The Ancient Secret Of Algae: Unlocking Detox And Energy Benefits Transcript

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Introduction to algae and fasting benefits

Welcome to the Fasting and Longevity Summit. I'm your host, Doctor David Jaggers, and I'm excited about our guest, Catherine Amsden. She's an expert in algae nutrition.

She runs Energy bits.com, and we're going to talk about how to use algae to support your mitochondria to help reduce inflammation in your body, to support longevity, and how you can actually use it while you're fasting as well to get great benefits.

So we're going to talk about spirulina, chlorella and how these are some ancient superfoods that are often forgotten and have tremendous health benefits.

So you guys are in for a treat here with this interview. So you are going to be inspired and educated as well. And I think you're going to walk out with some practical action steps to really improve your health.

And guys, definitely check out Energy bits.com. They've got some amazing products. And you can use the coupon code L, F s at checkout. That will save you 20% off at energy bits.com.

So without further ado, let's go into this interview with Catherine. Well, Catherine Anston, always great to connect. You're just a wealth of knowledge.

And I you know, I love algae. It's something I use from your company Energy bits every day. And so and I've always been fascinated with. And I think you're really the best speaker, the best communicator when it comes to overall algae nutrition.

So excited to have you here. And let's start with why you think chronic disease and inflammation is so out of control and escalating in our society today.

Yes, yes. Great question. Well, everything I've been reading, seems to identify two major, reasons. The first one is that, you know, our bodies just aren't being nourished the way they used to be because our soils are so undernourished.

They've been so mono cropped and over cropped that when you plant things in there, there's not enough minerals for the plants to have nourishment in them, whether they're plants for you to eat or plants that are being fed to other animals to eat.

Why chronic disease and inflammation are rising

So just like your cell phone, I mean, if you don't charge your cell phone every night, you're not going to have juice to communicate the following day.

And your body is no different if you don't give it the nutrients or the juice. The electricity which comes from nutrients that are in the food, it's also not going to perform for you optimally.

So that's number one. We simply do not have the nourishment in our food. Of course, that's even before even talking about the fact that most food that teenagers and kids are eating are overprocessed, and we all and sadly, do eat a lot of processed foods, but that's on top of the fact that the vegetables just don't have the nutrients that they used to.

And there's studies that document this, like broccoli has like a 10th of the nutrients it had 50 years ago. The other problem is that we are surrounded by toxins.

It's, in the air, in the water, in our in our clothing, in our cosmetics. It's impossible to avoid toxins. And I read that the average adult now has 700 toxins in their body.

So when you have toxins, whether it's glyphosate, pesticide, heavy metals from corroding water pipes in your town's system. Doesn't matter what it is, these toxins in, intercept, cell communication, they get into your cell walls, they get into your mitochondria, and they.

It's like someone stealing your parking spot. I live in Boston, and, you know, people like to protect them. Or maybe they've paid for a parking spot, but when somebody is in your parking spot, you're stuck.

You know, there's nowhere for you to go. Well, the toxins lodge themselves into your cell membranes. So even if you are now eating healthy foods like spirulina, the nurse can't get into the cells because the toxins have taken their their spot.

So if we can remove the toxins and chlorella, as you'll find out, is one of the best ways to do that. Then now you're getting the nourishment because we're going to talk about how spirulina feels all the nourishment, nourishing the gaps, and by doing so helps reduce inflammation, which 90% of inflammation.

By the way, I don't know if people talk about this. 90% of it is in your mitochondria. So as you find out, the spirulina protects the mitochondria, reduces the free radical, damage is occurring, which therefore reduces inflammation.

And when you have more reduced inflammation, your mitochondria are functioning better. Your cells are able to generate more cellular energy. And then when you have the chlorella that pulls out the toxins, then everything's working properly.

And if you don't have the top piece where you're pulling out the toxins, to use the cellular, cell phone analogy, it's like, you know, when you upgrade to a new cell phone and you realize you got to get a new charger cord because the old cord doesn't fit the new one.

If you're not pulling out the toxins, just giving the nutrition in isn't enough. You've got to do both good stuff in bad stuff out. Yeah. Super important.

And, you know, I've heard it said that chronic disease really comes down to toxicity and deficiency at the cellular level, right? Yes. And, you know, some would say toxicity is a even bigger issue because, again, when your cells are toxic, you can't get the nutrients in.

So I'm like you said, doesn't mean you just need to focus on toxicity. You actually need to address both. But we need to really prioritize, detoxification, cellular cleansing.

That's so important in our society today where we have so much chemicals. And so let's talk about the different types of algae. You got your, you know, your blue green, your spirulina, like you talked about.

You got the chlorophyl rich like chlorella. Let's talk about algae. Everything. Everything I do with everything algae. I love talking about algae. So, Yeah, algae, by the way, is a food.

Yes, it is in the oceans, the lakes, the rivers and the streams. But, it is a food, in its own category, food. And we grow ours in triple filtered spring mountain water.

I'm going to show you algae farms on a spirulina farm, and that's our chlorella farm. And so they're grown in triple filtered spring mountain water. So I want to mention that because there's so much toxicity in the ocean that you think, well, why should I be?

Spirulina vs. chlorella and how algae works

I don't want algae from the ocean. Well, I want to assure you that, spirulina and chlorella are grown in freshwater.

We're known for having the, you know, triple filtered Spring Mountain water.

And we do other things that make sure that they're, even more, protected from other tox toxins. But whether you buy spirulina or Chlorella at Target or Whole Foods pretty much guarantee that they're grown in freshwater.

So number one, algae is a food, and spirulina and Chlorella are grown as as food crops. Now, they have completely different, effects on the body. Spirulina, as you mentioned, is a blue green algae, and we call ours, energy.

That's, and we actually package it in blue because it's a blue green algae. We called it energy beets because spirulina gives you energy in the moment and also at the cellular level.

And I do want to get into some detail on the cellular level with the mitochondria. But just to, give you some sort of quick notes, the energy comes from the high protein that's found in spirulina.

It has the highest concentration of protein in the world, and all the protein is already an amino acid form, which means your body doesn't have to do anything to break down, the protein to get access to the aminos.

Here's a chart that shows animal protein all bound up. So you can take days for your body to break it down. And very often you only absorb about 10% of it as aminos.

Then you have collagen powder, which are in clusters of aminos and then you have algae which is individual amino. So because they're individual, it makes it easy for your body to absorb.

And spirulina is actually a bacteria. It has no cellulose wall. So, this makes it even easier for your body to absorb it. And because it's loaded with B vitamins, it converts the aminos into, into, energy.

So these are the little tablets that we sell to see the differences in color. This is a blue green algae, this is spirulina and this is Chlorella which is a green algae.

So as I said, spirulina has, two pigments in it, a blue one called viscose iron. And, and also the green one which is chlorophyl. But so that's how you get energy in the moment.

And the kind of energy you get is, not like a big burst and then a crash like you would get from a stimulant. A stimulant would be sugar or caffeine or chemicals.

And the analogy I make for stimulants is it's like putting a paper on the fire. You get a big burst, but then you have a crash algae, because it's really stimulates your energy at the cellular level, is like putting a log on the fire.

It's very steady. And in fact, you almost wouldn't notice it because it's not a stimulant. So, if you're doing a workout or, you, you'll notice that you have more energy or that you're not as fatigued, or that your hunger is satisfied, but, it's it's a very, very what I call quiet energy.

So that's the main thing of spirulina giving you energy and nourishment, by the way. It's ketogenic. So, if you're on a keto diet, it's great. There's zero carbs.

It does not interfere with your fast. If you, are trying to lose weight or if you are on Ozempic or one of the GLP ones, you need to be taking this. Because when you're taking those drugs, you're not get you may be losing weight, but you're losing muscle mass.

And that's a real big problem. And so because spirulina has the highest protein in the world, you can prevent that kind of loss. And you will never have cravings and you won't be tired and all that sort of good stuff.

So that's spirulina in the moment giving you energy. But more importantly, because it has nutrients in it that aren't found in any other food, like superoxide dismutase, which is an antioxidant or the blue pigment that makes it blue

called cosign.

And this heals your mitochondria and it gets into the mitochondria so that they can generate more cellular energy. And I explained to people that cellular energy is like money.

When you have more cellular energy, your body and your cells can do more things. They have more energy to fight a cold. They have your nutrients. Smelters will move better.

They will, help eliminate, toxins better. Your it's cellular energy is used for your heartbeat, your breathing, absolutely everything. So you want more cellular energy?

The problem is, as you get older, you have fewer mitochondria. So therefore you have less cellular energy or the ones that you have get damaged because of too many free radicals or toxins.

So they're not performing very well either. So and I do want to spend some time to explain the particular pathway that, helps the where the, spirulina helps the mitochondria heal because it's really fascinating, all science based.

And when you understand it, you'll, you'll, you'll really understand why and how you can reduce this inflammation, reduce these free radicals, and get back your cellular energy.

So spirulina very energizing in the moment and at the, at the cellular level. So it's very healing to, to the cell wall. By the way, the, your brain has the most mitochondria in it.

So we're going to and we'll talk about that in a minute. And so when you heal the mitochondria, one of the first things you're healing is your brain. And there's so much, issue, you know, recognition right now of brain health and, and depression.

And so there's a great book that came out last year by doctor, Chris Palmer by, called Brain Energy. And he talks about how all brain health issues, including, you know, are, caused by inflammation, which is caused by damaged mitochondria.

So when I get to the opportunity to tell you why spirulina is helpful to, regain your mitochondrial functionality and also repopulate your mitochondria, the first thing that it will help will be your brain.

It will reduce the inflammation and help your brain function better. So, so that's the sort of the high level, benefit of, of spirulina. Yeah, for sure. And I want to talk about that pathway.

My hypothesis, it has to do with the ability to boost superoxide dismutase, because you have your three major, mitochondrial antioxidants, glutathione oxidase or peroxide, glutathione on, peroxidase, I believe.

And then, you've got catalase and you've got, you've got superoxide dismutase. Yes. And so that tends to be the rate limiting one. Exactly. Well, catalase is actually in the cell not in the mitochondria.

But here's the cool thing. So spirulina is documented. We have lab tests to have the highest concentration of superoxide dismutase in the world. Chlorella has the highest glucose ion in the world.

Spirulina has the second highest. So those are two very critical antioxidants that can get into the inner membrane of the mitochondria and reduce the, the inflammation that's going on.

So if you want me to go through the panel, let's. Talk about. It because it's pretty cool. And we'll get to the chlorella in a minute. So I want to help people give them a bit of a science lesson.

So here's your cell. And inside the cell you have your nucleus. And you have all these little peanut shaped things that are the mitochondria. Now remember there's 2 million of these per cell in your brain.

And then inside the mitochondria this is where the ATP is produced. That's what cellular energy is. But what people don't realize is a byproduct of of ATP is free radicals.

And here's the problem. And most people don't know this either. Your mitochondria have their own DNA. There's only 37 of them, and you have 22,000 regular DNA.

But the mitochondria DNA really control the regular DNA. They control cellular communication. But guess what? They're located exactly where the free radicals are released as part of the ATP production.

So they're constantly getting damaged. And when they get damaged, that's when they, can't produce cellular energy very well. And so I want you to understand how cellular energy is actually produced, what this whole process is.

There's a series of molecules because I didn't point out, but the, the mitochondria have two membranes. There's an outer membrane like on all of your cell walls, but it has an inner membrane that only exists in the mitochondria.

And I can tell you why and how that is so the way that these the cellular energy is produced is there are molecules that are embedded in that inner membrane.

Mitochondria, free radicals, and superoxide dismutase

And what they do, it's sort of like a relay race. If you've ever watched a relay race, there's a runner who has a baton and he passes it to the next runner who then runs with the baton, and hopefully they cross the finish line and win the race.

Well, similar kind of concept, the way that ATP is produced. This is called the electron transport chain. But instead of runners you have these molecule rules.

And instead of a baton being passed from one molecule to the next, you have electrons. And when they pass the electrons from one to the next to the final, stage is that production of ATP.

And there are two helper molecules. I'll point out one is called cytochrome c and the other one is CoQ10. And we'll talk about those in a minute. So that's how ATP cellular energy is produced now in your Metuchen Gia.

When they're healthy all of those molecules are located nearby each other. So it's like having the runners having a nice hand off of that baton. But as your mitochondria get damaged from free radicals, what happens is the mitochondria start to expand.

Eventually that explodes. It's called necrosis. And that spills out all the damaged free radicals into your neighboring cells. But anyways, when you have damage free, too much free radicals going on and I'll tell you where they come from, they basically come from carbs or not having, proper, nutrition in your, in your cells when they become too far away.

Well, they can't pass the electrons very well. It's like asking Tom Brady to, to, you know, throw the football in a stadium that's four times the size of regular stadium.

So, so number one, when they can't pass the electrons efficiently like they would if they were healthy, you don't get as much ATP because the electrons aren't being passed along.

So that's number one. You get decreased. Cellular energy when you have damaged mitochondria. Number two, those electrons don't disappear. They leak out into the rest of the mitochondria and become free radicals.

This is why and how the the process of free radical damage just escalates and escalates and escalates. So here's an example a real picture. Here's a healthy mitochondria and here's a damaged mitochondria.

See all the empty spaces is a real photo. This is where mitochondria have. Not all those molecules have been damaged. And so they can't pass the electrons along.

And so they they leak out. And that leakage causes inflammation. And the inflammation are free radicals that have, exceeded the capability of the mitochondria to contain them.

And this is where inflammation comes. So so the great thing is spirulina contains this antioxidant called superoxide dismutase. It's the highest concentration of superoxide dismutase in the world.

And there are 25,000 studies in the PubMed and online medical libraries that prove that superoxide dismutase reduces inflammation, prevents Alzheimer's, prevents heart disease.

All these great things that superoxide dismutase does. But the problem is it's not available in any food except spirulina, algae, and to a lesser extent, in Chlorella.

The other interesting thing is that your body makes superoxide dismutase for you from the moment that you're born. However, by the age of 30, the production level decreases and by the time you're 40 or 50, you have virtually zero superoxide dismutase.

So the analogy I make for people is, you know, Mother Nature is so smart, so clever that she gave us superoxide dismutase because she knew there were going to be free radicals being produced in that ATP production.

So superoxide dismutase is was part of our composition. And think of it as a big umbrella, like a big golf umbrella. We've all seen those huge big golf umbrellas, right?

So all of our life up until the age of 30, we've had this umbrella protecting us from the rain of free radicals resulting from ATP as a byproduct. You can't avoid it.

But as you once you hit 30, that umbrella got smaller. Now it's just a city umbrella. Then it got smaller by the time you're 40, and by the time you're 50, it's like a cocktail umbrella and virtually.

And there and then none. So to me, this is one of the main explanations, I believe, why there's so much chronic illness and inflammation. And after the age of 40, because a, the critical antioxidant called superoxide dismutase is no longer being produced by our bodies and it's not found in any other food.

And the scientists don't know yet that it's in spirulina and chlorella because they, they do such research in very tight silos. Nobody's told them, about superoxide dismutase being available in spirulina.

But one catch superoxide dismutase. It's an antioxidant, as I've explained, but it's also an enzyme. And enzymes are damaged by high heat. So if you are buying a lower priced algae that has been dried with high heat, and most of them are because they need to get to market quickly, that high heat kills the superoxide dismutase.

It deactivates it. So you may be getting spirulina if you if you, you know, you might be getting still the protein and some other nutrients if you buy it from target or a lower quality source.

But you're not getting the, inflammation and protection of superoxide dismutase. If it was dried with high heat and almost all of them are I will say you can also use, raw or, frozen spirulina, because of course it has not been exposed to high heat.

And, there are some two really great, wellness institutes that, I'm aware of and we hope to work with. One is the Hippocrates Institute, which is 50 years old, based in, Palm Beach.

And the other one is the Gershon Institute. They operate out of San Diego, but have a clinic in Mexico. And in both cases, they take, patients who are in stage three, stage four, cancer and, help them with a plant based diet and, massage and red light therapy and juicing and sprouts.

But they always give them fresh spirulina. And I believe it's because, well, there's a couple of nutrients I want to talk about. Another one. The blue pigment.

That kills cancer cells. It helps their cells start to regenerate more cellular energy. Because the superoxide dismutase is being able to protect the, mitochondria again.

And again, when you have more cellular energy, you can fight it. Invaders, viruses, diseases, with more, more power. It turns the lights back on. Yeah. Absolutely.

Well, real powerful stuff. And that was a great explanation there. So let's go into, you know, the blue green element of, spirulina, which is the, what is if I go cyan in.

Yes, yes. And and then also what makes chlorella so powerful too. Yeah. Well, so again, blue green algae, I still think is Mother Nature's best, discovery creation for us.

It was the first life on Earth. And as you mentioned, that blue pigment, phi cosine. And I'm going to, show you how to spell it. It's, Why? Oops. Why Oak?

Why a and in and the reason I want you to know how to spell it is because then you can go online and Google it for yourself, because this blue pigment doesn't exist anywhere else in nature.

Only in spirulina. So not in blueberries, not in anything else, just spirulina. And it is an antioxidant. And it's a water based pigment, which is interesting because I'll tell you why it's important, but the most important thing about focusing and is that it has been proven to kill cancer cells.

And so I'm going to show you a paper that, is available on PubMed. What they did is they took cancer cells and they dyed them purple. And then they added psycho sign into the petri dish, and they took pictures over a 24 hour period.

And after 24 hours, the, the, cancer was virtually gone. And so this is because that's what phi cosine does. And the pathway by which it happens. Remember I showed you when I showed you the, electron transport chain, there were the four molecules, and there are four, two little helper molecules.

They're sort of like little shuttle busses. Well, the phi cosine. And in a healthy shell cell, triggers that one of those helper molecules, which is called cytochrome c, it triggers it to move faster.

So it moves the electrons through the electron transport chain faster. And what does that do? Generates more energy because you got more electrons moving and it's efficient.

So in a healthy cell the blue pigment in spirulina generates more cellular energy. And again more cellular energy means less inflammation. So that's number one.

But in a unhealthy cell we're talking a cancer cell or something called a senescence cell, which is basically a cell that has subdivided so many times that the DNA the telomeres have shrunk.

And they they're, they're now inflammatory. But they don't die. They just sort of keep hanging around and they cause problems. So in an unhealthy cell, that blue pigment called cycle, CNN detects that it's a cancer or unhealthy cell ejects the cytochrome c molecule that then kills the cancer or senescent cell.

Unbelievable. Right. So this is why I call spirulina intelligent food. First of all, you have to be intelligent to take it, but it knows what to do in your body.

Phycocyanin, chlorophyll, and cellular energy pathways

And it's it's so clever to me because that as I mentioned that I cosine it is a water based pigment. So, and that, that,

that cytochrome c molecule is also a water based pigment.

And this differs from that other helper molecule which is CoQ10. Now, CoQ10 is a fat based, molecule. And the other pigment in spirulina and also Chlorella is chlorophyl.

Chlorophyl makes plants green. Well guess what? It's a it's a, chlorophyl is a fat based pigment. So it does the same thing as the blue pigment does to the cytochrome c molecule.

It stimulates the CoQ10 molecule to move the electrons around, and it basically recycles the CoQ10 molecule so it can continue to generate ATP for us.

There's some really cool science out there that shows when you have red light, which could be from sunlight or red light devices and chlorophyl. It stimulates this helper molecule called Q10 to, to recycle.

But I thought it was so clever that that was a fact based molecule. And cytochrome c is a water based molecule, and spirulina has both of those pigments in it.

So you get double the, the kick from improving your electron transport chain, which include improves your cellular energy. And when you have more solar energy, that means you have efficiency in your generation of ATP, which gives you more energy.

B means there's fewer electrons spilling out to be inflammatory. It's a win win. Yeah. Really really great explanation here. And so let's talk about energy bits.

And like what's differentiating that. You talked about kind of the the you talked about the triple filtered water. You talked about how you guys aren't using heat, which a lot of companies are using heat, which is affecting the superoxide dismutase.

Can you go into some of the other details behind how you guys make the energy bits? Yeah. Well, I'm going to dwell a little bit more on that heat, because it is probably the most important thing that separates us from anybody else, because not only does that high heat, when you get to 114 Fahrenheit, it kill, it damages and deactivates all enzymes.

And superoxide dismutase, as you mentioned, is an enzyme. So you lose that benefit immediately because it's been deactivated. But I also found some science that shows same thing happens with viscose iron.

And when it's exposed to heat, the ability for it to be, anti-inflammatory and to have that benefit of the cancer killing capability just plummets. So when you are buying the lower quality algae that is probably been exposed to high heat, you lose the two nutrients that are most powerful to protect us from the two most damaging, chronic illnesses in our world right now, which are cancer and heart disease.

So, that's a pretty important thing for people to understand. And, and, we want to ensure that you're going to get maximum value from, you know, from the algae.

And also, I tell people, growing algae isn't like growing broccoli. It's more like making wine. And when you make wine, it's the production process that determines so many of the attributes of wine.

Same with algae. This is very complicated. You know, spirulina is easier to grow. Chlorella. Very complicated. And I'm going to tell you one more thing that separates us from the other companies because.

So you can't nobody would ever be able to grow chlorella in their backyard because the way you have to grow it, you start it in a little test tube and it grows for a little bit, then you move it to a bigger test tube and it grows a little bit.

Then you go to a bigger test tube. Then. Then you move it to a what's called a, pond. There. It's outdoor form and

it's a small pond. Then it grows a little bit, then you move it to a bigger pond, then it grows a little bit and it grow too.

So it's quite a process. Once you finish growing it from all those stages, then you dry it without high heat. At least we do, so that you preserve all those nutrients because, any time you use high heat.

This is why, we just did a chart to compare algae to some of these dried powders that are on the market. Anytime you use high heat, you scramble the nutrients and you decrease the the efficacy.

So our algae, both spirulina chlorella, are raw foods because we don't use high heat. And so even if you're using powders, I can almost promise you that you're not getting the same efficacy because they've had to use high heat.

But back to the Chlorella. So Chlorella does have a hard cell wall. And we will talk about some of the benefits of chlorella equals recovery. But it has a very hard cell wall.

Remember spirulina has none because it's actually a bacteria. This hard cell wall needs to be cracked. At production. Now, most companies use the original technique, which is to tumble the chlorella with glass beads to physically, you know, hammer the cell wall.

But there's heat, that is generated in that process, which deteriorates the quality of the chlorella. And some lead from the glass leaks into the Chlorella.

Now, we didn't get into what chlorella benefits are yet, but one of the key ones is it pulls out toxins that are interfering with your body's capability and your cellular communication to to be healthy.

So you want you don't want to introduce toxins when you're using something to pull them out. So we don't use that technique. We have a patent pending process that we use, which is we pass the chlorella through a, basically a sound chamber, and it's vibrations that crack the chlorella.

So there's no heat and there's no lead. So it's a much safer, way to and keeps the, nutrient value so much higher because there's no, no exposure to all these heat.

So, and then we, we import our, our tablets in large quantity, and we package them here in a UV protected packaging, whether it's bags or boxes or canisters.

So, and then, you know, so it's, and, you know, we, as you know, doctor joggers, we do our very best to educate people about the nutrients, and in the different allergies and how to use them.

So it's, so there's lots of steps required to ensure efficacy. And, you know, you know, I started the company, well, 14 years ago when my younger sister had breast cancer.

She's fine now, but her oncologist told her to change her diet to an alkaline diet because it would help with her healing. And I helped her with that, which led me to plant based nutrition, which led me to to algae, the most alkaline food in the world.

But, it's like anything the quality in is determines the efficacy.

How Energy Bits is made and why quality matters

And, whether you're buying, leather handbags or, house or algae, if you, make sure you focus on the quality, you'll, you'll get better efficacy. But also you you'll need less.

We recommend, for the regular dosage. Ten spirulina is pretty good for the most person, most people. And take it in the morning or the afternoon, to give you energy to satisfy your hunger.

Good workout. And ten chlorella. We recommended generally before bed, because that's when your body goes

through a detox repair cycle. So this will pull out toxins and actually helps you sleep.

And, we sell the tablets in large bags of a thousand tablets. So if you took ten tablets a day and we have a 20% discount code to share with your audience, ten tablets a day works out to a dollar a day.

So I tell people a dollar a day, that's that's like a third of a Starbucks coffee. You're worth a dollar a day. And each tablet has the same nutrition, as an entire plate of vegetables.

We have a great quote from a from NASA says one gram of algae has the same nutrition as a thousand 2000. One gram of algae has the same nutrition as 1000g of vegetables.

So each tablet has the same nutrition as vegetables. But, you know, maybe you don't like vegetables, or maybe they give you gas or your kids won't eat them.

Or maybe you're a carnivore and you don't want lectins and oxalates. There's a lot of reasons why people aren't eating vegetables. So you can have algae.

Because it's paleo, it's carnivore friendly, it's vegan. It's low carb, low cal, great for fasting. Ketogenic. I mean, it's great for every lifestyle and a dollar a day.

It's within everybody's financial reach. And you can use other devices to help with, your like other bio hacks, red light cryotherapy to facilitate healing and keep your inflammation levels down.

But honestly, algae is is, you know, a no brainer. And in fact, we didn't even talk about yet about how much it's so good for your brain, health, in fact, what I call spirulina, brain food and chlorella.

Because it's so healing and detoxing. It's really gut food. So, the two of them work quite differently, but also, synergistically. Yeah. I love the energy bits products.

And so my family, we use these on a regular basis, and I know that you now have a free report as well on improving mitochondria health. And algae. Yeah.

And of course that 20% discount I believe that code is CC is. Yes CC I am. Cses so simple code right there at energy bet SI.com. And tell us a little bit more about obviously you talked about this connection between mitochondria health and algae.

And so you've got this free report. Yeah. Well, ultimately, well, here's a couple of things. First of all, spirulina, as I mentioned, is a blue green algae and that it's a bacteria.

It's called a Sino bacteria. And, a Sino bacteria was the first life on Earth almost 4 billion years ago. And, science have had scientists have shown back from the 60s, they started discovering this that the, cyanobacteria evolved to become our mitochondria.

And, so it's no surprise to me that the, anything that's in the algae, the highest chlorophyl, highest, like glutathione on highest superoxide dismutase, gets into the mitochondria to help, with its production for its life or its regeneration, because there's sort of family.

And this explains as well, while why mitochondria have that inner membrane that doesn't exist in any other cells because originally this cyanobacteria was all by itself.

It was an antibody anaerobic cell, and it generated enough oxygen after a billion years that larger cells could start growing. But they didn't generate ATP as well as that anaerobic cell.

So the larger cell basically absorbed the smaller cell and put a second membrane around it. And that, that, that cyanobacteria became your mitochondria.

But here's the thing. It that original cell membrane, when it was out by itself, didn't disappear. It just had a fat membrane put around it. So when you are taking spirulina or chlorella, it is able to get into that inner membrane.

Drugs can't get in there. Most antioxidants like vitamin C or vitamin E can't get in there. Only the ones that were are found in in algae especially. Spirulina can get through there.

And it's because there aren't what's called pawns. Pawns are these little channels that are in your fat membranes that allow proteins and molecules in and out, and there aren't any in the inner membrane of the mitochondria.

But but, glutathione alone can get in there. Chlorophyl can get in there, and so can superoxide dismutase, which is the most powerful. So millet melatonin not.

Melatonin as well. Melatonin from. Infrared exposure will stimulate that mitochondrial melatonin which is a powerful antioxidant. So it's actually from sunlight or infrared.

Obviously we can get that an infrared sauna or like a red infrared panel, something along those lines. But that's, that's also, a stimulator there. Yeah.

And most people only know melatonin as something that helps them sleep but manages their circadian rhythm. But, you know, but melatonin was part of that original cell, single cell organism 4 billion years ago.

The melatonin that manages the circadian rhythm is only 200 million years old. I know that sounds funny. Only 200 million. But for oh, 3 billion years, it was an antioxidant.

At the cellular level, most of your melatonin, 80 to 90% of your melatonin is at the cellular level, not managing your circadian rhythm. The mitochondria are where every everything is your health, everything to do with your health.

It has to do with your mitochondria. So what I want people to help understand is that when anything that you can do to improve the health of your mitochondria and the number of them will automatically decrease inflammation and improve your own health.

So one of the things that you can do that doesn't cost you anything is to change your diet. Because it turns out carbs, processed carbs generate the most free radicals because they most free radicals escape through that electron transport chain and they convert into free radicals.

So you could just get into a low carb diet or adopt a keto diet. But fasting, intermittent fasting, or algae creating the fewest, free radicals. So one of the things you can do is change your diet.

Dosage, fasting use, and everyday health support

Just start eliminating those processed, carbs to reduce the amount of electrons that are escaping. To which will automatically protect your mitochondria and therefore reduce inflammation.

The other thing. So that's reducing your, your, your, free radicals. The other thing you can do is reduce, remove the free radicals, because now we've reduced them.

Now we want to remove them. But as I mentioned, most antioxidants can't get in there. But superoxide dismutase is the most powerful, antioxidant for that purpose.

Now, I was curious as to why that was. And so I learned that the type of free radical that is produced in the mitochondria is called superoxide, and it is known to be the most damaging free radical of all free radicals.

So that what you know, what's so what's so, you know, damaging about this particular antioxidant or free radical. And I found out and if you know anything about, free radicals, they have an unpaired electron in their molecule structure.

And so Mother Nature likes harmony. And so when you have an unpaired electron, that molecule will seek out somebody else's electron and steal it to balance itself out.

It's like a kid being at school. And they didn't they didn't have a lunch that day. So they took somebody else's lunch. And then that person has to take somebody else's.

So antioxidants have extra, electrons that they are able to donate to the free radical to balance out the, the, that harmony. And so there is no damage going on at the cellular or tissue level.

But superoxide has three unpaired electrons, so it's three times as damaging. And that's why this one antioxidant called superoxide dismutase is so critical to get in there.

Because basically what it does is it turns the, the those free radicals, superoxide into water. So now your, there's no damage being done to the mitochondria.

Remember, again, that umbrella idea, superoxide dismutase is gives you back the umbrella to protect yourself from the rain of free radicals that are coming out from the electron transport chain as ATP is being produced.

And you had this umbrella from the moment you were born until 30, and then got pulled away, and you can't get superoxide dismutase, but, from food, but you can get it from algae.

So, so it's, it's to me, it's a remarkable discovery. And I can't wait for more people to understand this because it seems to me the easiest, simplest food based way to protect your mitochondria when they're protected.

Now, they can repopulate. They can, generate better cellular energy. And soon as you have more cellular energy, you're going to have more energy to do everything, whether it's, fighting disease, thinking better, having your heart protected.

That's why they have found that superoxide dismutase is is a critical nutrient for preventing heart disease. And a large part of that is because of the reduced inflammation that's occurring at the mitochondria level.

I tell people I never eat alone. I always eat with my mitochondria. So if you are aware that they're these they're on your side. They want to help you be healthy.

And another analogy I help people to, you know, I use to help people understand this. Think of your body as a building and, and in a building you have offices and all the work that gets done in the offices are done because there's lights in the offices.

And as the lights go out, maintenance people come and, you know, put them back in so everybody can keep going while you're in your body. Think of those offices like cells and the lights are the mitochondria.

But if but as you get older, the mitochondria die. It's like the lights going out, right? Yeah. And if you don't have things like superoxide dismutase, there's nobody to turn the lights back on.

So think of spirulina.

Longevity mindset and closing thoughts

And to a certain extent a chlorella as something that will turn the lights back on. It will get your mitochondria working again, operating efficiently again.

And when that's happening, everything else will fall into place. But powerful stuff. Catherine, this is really great. I'm a huge fan, of course, of algae and in particular your company, Energy Beets.

You guys do a really great job with that guys. Check them out. Energy bits.com. And again you can use that code

CCS to get 20% off those products. They're amazing stuff.

Catherine, thanks again so much for your time and your expertise. Any last words of inspiration here for our audience? Well, being, aging does not need to equal declining.

And, I'll be honest, I'm approaching 70. I'm, you know, going to be 68. So I still got a couple years to go, but I have all my my my brain functionality, my physical functionality.

My skin is healthy, my digest, I sleep, I poop, I do everything great, and I, I use I've been using algae, both spirulina chlorella for 14 years. So, whatever health condition you have, you're you there's an opportunity to to regain or protect.

Not either protect what you have or regain what you've lost. And it does require some attention to what your lifestyle choices are, but it doesn't have to be complicated.

And it doesn't have to be expensive. You don't have to be Brian Johnson. And spending $5 million to reverse, your biological age. So I just want to let you know that everything is possible.

And the greatest things that help your health are the simplest things. Sleep, breathing, movement. And I put algae right in there because it was the first life on Earth.

It's still here. It's a single cell organism packed with nutrition. And it was a gift to us from Mother Nature, like everything else. So it doesn't have to be complicated.

It doesn't have to be expensive. And everybody can do it. And just sort of dial it down and, and, use the things that have been here for, for centuries.

Just take another look at them. Yeah. Wonderful. Thanks so much, Catherine. Appreciate you. Thank you. Doctor.