So what does spike it are going to be particularly processed carbohydrates. So all your processed glucose and starches. So to no surprise, that would be things like candy, right?

Most people would realize, okay, that's gonna spike your blood sugar. But it can also be things like, you know, for example, crackers, cookies, potato chips, all kinds of things like that.

Basically, just about everything in the middle sections of the grocery store. Those things are all prepackaged and processed in such a way that they spike our blood sugar and our insulin levels and pull us away from fat burning.

What happens there? It might give us an immediate energy increase, but then we have cravings later and we end up constantly needing to eat because basically our, our appetite is going to be driven by these blood sugar and insulin spikes and then they drop, right?

So once insulin gets the sugar out of the bloodstream, now we have hypoglycemia. So we have low blood sugar and now our brain's saying we need, I need something more.

I need, I need, I need another hit to increase my blood sugar. And we end up kind of in this, this craving cycle, right? And that actually depletes our energy, drives up oxidative stress and inflammation.

So real problematic. Okay. Now other things, even healthier things can actually spike our blood sugar as well. For example, if we're eating what we call naked carbs.

So I'm a fan of fruit. I eat fruit on a regular basis. I think there's lots of phytonutrients, structured water in there. And of course there's glucose carbohydrates in there.

However, I don't eat my fruit naked. What that means is I don't eat it all by itself, right? So I don't just in the middle of the day eat an apple, right, without anything else.

I'll eat it as a dessert and that's how I give it to my kids as well. First, I want to make sure I'm prioritizing protein. This is kind of the principles of the blood sugar stabilizing diet is we think protein first.

Protein is the most blood sugar stabilizing macronutrient. So where are we getting our protein that's gonna be coming from, particularly animal foods, that's gonna be the best quality protein.

So ideally, animal foods with the minimal amount of toxins. And so that's why I like organic animal products, because whenever we're buying organic, We're getting things with the maximal nutrients and minimal toxins.

And that's another real key nutrition principle because chemicals, even things like antibiotics, pesticides, phthalates, things like that, all of that poisons our mitochondria, which produce cellular energy.

And then we get more oxidative stress, more inflammation. We're not able to burn fat effectively for fuel. part of a healthy lifestyle and a healthy metabolic plan is reducing our exposure to toxins.

So getting organic as much as we can, you don't have to do 100%, but as much as you can is going to be really helpful. So grass-fed organic animal products, which that would be like grass-fed beef or lamb or bison or chicken, turkey, wild caught fish, wild caught seafood in general, all super helpful sources of protein, pasture raised eggs, really good.

So that's what we're looking for for our protein sources. You can also do, you know, if you're able to tolerate dairy, like fortunately I am, I do Greek yogurt, I do cottage cheese.

I always try to get it organic. We get raw milk from our local farmer as well, raw cheeses. All of those can be really, really beneficial forms of protein.

And then they also have healthy fats. Most of those things I mentioned are also a good source of healthy fats and fats come in and they also help to stabilize our blood sugar as well and reduce cravings.

And so I always recommend getting at least 30 grams of protein in a meal and really more like 40 to 50, maybe even more depending on your metabolism, your appetite, right?

So for me, I'll eat, you know, I usually two meals a day. and I'll eat 100 grams of protein in a meal pretty easily and feel great, right? Now, some people are not able to tolerate larger meals like I do.

Maybe they've lost a gallbladder. Maybe they're just a smaller body type and just eating a lot in a meal doesn't do well for them. So they might do three meals and that's what I'll recommend, two to three meals.

Okay, no snacking in between and make those meals very high protein, right? Like literally almost as much protein as you can consume in those meals, right?

30 to 50 grams as a minimum. And then healthy fats, healthy fats we can range. Some people like myself, I can eat a lot of fats in a meal and feel fine.

Other people, maybe they've had a gallbladder removed, okay, or they have sluggish bile flow and they need to moderate their fat or else they feel nauseous or they, you know, they feel really sluggish after the meal.

So they might do, let's say 15, 20 grams of fat in a meal. Where are you going to get your healthy fats? Typically, they're going to come from your protein sources, your grass fed meats, pasture raised eggs, things like that.

You can also use high polyphenol extra virgin olive oil. I'm a huge fan of extra virgin olive oil. Avocados are a good fat source, coconut oil or coconut products, butter, grass-fed butter, all really good fat sources that you can add in.

And then once you've got your protein and your fat, you know, the only time you really need to add fat if you're eating a lot of those protein sources would be lean proteins like for example chicken or fish or something like that you might add in some butter or some olive oil like last night for my for my family i made i made chicken right and so we did chicken cooked in butter and then we put olive oil high polyphenol extra virgin olive oil on top of it afterwards and put herbs and spices and things like that and we also did sweet potatoes right with grass-fed butter

And then we also steamed up cabbage and onions, right?

And so, and then put butter on that, olive oil and salt, right? Salt, garlic salt on there. And that was great. It was a wonderful meal. And so we did, we got our protein, okay, with the chicken.

We have healthy fats with butter and olive oil. And then the third thing was colorful fruits and vegetables. Okay. And so you want to get a lot of colors in there.

So we had sweet potatoes, which are very rich in vitamin A. We had cabbage, which is rich in sulforaphane and these different isothiocyanates that are great for hormone detoxification.

And then we also had onions, which are rich in quercetin and other sulfur compounds that are great for our immune system. And so, and it was really tasty.

And even my kids, you know, I've got four young kids under 10 years old, and they all really enjoy that eating like that, that sort of meal, right? So that was great.

And then what did we have for dessert? Well, for dessert, we had a little bit of Greek yogurt with MCT oil powder in there that was flavored with stevia.

And then we had pomegranate seeds, right? So we have, we love, this time of year, their pomegranates are easy for us to access. We don't do them year round because they're harder to, to find, but I love pomegranates, one of the most powerful anti-aging superfoods.

And so we did pomegranate seeds in there and that was amazing. That was great. So if we don't have pomegranates, we'll do raspberries or we'll do blueberries or sometimes my kids love mango.

They love pineapple, especially in the summer. So we usually do some sort of really good fruit or maybe multiple fruits. And then I'll combine it with like a easy to digest protein, like a Greek yogurt, which is great.

throwing in a little bit of the MCT oil powder, which kind of gives a really nice flavor. I don't know if you've tried that, Debbie, but MCT oil powder combined with dairy just makes a great, a really great flavor, a really great texture.

And then the stevia will provide the flavor. And that was an amazing meal. My kids, you know, thoroughly enjoy that. So that's a typical blood sugar stabilizing meal with kind of all the principles that I talked about there.

Well, and David, people left feeling satisfied. They feel like they've eaten something. They don't feel deprived. I mean, I think that's so much of the joy in life and the relationship issue is sharing these meals that are satisfying and delicious.

And it's such a… foundational point for hormone regulation. These days, so many people are first looking to adding, you know, bioidentical hormones or whatever before they're addressing these very foundational issues.

So I think that's key to look at nutrition first. And it makes me want to have you expand on something I saw on your website. I saw that Angel, your wife, had infertility problems.

due to endometriosis. And rather than turning to a prescription, you did something different. Tell us about that. Yeah, for sure. Well, we hadn't actually tested the infertility issues because we were dating and we're both Christians, so we were saving ourselves.

And so anyways, we were dating, but she had been diagnosed with endometriosis before that. and had even had a surgery and everything and had just terrible menstrual cramps, like terrible, like to where she had to stay in a warm bath for a day, okay?

Couldn't work, you know, things like that. And there are a lot of women out there, unfortunately, that are struggling

with that sort of thing. And so what I said was, you know, we've got to get your blood sugar balanced, right?

And so I put her on what we call a sugar detox. And so with this, We went low, I had to put her on a lower carb plan for 30 days. So I took out starches, even things like sweet potatoes for a 30 day period of time.

And she prioritized protein, healthy fats, lots of colorful vegetables. So she might do like bell peppers, tomatoes, you know, I allowed things like that and a small amount of berries.

Okay. And those were kind of her primary carbs. And of course she would do vegetables like arugula. and broccoli, cauliflower, kale, collard greens, things like that.

And within 30 days, she no longer had those really painful menstrual cramps and was feeling significantly better from that. And then we got married and then six weeks later after we got married, we conceived with twin boys.

You know, obviously we weren't even, you know, intentionally trying to, but you know, we're, we're doing what married couples do. And so anyways, with that, she had been told when she had endometriosis that she would have a lot of trouble conceiving later in life, like just to expect that.

And she was in her thirties when we got married, we were both in our thirties. And so we did not expect that it would happen that easily. We've heard from a lot of other couples and a lot of people, especially women that have been diagnosed with endometriosis, that it's, it can be a struggle.

It can be an issue. And I really credit that to lifestyle change, right? And good nutrition and some of the other things that we did, you know, we got rid of a lot of the cosmetics that she was using when she first met me.

We got rid of, you know, a lot of the different chemical toxins that she was exposed to. I remember I went through her refrigerator and her pantry and I said, hey, can I just, can we just substitute this stuff out?

Lifestyle Changes, Endometriosis, and Fertility

Like got rid of like the old mayonnaise, right? The old ketchup, you know, all that kind of stuff. Got better alternatives to those things with less chemicals, less toxins.

in them. And so all of those sort of lifestyle changes, she was exercising more, things like that, all of that helped balance her blood sugar, bring down her insulin levels, right?

And create that metabolic balance, reducing oxidative stress and inflammation in her body. And the way her body had been experiencing inflammation was inflammation in her uterus, right?

Causing the endometriosis. And that's the way many women are dealing with that. If you're dealing with You know, heavy menstrual cycles, heavy cramping.

Okay. It's normal to have some, you know, you would know Debbie better than me, but what I understand it's, it's normal to have some discomfort, right?

Kind of like a little bit of discomfort, like after a workout or something like that, but it shouldn't cause you to have to miss work or really create an interruption in your life.

And if that is the case, you're having way too much inflammation in those areas. Well, and unfortunately it gets to be too normal for too many people.

And I just want to commend Angel. I mean, she's dating you and you go through her refrigerator, David, and you start telling her to get rid of her makeup.

What a woman. I mean, you're changing her eating plan. She must've been already madly in love with you. And if

you folks, if you look at David's website, you know, Angel is gorgeous.

She's birthed four children and she just looks so youthful. I would have never guessed that you didn't get married until your thirties, you know, the way she looks now.

Cause your twins are what about 10? We started dating at 32, got married at 33. She's two months younger than I am. Got married at 33, had our twin boys.

We were both 34 at that period of time. Right. And so, yeah. Super, super impressive. Well, let's go back to something that you talked about earlier with people having sluggish gallbladders, sluggish livers.

I love, love, love your video on castor oil. And I would implore anybody who's listening to, you know, run and don't walk to listen to it because it just gives a lot of practicality.

So tell us all about kestrel oil and the many benefits of something that I believe is absolutely a gift from the Lord. Yeah, absolutely. Well, you know, castor oil is kind of this really thick oil if you've ever, you know, it's really sticky.

It's from the castor bean plant and it has a couple different compounds in there. One is called undisilic acid and the other is called racinalic acid.

And the unique thing, castor oil has been used for so many different things, you know, all, you know, all over the world. But castor oil has this really powerful effect.

at dilating, right, meaning basically like opening up, loosening or relaxing muscles. Okay. And also, you know, we think about like our lymphatic system, kind of the idea of relaxing muscles helps move fluid through our lymphatic system.

We actually have two circulatory systems. Most people don't realize that. We have our blood circulatory system, but we also have our lymphatic system, which is kind of carrying toxins, It's carrying immune cells.

It's basically this extracellular fluid that is carrying away toxins and dead immune cells, right? And infections and different things like that, dead pathogens.

And so we need to keep all of that moving. We want to keep things moving in our body like a river not being stagnant like a pond, right? We think about a pond.

When you go to a pond, what do you smell? It kind of has like this kind of putrid smell oftentimes because of the algae that's breeding in there. whereas a river smells clean.

And so we want things moving through our body, whether it's our lymphatic system, whether it's our bile flowing through the bile ducts in our liver and our gallbladder, so critical.

And for so many people, they create stagnicity. In fact, in Chinese medicine, They actually say stagnicity is kind of at the root of chronic disease, according to the Chinese medicine model.

And I wouldn't say it's at the root, but I would say it's definitely a foundational factor. When we're not moving things through in our body, they start to rot and putrefy.

And so castor oil has this great effect at dilating our blood vessels. It helps dilate our bile ducts, right? And again, we need to be moving that bile through.

So many people have really thick sluggish bile. And if you're having trouble digesting your food, If you're having greasy stools, if you are constipated, if you have a really itchy skin, right, histamine issues, right, oftentimes can be related to poor bile flow.

Okay. And so if you're, if you eat, you know, if eating butter, for example, doesn't make you feel good or eggs, that may be a factor with your bile flow.

So putting a little bit of castor oil on a flannel, right, or some sort of like a cloth, okay, and you can even buy just a whole castor oil pack, which I'll explain in a minute, but just putting on like a cloth or something like that, and putting it over your upper right quadrant of your abdomen, which is where your liver is, and letting it sit there for roughly about an hour, 45 minutes to an hour, the castor oil will actually have this effect where it will help to dilate blood vessels, Okay.

Even penetrating through the skin and into the liver gallbladder and dilating the bile ducts to allow bile to flow through more effectively. And so it's really powerful.

Now people will say, can I just put it on without the cloth? And you actually could. The issue is that that castor oil will stick to whatever you put out over it.

So if you put a shirt over it, it's going to be on your shirt. You're going to literally ruin your shirt. Or if you're sleeping at night, you're going to ruin your sheets and everything.

So this is why we recommend a pack or a flannel over it. that you can tie on there so that way you just have like that pack or that flannel that's you can consistently use you know and it will kind of take on the effects you know obviously we'll have the castor oil will be on it but you won't ruin anything else and that works really well and so just put it on there roughly about an hour but but what i found is that a lot of people will just put a castor oil pack go to sleep and then take it off in the morning the next day and that seems to work great right and so the pack just ties it up so it doesn't stay loose And just, again, putting it right over that upper right quadrant will help open up those bile ducts and help you detox.

In fact, bile actually helps bring toxins out. Bile is made up of cholesterol. It's made up of something called bilirubin and salts that kind of bring it all together.

It's almost like soap, right? From that perspective, it helps emulsify. fats that, you know, when we're digesting fats, helps us absorb fat-soluble nutrients like vitamin A, D, vitamin E, vitamin K, all of those.

We need that—we need good bile flow for that. But bile also is an antimicrobial in the gut, so it helps to alkalize the small intestine. It helps to carry pathogens and pathogenic debris, things like endotoxin, lipopolysaccharides out of our system.

Castor Oil for Detox and Inflammation

So we really need good bile flow to keep our toxic levels down. In fact, that's one way that the liver actually, it deactivates, liver's function is to deactivate toxins and then dump them into the bile so they can be escorted out of the body.

If bile's not flowing well, we're not getting toxins out of the body effectively. So super critical for that. Now we can also do other things with castor oil, like for example, if you are dealing with endometriosis or painful menstrual cramps, instead of putting it over your liver, which would still be good, if you're dealing with the cramps, You can also either put a separate one or just put the only one you're using over your lower abdominal region where you're experiencing those cramps.

And what's going to happen there? Now you're going to get better blood flow into your endometrium, into your uterus. And that will help to reduce inflammation in that area, kind of like a hot pad, right?

A lot of people will do hot pads in there. Well, the castor oil will have kind of a similar effect, right? And kind of get in there, right? And help open up and dilate those bile ducts.

And the castor oil is very anti-inflammatory as well. So it will help reduce inflammation in those areas. my opinion,

even better. It's even better than a hot pad because it'll have more longer lasting effects for doing that.

And you can really do that over any area of your body, for the most part, with the castor oil. In fact, castor oil, because it's so good at bringing blood flow into areas, a lot of people will use it.

Like, for example, if they're losing eyebrow hair or hair thinning, a lot of people use it and have seen really good results for helping restore hair because of its effect on improving blood flow and reducing inflammation in the areas.

And for a lot of people, their hair loss issues, I would say, you know, there's a couple of reasons for like, for example, female hair loss. One would be a hypothyroidism could be a major factor there.

I mean, you need thyroid hormone stimulation into the hair follicle for the hair follicle to grow. Another could be low estrogen progesterone. Okay. Because the woman's under a lot of stress, blood sugar imbalances, all the different things we talked about.

And so therefore her body's making more too much stress hormone because it's trying to survive and there and it's depleting sex hormone because stress and sex compete right when we're overstressed we're not going to be able to produce enough sex hormones and that could be a reason and then the third reason is actually autoimmunity to hair follicles and the castor oil i think that's where it's it's most effective when you put it directly on your hair it's not When you put it directly on your hair, that alone is not improving thyroid function or helping to manage or improve estrogen progesterone levels, but it will help reduce inflammation directly at the hair follicle level.

And so if that would be the reason why you're losing hair or you have hair thinning, I think it could have a positive effect on that. Now, we also want to get to the root cause, right?

Which typically is going to be related to leaky gut, blood sugar imbalances, toxins, maybe oral infections, like you know, right? that could trigger that autoimmunity, but it can give some topical relief.

Well, it's super interesting, David. I got acquainted with Castor Oil about, I don't know, maybe 10 years ago. My husband and I were headed to A4M. You know, I'm a fellow with American Academy of Anti-Aging Medicine.

And so I told Mike, I said, okay, I'm about to drop some money on skincare, because I was, you know, 10 years ago, 57. And so I said, just be ready, because I'm afraid this is going to be expensive.

And I'm sitting in a lecture, David, and next to me is this doctor from Pakistan. And he has a giant sack of stuff from this cosmetic place that was natural cosmetics that I was going to consider.

And so I said, tell me what you like about this makeup. And he said, nothing. He said, nothing. He said, I'm a dermatologist in Pakistan. And they give it to me to try to get me to sell it there.

And I said, then why do you recommend? And he said, castor oil, he said, put castor oil on your skin every night and, you know, make sure it's in a glass bottle, make sure it's, you know, cold press, organic, all the things that of course you advocate.

David, I started doing that, uh, 10 years ago and I, It's improved my skin. And of course, what goes on your skin goes in your body. So, you know, I don't know.

I know that has to be helping, you know, other places. I really want to start doing the castor oil patch. Yeah, it's super helpful. And a lot of people ask, can I take castor oil orally?

They're like, well, if it's got these great benefits, when I put it on my skin, can I just take like a teaspoon a day? Will I get those benefits? Well, it doesn't actually work as well that way.

So when you take castor oil orally, it's gonna have a pretty strong laxative effects. If you're constipated, it can actually really help short term, but I don't recommend consuming it orally.

Instead, it's better actually topically. You'll still get some of the benefits. You know, you'll get obviously that transdermal benefits. So these compounds, these unique compounds like racinalic acid will get into your bloodstream transdermally.

So you get the great benefits without having the strong laxative effects. And so it is actually the kind of oil that's better to use. over your skin. Now, again, it's a real sticky oil.

So like if you do put it on your skin, you typically have to clean it off. Like you put it on for a period of time and then and you got to clean it off.

So that way it doesn't kind of get into like your pillow or whatever it is that you're you're laying on later in the day. And a lot of people will do it as kind of part of an evening routine.

They'll use castor oil, right? And so you put it on and then you help take it off afterwards. How are you using it, Debbie? I'm using it on my face. I've thought that a castor oil pack had to be on all night.

So I'm glad to know that I haven't been doing that as effectively because I don't like to sleep in it. But you know, our pillowcases are demolished from my castor oil.

They all look like, you know, some kind of oil cloth. But I really enjoyed it in that way. And then also just, you know, in our family, if somebody has a skin problem, I mean, castor oil is certainly a piece of the armamentarium.

I mean, you know, there's all kinds of things we have now to use. herbal remedies and, you know, ozenated oils and things. But castor oil is so basic.

It's so inexpensive, so accessible that I just think, I think your information that you've given out is really key. And that's, again, one of the things that's just so nice about your education, David, is that you give simple things that are accessible to most people.

Yeah. You know, another thing with castor oil is you can put it, there's actually you can get like an eye mask, cloth, right, and kind of put it on that as well.

And for a lot of people, especially if they're noticing a lot of big bags under their eyes, typically when people have very big bags under their eyes, outside of trauma, I typically like if you have like a head trauma or something like that, you might get that.

But just on a regular basis, I typically think sluggishness in the liver kidneys, right? But also just lymphatic system, poor lymphatic drainage in the sinus area, which could also be related to, you know, some sort of an infection in the mouth actually too.

But it will help get rid of some of that, those bags under the eyes. So a lot of women are doing that where they'll wear You know, a castor oil pack over their face at night with an eye mask to help them sleep.

You don't need to do these things overnight. Like I was saying, let's say you wind down. It's eight 30. You're like, okay, I'm going to, I want to go to bed at 10 or 10 30. You could put it on, you know, at eight 30 or something like that.

Give it about an hour or so, and then wash it off. Right. And you'll get, you'll get the benefits from it. That's terrific to know because it is like, you know, syrup.

I mean, it's just so thick. Well, one of the things that I've noticed in my clinical practice, of course, I don't do regular dentistry, David. I just help people with their oral and gut microbiomes.

But I didn't even have brain fog on my health history until maybe six or seven years ago. And I know that you wrote A Supercharger Brain back in 2013. And so tell our listeners, some basic things that you would recommend if

they're experiencing brain fog, even those little things that people start to experience.

They go, Oh, is this because I'm busy or is this because I'm really got a problem? Where do they start from a simple? Yeah, from a simple standpoint, that blood sugar stabilizing diet plays a big role because if you're having these blood sugar imbalances, your brain absolutely needs a level of glucose in there, okay?

But also, you want to be metabolically flexible to where your body can produce these ketones. Ketones are really beneficial because they cross the blood brain barrier.

Fatty acids can't, and they're an alternative fuel source for those neurons. Also, when ketones get into the brain, They actually act as something called an epigenetic modulator.

What that means is they help to actually modify how the genes express themselves. And in particular, what we found is that when ketones are elevated in the bloodstream and they're getting into the brain, they actually shut down brain inflammation.

And typically with brain fog, we are dealing with brain inflammation. So either we're not getting enough oxygen into those neurons or we're not able to produce enough fuel.

So there's either kind of this you know, this state of low oxygen or this state, which could be related to poor circulation, could be related to a number of things, or a state of low energy production in those neurons.

And so when we're getting the ketones, now we lower inflammation, right? We actually improve circulation into the brain and we improve the energy production in the neurons.

and we actually increase the amount of mitochondria. We call that mitochondrial biogenesis where we get more mitochondria and we actually break down old damaged mitochondria because what happens, one of the major issues with cellular energy production is when we have a high level of oxidative stress, we damage the mitochondria and they become less efficient.

They become unable over time to burn fat effectively for fuel. And unless we get rid of those mitochondria, they just take up space. in a cell and they're not able to, again, burn fat, right, or use ketones as a fuel source.

So when there's ketones elevated and insulin is down because we're eating this blood sugar stabilizing diet, now we end up actually triggering something called mitophagy where we break down these old damaged mitochondria and replace them with new healthy stress resilient mitochondria that are metabolically flexible and can use fat for fuel.

And in the brain, they use ketones as a fuel source. And this is really important for having metabolic flexibility. So between meals, we're not having brain fog, right?

And needing, you know, to go eat a snack in order to feel better, right? And be able to think, but instead we can have great energy. In fact, most people when their blood sugar is stable, they notice they're actually, their energy is better, right?

When they go four or five hours between a meal, they actually feel like they're performing even better because the ketones are elevating during that period of time.

And so blood sugar stabilizing diet is the first thing. Now, how do we handle the lower oxygen? Well, good exercise, regular exercise is super key. Walking on a regular basis.

Walking is one of the easiest things to do to help improve your life and your health.

Brain Fog, Exercise, and Neurobics

There's lots of studies coming out showing people who walk Uh, you know, even 8,000 steps a day have like a 40% reduction in neurodegenerative conditions than people who walked 4,000 or less steps.

So there's great research on that. Just getting out and doing regular walking is key, but I would also recommend, um, strength training. Okay. And that's because.

We know that muscle is the organ of longevity. Muscle is so critical for helping pull glucose or sugar out of the bloodstream and keeping our blood sugar stable.

And also in general, just for all of our daily activities. So muscle also releases something called myokines. And these are these really powerful hormones that actually reduce inflammation in the brain.

And so movement is really key, and it helps improve circulation, of course, getting more oxygen into the brain. So movement, super critical. And there's also some novel movements you could do that actually have a unique and even more beneficial effect on the brain.

So kind of your baseline movements are just getting out and walking. Pretty much everybody can do that, okay? If you're in a wheelchair, just get out and roll your wheelchair, right?

Just get movement. Strength training. So I'd recommend that doing that at least three days a week. Maybe it's like three to four days a week doing large muscle groups like squats, lunges.

You can do them with your body weight, right? You don't have to be at a gym. Push presses, okay, so where you're pushing, right? And then also pull exercises where you're doing like a row or something along those lines.

And if you need help with that, a personal trainer can really help you. I mean, just even working with a personal trainer for a week. They can show you a number of different exercises that will help you that you can continue to do to help build strength.

That's kind of the foundation. But then there's something called neurobics. And neurobics are these novel exercises that have a greater effect that's stimulating brain.

See, our brain needs actually introducing like new unique movements, really challenges the brain and causes great brain adaptation. And we call that neuroplasticity, right?

We're actually able to build new neurons, new synapses, in the brain and that helps improve our creativity. It helps improve our ability to connect complex thoughts.

It's an aspect of learning. these, these, uh, neurobic exercises could be things like crawling, for example, or cross crawl movements where maybe I'll take my right hand and I'll bring my left leg up, right?

And touch my right hand to my left knee, right? Or my left hand to my right knee. That would be like a cross crawl movement, or maybe I'll reach across my body where I'll turn my waist and reach as far as I can to the left and then go back and reach as far as I can to the, to the right, right?

With my opposite arm. So if I'm, If I'm turning to the left, I would reach as far as I can with my right arm. And if I'm turning to my right, I would reach as far as I can with my left arm.

Okay. Those are things. Those are neurobic exercises or maybe balance exercises where I'll just kind of get up against a wall and I'll stand on one leg for 30 seconds.

And I've got my hand slightly against the wall, at least in the beginning, to make sure I don't fall. We don't obviously want to avoid any sort of injury.

But then I can take my hand off the wall. But I know the wall is there just in case I lean, right? But I'm trying to kind

of stabilize my body without having to use any sort of crutch, right?

Any, you know, going up against the wall. So just allowing my lower body, my core to activate in order to keep that balance. That would be like the first step.

Then I might actually do I might actually walk, like, and this is great for a hallway, because you know you got a wall on each side. And I might do, for example, a heel-to-toe walk.

In fact, you know, all the different things that, you know, hopefully you've never been pulled over for a DUI, right? However, and hopefully the listeners haven't, but however, if you look at what the police officers do when they're testing somebody for a DUI, they're testing their cerebellum, which is the most sensitive area to alcohol.

And actually doing training your cerebellum enhances everything in your brain. So doing a heel-to-toe walk where you are putting, for example, let's say I've got my right leg on the ground and then I step with my left leg and I try to get my heel real close to the toes, right, and step right in front, and then I just continue to walk down the hallway like that, that actually helps really enhance brain function, believe it or not.

Okay. And so it's a simple thing you could do. And then you can take it to the next level where you could close your eyes and try to do that. Okay. And that can be really helpful.

Finger to nose, right? That finger to nose movement actually can help enhance the brain. So those are simple things that you can do, you know, just in a pinch.

Okay. If you're noticing some brain fog while you're working, just get up and do 10 air squats, no weight, just do some squats. Okay. And that alone will increase circulation.

You should feel a lot better. Hydration, really key. Most people are getting dehydrated throughout the day. So just taking some water and actually taking a little bit of salts, right?

Get some sea salt. a little bit of salt, put it on your tongue, drink some water. Okay. And that can help enhance circulation that can help enhance, you know, basically we need those electrolytes for neural activity.

So that's why I recommend taking a little bit of salts. You can also do an electrolyte powder. You know, there's a lot of good ones out there. And, and that's phenomenal, right?

For, for, for bringing back better brain function and snapping out of brain fog. So just a couple simple, easy things, you know, in that book, I talk about like even just munching on like some rosemary, right?

Rosemary out here in Georgia. I don't know if it's like this in Oklahoma, but you know, it grows like in the summertime, it's really, really easy plant to grow.

And most of the listeners here, if you go to like a plant shop, you can get rosemary and you really like, you, you don't have to have a green thumb to be able to grow it.

Like it grows like a weed. and that rosemary has a strong smell and flavor and most people like it like i love it i love i love the smell and the taste of rosemary and rosemary actually had actually helps increase acetylcholine which is the major neurotransmitter in the hippocampus of your brain the temporal lobe where you store memory so believe it or not rosemary is actually a great brain enhancing herb and you can just munch on it throughout the day if you wanted to or add it to your chicken, you know, rosemary chicken, right?

Things like that. So that's another easy thing that you can do. Those are fabulous recommendations. I mean, you over exceeded anything I expected. I have to ask you, David, how does juggling impact One of my goals that turned 67 is to learn to juggle.

Don't tell my daughter or son-in-law because I'm going to do it for our granddaughter. I mean, is there any research

on juggling? Because it's pretty hard.

Definitely, because your brain has to make so many quick, you know, quick, basically enhancing your reaction time, like for example, juggling, you get you have to enhance that reaction time, you get a major stimulus of something called brain derived neurotropic factor BDNF, which is like miracle grow for your brain enhances the neurons and the synapses.

And so for sure, like your brain wants to habituate activities, meaning it wants to regular activities. It wants to get it to where it doesn't have to use a lot of energy in order to be able to carry those out.

So if we're brushing our teeth every day with our dominant hands, you don't have to think about it. Like for me, I'm listening to a podcast. I'm thinking about something else.

I'm not thinking, okay, brush here, right? You know, you don't really have to think about it, but if I had to brush it with my left hand, I'd have to put a little bit more thought, right, into brushing my teeth with my non-dominant hands.

So that's a neurobic exercise. Well, juggling, you don't know exactly where the ball is going to be. Your ideal is that like the ball's kind of coming at the same speed, right?

and in the same location every time, but you don't know for sure. Like sometimes you got to reach out a little bit further. And so that just drives up the activity because your cerebellum, like I talked about, that means small brain and the cerebellum is constantly communicating with your cortex, your frontal lobe and your cerebral cortex.

And it's trying to see what movement, like it'll actually replay or I guess you could say foreplay the play that or the movement that you're going to do.

10 to 20 times before you even do it, right? Like if you're gonna move your hand just two inches to the left, it's seeing that 10 times before you even do it.

And so as that ball is moving, you're making these quick reactions, right? And that is just like phenomenally good for your brain, okay? Now, what I will say is probably experienced jugglers, their brain gets so good at habituating it that over time they lose the benefits.

So like adding in some other level of challenge maybe doing it with their eyes closed or blindfolded, you know what I mean? As they get really good, they can add in some other level of challenge that then their brain has to adapt to, or maybe doing it on one leg, you know what I mean?

So there's other ways that you can kind of stagger the resistance, I guess you could say, to challenge your brain further. Well, you know, for our listeners, so you know, if I get really good at juggling, you know, I have to quit doing this podcast, I might be on the road.

I mean, you can just imagine, I could be doing it on a ball, you know, with, you know, more than three ball. It's just so exciting to think about, David.

That neuro-neurobics is such a fascinating concept. Well, I wanna respect your time, but I want you to tell our listeners about how your faith impacts your medical message.

Faith, Purpose, and Closing Remarks

Yeah, well, for sure, you know. You know, I'm a born-again Christian, and so I'm just grateful for the life that God has given me, that's for sure. And, you know, when it comes to my natural health message, it's really just about honoring God with our bodies.

You know, this is a gift that God's given us. Everything in our lives is a gift, and the body He's given us is a great gift, and we want to honor it and steward it well.

And so we don't want to idolize it, we don't want to make it an idol, but at the same time, We want to do everything God's called us to do, and it's really hard when we're sick and suffering, right?

And a lot of the sickness and suffering that we see out there is preventable and avoidable. In the Bible, it talks about, my people perish for a lack of knowledge, right?

And in another area, it says, my people perish for a lack of vision. I think that's in Hosea. And so when I think about knowledge and vision, knowledge is education, okay?

And that's important. Like you need to know the right thing. You need to know what a blood sugar stabilizing nutrition plan looks like, right? And I gave you that knowledge, but vision is the inspiration to carry it out because we all know people that know the right thing to do and sometimes it's us, right?

And we don't end up doing it because maybe we're not inspired to actually make a lifestyle change or to carry things out that are, that seem challenging.

And so we need to have the knowledge and the vision. And so that's really my, you know, that's my ministry is helping equip people with the knowledge to be healthy, but also the inspiration to actually carry out what it takes to live a healthy, abundant life.

Thank you. No, it's all about living at our God given purpose, loving God, loving people, fulfilling what he wants us to do while we're here. And I think also David is having a biblical eternal perspective.

So you don't really have to worry that, you know, it's not about longevity or it's not really anti-aging. That whole term anti-aging always kind of rubs me the wrong way.

I mean, it is the current term, but it's really just about, we're not going to cheat death. We have to face that. We're here and it's not for very long.

Well, thank you. In closing, tell our listeners how to find you about your podcast. For sure, Debbie. Well, you can find me at drjockers.com, also Dr.

David Jockers on any social media channels, YouTube, and then also if you're on podcasts, Apple, iTunes, Spotify, wherever it is, it's a Dr. Jockers functional nutrition podcast where I do short podcasts focused on really all the best functional nutrition tips, a lot of the stuff that we talked about today.

That's great. No, you'll learn something every single time. Well, thank you so much for being here and thank you listeners. Thank you for sharing. Share this.

Everybody needs this podcast. It's going to enhance their life in every single way. Because of you all sharing and subscribing, we're now in 146 countries and 6450 cities as of today.

So thank you very much. I very much appreciate it. I pray for our listeners that you will have God's richest blessings in your life. Blessings until next time.

Thanks for joining us on Vitality Made Simple Podcast. Be sure to visit DrDebbieOslet.com for our courses and resources designed to help you feel better, look better, and enjoy better relationships.

Please remember to like, subscribe, and share. Thanks for joining us.