Ryan: Welcome back to the Anti-Cancer Revolution, everyone. I am Ryan Sternagel of the Stern Method and the Integrative Answer to Cancer podcast. And on this session, we have with us, Dr. David Jockers, who is a doctor of natural medicine, functional nutritionist, and corrective care chiropractor. He currently owns and operates Exodus Health Center in Kennesaw, Georgia. He is the founder of doctorjockers.com; a website designed to empower people with science based solutions to improve their health.

doctorjockers.com currently gets over one million unique visitors and has over two million monthly page views. Dr. Jockers has been published in various popular media outlets, including ABC, FOX News and The Dr. Oz Show. His bio is actually quite extensive, but maybe we'll leave it there for now to let him get all the information he can. Dr. Jockers, thank you so much for being with us here on the Anti-Cancer Revolution. How are you today?

Dr. Jockers: Doing great, absolutely, Ryan. Really glad that you're putting together this summit; such critical information people need.

Ryan: Yeah, we're really excited and the collection of people we've got, all in the same room, so to speak, yourself included. And it's shaping up to be something pretty special that we're pretty proud of. All that being said, I just read your general bio; but do you want to give the folks a taste, I guess you
could say, of what about cancer it is in particular that has you interested in cancer?

**Dr. Jockers:** Well, I mean honestly, the first person I ever saw suffer in my life, was my grandfather. My grandfather was my biggest mentor. He was Teacher of the Year three times in New York State. A military war hero. He taught me how to drive and I always looked up to him. And when I was 19, he was 72 at the time. He played 18 holes of golf, came home that afternoon feeling good, went to open a sliding glass door to let the cat in and he had done that a million times. He started pulling and tugging on the door and couldn't get it, so he tugged harder. All of a sudden, he fractured his arm. Literally, his arm broke.

Grandmother rushed him to the hospital. They took the x-rays and found out what was going on there. But how do you break your arm? You don't. So they were suspicious. They went in, they did a biopsy. Found out he had metastatic cancer. It had spread throughout his body into his bones. Of course, started him on chemotherapy and radiation. And I saw him in six months. He was over 100 pounds. He was 6'3", 210, strong, stocky guy when he started. By the time he died he was 106 pounds and just literally withered away. He was hoping every single day would be his last.

And so my family, we all saw that. Watched him go through that. I just asked the question, how could he feel so good, play 18 holes of golf, have that kind of energy and yet have this disease that was literally eating him up from the inside out? And that just started my quest. I was always interested in performance. And I became a personal trainer and then I ended up developing irritable bowel syndrome. And my path took me to nutrition, took me to stress management, sleep habits; things like that, and chiropractic care. And I became a chiropractor.

I started a practice and I was working really hard. And by the world standards, had a very successful practice but I was working around the clock, 80 hours a week. Taking better care of myself than most people in the world but not taking optimal care of myself. And I actually ended up developing skin cancer. And that was the same cancer that killed my grandfather. He had metastatic melanoma or skin cancer that spread throughout his body. And I grew up in Florida. I was on the beach, surfing and bodyboarding and sunburnt way more times than somebody should in the course of their life.

So I had all these risk factors and I developed skin cancer on my face and I could see it every single day, looking at it. And I just had to take inventory of my life and I realized there was a lot of things that were out of balance. I was
living through a fear of failure. And I'm sure you have other people that have talked about that. The emotional element, when you're living out of fear and fear is driving your thoughts. You're really not going to be able to heal. And so I had to do a lot of deep mental, emotional, spiritual work.

At that time, I was 29 and I was eating too much sugar for my body type. And so I changed my diet. Started doing intermittent fasting, extended fasting, a ketogenic style nutrition plan. I was overtraining. I was working out every day, seven days a week; just because I felt good, I got the endorphin release when I worked out. But I was overtraining and under sleeping. I wasn't resting my body well. I was just kind of plowing through each day, not really having my best. Just feeling like I had to work all day long because I was so scared if I didn't, I was going to fail.

And so I had to really focus in on that. I had to remove toxins from my life. I know you talk a lot about that, and I did that. Over the next three to six month period of time, I saw the cancers completely fade away. And to this point where you can't even see it at all on my face. There's not even a scar left. And I just realized, "Hey, we can take control of our health." And it's the things that we're doing every single day that are either causing cancer in our body or are allowing our body to heal, to regenerate, and to function at its optimal level. And ever since then, I've just been putting out content online and helping clients in my clinic to just overcome any kind of chronic condition and really achieve victory in their life. And so, I'm glad to be presenting here and helping people do that.

**Ryan:** Yeah. The Lord works in mysterious ways for all of us, I suppose, when we get into these things. That being said, the topic at hand; you mentioned fasting in there and I've had several speakers make reference to fasting as being a good idea. You've talked about it a lot over the years. You just recently ran the fasting transformation summit event, similar to his one; all about the benefits of fasting. And then pertaining to fasting, you also just published an amazing article on autophagy, one of the primary benefits to fasting. So that being said, I want to dive deep into both of those things pertaining to cancer. But just to start, would you like to give folks just kind of a general overview of what it is we're talking about when we're talking about fasting. And then we can dive deeper from there.

**Dr. Jockers:** Yeah, for sure. So fasting is basically just taking time between meals, between eating. And we all fast to some degree because we're sleeping at night, we're not eating. There's times during the day where we're not consuming food. So, basically that's fasting but really where we get the benefits are when we start to extend the amount of time that we're fasting
through each day. You see, every time we eat, we actually boost a hormone called insulin and insulin is a very, very important hormone. One of its main responsibilities is to take glucose or sugar and put it into cells where it can be used for energy. So insulin is very important. It does a lot of other things. We can't live without it. We absolutely need it.

However, we don't want high levels of insulin. Insulin is this dormant hormone that tells the body to store fat, to promote inflammation. It actually activates inflammatory gene pathways that amplify the message of inflammation throughout our body. So the higher our insulin levels or the more that we are stimulating an insulin boost, by consuming foods and snacks, and basically consuming meals all throughout the day, we are promoting inflammation in our body. And inflammation is the environment that is basically the environment that allows cancer to really grow, develop, and be sustainable in our body. And so we don't want that obviously.

So we want to keep insulin down for the most part throughout the day. We don't want it to continually boost. If we're only getting an insulin hit, let's say 1 to 3 times a day, we're going to do a lot better than if we're hitting that insulin with continuous meals; five, six meals a day. And so that's a big element. So, basically fasting allows us to get that insulin to be suppressed by taking an extended period of time between meals. And I always talk to people about a building phase. This is kind of on a daily basis. We could talk about extended fasting too but in a typical day you have a building phase and you have a cleansing or a healing phase.

So the building phase is your eating window. So let's say you have your first meal at 8:00 a.m. and you finish your last meal of the day at 8:00 p.m. That would be a 12 hour building or eating window. And then you would have a resulting 12 hour cleansing or fasting window. So that would be from 8:00 p.m. to 8:00 a.m. the next day. So it's a one to one ratio. Now for most people, especially for cancer prevention or if we're trying to heal cancer, we need better than a 1 to 1 ratio. We're going to really need something more like at least a 2 to 1, if not 3 or 4 to 1 ratio of cleansing to building.

So, a 2 to 1 ratio would be eight hour eating window. So we eat our meals between let's say 10:00 a.m. and 6:00 p.m.; that's eight hours. And then we fast from 6:00 p.m. to 10:00 a.m. the next day; that's 16 hours. So that's a 16/8, 2 to 1 cleansing and fasting. So those can be used interchangeably. 2 to 1 fasting to eating or building window. Okay, now we could do a 3 to 1 leg. This is what I'm typically doing on a daily basis, is an 18 hour fast and I usually eat two meals in a six hour eating window. So today I worked out. I had a meal around 1 o'clock and then I'll have another meal around 5:30 or
so. And so it's roughly a five to six hour eating window that I'm eating all my calories for the day and then I'm fasting for a good 18 hours from roughly 6:00 p.m. or so until 12:00 or 1:00 the next day. So that is that 3 to 1 ratio.

Now twice a week, what I do is one meal. Where I eat one meal in a one hour time period. I give myself one hour, I can eat, in a sense, as much as I want. Now I don't want to feel bogged down, right? So I eat until I'm really satiated, really full. But I do that, I do one meal two days a week. And this is basically a one full day fast where I really suppress insulin and I also activate something called autophagy; where the body actually self-eats. It goes and it breaks down old, decaying organelles. So, within every cell we have all these different components and they're called organelles; kind of like we have organs within our body.

So these organelles would be things like the mitochondria where we produce all of our cellular energy. The endoplasmic reticulum, which helps our body produce proteins for DNA and RNA synthesis. We've got our nucleus within the cell. We've got all these different components that we can actually break down and regenerate. So as they get older, all cells, in the process of metabolism, they're exposed to oxidative stress. Think about that like rusting. So, you know, any sort of object that we have over time, it's going to age. Well, it's the same thing with our cells and the organelles within the cell.

But the cool thing is, the body has its own self recycling system. Where it actually will take the mitochondria that's been damaged from oxidative stress over time, break it down and create a new, better mitochondria that's more metabolically flexible. That can use fat for fuel more effectively. That can use both fat and glucose for fuel, if it needs to. And so we just become better. We become better in ourselves. We become better, stronger, more stress resilient. And that's a cool thing that happens when we start to really get that autophagy ramping up in our body, when we start to fast beyond 18 hours. And this is why I will do that roughly 24 hour fast twice a week.

Now, we get a huge boost of autophagy. So I'm already getting a really good boost of autophagy; however, I may also implement a longer fast. My body type, I'm so thin. Ryan, you're thin too. Our body types don't need to do this very often. Somebody that's overweight, actually they can do this every month and get a lot of benefit. And really lose weight and prevent and reverse disease in their body. But for me, I'll do it once or twice a year. Where I'll do something like a five day water fast. And we start to really, really ramp up the autophagy, typically by day three. Especially if our body is already really good at burning fat for fuel.
And if we're on like a really high carb diet and then we try to fast, it can be really hard because we're not good at burning fat for fuel. However, if we're more keto adapted or good at using fat or ketones for fuel to begin with, then it actually becomes pretty easy. Like for me, it's really easy to do a 24 hour fast. I mean, I don't have to think about it. I don't have hunger or cravings. It's actually very, very easy for me. And I've been doing it for a long time because my body's so good at switching between burning fat and burning glucose.

So if I have a big meal, now let's say I have in that meal, more carbohydrates. Maybe I eat fruit or starches or something like that in that meal, my body is really good at taking the glucose from that and using it for energy. So I don't get this huge blood sugar spike and I feel really tired afterwards. It's really good at using it. But then, five, six, seven hours later it's already used all the fuel from the meal. Now it's really good at just going in and breaking down body fat and using my body fat for fuel. So I don't have cravings, I feel really good; I'm keeping insulin suppressed that way. And so these are some of the benefits that we get from fasting. And fasting again helps our cells become stronger and more stress resilient.

When it comes to cancer, fasting is really good at helping prevent. So, I'll just touch on prevention. Basically, when we don't have autophagy taking place, a high level of autophagy taking place on a regular basis, then we get all these damaged mitochondria; and damaged cells and damaged DNA and different proteins within our cell. Including things like a p53 gene, which is like the cell guardian that helps prevent against abnormal copies of the cell being made. These things become damaged and then the cells actually replicate. So they actually become copies of damaged cells in a sense. So the cell is dysfunctional and then it replicates and creates another dysfunctional cell.

And now we start to get large amounts of replication taking place. Then sometimes that replication can be sped up by different things like high insulin, for example. When we have higher insulin from consuming a lot of meals or a high carbohydrate diet, we're going to actually get faster cell reproduction. So now these cells can be sped up. So fasting is a great way to regulate that. To balance that, keep insulin down; slow down cell reproduction. Basically heal and reset the cellular structure, so we're not stimulating the production of all these abnormal cells. It's just fantastic for prevention of cancer. Ryan, if you want to ask any questions on that or we could talk about, if somebody has cancer, obviously how they can use fasting too.

**Ryan:** Yeah, definitely. I definitely wanted to get into more of how this would be applicable to a specific cancer situation. I just want to throw in, on a
personal note, for everyone watching; you mentioned that it’s easier once you’re more fat adapted, so to speak or more keto adapted or whatever the word. And I think, just with the way that ketosis has been kind of portrayed in social media and that sort of thing, a lot of people relate being fat adapt, for lack of a better term, to eating a super high fat, ketogenic, all fat all the time pretty much diet. But I would just add in there that that’s not necessarily the case, in terms of like being able to get into relatively easily doing this for yourself.

I guess I went through a period of having a really high fat diet but for the most part, I mean, I eat a lot of fruit. I eat a lot of grains and that sort of thing; of course, soaked and sprouted and all that good stuff. But yeah, I mean it’s about 1:30, Mountain Time and right before we started recording, I treated myself to a pear and half of an apple. That’ll sustain me for a little while and then I’ll go back to just feeling fine again because my body too is adapted to being able to switch back and forth. And it’s really just from implementing this practice into my life, of spreading that fasting, cleansing window out further and further. So, as far as actually putting it into practice, just start doing it a little longer every day and it doesn’t take long.

Dr. Jockers: Yeah, exactly. I mean, you've created metabolic flexibility and that's really the goal. We want cells that are very metabolically flexible, so we can consume the carbohydrates and then not have cravings a few hours later. Like, if you're on a daily basis, dealing with cravings, if you can't go more than four or five hours without a meal, without eating something, it's a sign your body is really metabolically inflexible.

Now, I'm a functional medicine practitioner, so I look at lab work all the time but I will typically know how healthy somebody is, metabolically, based on how long they can go without meals. Because if you can go a long time without meals and still be able to function really well, mentally, energetically, sleep well at night; that's a sign your body is just very good at switching between burning carbohydrates when it's available. But when it's not available or at least not available in the quantities that every cell needs, actually diving into your body fat and using that for energy. That's a really good factor.

So, if you're used to eating five meals a day, you just all of a sudden fast. I mean, you could do that but it's kind of like running a 10k when you've never exercised. It could be really uncomfortable and traumatic on your body. So it's much better to just start slowly. Like you were saying, just spread that window out just a little bit at a time. I tell people, start with 12 hours between your last meal and your first meal. Then maybe you could boost it up to 14 hours.
Then maybe a 16 hour fast, two days a week. Nonconsecutive days, like a Monday and a Friday. That's called a crescendo fasting. Then you could try cycle fasting, where you're doing three times a week. Like a Monday, Wednesday, Friday, where you're just skipping breakfast. And you're consuming your breakfast at 10 a.m., rather than 8 a.m. and you're finishing your food by 6:00 p.m. at night. And so you just start like that and then you just kind of listen to your body. Eat really good, nutritious, high quality foods when you are eating. And just try to listen to your body and hydrate well during that fasting window.

You can drink as much water as you want. Really important to hydrate well. When you wake up first thing in the morning, the best thing you can do is get something like 16 ounces of water into your body. And sometimes I'll tell people, drink 32 ounces before you even think about food. You're already dehydrated when you first wake up because you've been breathing out water vapor. So you've just got to get in and you've got to get that good hydration in. And then that will help every cell produce energy. You'll feel good.

It will suppress your hunger hormones, like ghrelin; which will suppress your appetite and make you feel like you don't necessarily need breakfast. That will help extend that fasting window. So that's super important. You certainly could follow a ketogenic diet, like a higher fat diet which can help with your keto adaptation. But if for whatever reason that's not something that you want to do, you don't have to do it. You can eat a higher carbohydrate diet, as long as you're following these principles and keeping that fasting window tighter. Getting that fasting window tight, like we talked about. An eight hour eating window, a six hour eating window. Once or twice a week, doing a full day fast or one meal a day, can be really powerful.

And if you're overweight and you really want to lose weight, doing something like a 48 hour fast, once a week. Doing daily intermittent fasting and then let's say you finish dinner at 6:00 p.m. on Saturday night, you don't eat again until Tuesday for dinner, in a sense. So that can be a really powerful stimulus for you. On a daily basis, make sure you're staying active as well; just moving your body on a regular basis. Whether it's high intensity exercise or even just going out for long walks. So good for giving your body a stimulus for autophagy, like actually exercise itself. Really good, especially during the fasting window. It can be really, really good for stimulating a higher level of this cell eating and rebuilding process.

Ryan: So let me ask you this, I want to dive deeper into the tangible, physical benefits from fasting. Especially the autophagy piece; but just more from a practical implementation. Balancing this out with everything else people hear.
When you're going through cancer or just when cancer is talked about, especially from a holistic, integrative nutritional angle or whatever you want to call it.

You know, we hear a lot about the medicinal power of food and flooding yourself with nutrition. Getting as much as possible of God's goodness into your body as you can, for all these positive epigenetic benefits and whatnot. But now we hear about limiting that to just a few hours per day or more than a few, but you get what I'm talking about. Could you maybe speak to that dichotomy a bit and how folks can reconcile that in their minds or how you reconcile those two?

**Dr. Jockers:** Yeah, absolutely; for sure. So we always have to realize, is that sugar itself or glucose, even though our body uses it for energy, it's actually an anti-nutrient. Meaning that we're consuming high levels of sugar or anything that boosts up insulin. We're actually going to utilize a lot more nutrients. The act of digestion itself utilizes a tremendous amount of nutrition from our body. So we have all the nutrients we really need within us, like they're stored within us. We can reuse them.

The body is really good at times of famine. I am a huge fan of a feast famine cycle. This is the ancestral way of life. If our genetic code was not good at times of famine, as a species we wouldn't have survived because before refrigeration and before modern agricultural practices, there were many times where cultures would go weeks sometimes, without food. Without being able to get enough food to survive on, and they didn't starve. In fact, believe it or not, their bodies actually got stronger and more robust. And so this is actually a way of survival. It's built into our DNA.

Now, do we need nutrients? Yeah. I'm a huge fan of food. I love to eat, myself. I love nutrient dense foods. So when we do consume food, ideally we're getting the best quality, nutrient dense foods that we're consuming. And we're also not necessarily... like I'm not a huge fan of long term calorie restriction. You're going to need a good amount of calories on a regular basis. I said I don't do extended fasting. My body is so thin, I don't do extended fasting like every month. I might do it every three to six months or something along those lines, doing more of an extended fast.

But on a daily basis, when I'm doing two meals, I'm eating very large amounts of nutrient dense foods, when I eat those meals. And I eat until my body says, "I'm full. I'm satiated." So I always say eat 'til full. Eat until your body says, "I'm full." I'm not trying to count calories and calorie restrict and I only want to eat a small amount right here. I'm eating a really, really good amount of
food. Now, I typically enjoy like a big, high fat smoothie. That's what I had today after my workout. I had avocados in there, coconut milk, good high quality protein powder; stuff like that. So I had a lot of calories but it was in a blended fashion, which makes it easy for my body to digest; less digestive stress.

And then I typically will do like one solid food meal a day. Just easier because I've had in the past, digestive issues. I find that I feel a lot better doing that and I enjoy smoothies. I enjoy the high fat smoothies. Now, in general though, could you do two large meals? For sure. You totally could. I know a lot of people that do that and they do really, really well. We're reducing the meal frequency but not necessarily the calories, unless we are trying to lose weight. Now we might add in that fasting window.

And the cool thing about fasting, fasting compared to just a calorie restricted diet, like if you were to consume 1,200 calories or a thousand calories a day, you are still getting insulin boosts. And this calorie restricted model, you don't get the human growth hormone elevation. You will get some ketones, but not the level of ketones that become very therapeutic and help you hold onto lean body mass. When your body has elevated ketones from a fast, you preserve lean body mass. It's also very anti-inflammatory. Ketones themselves are epigenetic influencers. Meaning that they actually affect the genes, particularly like in inflammatory gene pathways and they shut these things down. And they promote the expression of really good gene pathways.

So when we're fasting, especially extended fasting but also intermittent fasting, we're getting elevations in these ketones. And having all these tremendous neurological benefits on our brain, benefits for reducing cancer growth in our body. Then we're also really boosting human growth hormone. And growth hormone is great for our immune system. It strengthens our immune system. It helps preserve a lean body mass, so we don't lose muscle tissue. We maintain muscle tissue. We burn fat for fuel.

It also helps our skin, our hair; our nails. Human growth hormone is called the anti-aging hormone. People are paying thousands of dollars for growth hormone therapies and stuff like that. We actually boost it significantly by doing intermittent and extended fasting. We get this great boost of it. And then of course we get the autophagy, breaking down these old, decaying cells. So we get all those benefits. Whereas, calorie restriction, like if I were to eat let's say three meals a day, that were 300 and 400 calories each meal, I'm not going to get the same benefits.
Now there is something called the fasting mimicking diet, I don't if you're familiar with that, Ryan, but that is a five day low calorie, it's like 800 to 1,100 calories; low calorie. It's a low protein, ketogenic style, plant based ketogenic diet basically. So, high healthy fats, high fiber, low carbohydrate, low protein. And that sort of diet, because it's very low in carbs and low in protein, does not stimulate anabolic pathways. So like mTOR, the mTOR pathway and also insulin. So it keeps those things down and we get autophagy. Particularly by day four, day five, we're stimulating high levels of autophagy.

So, some people will do that and that can work. But if we're doing long term, beyond five days, that would be the most I would recommend. Intentionally calorie restricting would be five days. I wouldn't be intentionally calorie restricting for more than that because that can suppress thyroid hormone, it can suppress sex hormones, and it can cause a lot of problems. However, if you're fasting, you can do an extended fast beyond five days and actually get tremendous healing benefits. Without having that same level of suppression because you get this huge boost in human growth hormone, which basically helps optimize your hormone expression.

So it's interesting how those things differ. So I'm not a fan of long term, just reducing your calories, being on like a 1,200 calorie a day diet. And then exercising a whole bunch while you're doing that, in order to lose weight or whatever your goal is. Instead, I'm a fan of feasting. So when you eat, eat really well and then fasting; so when you're not eating, you're not eating. And then whether it's an extended period of time or if it's just a good window of time each day; that's what you're trying to accomplish.

Ryan: I'm glad you clarified there, in terms of, it's not about eating less. Particularly when we were talking about how are we going to get all these good anti-cancer nutrients into us? Just now, I just had a pear because that's all I had time for. You're not hungry but then when you are hungry, you can punish some pretty big...

Dr. Jockers: Oh yeah. For me, it's one of those things where, like I barely ever feel hungry until I start eating. It's like I wasn't hungry for lunch but once I started eating, it was like, then I was hungry. So I just wake up my body, saying, "Okay, now it's eating time? Alright, let's make sure we get all these calories in."

Ryan: Yes, very good. I don't want to derail too much from the benefits. I want to get into all the benefits of fasting, particularly on autophagy pertaining to cancer. But just one note for clarification, when you mentioned about the boost in human growth hormone. When we're talking about people actively
going through cancer, just anything with the word 'growth' in it can be kind of scary. Could you talk about that?

**Dr. Jockers:** There's different hormones, like insulin growth factor 1; so IGF-1. That is one that in a sense, kind of like the mTOR, the mammalian target of rapamycin pathway. In general for a healthy person, we want a slinky like effect for those things. Meaning that we suppress it and sort of like a feast, famine cycle comes in. We suppress it for a really good period of time. Like in my case today, 18 hours suppressing it and then boom, I boost it for six hours to help with growth and repair. Now if somebody has cancer, particularly a fast growing cancer, we in a sense want to keep it suppressed longer. We don't really want to get a good activation of it.

The main things that really activate those pathways are going to be high protein, high amounts of amino acids and high carbohydrates. So I always recommend a plant based or a lower protein, ketogenic style nutrition plan with fasting; for people that are in a state where their cancer is growing fast. That's what I typically recommend because it works on those pathways. Now in general, human growth hormone is different. Human growth hormone is actually something we really want because it's one of the best ways of improving our immune function. So, HGH in general, very anti-aging. Really great for suppressing tumor growth in our body. So those are really good things.

It's called growth hormone because it helps with stimulating... like if you were to combine it with exercise, strength training in particular, really great for helping boost muscle strength. Like there's bodybuilders that don't follow the bodybuilder diet. They actually fast on a regular basis. There's one guy that does a 48 hour fast. There's actually a guy, you can look him up on YouTube, I can't remember his name but he's a vegan. A bodybuilder; he eats one meal a day in a one hour eating window, every day. And he's like in his 50s and just incredibly strong. So he's getting the autophagy benefits; all kinds incredible benefits.

But anyways, with that said, this is not dangerous for cancer patients. The big things that are going to stimulate the IGF 1 that we want to keep down, are going to be very high protein. So, I don't recommend that when somebody has got an active cancer growth particularly. And then, in particular, dairy protein tends to stimulate it more. So like whey protein or casein or if you're eating cheese and things like that. That tends to be a greater stimulus for it. So, we take those things out on this sort of a diet and then we fast. Whether it's intermittent fasting and also doing extended fasting, for people with cancer to get the HGH boost, without that IGF 1.
Ryan: Very good. Glad that you cleared that up. Glad you said there what you did. I want to dive more into, particularly the autophagy. Let's close out with that and really go deep into it. But all the other benefits of fasting pertaining to somebody going through active cancer, epigenetic modification, new immune stem cells, all that jazz. Do you just want to kind of give a bit of an overview or a little deeper dive, I guess you could say, that you went into in the beginning? About just all those peripheral effects that are great.

Dr. Jockers: Yeah, absolutely. So we're talking about autophagy. Autophagy does a number of things. Number one is, mitochondrial or what's called mitophagy. It breaks down these older mitochondria. The healthier mitochondria... you know, cancer cells for example, are metabolically inflexible cells, the majority of them. Most cancers, they run off of glucose. They're basically anaerobic and they're constantly pumping out lactic acid as a byproduct because that's what happens in glycolysis. We've all experienced that when we work out really intensely, we'll feel the burn in our muscles. That's because those muscles don't have enough oxygen to use fat for fuel.

So, when we're exercising, it's great that we can use this glycolytic pathway and produce energy, through utilizing glucose. But if we're doing that all the time, like cancer cells are, we're going to produce a lot of acidosis in the system. And that can be real problematic in general, plus we're producing a tremendous amount of oxidative stress on the body. The more that we're breaking out sugar for fuel, the more oxidative stress we produce. In short amounts, in small amounts, like doing intense exercise for 30 minutes a day or something like that, amazing; because the body will adapt and get stronger. But if we're doing it 24/7, not good. We get worn down.

So the body will break down these old mitochondria that are dysfunctional; that can't use fat or ketones for fuel. And it will produce new mitochondria that can use fat or ketones for fuel, as well as glucose. So we want that flexibility. On top of that, it will also break down sentient cells and sentient cells are basically these older cells. So all of us have cells that are just aged. And for whatever reason, their cell programming has not shut them down. So, we all have this kind of programmed cell death called apoptosis, but many cells lose that ability just because oxidative stress, again. This kind of internal rusting breaks down the components that trigger that. Also, our immune system may be weak. Our immune system is not able to hunt these things out.

And so the autophagy or fasting process will help to get rid of these older cells and make room for new, healthy, stronger, and more stress resilient cells. Also, a big factor with cancer development, I'm sure some of the speakers have
talked about this, is viruses. Viruses are intracellular parasites. So we've heard of like bacterial overgrowth or let's say, H pylori, strep, parasites like worms, and blastocystis hominis and things like that. I mean, you may have had some speakers talk about that. I know in the world of functional medicine we're dealing with that all the time, with a lot of different individuals. And those are parasites or overgrowths of things that are basically feeding off of us.

Viruses live within the cell. So, other parasites and bacteria don't. Viruses actually go inside of the cell. And so they're hard to kill. In a sense, they're hard to get rid of. Herbs themselves don't really kill viruses. Herbs can strengthen the immune system. We can take things like beta-glucan, and elderberry, and olive leaf extract, and vitamin C, and zinc, and vitamin D. Great for helping support a healthy immune system. And that can keep a virus like Epstein- Barr, cytomegalovirus or something like that; herpes simplex virus. Keep these things from expressing themselves.

However, all of us are under stress and there's going to be times where we're just overwhelmed with stress. This is why people end up getting colds, fevers, and flus when the weather drops. A significant change in weather and particularly heat, from going from hot to cold is a major stressor on our body. And if we're already under stress, our immune system is not working at its optimal. It makes it very easy for pathogens to activate and cause problems. So a flu season is not because there's more flu viruses in the air, like we're always exposed to flu viruses. There's not an increase during that period of time. Instead, it's just that we had a weather change.

And oftentimes, our flu season, we've got all these holidays; Halloween, candy, right? Thanksgiving, Christmas, people are typically not living a healthy lifestyle. They're not getting outside as much, they're not active; things like that that are good for the immune system. They're not getting the vitamin D from the sun. So their immune systems are weaker. Oftentimes there's more stress and we get sick. And so we want to keep our immune system really strong. Taking herbs like that can be really good, but again, they don't actually get rid of the virus. What gets rid of the virus is our body. Our body can do it, we just need an environment that tells our body, "Now is the time." And that's really what fasting does.

Fasting senses the signal that the body needs more nutrients. It needs to recycle these cells. The first cells it's going to go after are not the healthy cells. There is an incredible intelligence within our body, it doesn't go for the healthy cells and break them down. It goes for the sick, dysfunctional cells. These cells are not supporting our lifespan. They're not going to help us survive and propagate the species; we need to get rid of these cells. So it will go in and

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start to break those down. Of course, those are typically the viral infected cells or the cells that have really rusted. We talked about the ones that have damaged mitochondria, the ones that are older. It's just going to go and break those ones down first. And that's how you really get rid of these intracellular viruses.

So fasting is one of the best things we can do to get rid of viruses. And we know that viruses are a major factor when it comes to cancer growth and cancer development. A lot of research going into different viruses and how they trigger oncogene formation and the development of cancers and tumors. So, doing a regular fast, like a yearly fast or especially if you are not healthy, and doing it several times a year; where you're doing an extended fast. Let's say, if you're really thin, maybe three to five days. If you are optimal weight, maybe do a five day fast. If you're overweight, maybe up to seven days or so. It can be one of the best ways to help get rid of these viruses. Do that every single year and your immune system be so strong and robust. It'll be a great way to prevent cancer.

And if you have cancer... cancer patients, I always have them fast; unless they are already cachexic, where they've lost so much weight. Then it's really tricky. We've got to get the nutrients in them, so it's a more tricky battle there. But in general, one of the best ways, if you've got a slow growing cancer, change the diet. Do a lot of things that Ryan's been talking about with all the experts in this summit, and then do a five day, seven day water fast. Which you'll notice is actually the toughest part is the first three days. Once you get past day three, you actually feel great. Most people feel really good. If you don't, I've got a lot of articles and content on my website that can help you troubleshoot why you may not feel good.

For example, it's really important to hydrate well. Really important to get minerals, electrolytes, things like that; keep your stress levels down. There's a number of different factors that can help you have a better experience. But for most people, I notice the first three days are the toughest, after that gets a lot easier. People typically are able to extend it without a major issue. If you have a fast growing cancer but you haven't lost a ton of weight, great time to do it. Do a fast. And if you're doing medical therapies like chemotherapy and radiation, actually doing a fast beforehand and then also extending it after is one of the best ways to actually make chemotherapy and radiation more effective.

So if you've got cancer, it'd be great for me to say, just do it fast and your cancer will be healed, right? But that's not going to happen a hundred percent of the time; maybe 10 to 20% will notice that. However, most people are going
to need oxidative therapies as well. So we call it a press pulse therapy. We press the cancer metabolically with a fast, for example. Where we get the body and we know these cancer cells love to use glucose. They thrive in a high insulin environment. We suppress that. Fasting, I also like to use a plant based, ketogenic diet when they are eating.

So, we create this environment that metabolically stresses the cancer cell. Again, that’s not typically going to get rid of the cancer cell. It’s just going to stress it and make it more vulnerable. Then we pulse it with some sort of oxidative therapy. So, if you’re in that natural alternative world, you’re going to hear a lot about hyperbaric oxygen. Oxygen is strengthening to normal cells, toxic to cancer cells. I.V. vitamin C, which it creates oxidative stress on the cancer cell. It strengthens normal cells, toxic to cancer cells. Ozone, there’s a whole number of different therapies that other presenters are talking about; that are oxidative therapies from a national perspective.

But if you’re like, "Hey, I really want to do chemotherapy. I want to do radiation," those can be used really effectively as well. And those are oxidative therapies. And I’ve seen a lot of people get great results when they combine the metabolic therapy with the oxidative therapy. So you’re fasting, let’s say you do a water fast 48 hours before you do the chemotherapy, and then you go ahead and you fast for another 24 hours after; you’re going to get much more profound destruction of the cancer cell, with limited side effects, when you’re able to do that.

Let’s say you get one treatment a week, I know there’s a lot of people that are on a program like that; eat well, if you can. I know obviously sometimes chemotherapy can have a lot of side effects; nausea, things like that. Do your best to eat well four days of the week. Then three days, you’re fasting two days or a day and a half to two days before the chemotherapy and a day and a half to two days after the chemotherapy. And you’re going to have a much better effect, as far as killing off the cancer, getting a better effect of that oxidative therapy, and also having less side effects.

**Ryan:** Because fasting, not only does it make the cancer cells more vulnerable but it does have that protective effect over regular cells as well.

**Dr. Jockers:** Absolutely, and radiation would be the same. You’d want to do the same with radiation.

**Ryan:** You kind of touched on it there, but I want to go back to autophagy for just a minute. When you first started talking about it, we were talking about going in and breaking down disease or unhealthy cells. For someone going
through cancer, that's kind of their first thought. "Well, does that mean the body is actually going to seek out and break down like an entire cancer cell itself?" or not necessarily? Do cancer cells just become stressed by the process but not necessarily broken down altogether?

And then the second part of that question is... I know this isn't necessarily a concern, just because of how well people do with cancer going through fasting. But I do hear the speculation on the autophagy process; that it could be beneficial to cancer cells, in the same way that it's beneficial to regular, healthy cells. In that the cancer cells can optimize themselves as well. Again, I know you know that just seeing how well people do, it's not really a concern but it's a good second part of the question, I guess.

**Dr. Jockers:** These are really great questions and questions we need to ask when it comes to this. And so basically, can somebody get rid of cancer cells when they're fasting? Sure, absolutely. The body is amazing, it's intelligent; it can definitely do that. We always want to figure out what the root causes are. So, if the root cause is really high insulin, that's one of the major root causes. Really high insulin, nutritional deficiencies, things like that; fasting can have a profound effect. If there's other major toxins, like if we have a root canal that is constantly leaching infection into our system, it's not necessarily getting rid of the root cause.

We also want to go upstream and figure out root causes as well, while we're cleaning up these dysfunctional cells. I think for most people doing a fast, along with a healthy lifestyle, doing this sort of extended fast, intermittent fasting on a regular basis, and then healthy lifestyle practices, and cleaning up just stealth infections, massive toxicity; if they have a really high level of toxicity in their body, things like that; it can be can be a great, great way, probably the best way to prevent cancer in your body. Arguably, along with anything else somebody might mention. However, once a cancer cell starts really building a lot of momentum in the body, when I'm talking about fast growing cancers, then we get a different game because these cancer cells can be super adaptive. They have a level of intelligence about them as well.

So I would think about it like, in a sense like a terrorist group. So if we have a terrorist group and that terrorist group is really small, it doesn't have a lot of PR, not a lot of people hearing about it and our police force is out looking for them every day, in a sense or we do a full sweep of the city once a year or whatever, we're going to knock these things out. But once the terrorist group gets large and they're able to communicate really well and have unique ways of communicating all around the world or wherever, all around the country; now we got a whole totally different game. It's a lot harder.
And so it's kind of the same thing with cancer cells. Once they're growing, once they're growing fast... I still believe fasting and prayer are the number one things that we should all be doing when we have a fast growing disease in our body. However, beyond that I do think there's a great place for this multi therapeutic approach. Where we're using these oxidative therapies, we're using a wide variety of different mechanisms to help the body. Help stimulate healing rhythms in the body, as well as energy medicine. I mean, just every element that we can. But even though cancer cells can adapt and use autophagy at times as well, I still think that environment is favorable to the survival of the organism. Creating that sort of environment. It's still going to be favorable but we may need more than that.

Ryan: And if this event is doing anything, I hope it's showing people that there's no reason to and you should not be putting all of your eggs in any one basket. Be it just one form of conventional medicine or one form of complementary treatment approach. Do all the stuff you hear about here and mix it all in and you're going to have the best result for sure. I didn't ask you before we started recording, do you have a few more minutes to get into some of the other benefits outside of autophagy? Stem cells and epigenetic modification and that sort of thing.

Dr. Jockers: I mean, honestly, those are like really the great benefits. Clearly ketones are being elevated when we're fasting. Really great for our mind. Really great for our brain. We also develop a better relationship with food. I know fasting, intermittent fasting, and extended fasting have really helped me just have a better mental, emotional balance in my life. I think eating in general is an addictive process. And I mean, it feels great to eat, I thoroughly enjoy it. We get the dopamine. We get this great dopamine hit, stimulate all these feel good neurotransmitters and endorphins. But it can be really addictive and for a lot of people, they cover up emotional issues by eating all the time.

Now when we don't eat, we don't get that stimulus; that feel good stimulus. And so we have to learn how to help ourselves feel good and feel happy, have joy, without getting this kind of stimulus from the outside in, through eating food. We've got to kind of learn a new mental, emotional coping mechanism or way of just thinking, and living in general. And I think it's a beautiful thing and sometimes different emotions come to surface and we're able to deal with different emotional challenges and blockages we've had. So I think that's a profound benefit of fasting.

Fasting is very biblical. I mean, every religion actually out there talks about the benefits of fasting. I'm a Christian, so the Bible is all about fasting. Jesus
says, "When you fast..." like if you choose to fast, you know. It's all about when you fast because it was so well known in that culture. Everybody did this, it was something that they all did. So He just talked about how you should carry yourself when you fast. That's what He was talking about. Everybody knew, you fasted. And so I just think that those benefits are profound. The insulin suppression, the elevated ketones, the human growth hormone; the stem cell development, which is a whole other level of science. Developing these embryonic cells. Again, these new, young, healthy cells is what we want.

The autophagy mechanisms. I mean, those things are just profound. The metabolic flexibility that we get. So, that's fasting. It's amazing and it's free. It actually saves you money. In fact, I tell people, if you're doing an extended fast, you know you're going to save money. So take that money and invest it in like getting a massage; go to the spa. And that will help you actually get even more benefits from fasting. And give you something to look forward to, rather than the meal.

**Ryan:** I like it. On that note, I have one tactical question I just thought of. Again pertaining to someone going through cancer and interested in this stuff. When you've got cancer, and you're taking an alternative, complementary, integrative or whatever you want to call it, approach; supplements are a big part of that equation. We never did an extended fast with my son but we were pumping a whole ton of supplements into him. I know if I had cancer, I probably wouldn't do anything before I did an extended fast. But that being said, I also have seen the power of all these different supplements and nutritional products and that sort of thing. What is your take on, could you do some turmeric supplements and poly-MVA and so on and so forth, and still maintain fasting levels or would it be bad?

**Dr. Jockers:** Yes, absolutely, you can do. All those types of supplements are great. Ones I don't recommend are typically going to be like, for example, folate. We know folate has an effect on stopping or inhibiting autophagy. So in general I don't typically recommend B complex or a multivitamin when somebody is fasting. Fish oils, omega 3s; I don't recommend those when you're fasting. Digestive enzymes, you don't need those if you're fasting; you're not trying to digest anything. So those would be things that I don't think that there is a big need for. But if you want like immune supportive supplements, like for example curcumin is something that actually helps activate autophagy.

So although turmeric or curcumin digest better when you're consuming it with meals, I mean, you're still going to get some benefits taking it outside of meals.
So that that definitely could be helpful thing. Different supplements like some binders, can be really helpful. Whether it’s charcoal or like a folic acid type binder, to help bind up fat soluble endotoxins. Your body starts breaking down fat and it’s going to release different toxins from the fat. So, something it can get out into circulation, like we use something called bio toxin binder, it can be really helpful for not having unpleasant symptoms when you’re fasting.

For some people, they get constipated when they fast. And if you’re constipated, especially on Day 1 of a fast, it’s not going to be a fun experience. So we’ll use like oxy powder is a great one, magnesium oxide type thing, to help stimulate the bowels; get the bowels moving really, really well. So, make sure we’re flushing things out. Coffee enemas can be helpful in those cases as well, to get the bowels really moving. Let’s see... sometimes people don’t sleep well, so we use adaptogenic herbs. Things like ashwagandha, L-theanine can be really helpful. Gaba, Valerian Root, passion flower and stuff like that for helping down regulate cortisol.

Some people get real high cortisol and they can’t sleep at night when they’re trying to fast. So those things can be really helpful in those cases. Green tea, believe it or not, the EGCG is really good for stimulating autophagy. Resveratrol [RSV] boosts autophagy. There’s compounds in oregano and rosemary that are really good for stimulating autophagy. Yes, there’s a lot different compounds actually out there. A lot of polyphenols, polyphenolic compounds. Ginger has shogaol, I think it’s called, that’s a polyphenol compound that’s really good for helping stimulate autophagy. Drinking some ginger tea, nothing wrong with that at all.

So all those things can be great. Apple cider vinegar can actually be helpful, the acetic acid. Citric acid in like a lemon juice or something like that can be helpful. So these are all things that can be done. Most supplements are totally fine. I tell people, if they’re on medications, "Continue to take your medications or talk to your doctor, in general, about it." Some medications like diabetes medications, definitely you need to talk to your doctor. If you start fasting and you’re taking metformin or some sort of a blood pressure or blood sugar medication, your blood sugar is going to drop really low.

So you need to be talking with your doctor about it. If you’re taking medications that you have to consume with food and your doctor does not want you to fast, then you could try something like the fasting mimicking diet too. Where you’re still consuming food, you’re just doing it in a lower quantity. Calorie restricted, plant based, ketogenic style diet to suppress mTOR. But you’re still getting the calories, so you can take your medications with that.
**Ryan:** Very good. I'm glad you cleared that up. So, even if you're technically consuming like one or two calories, and taking your supplements...

**Dr. Jockers:** No, no. I think as long as your body is sensing it needs more nutrients and obviously one or two calories or even like 10 or 20 calories a day, it's not anywhere near the amount that you would need. And really not enough to give you a big insulin sting. So no, I don't think there's any issue with that.

**Ryan:** Very good. I guess the last question would be what I'm asking everyone on this event, just to kind of get an overall milieu of what everyone has to say. Dr. Jockers, could you just spend like one to two minutes just talking kind of rapid fire, bullet point, whatever you want to do, about the ways that you, Dr. Jockers, go about living your life to ensure to the best of your ability that you do not come down with cancer yourself?

**Dr. Jockers:** Yes, sure. I mean, intermittent fasting, a huge component to it. Intermittent fasting, high intensity strength training. I work out four days a week. Where at the end of my fasting window, it's great I feel with that HGH boost. It's so good. Really prioritizing sleep, trying to get to bed early. I always try to be in bed by 10:00 p.m., for sure every night. I keep my room really dark. I have really good sleep hygiene in general. To prioritize good rest. Keeping stress under control. Just really working on my mind and emotions. I think that's so powerful.

It's so easy in our society, most people are walking around, being offended by everything. And I think being offended in life is actually a sign of weakness, mental, emotional weakness. I try to not be offended by anything. Somebody could think something totally different from me. Somebody could be out there thinking, "Oh, the ketogenic diet guy, blah, blah, blah. The ketogenic diet is bad." I'm like, "You know what? Whatever you want to do." It's like, "Hey, look. I'm not going to be offended if you don't carry my values." I think just being offended in general, is for the weak minded. So, we want to be loving beings. We want to express our own truth and what we feel like God is telling us but we also, at the same time, want to be loving, caring beings. And be able to offer that to the world.

I think mental, emotional health is so important. If you got to my Facebook page, I'm always posting things that inspire me; my social media. So, I think that's so powerful. Really good relationships, and with my wife and I, we always ask each other, whenever we have a disagreement, "Am I fighting to be understood right now or am I fighting for peace?"
And most of the time, I know when we're having a disagreement, we're both fighting to be understood. We both want to be understood. But you know what? Being understood is a great thing but what's a lot better than that is peace. And so we make the decision, "Well, let's fight for peace here." I think that is so, so important. So, I would say all those things; eating a really nutrient dense diet, is extremely important. I think that's really the foundation. Taking good supplements. All those things, that's really the foundation.

**Ryan:** Beautiful. A good way to close it out. Dr. Jockers, do you want to let everyone know where they can follow up with you and find out more?

**Dr. Jockers:** Yes, absolutely. I mean, drjockers.com is my website. I've got tons of phenomenal articles there. My YouTube, Dr. David Jockers. Facebook, Instagram, you know, all that stuff.

**Ryan:** All that stuff. Well, thanks once again, Dr. Jockers. This has been incredible. That's it for this one, everyone. That was Dr. Jockers. I am Ryan Sternagel of the Stern Method and the Integrative Answers to Cancer podcast. And we'll see you on the next one.