



## **Transcript – Solving the Hypothyroid Epidemic with Elle Russ - #353**



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Dave: If you've read the Bulletproof Diet, you know how important it is to have grass-fed meat, because animals that eat grass actually contribute to healthy soil, but they also make you stronger versus eating industrial, processed meat. Even organic industrially-fed meat is still not good for you. That's why I'm a fan of Butcher Box. Butcher Box delivers healthy, 100% grass-fed beef, organic chicken and pork directly to your door. All their products are humanely raised and free of antibiotics and hormones. You can think of them as the neighborhood butcher from Modern America.

Each box comes with 7 to 10 pounds of meat, which is enough for about 20 individual-sized meals. You could choose from 4 different box types, all beef, beef and chicken, beef and pork, or the mix box. You could also customize your box with add-in items like bacon, rib eye and beef bones. If you've Bulletproofing Cookbook, you know about bone broth and how important that is. You also know you can toss some upgraded collagen in there when you're done boiling those delicious beef bones to get an upgraded bone broth. It's pretty amazing.

Butcher Box is basically your meat for the month in a box. It also includes step by step recipe cards and a note from the butcher describing the cards and the farm's feature that month. I've seen these guys everywhere from Marxism to the Today Show, and for good reason. Sourcing high quality meat you can trust is hard, especially in some areas. The fact they deliver for free nation-wide is pretty amazing. By taking out the middle man, the grocery stores and purchasing direct from farms, Butcher Box is able to buy meat at a lower cost and passes savings on to you.

The price is only \$129 a month, which works out to less than \$6.50 a meal. Who says the Bulletproof Diet had to be expensive? Every box comes with enough meat for at least 20 individual-sized meals. Shipping is free nation-wide, unless you live in Alaska or Hawaii, in which case, well, it's going to cost more, but that's not always how it is.

Order now and get free 100% grass-fed burgers. That's 6 6 ounce burgers in your first box. Use the code Bulletproof to get an additional \$10 off. Get started by visiting [butcherbox.com/bulletproof](http://butcherbox.com/bulletproof). You can cancel any time without a penalty, so give it a try. Visit [butcherbox.com/bulletproof](http://butcherbox.com/bulletproof), and get your free 100% grass-fed burgers, and \$10 off with the code Bulletproof.

Speaker 2: Bulletproof Radio. A stage of high performance.

Dave: You're listening to Bulletproof Radio with Dave Asprey. Today's cool fact of the day is about hormones, which is kind of a dead giveaway that we might be talking about some hormones in the show. This is something you probably didn't know, that early hormone biohackers and spies in World War II actually have something in common. When there was World War II, obviously there was this war with Adolf Hitler running what is affectionately known as the bad guys.

The allied forces were looking for a way to disarm him and hadn't succeeded militarily, at least not at the time that they were doing this. They just figured out in cutting-edge medical research

that sex hormones made a difference in your aggression levels. They had started to use sex hormones therapeutically in London. The British had spies in Hitler's food network. They realized that if they put stuff in his food that poisoned him, his food tasters would figure it out, because ... Well, they would die, and that they couldn't poison him.

They had a plan. They actually wrote this all out to put estrogen into his food. You can't taste estrogen. Over time, they're like, "His food tasters won't know, but it would make him more passive and less hostile, maybe more like his younger sister, Paula, who was a secretary." They never got to put the plan into action. Hitler never grew a pair of boobs, and had a desk job the way they hoped. That is fascinating. It's one of the first times I've come across of hearing about someone looking to use hormones militarily instead of "Use testosterone, make super soldiers," and things like that, which we're still doing to this day and works pretty effectively.

Before we get into the show, if you haven't had a chance to check out something I'm incredibly happy about, if you're watching on Youtube, you can see this. It is Bulletproof Grass-fed Ghee, 100% butter that we cook over an open-flame to remove all of the bad stuff that you would find in butter. It provides a source of vitamins D, A, E, K2. These are crucial building blocks for hormone production. Removing nearly all of the casein and lactose and keeping the best parts of the butter, it gets rid of all the extra water, so it's more concentrated than butter. It contains the short, and even a few medium-chain fatty acids that help to keep your immune system and metabolism running.

I make this stuff because when you're cooking, this is the most stable cooking oil you can get. It's got a smoke point of 485 degrees. It tastes like buttery and caramel-y. It's super delicious. It works in every recipe you can think of for cooking. You can make Bulletproof coffee with it. When you make Bulletproof Coffee with grass-fed ghee, it doesn't foam and froth quite as much as it does with butter, but it doesn't have the trace amounts of protein that are in butter. It's less inflammatory if you're sensitive to those proteins.

This is one of those go-to fats that should be in your arsenal. It adds a flavor to food that is hard to express. It's different than butter and more smoky and rich, more caramel. I love this stuff. I'm so pleased to be able to offer it to you.

Alright. We've now got that out of the way. You're already going to bulletproof.com and clicking on Brain Octane, Bulletproof Ghee. It's time to move on to today's guest who is a certified Primal Blueprint expert, a health and life coaching writer, host of the wildly popular Primal Blueprint podcast, author of a new book called, "The Paleo of Thyroid Solution." Her name is Elle Russ. Elle Russ. Elle, welcome to Bulletproof Radio.

Elle: Thank you so much for having me. It's interesting you mentioned that tidbit about Nazi Germany, because I was thinking as you were saying that, they should have just zapped his thyroid. He would have been too tired and miserable to even get out of bed to do anything, not just estrogen, right? That could have been also another tactic.

Dave: Maybe you're thinking that they should have put fluoride in his water.

- Elle: That's right. Fluoride, chlorine, maybe a little radioactive iodine on him while he's sleeping on the glands. He would've never been able to think straight, to get any of the troops right.
- Dave: It's funny because I know that we're going to talk about fluoride and how fluoride negatively impacts the thyroid, how it was one of the original drugs to slow thyroid function. A lot of people don't know that fluoride is primarily a byproduct of aluminum production today. The first big distributions of fluoride came as a result of the Manhattan Project.
- Elle: Not surprisingly, yeah. Bromine, fluoride, chlorine, those are all definitely anti-thyroid. Soya is also anti-thyroid.
- Dave: My grandfather was one of the original fluorine chemists. He wrote on the heading for the Encyclopedia Britannica. On the Manhattan project, he created the PUREX process for separating out uranium like it's still used today. I used to ask him before he died, like, "What do you think of fluorine?" He's like, "Nasty stuff. You should get it nowhere near your body ever." Then again, he wasn't a biochemist. He was just a chemist. He was looking at whether it would break your cells and smack you upside the head and burn your eyes and stuff. Just a little bit of an interesting tidbit since we're going way back in time.
- Elle: Sure.
- Dave: Now, you just came out with The Paleo Thyroid Solution. People probably don't know this, but you're a Hollywood writer and like a comedian and stuff.
- Elle: I am.
- Dave: What does a Hollywood writer/comedian do writing about a thyroid, because there's really nothing that funny about a thyroid gland, right?
- Elle: There's nothing funny about it, but there are some hilarious, uninformed doctor experiences that go on, conversations with doctors that are pretty funny. There's actually nothing funny about it. In fact, when I got a thyroid problem, I initially moved out here to ... I'm a comedian from the second city in Chicago. My background is sketch comedy and improv. I came out to be like a leading actress in Hollywood in TV and film.
- When the thyroid stuff hit, and I gained so much weight, clearly there's a type that was out of this type of leading lady. When I realized that I still was undiagnosed for 2 years. I was just so fat and bloated. I thought, "Well, you know what, I guess I should go back to comedy, because maybe then I will only be accepted as like the fat, funny friend or whatever."
- Then, I got back into comedy, which it wasn't my intention. What was great about that is it turned me into a writer because we just write hundreds of sketches, and you perform so much, and including with celebrities. It's just a huge ... big problem. I never wanted to write a health book. I never even thought of getting into this. It was total accident. Meeting Mark ... When I first met Mark, I didn't even know who he was or what the Primal Blueprint.

Dave: Mark Sisson, you're talking about ... Just for listeners who don't know. Mark Sisson is ...

Elle: My publisher.

Dave: Your publisher. Also, you guys cohost the show together, right?

Elle: Yeah. He's so busy right now with Primal Kitchen and other things that he doesn't host as many as I do, so sort of like the over this year. There is some comedy involved, but for the most part, it's really not a funny subject. I was really compelled to write it. After just hundreds of people, just wherever I would go in the world, would just naturally bring up their thyroid problem to me. Then, I would coach them or help them or spend time with them. Then it just became like, "Gosh, I should really write a book because this is just in my reference range everywhere I go."

Then Mark said, "Hey, I actually want to write a thyroid book." I said, "Well, I've got the one for you." Because going primal and paleo and low carb actually really changed my life and got me out of the insulin resistance state that hypothyroidism got me in. Also, just there's too many nuances to paleo, primal lifestyle, not just the diet. I'm keto at this point. I stay low carb as much as possible. That's the best for me. There's so many nuances to this way of living and being fat adapted that helps heal some underlying issues of hypothyroidism.

No one's ever done a book on these two. They might have mentioned a paleo diet in a thyroid book, but no one's ever really delved into it. I felt like there was a reason to write a book.

Dave: There definitely is. I've gotten really deep on Hashimoto's on the show with Isabella Wentz, who is a good friend. I realized, we've never covered like thyroid 101 on Bulletproof Radio. I wanted to go in on that with you because I realized probably half a million people will end up hearing this interview, which is amazing. Of those people, a substantial percentage of them have thyroid problems and don't know it. You can probably tell me what percentage of them ...

Elle: 60% are undiagnosed and a lot are mistreated or under-treated, as well. Those are people that have been diagnosed but then they're just non on the right dosage, not on the right hormone, doctor's not looking at other areas. 200 million people worldwide, and 25 plus million Americans.

Synthroid, which is just one thyroid hormone replacement option, and often not an optimal one, has ... I don't know. 23 number one brand name prescriptions sold in the US.

Dave: I can tell you and listeners, when I was 27, I did a full hormone workup. I'd already spent years and at least \$100,000 on improving things. I was trying to get to the bottom of why I was fat and tired all the time. I had a successful career, but I was barely holding it together. It was like all of my effort ... I was exhausted all the time no matter how much I slept.

I did have Hashimoto's. It's gone now. Hashimoto's is an autoimmune condition for that. I remember the first time I went to the doctor. The normal doctor, "There's nothing wrong with you. Maybe you should lose some weight." I'm like, "I work out 6 days a week, an hour and a half a day. I'm tired all the time. I'm not losing weight. Maybe you can kiss my ass, because you

can't tell me how to lose weight either."

When I went to a functional doc, and he was like, "Your thyroid is trashed." I had one other problems that we're going to talk about, that you're going to talk about. He put me on the right things, not just Synthroid. The next day I was like, "Oh my God. I remember this. This is what I feel like."

Elle: Because you got T3. He probably gave you something with T3 in it.

Dave: he did.

Elle: The moment you take ... even just if you're hypothyroid. The moment you take just a little bit of that, the brain lights up immediately. It's almost like how you feel when you take the octane and you're like in between meals, and you're not hungry, and you ... Then like, I'll take a swig then I'll be set to go for swimming and totally satiated. The brain lights up. You know what I mean?

Dave: It's a feeling. Right.

Elle: It's so potent. It's amazing. Yeah.

Dave: You totally get it. I love that analogy. For me, it was life-changing. This one time, I was in Europe and had a month-long roadshow where I was just raising money for a startup. I left my bag of supplements and thyroid hormone in the US. I flew around. I was in Malta.

Elle: That's bad.

Dave: A month without thyroid, I was like, "I'm going to be disabled." I was actually viscerally afraid. This was probably almost 10 years ago. I'm like, "I don't know if I can do this. I don't have this." I had a friend send me ... Like break into my apartment and send me my supplements, like FedEx to Malta. The customs people, they're like, "We can't let a box or bag of pills and all this stuff in." I met with a custom's agent. I'm like, "Do you have socialized healthcare?" He goes, "Why?" I said, "Because if you don't give me my drugs within 48 hours, I'm going to have a seizure here on the floor of your hotel. You guys are going to have to pay to fix me."

He was like ... He thought of it. He goes, "I'll give you your pills on your way out of Malta." I'm like, "It's a deal." I picked up my thyroid. Then, I was good to go for the rest of my trip. I remember, I was terrified of not having thyroid meds, because, for a while, it was like the only thing that kept me going. That's how important it is, right?

Elle: Well, yeah. Well, I'm going to get to that in a second. I also want to say, it's interesting you mentioned that. I not only do this for myself, but I tell people to do it. If you're on thyroid hormone, give an extra bottle to a friend or family number, because in the event you're somewhere, it falls on the water, you're in the middle of no where in Fiji, you're going to need someone to FedEx you that medication if you can't jump down to the local pharmacy and get it right away. That's so funny you've had to do that. I've had that happen, too, like, leave my thyroid medication, had to have my mom and someone FedEx me an an extra bottle.

Thyroid is the master gland of the entire body. It is responsible for every metabolic process that goes on. From regulation and production of sex hormones, brain function, heart rate, everything. If you don't have one, you're dead. That's just the end of that. If you don't have one, then you need to replace what you would've been given, which is thyroid hormones.

The thing is though, well, if you can't live without the gland, meaning no thyroid hormones, then what do you think life is going to be like when you've got suboptimal, crappy levels of thyroid levels? You're going to die slowly. You may die faster without the thyroid gland, but you're going to die slowly. That's exactly what happened to me. When I look at hypothyroidism sometimes, I don't believe in the ... looking at like a disease as an enemy, or anything like that. Just for humor's sake, I'd be like, "This thing is like ... It's like a Schlumberger." It's literally like getting to the bottom of like, "Okay." You wouldn't allow your wife to be slowly poisoned and not know ... You'd be like, "I'm going to do everything to find out who is doing this to my wife."

Same thing here. It was just like, "What was happening to me?" Everything will shut down. You will get diseases, cancers and other issues that will kill you, so you won't technically die of hypothyroidism, but you will die of something you would have otherwise not gotten because you're in a hypothyroid state.

Where Bulletproof and keto and low-carb comes in is perfect because people who've been in a hypothyroid state or been undiagnosed or on the wrong dosage of medication for years, they're insulin resistant at some point. What happens, too, in the hypo state is not just you're naturally gaining weight no matter how much you work out or how much you eat. Then, you are craving unreal levels of sugar and carbs, because you're not getting energy from any thyroid hormone. Your cortisol is up.

Now, you're fat around the middle. You're craving carbs. Then, now, you've just become a pre-diabetic mess. That was the key that a lot of people ... That's where all of what we do comes in because the key essentially is is you might get on thyroid hormone and feel great in every way. Then, what do you do about this lingering insidious horrible bloat and weight? The only way to do that is to do the anti-inflammatory, low-carb, keto, and primal life.

It end up killing people. I mean, I know someone who is riddled with Hashimoto's, untreated for 20-30 years, diagnosed with multiple personality disorders. People get misdiagnosed with bipolar disorder with Hashimoto's. Anyone who has ever been depressed or feels like they're struggling with depression, that is absolutely related to thyroid. We have more receptors in our brain than anywhere else.

People are getting misdiagnosed or given Prozac. Then, it won't work. Then, you're back to square one again. Or, they'll get misdiagnosed with polycystic ovarian syndrome, or something, which I was misdiagnosed with. Don't have it. Never had it since. On the profile of the gynecologist, it looked like a classic profile. Again, it's what's causing it?

You and I know, it's like you go to functional medical doctors. They spend time getting to the root. Most of the time, people go to an endocrinologist or some doctor. An endocrinologist, by



the way, are the worst people to go to classically for thyroid health.

Dave: It's true.

Elle: They're so indoctrinated into a belief system that's 40 years old when it comes to thyroid hormone treatments. A lot of patients remain sick for years. On the other side of it, too, I have to put some responsibility on the patient. I know a lot of people who, they might say, "I'm on thyroid medication." If you were to ask them, "Do you know what it is and how it works?" They have no idea. Those are people that are just taking it from their doctor and they're going, "Alright. I take this pill."

My biggest thing is if you get diagnosed with something, you get in there and you learn about it. There's no more of a professional hack than me on this subject because I did it without doctors. I actually solved 2 bonds of hypothyroidism without a doctor at all. I dosed myself. I took my own bloodwork, because no one would help me. I live in Los Angeles with some of the best hormone doctors and celebrity doctors on books and all sorts of stuff and still couldn't find anyone who knew what was up, had to do it myself. I don't recommend that. I'm just saying that's how brutal it is and hard it is to find an informed doctor.

Dave: Why is it so hard to find a functional medicine doctor? Is it because the problem is more complex than they were taught in school? What's the underlying problem there?

Elle: Actually, you probably misspoke there a little bit. You want a functional medicine doctor probably to deal with it. It's hard to find a regular MD or an endocrinologist who treats thyroid properly. Functional medical doctors usually do go above and beyond, so they are the best.

Here is why it's hard to find, because they haven't gone above and beyond any learning since 30 years ago when they got their MD. They're indoctrinated into the system. Literally, it's an ego-based approach that's, "Gosh. I spent all this money on medical school. How could I not have learned everything I was supposed to learn? I went to Harvard." Then, they don't do any more researching beyond that.

When I see a doctor that just got an MD 30 years ago from somewhere, I look at that as a red flag. I want someone who is geeked out on medicine and as excited and stoked. You know that functional medicine doctors are usually like that. They ... Orthomolecular medicine, anti-aging, they're dabbling into all these arenas. They're spending an hour with you getting to the root.

Dave: It's still hard to find a functional medicine doctor. That's what I was bringing there. Like, it's hard to find a normal doctor who knows about this ...

Elle: There is not a lot of them.

Dave: I get people in LA. They'll call me. They're like, "Dave, who should I go see at LA?" There's a smattering of people. Maybe there's a bunch of them I don't know, but there's still a percentage of doctors who know this. It's ... What? 5%, 10%, would you say of overall doctors?

Elle: Probably ... Listen, the doctor on my book, Dr. Gary Foresman who is a functional medicine doctor ... I drove 2 and a half hours to see him on the Central Coast from LA. There is a reason for that. You know what I mean? Because he is very unique and special. Gosh. All of the experts in Beverly Hills, and all of these people. They're just ...

A lot of them don't know and understand the diet component to things. They might be missing that biggest link. A lot of them know how to test properly. Some of them are scared of being sued, to be honest with you. That's the way they're practicing medicine. It's the practice of medicine. You know, it's ... to operate under that fear. A lot of new physician assistants and doctors are being trained pretty much how not to get sued. Is that really the first order of business with patients?

I think in this Western medicine world ... I think Western medicine is great obviously, but you're looking for a prescription when you go to a regular MD. You're not going to be getting answers with 15 minutes.

Dave: I actually became a biohacker, because back when I was dealing with all this stuff, I didn't know my thyroid was a problem. I also had ... My testosterone was very, very low. My estrogen was high. I was living in a house with toxic mold, which causes Hashimoto's in many people. I have of whole complex of things going on. My body was in terrible shape.

I went to this guy. I'm like, "I don't know what's wrong, but I feel like I've been poisoned. I just don't have any energy. I bought disability insurance. I'm under 30. I kind of feel like I'm dying. I don't know what's going on.

Elle: You were.

Dave: I was. I was sure of it. I said, "Vitamin C kind of helps." He was, "How much are you taking?" I said, "I take 3 g a day." He goes, "Stop. It could kill you." I looked at this guy, and I go, "What about Linus Pauling?" For listeners, Linus Pauling ... Oh my god. He was nominated for two Nobel prizes, or won 2 Nobel prizes and was one of the leading researchers of vitamin C. This doctor looks to me and goes, "Linus who?" I'm just sitting down there. I'm like, "You're fired. You don't know what you're talking about."

I didn't pay him. I walked out of the office. I still never paid him. He sent it to collections. I'm like, "Services weren't rendered. He was incompetent."

Elle: I have not paid so many doctors. There's so many I haven't paid.

Dave: I felt betrayed. For the next 4 years, I was like, "I'll just learn all of this." I read like thousands of books and papers and put all my energy into this, and eventually found functional medicine. They didn't call it that. They called it orthomolecular back then. Realized then I had a thyroid problem, and other problems and toxin problems and ... All this stuff that's become biohacking in functional medicine.

If I hadn't have had that same experience you did, which is basically them saying, "It's all in your

head. You have more than 2 symptoms. Therefore, you're a hypochondriac." People still experience that every day. I've had clients, and I've had friends who are so clearly hypothyroid, and you're like, "Go see your doctor." "I did. I took a thyroid test, and they said I was fine."

Walk listeners through what are they testing, and what do you test? What will you recommend testing? What's the difference?

Elle: Let me rattle of the test, just so that people can write it down later and know exactly what the right ones are for. I listen to podcasts sometimes. They're not giving me enough juice. I want a little bit of information. Essentially, kind of a comprehensive basic, thyroid panelist, TSH, free T4, free T3, and then, we have 2 Hashimoto's antibodies. One is TPO antibody. The other is TG antibody. Then, there's reverse T3. If you get those all done in one blood-draw, that is pretty comprehensive.

There's also a little side thyroid related test, DHEA sulfate. If you're a guy, low and total in 3 testosterone, vitamin B12, vitamin D, and homosistine, and HbA1c, of course, if weight is really a problem. Those are the basics. If we want me to do thyroid run ... Do you want me to just tell you how the whole whole thing works ...

Dave: Start with TSH and what it does, what converts, what's ... People listening may have heard us talking on Bulletproof Radio about specific autoimmune thyroid conditions, and other things like that, but I realize I've been remiss in just walking listeners through one of the primary important energy metabolism ... I don't want to call it quite a pathway, because it's not mitochondria. Your mitochondria actually tells

Elle: It affects it.

Dave: Your thyroid tells your mitochondria what to do, in some sense. Just walk people through what all these things are, and why they matter so much.

Elle: Sure. First of all, the thyroid is here, the base of the neck. It's like a butterfly-shaped gland. One of the reasons people go misdiagnosed, or undiagnosed, or mistreated for so many years is that a 1973 test called the TSH, which stands for thyroid stimulating hormone, was classically used. Doctors in the know know now that this is not a way to assess people's health.

What it is, it's a signal from the pituitary at the base of the brain, that is sent to the thyroid, TSH signal. When it sense that your blood is low in thyroid hormones ... I'll get into that. We're really going to focus on just 2 ... There's only 2 primary ones that we really care about, which is T4 and T3.

Once the pituitary senses that your blood is low in thyroid hormones, it sends a signal to wake up the thyroid gland and say, "Hey, produce more." Then, it can either receive that message or not receive it, or maybe not execute properly, or execute properly, and then it's not metabolized. There is a lot of prongs that can happen there.

The reason patients have remained sick and under-treated for a long period of time is that we're

measuring the thing that doesn't matter. Here's what does matter. When the brain says wake up to the thyroid, the thyroid produces 80% T4, and about 20% T3. Now, here's all you really need to know. T3 is really the only thing that matters. I'm going to gloss over that. T3 is the biologically active thyroid hormone. It is energy.

Now, just a side note, if you were to look up T3, or Cytomel, which is the brand-name online right now, anyone listening, a thousand body-building websites come up. You're like, "What's this about?" It's because those guys, before they go into a competition, and they need to shed a bunch of fat quickly, they pound themselves with T3. Not good. Not healthy. They shutdown their own thyroid feedback loop. This is the feedback loop going on. Sometimes, they may not get it back, or screw up their thyroids. It messes with all sorts of things. It's not a smart move, but it's the most potent fat burner, which is why hypothyroid patients, low thyroid get super fat when they're working out 2 hours a day, eating 800 calories. The doctor is going, "I think you have a closet eating disorder." You're like, "No, buddy. I'm freaking working out."

I had that happen to me. I had a doctor hit my gym shoes and goes, "Just use these more." I'm like, "I'm working out 2 hours a day. I'm eating the calories. This is not even possible." That's why you get fat, because there's no energy being produced in your body. T3 is energy, so it has to do ...

Dave: I've got to pause you for a second here. There's a lot of doctors listening to Bulletproof Radio. Most of them are functional. If you're a regular doctor and you're listening to this, you listen to what Elle just said there. In terms of bedside manner, if you ever tell a patient that, you better know your shit, and you better know something about that patient. Otherwise, you're just an ass hole. There's no other word for that. Anyway, keep going. Everyone listening who has dealt with this, has had a doctor tell them that, it's not okay to act that way. We will talk about it on Yelp. Don't treat patients that way. Anyway, Keep going. Sorry. It's important.

Elle: No. I wrote a whole book that's an entire soap box. They also will say things like, "It's in your head. Your thyroid is fine. It must be something else, so we will give you."

Dave: Because your TSH is good, right?

Elle: Your TSH ... Here's the thing. Let's give a little perspective. T3 is the only important thing that matters. Here's how ... I'm on T3 only, which is very rare for patients. It's not something that is suggested to anybody. It's very rare. Here's the thing. I have not had any T4 in my body for 3 1/2 years. You don't technically need it, as far as we know in science. Is it endocrine mimicry to have it? Yes. I'll get into that in a second. It's a pro hormone. It's only job is to convert into the biologically active T3.

The signal is sent to the thyroid, the TSH signal. Then, the thyroid produces about 80% T4, 20% T3, but about 40 to 50% of that T4 is going to convert throughout the day as you need it to T3. In general, on its own, it's useless.

Back in the day, and in general endocrinologists and doctors classically only test the TSH, the signal being sent, and T4. They're not even checking and testing the thing that matters, and

corresponds with how people feel. Free T3 results ... We say free T3, meaning free and unbound and available in your blood. That's what always corresponds with how people are feeling. That's what it is.

These endocrinologists are going off of 30, 40 year indoctrinated protocol, where they're told that T3 is very stable, which it is. That's true. It's a very stable storage hormone. If you were on T4, T3 combination hormone, and you went 10 days without your medication, T4 would slowly fizzle out, has a longer life. T3, not so much. I can't go without my medication for very long or something maybe not so great would happen. Because direct T3 peaks within 2 hours and it dissipates within about 4 hours in the body.

Getting back to the TSH,. Let's say you go to Bulletproof, and you order some ... There you go. Grass-fed ghee. You never get the package. Let's say you just don't receive it. What do you do? Do you order it again? Do you keep ordering it? Do you call up and say, "Hey, let's look at tracking. Maybe the address was wrong." The same goes for this TSH, the fact that the signals being sent or not sent is not the way to look at this. It's what's in the blood and happening. That is why the TSH is a disaster.

Now, to be helpful, when you're looking at TSH, free T3 and free T4 together, it can be a helpful assessor. If it's very high ... Sometimes that means the brain is screaming to the thyroid, like, "Hey, wake up. Give me thyroid hormones." If it's too low, then that can be like, "Maybe this person's starving, or restricting calories, and the body is just shutting down the whole feedback loop."

At the end of the day. The problem is really with the TSH and with the fact that doctors and endocrinologist classically only test T4 and the TSH. Both of those things don't really matter, don't really matter. When you're on thyroid hormone that contains T3 at all, that signal gets suppressed. My TSH result, when you see my blood results, is 0.00. It's done. It's like ... Let's say it's completely suppressed. There is no signal being sent, because the brain senses that I have enough thyroid hormone because I'm taking it orally.

Dave: Normally, if you have no T4, your TSH goes up and up and up, doesn't it?

Elle: No, actually ... It depends.

Dave: That's weird.

Elle: ... taking about a natural person with natural working thyroid and something goes awry. For whatever reason, the T4 is not converting it into T3. They're not getting enough hormones. Yes, the TSH signal will go very high because it's screaming saying, "Hey, we need thyroid hormones them. We're not getting them for whatever reason."

Because T3 suppresses that signal so quickly, more so than T4 ... Again, T4 is sort of a steady pro-hormone. Then, people who are on natural desiccated thyroid, which has T4 and T3 in it, or people like me, I'm T3 only, this is not the case for someone on T4 only. The people who are on T4 and T3 or any kind T3, you're often going to get a zero there. You're going to get a

suppressed TSH. There's nothing wrong with that. You've just come in and taken over and shut down.

Doctors also get very freaked out about that, because 30 years ago, the way that they used to ... It's not practiced anymore in medicine. The way that they used to treat people who had nodules on their thyroid is they would jam them with T4, essentially making them hyperthyroid. They would have all sorts of cardiac issues, and all sorts of bone loss, and bone density issues. Back then, they thought, "Oh my gosh. A suppressed TSH is horrible for your life."

They've now done studies to know this is not the case. There's people with ... My TSH has been depressed for 13 years. It's really not an issue. Again, there's doctors that are still ... It would be like us sitting next to someone and then saying, "You guys shouldn't eat saturated fat. You're going to get a heart attack." It's the same exact paradigm. It's an old shitty paradigm, that no one in the know ever practices, but it's still keeping patients sick. I mean, for 20, 30 years sick, I'm talking. It's really, really bad.

Basically, T3 is really all that matters. You could be giving a patient a ton of T4. If it's not converting into the T3, doesn't matter.

Dave: When I took T3 only, it was compounded triiodothyronine, my TSH actually kept going up and up without any T4 present. I ended up getting high TSH. High TSH, even if you have enough thyroid hormone, is correlated with inflammation. My homocysteine and C-reactive protein actually elevated, which is why I added some T4 back in, which helped my TSH come down. It's interesting that you have fully suppressed TSH on just T3. I didn't know you could do that, which is cool.

Elle: You might not have been on enough T3 or you could have been on ...

Dave: [crosstalk 00:34:14].

Elle: You could've been on slow release T3, which could've ... maybe not ... the dosage not been right. Often times, I'd be willing to bet, were you just doing once a day dosing with T3?

Dave: I was doing 2 caps in the morning. I don't remember the size anymore. This was 3 to 4 years ago, maybe 5 years ago. 2 in the morning, one in the afternoon, and ...

Elle: Roughly, though, direct T3, if it wasn't slow release. I'm not sure which it was for you.

Dave: It was slow release.

Elle: That's a different story. Sometimes that's not the most optimal. People who are on direct T3 often have to dose 3 to 5 times a day.

Dave: Okay. That could have been it. What I do now, that's been stable for years, I do westroids. I do a grain ... one grain in the morning, which is a natural mix of T4 and T3. Then, I do a quarter grain at night, which is way less than I used to take. I'm probably down 75% from my max dose.

My Hashimoto's antibodies are gone, but I still have slightly deficient thyroid function. I feel pretty damn good, to be honest.

Elle: Well, you know, maybe you need a quarter green increase somewhere.

Dave: Yeah. I could play around with it.

Elle: I would totally ... half of that in the blood results. It's great that you multidose. When you're on anything containing T3, it is better to multidose twice a day on natural desiccated. Westroid that you're on, or WP thyroid, is great for patients that might have sensitivity to fillers and things like that. That form of natural desiccated thyroid is the cleanest.

Dave: It was Alan Christiansen, the adrenal reset guy, was the guy who influenced me to switch to that from whatever other armor I was using before.

Elle: You know why, because armor had ... It had left a bad taste in a lot of doctors' mouth because they changed their filler formulation, their pills. There was too much cellulose to breakdown. People then weren't understanding that they had to chew the pills and swallow them first.

Patients were getting sick. The medical community and the doctors in the know were like, "You know what, screw you for that. We're going to go with the other brands that didn't pull that BS on their patients." Armor is still valid medication, but it just left people with a bad impression. That's what happened.

Anyway, getting back to ... What they're looking at is not only things that don't matter, but they're looking at things that are 30, 40 year ago thyroid assessment protocols. That's why the free T3 levels really, really matter. Now, T4 levels matter, too. I'd get into all the details about this in my book. I give tons of bloodwork examples and before and after, and what if this not this, what if this is still high. That's all in my book. At the end of the day, I mean, I was undiagnosed for years because the doctor kept testing the TSH and said it was in range. That's great.

They're testing the signal, but they're not testing what's in there. What's in there? I was 96 degrees all day long.

Dave: Talk about low body temperature and thyroid. What is low body temperature do to you? I was 96.8 for years, instead of 98.6. that's Fahrenheit, for people listening in the UK. 98.6 normal. I was 2 degrees Fahrenheit, 1 degree centigrade off. What does that do to you?

Elle: Well, you could think about it as like trying to cook something over a fire with no wood and like slow burning embers, you know what I mean? There's no energy being created. I know that you're really interested in mitochondria stuff. This would be great for you to look into in detail because when we talk about energy ... You don't want too much energy created, otherwise you're hypothyroid, and then you've got a fast heart rate. You could have a heart attack. Often, those people are often skinny and can't lose weight.

Then, some people out there might be like, "Well, why don't I just take a shit ton of hormones ..." Sorry if I swore. "Why don't I take a ton of ..."

Dave: Whatever. Doesn't matter.

Elle: "... thyroid hormones and I'll just lose weight." It doesn't work that way. It's a little like Goldilocks, not too hot, not too cold. When you don't have any energy being created in the body, your digestion slows down, you're not absorbing nutrients, gut health is compromised, your body can't hold on to certain nutrients. Often, hypo patients are really deficient in Vitamin D and ferritin, iron storage and B12 and some other things, as well.

Basically, essentially, it's just like this slow ... Your brain is slow. Everything is slow. Hair growth is ... That's why people's hair falls out. It's why all the sex hormones get screwed up because this is the master gland that regulates and controls all that, which is then why you can get another disease from one of these tangents. People don't look here to see that that's the cause, because they don't know how to assess it properly. It's terrible.

There's a lot of people who had have unnecessary hysterectomies, and have had organs removed. Things happened to them that never needed to happen all because their thyroid was never properly assessed or treated. It's pretty sad.

Dave: Great life starts with great sleep. Improving your sleep quality with healthy and high quality bedding is one of the easiest sleep hacks you can do. You spend about a third of your life in bed, so you might as well invest in quality bedding and create a healthy sleep environment. Ettitude is the first company in the world to create 100% organic bamboo lyocell bedding. It is a sustainable lifestyle company that aims to provide you the best sleep ever with innovative fabric with health and beauty benefits.

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It is pretty shocking. I was looking ... Geez. This must be a dozen years ago. I was looking at my body temperature. There's a bunch of enzymes in the body. They only operate in narrowed-temperature ranges. If you're a degree too low, some of the enzymes that caused cellular repair never turn on. If you're not getting enough thyroid medication, your body temperature is too low. Then, basically the resolve repair mechanisms don't kick in all the way. You don't know why but you start to decline. That was happening to me.

Elle: Healing, as well.

Dave: Yeah.

Elle: You're a slow healer. You get a cut, and it doesn't ... There's thing that don't resolve well. You don't recover from exercise. You get sore muscles. I had weird hip pain and nerve pain. Yeah.

Dave: The muscular skeletal pain, I used to get that all the time. It's really weird because you just think you're weak. You think it's maybe you're not trying hard enough. It's actually biological. I tried this strange protocol, one of the founders of the Silicon Valley Health Institute. It's an anti-aging group that I've run a nonprofit in Silicon Valley for a long time.

He wrote this weird thing. He's like, "I'm a systems engineer. Here's how you do this." It was a body temperature reset protocol where you literally sit in saunas all day and wear parkas. You basically overheat yourself while taking T3 in divided doses many times per day, until ... You do it for a week or 2 to get the body temperature up. Then, after that, you dress warmly for like a year. I did that. It totally raised my body temperature, but we were playing with thyroid levels. I don't know for certain. We didn't have as much knowledge of thyroid. Certainly, getting it tested wasn't as easy back then.

It did make a huge difference to turn on some of the repair systems. I think that was one of the things that helped me because I reestablished a body temperature that was higher than 96.8. I was like around 98, 98.2. I somehow changed the set system. I think it was every 2 hours you took a micro dose of T3 during those protocols.

Fascinating stuff in very early days for this. What I was talking about, there's just the change in my body temperature correlated with much better healing, much better digestion. Everything got better.

Elle: That's why hypo patients are chronically constipated, where no amounts of laxatives will even work. Then, people who are hyperthyroid, who have too much, they are all the time in the bathroom, or too often. It is that balance. Also, the worst part about this is the way it affects your brain. I mean, I had over 30 symptoms from inner itching of the ears, heavy legs, misdiagnosed with stuff and freezing all the time, hair falling out and bloated fat. The worst part is how it affects your brain, because it literally makes you so depressed.

What people misunderstand is they think that the patient is depressed because they got fat. You're like, "No. I'm having actual, real depression because I don't have T3 in my brain," which is why when I ... I had a reverse T3 problem, I had 2 hypothyroid issues in 10 years. Solved both on my own. I had a conversion issue. I become hypothyroid again. When I took my first does of direct T3, immediately the brain ... I knew right away at that moment, I was like, "This is going to save my life."

By the way, I had doctors telling me ... It's so awesome that you had a doctor that even knew to prescribe you slow-release T3, or direct T3 at all, because doctors are often very afraid of that. I had doctors tell me I was going to give myself a heart attack and kill myself. I was like, "You know what, you're killing me. How about I'll try my way, and we'll see what happens." It worked.

Dave: I was really fortunate. I was in the Bay Area at the time. I had made a lot of money. I made \$6 million when I was 26. I lost it when I was 28. That was a learning experience, a very frustrating learning experience.

Elle: No T3 is going to help that bank account.

Dave: No. I probably lost it in part because I didn't have energy to make good decisions. Like, your brain doesn't work that well when you don't have good T3. I was able to throw money at the problem, and all of my time. When I finally went back to see a doctor after 4 years of like "Screw you guys," I did maybe an obsessive amount of research. I came across a Dr. Phil Miller. I think it was like antiaging.com, one of the original A4M guys. A4M is the American Academy of Anti-aging Medicine, maybe one of the precursors to what became functional medicine.

He was, I would call, the Godfathers of that. He is still a personal friend. He was into this stuff in the 90's. It totally saved my career in order to have access to this. I'm like, "I got my life back, I can go be a VP at a company and draw a paycheck." Otherwise, it's like, "I wouldn't have hired myself, because I couldn't bring it consistently any day. I don't know. Is today going to be a day where I have energy, or I'm just going to sleep through meetings and just be a jerk, because I'm

just cranky all the time?" Like I said, we have 25 million Americans dealing with this that we know of. It's not a small thing. It's a life-changing thing.

Elle: People get divorced. People get fired from their jobs. I know people that are still repairing relationships with their children because they acted like a jerk for all those years, and no one knew what was wrong with them. That's the case. You get overwhelmed. Often, hyperthyroid patients suffer from adrenal fatigue. You're overwhelmed. You can't deal with smells, sounds, some place music. You're like, "I can't." You're so aggravated and testy. You're depressed.

I had a friend call me after I fixed my first problem and doing well. He called me crying because he felt so bad because he's like, "I thought you were like a party pooper. I thought you were just lazy and not wanting to ever do anything. You always wanted to stay home." He's like, "I feel so bad now."

When you don't know what's wrong with you, and your partner doesn't know what's wrong with you, and you're going to doctors, and doctors are saying, "You're fine. Your thyroid is fine." I write sections of my book to family members who are dealing with ... Here. Give this to your boss. You might need to take a sabbatical. You might need to let them know what's going on. Also, we need to apologize for behavior when we were hypo, if that was the case. People need to have compassion and really understand this. I put a little section in my book there for family members and people who ...

It's such a tough thing. Because of the undiagnosis, you often act ... You're a mess. You're just a mess. Your brain cannot function in terms of ... You become dyslexic, almost. Hand to brain dexterity is off. Also, you cannot find the words, or you mix up the words like a dyslexic. I mean, I'm a fast talker anyway from downtown Chicago. Of course, I'm bound to fumble occasionally. I can feel it. I can also feel it when I'm not on an octane 3, if I'm mixing up my words in a weird way.

You can't read a page and retain it. Someone could say something to you and you don't even remember what they've just said. People who deal with accounting and numbers, they have the worst problems, because when you're seriously hypothyroid and untreated, you feel like you're getting dumb.

Dave: Absolutely.

Elle: There's this part of you that feels like, "Maybe I'm just getting old faster." All these doctors are saying nothing is wrong with you. Then, that's depressing. Then, you also age. The age acceleration is horrible. I feel like I kicked that back in a year, but you feel so old. It's the most depressing place to be.

Dave: When this hit me was when I knew it hit me. I think I knew I had had problems for a long time, but it got really bad. I had run a program at the University of California at Seneca's. A program in Silicon Valley.

Elle: You know I'm an alumni, right? I'm a banana slug.

Dave: You're a banana slug? Sweet.

Elle: I'm totally a banana slug.

Dave: I was at Gaucho where I studied, but I did teach at UC Sta. Cruz extension. I ran the program that taught Silicon Valley engineers how to build the first generation of the Internet that we know. I taught 4 nights a week. It was like my passion. My thyroid's slowing down or having problems. I go to apply to be CTO at this company, chief technology officer. I ran the program to teach 1,500 engineers how this stuff works. I know my shit cold. I'm good at this. I wrote a book about it, a very long time ago, that never got published, but it was a deal with prints ... This was my world.

The guy asked me a question about DNS, something that only geeks would recognize. I couldn't answer the question in the interview. I walked out there going, "I'm losing it. I'm stupid." It was an obvious technical solution. I could have done it with my eyes closed. I've white boarded this 10 times in class. I can't bring it. It was that feeling of, "I must be getting stupid." You start to question your self-worth. It all comes down to energy production, like if your brain doesn't work, your eyes don't work well. You can't think. You can't remember. You can't remember words. It's like you said, it's like slow dying.

Elle: It actually literally is, though. That's what's messed up about it. It's a slow awful death. I don't know about you, but if I'm going to get murdered, I'd rather like it quick. I don't want a slow one with 20 stab wounds. Just give me one in the right place and let's be done with it. It is a steady awful decline riddled with lots of health issues and hormonal issues. I had low testosterone. I had adrenal fatigue. No wonder you probably had low testosterone at that time too when you're hypo. That happens all the time with women men.

As you know, even for women, testosterone is important. It's ... Anyone listening to me now and says, "She probably has healthy amounts of testosterone." I'm a strong-headed female, pretty alpha female. You guys obviously need it in more abundance, but that's another factor, too. Then, these hormone levels get low and you just feel meek and feeble. You're crying all the time. It's really, honestly, the most depressing place to be. You end up being like a hermit. Also, you get skin-thickening. Your skin thickens. You get myxedema. You're just bloated and puffy. You don't even feel comfortable literally in your own skin. It's not just that you're fat and you're like, "I look fat." You feel like you drank a bottle of MSG. When you bend your leg, you're like, "What is happening? Why am I so tight and bloated?" It's because your skin actually starts to thicken.

It's disgusting. It's really this ... I think I stayed inside for the 2 years. It was so ... I mean, I went and worked out. I tried to do my morning routine. Then, I would just literally sit and cry and research my way out of it after that.

Dave: Can you talk about post-pregnancy thyroid conditions?

Elle: It's funny you've mentioned that. I've never had a baby. Often, women after pregnancy and giving birth will either have a swing. Sometimes, they become hypo. Usually, after 2 or 3 kids

sometimes, or hyper. Often times, it's hypo. One of the things could be low iron related to that. Like, low iron storage that were never checked. Perhaps that woman had heavy periods, then got pregnant, then lost blood in the delivery and never got those levels up to normal. Something as dumb as a ferritin level, which is iron storage, can induce thyroid issues.

It could be the stress involved in being a new mom. Depending on what that situation is. If someone is broke and struggling and working 3 jobs, then that absolutely could induce hypothyroidism. Same with keto ... I had a selenium deficiency at one point. That could do it. There's a lot of factors. Often, women ... I'm sure there's more details that the doctor in my book probably has experienced with pregnant women on, but it's just often the case, that after a couple of children, women develop a thyroid issue.

Dave: It's so worth paying attention to, because you need to have energy to recover from pregnancy and to be there for your baby. After our first child ... My wife is a physician, Dr. Lana. She coaches people on fertility and has a really good success rate there. Our first book, the Better Baby Book ... Because like everything you do before and during pregnancy to have better epigenetics and kids and ... The first book about epigenetics, like hands-on guide ... "Now, it's real. What do we do with it?"

After our first baby, she developed hypothyroidism. Even though we did everything. We tested ferritin. We ate liver. We did all those stuff. I remember going ... because I lived it. I'm like, "You have a thyroid experience." She's like, "No. I'm a doctor."

I'm like, "You're sleeping an awful lot." She's, "Because I have a new baby." I'm like, "I know, but you act like you have thyroid, and you're cold. Come on." After about a year, she got tested. Her levels were really low. She went on her thyroid medication. It got better. I think she's off of it today. Like that first year was really frustrating, because trying to care for a new baby when you have really low energy, and you're just trying to be cognitively present, you get mommy brain anyway, because all of a sudden you can't sleep because every noise wakes you up, in case it's the baby. All this stuff happens.

That's an area where I always tell new parents like, "If you're at all tired ... For 6 weeks, it is normal. You're recovering. You don't get good sleep. If it's more than that, just get a test. A thyroid test is like \$100. It's not expensive."

Elle: It's interesting because you can have ... Miscarriages are often the result of people being hypothyroid. If someone is attempting to get pregnant and they have any kind of hypothyroid symptoms, either way, they should get tested for the thyroid levels, regardless. If someone is on thyroid hormone replacement, they usually need to increase their dose during pregnancy. That's another nuance to the pregnancy thing. You usually need more thyroid hormone during the pregnancy. After maybe you drop a little bit. Maybe you could be half a grain if you're on natural desiccated. It doesn't matter what it is. That needs to be monitored and certainly checked beforehand, because ...

I mean, I've had friends who've had 3 miscarriages before they were diagnosed. Often with women, a thyroid situation affects your gynecological ... It will show up in that way sometimes,

with a gynecological issue like bleeding too much or heavy periods, or miscarriages. Infertility, too. You also then can't get pregnant. Why remain frustrated for years and years and years. Why don't you to test these underlying causes of infertility. Low ferritin is one of them, actually, not just thyroid.

Dave: You're totally right there. I know when she works with clients now ... before the pregnant thyroid levels ... You've got to have enough energy in your mitochondria. You're not going to have that without enough thyroid. Everything you could do their on hormones ... You're dead right on those things.

We're coming up on the end of our interview. I'm grateful that you shared just the basic pathways there on how the thyroid works with listeners. Also, some of how it feels to be low thyroid, which is really important. Maybe you see this in yourself. You see this in a coworker, your spouse, your friend. That's really helpful.

Where can people find out more about your book, specifically? They go to Amazon to order it?

Elle: Yeah. I mean, it's at a variety of outlets. Even in Barnes & Noble's right now. Amazon.com. You can also just check out my website, [elleruss.com](http://elleruss.com), if you want to find out more about me and my work. Amazon is pretty much where to go right now for the book.

Dave: It's called?

Elle: The Paleo Thyroid Solution. Thank you. If people go, "She's not a doctor. She's just a layperson." Well, I have an amazing functional MD with an in depth Q&A in the book where he corroborates everything that we're all saying. If anyone feels like they don't trust hearing it from a layperson's mouth, you're also going to hear it from a doctor.

Dave: Just to put it in perspective, you're listening to Bulletproof Radio, hosted by an unlicensed biohacker. Just so we're all clear on this. I have fired multiple doctors, and I work with a whole team of them. In order to bring information to the public, you don't have to have an MD, you have to have skills. I appreciate doctors very much. If you don't trust someone because they're not a doctor, you have psychological issues. You need to work on those.

Elle: Exactly. Go with your gut. Your doctor is not always right. Double check their word. Just because they went to Harvard means nothing to me. Just suss them out as well. I'm glad that you said that about friends and family. I noticed it in people, when people start to get depressed or have brain issues, and they're seeing listless and general malaise, that's always a good indication other than the being cold and the fat. It's this not caring and not having passion in life, and not wanting to pursue your goals. That's a huge hypothyroid symptom.

Dave: Totally. Zest for life, look at the thyroid. Look at testosterone. Look at everything you do that makes energy. Thyroid is oftentimes at the core. Thanks for sharing it. I want to ask you one more question.

Elle: Sure.

- Dave: You're going to have an interesting answer, too, because you're a comedian in addition to all these other things that we just talked about today, which are probably not that funny. It's hard to make thyroid jokes.
- Elle: Yes. It's hard to make thyroid ... There's a few.
- Dave: 3 thyroids walk into a bar ... It is just not ... Anyway. If someone came to you tomorrow and said, "Based on every experience you've had in your life, health and otherwise, what advice would you have for me if I wanted to just kick more ass at everything. I want to be better at everything I do. 3 most important principles. What are they?"
- Elle: Don't BS people. Be a straight up shooter. Always be on time or early. I prefer that. Always be early. I mean, I tell people starting out of college, getting in the corporate world, I'm like, "Show up at 7:30 to that office even if you don't have to. Just get there. You'll get more done before everyone's rolling in at 8:30 wasting time with coffee. You'll be ..." I was really successful and retired at a young age from the technological industry up in Northern California, as well. I feel like being on time, being early ...
- Obviously, we have to edit ourselves sometimes, of course. People value my opinion because they know I'm going to tell them the truth. I pride myself on that. I feel that's a compliment. When you're wishy-washy, or you're that ... There's a loss of strength in there, and your character. I feel like being up front, being honest with people usually get a lot of respect. Then, people know that they're going to get the truth from you.
- Let's see. What else? Kicking ass. I don't know. I mean, I just feel like as much as you can act out of integrity, as much as possible. We all have little parts of our lives. We're little hypocrites here and there and some things, or we might judge someone on something that we ourselves maybe are a little backwards on. At the end of the day, I think just I'm shooting for as many areas where I can be out of integrity, and even if that's within myself with something. That's always a good one.
- Dave: Cool. I was expecting you to say laugh because you do comedy, but you didn't. You totally shocked me.
- Elle: Well, I will say this, I actually rarely watch dramas. I feel that when you are going through a healing thing, or you're hypothyroid and you're screwed up, I reckon many people don't watch the CSI's, don't watch murders and rapes every nights. Watch stand up comedy almost constantly. Watch as much comedy, and laugh as much as possible. Stay away from the negative stuff that can seep into the subconscious and really make it a harder process to heal. As we know, they've done studies on laughter and healing. You can look into those, too, if anyone is interested.
- Dave: Absolutely. I think there might be an exception. There's actually 2 studies that show zombies are good for your thyroid, but not murders. I'm just ... Totally made that up.



Elle: Walking Dead is totally acceptable, but not CSI. Exactly.

Dave: Awesome. Well, Elle Russ. thank you for being on Bulletproof Radio today. Totally appreciate that you've set aside some time and energy to write a book about your thyroid experience and to help people understand what's going on with it because it really matters, and it's affecting a lot more people ... think. For listeners, it could be affecting you directly, or it's affecting someone in the room with you right now listening. It's this big of a problem it is.

Elle: It is. It's really an epidemic. It's everywhere.

Dave: Cool. If you've liked today's episode, there is a couple things you could do. One is you could go out and check out Elle Russ' book. Another thing you could do that I would personally appreciate is if you took exactly 23 seconds and went over to the iTunes webpage, or your iTunes app and just gave Bulletproof Radio a 5-star rating, just tell people it's good. That will help them find this. It will help them get this kind of information. Plus, it's a nice way of saying thanks.

Every time you say thanks, it actually puts a nickel in the account that makes you live longer. If you're grateful all the time, you actually live longer. By showing gratitude with the rating, you can have an opportunity to live longer, which lets me be grateful to you, which lets me live longer, since I'm trying to live to 180. If you give me a 5 star rating, you could follow me to living 180, to help me live to 180. Then, you can hopefully laugh because this is total BS. I just would appreciate it. Anyway. Have a wonderful day. Elle, thank you for being on the show.

Elle: Thank you.