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Dr Ray Peat Q&A - Weight Loss, Stretch Marks, Hydrogen, Negative Ions and More!

<http://youtu.be/RtBGNT3JvYc>

(Many of the questions reduced to their essence.)

JodelleFit: How have you been doing? [in Corona times]

Ray Peat PhD: Very well. Investigating, as far as I can, what's been going on. My first reaction was that I couldn't see any pandemic. The last information I have, even looking at the figures at the CDC — even though they make this information something you have to add up for yourself — but their figures are now supporting the very earliest estimates of the professors at Stanford who are also saying, "Nothing is happening." The mortality from this virus is right in the range of traditional flu/influenza mortality: about one fourth of a percent!

JF: Wow! [...] You discuss how stress is a negative in our life, and I feel social media outlets are one of the biggest stressors. People are doing it every day, but I don't think they're aware of the pressures. So I wanted your thoughts on social media and its pressures of posting and getting Likes and approvals from others, *and* being on devices. Do you think this is one of the main concerns and causes of why people have a lot of health issues nowadays, as opposed to twenty, thirty years ago?

RP: I've never experienced Facebook or Twitter or any of those things myself, but I see people being deeply involved in their cell phone or their computers, and that's something that... oh, as fifty years ago or more, there wasn't even that absorption in TV. TV was just starting to be an obsessive part of the culture, but my family didn't even have a TV until I was long out of college. I think I had been out of college several years before we got a TV, or part of the TV, to watch Kennedy's inauguration. Even TV, I'm sure it's damaging kids to sit around inertly, watching stories which are very cleverly designed propaganda cycles. The Pentagon is now part of the Hollywood industry. They even invested in the latest technology development for Hollywood to create realistic images that can be mistaken for the real thing. They can forge voices and personalities. The Pentagon can operate... One person can operate many personalities on Facebook or the other social media, so people are interacting, and very often, with computers that they think are human. It's not only stressful but it's creating a dream world, and the dream world people can be manipulated to do what the Pentagon or the CDC or the giant corporations want them to do. Google.. Several years ago, sociologists demonstrated how by changing the definition of questions on a search engine, they could absolutely skew the way people voted in real elections. Google is obviously doing that. They can control the elections. Congress worries about Russians or Trump or Ukrainians or whatever, interfering with US elections. But the very powerful and demonstrated effect of Google on elections is ignored, apparently because Congress is bought off by the people who control the elections and are pleased with how they're turning out.

JF: There are so many rabbit holes I want to go down with that, but I do remember somebody recently told me that television actually stems from tell-a-vision. So like you said, a dream world where they're kind of programming us to *not* think for ourselves, but "Here! Let me tell you a vision that you need to believe in and be a part of." I can definitely see your point about how it is a stressor, and even television, not just social media. But just the idea of *not* being able to think for ourselves, that's kind of something to be concerned about, and how we might want to dial back on

our social media outlets and really focus on, “Where is my time devoted to? How much time am I spending bettering myself versus lessening myself with the energy suck that is a lot of device time and social media time?”

RP: Right.

JF: Matt, researcher at Harvard, would like to know your thoughts on adaptogen herbs, such as ashwagandha and rhodiola, for helping with cortisol...

RP: There are several levels that they work at. Some of them are boosting the steroids, like ginseng has androgenic steroid materials in it that actually support our natural hormones, like pregnenolone and DHEA are the body's adaptogens and so things that work *with* them are simply supporting our bodies' stabilizing effect. There are two kinds of adaptation. One, the emergency system that pours out cortisol and all of the stress-related steroids and other hormones, [that] these powerfully help you survive an immediate threat — a matter of minutes, seconds, and hours — but then they become counter productive and *reduce* your adaptability. If they aren't backed up by increased energy production — which means: anything that supports mitochondrial stability and health and good thyroid function, and the ability to produce increased amounts of the stabilizing DHEA, pregnenolone, and progesterone... The basic long range adaptogen is this stable energy production keeping your mitochondria producing energy at a high rate and without producing toxic side effects. An emergency activation with adrenaline tends to produce lots of free radical side effects, but the proper high energy production running on the basis of thyroid activity are actually wasting energy in that sense that you're producing a tremendous amount of heat, but *that* use of oxygen to produce energy is actually *reducing* the toxic side effects, so becoming an *inefficient* machine that operates at a high temperature and seeming to waste energy, that's actually the proper route to long-range adaptability. You assimilate and overcome by changing the nature of the threat and the stress, rather than being forced to change your body's structure or behavior by the cortisol, a huge stress drought. Probably the single most important factor in staying on this route of long-range protective adaptability is the production of carbon dioxide [CO₂] and the ability to suppress lactic acid formation that the acute stress — if you lack adaptability — pours out a lot of lactic acid with lots of bad consequences in the long run. The ability to make carbon dioxide by running your mitochondria at high energy and what way that is protected, is that they are generating carbon dioxide which suppresses the free radicals and keeps lactic acid under control — keeps the whole system in an oxidizing state. The reducing or a pseudo hypoxic state is a destructive stress state that everything should be geared towards getting over.

JF: Michael asks, “What are Dr. Peat's existential fears?”

RP: Currently, the insanity of the ruling class. It's been long range... Since I was three or four years old, I started seeing sadism and cruelty in everyone in power. But the long-range trend over all these years is that the ruling class is becoming more confident of its ability to go right to the final state. This pandemic and the behavior of the CDC and all of its supporting agencies, I think this is threatening the existence of life itself.

JF: Yeah, I would second those fears. M. Anderson writes, “Please ask about caffeine and coffee addiction. How can caffeine be good if it's habit-forming? Caffeine triggers cortisol release. How can this be good? What about acrylamide, the carcinogen chemical that's released when organic matter is half burned, like roasted coffee beans. Many people get problems with insomnia, anxiety,

become edgy due to coffee. Quitting coffee cold turkey gives me terrible withdrawal. Why bother with coffee?"

RP: Part of that type of reaction is because of the lack of proper coffee consuming technology. Like the Japanese have their tea ceremony, we need a better coffee consuming technique, which involves good thick cream, because cream slows the absorption of the caffeine. The people who have the terrible reactions are usually hypothyroid and have a blood sugar problem. They take black coffee, often on an empty stomach instead of eating, and it drives their adrenaline and cortisol into a frenzy of tissue damaging stress. And the using coffee *only with food*, never on an empty stomach unless there's plenty of cream or milk with it. *Café con leche* is a good method of taking it. But heavy cream, if you like the flavor of a rich coffee... Cream improves the flavor while slowing the absorption. If you look at the effects of caffeine... For more than 50 years, studies in animals of all sorts have demonstrated that caffeine is so powerfully carcinogenic [means *anti*-carcinogenic?] that it can be given with concentrated cigarette smoke — a very powerful carcinogen — and just a little caffeine added prevents the carcinogenicity of topically applied cigarette smoke. That observation led people to test them against other carcinogens. Even viral carcinogenesis is inhibited by caffeine. Even radiation carcinogenesis — the most absolute form — is suppressed by caffeine. So it would be good if we didn't burn the coffee; that that technology comes from partly the fact that people like the taste of a smoky burn things, and partly because it softens the bean and makes it easier to grind to get the caffeine out. Like the technology from ending tea, making black tea, releases lots more caffeine than green tea. So black tea is really biologically much more effective as an anti-stress, anti-cancer agent. The present way of preparing coffee isn't the ideal; it's just part of the tradition. It turns out that the more coffee people drink — five cups and up, for example — are the healthiest in general. Even a lower rate of of Alzheimer's disease, of cancer, heart disease, kidney disease, liver disease even! So empirically, even though coffee is full of all of that smoky junk, which would be best to eliminate, the caffeine overrides it powerfully.

JF: My grandma was a big coffee drinker and she lived to be 94, so I believe there's something to the health effects of it. What about the habit-forming aspect? Because it's so medicinal, it's okay to have a little habit-forming with it?

RP: Yeah, but part of that is really what you *need*. Before I took any thyroid supplement, for many years I recognized my symptoms as being typical of people who were hypothyroid — for example, being nearsighted and having migraine headaches, or classical low thyroid signs — but for various reasons I just didn't get around to trying a supplement. In that period I would drink often *50 cups* of coffee a day, and I would stave off the stresses and migraines and such. But I was pouring a huge amount of of coffee through my system, and just to feel functional, keep my energy up so I could work efficiently, first thing I thought of waking up in the morning was a cup of coffee, and then I would just constantly have a cup of coffee in my hand all day. Within a couple of days after I began using a thyroid supplement, I woke up one morning and noticed something was very different, and I wasn't craving coffee. I looked at my coffee drinking behavior and I was only drinking about five cups a day — four to five — and that happened spontaneously over a period of just a few days. So it wasn't that I was *addicted* to 50 cups a day, it was that my system recognized *that* as part of its homeostasis. That could be called an addiction, but if it's repairing you and preventing disease, and making you live longer, it's not proper to classify it with addictive things such as morphine. Everything about morphine and the opiates, everything known about it is destructive, creates inflammation, promotes cancer growth and degenerative diseases, and so. It's *the* basic archetype of

a destructive drug and that this addictiveness is just part of that. The reason people *feel* addicted to coffee or caffeine is mostly that it is filling in for something they *need*. There's obviously no need for the opiates.

JF: I feel like I'm the same way. First thing in the morning, I think of coffee...

RP: The body that takes all of those things into account. Someone did an analysis of the English diet and even though nutritionists say that coffee and tea are nutrition free, this analysis showed that — looking at the English diet as a whole — coffee and tea together provide 20% of several of the essential nutrients, including some of the B vitamins.

JF: What's your favorite go-to cup of coffee?

RP: Oh, I don't know... I usually like — but for taste — a fairly dark roast or French roast, but just because of the recognition that it's got a lot of smoke in it, I sometimes alternate by drinking a light roast. If you can find a variety of coffee that's low in acid, then the light roast are really very rich tasting.

JF: “I have SIBO, gut dysbiosis, and the foods don't seem to be cutting it, that are carrot salad, bamboo shoots, etc. If they're not working, which antibiotics might Dr. Peat recommend? What doses, frequency, and where to locate online? Can one expect some symptoms with use of these?”

RP: I think the first thing is to make sure that your whole digestive system is working optimally, and your inflammatory reactions are minimal. Two of the most important things are getting enough thyroid, so that you have quick peristalsis, quick transit through the intestine. That simply can keep the bacteria from having the time necessary to develop in the upper part of your intestine. And intense digestive fluids are toxic to bacteria, helping to keep the intestine clean. And quick digestion makes you absorb the food, basically tending to starve the bacteria by getting it all yourself. And Vit D and calcium — the ratio of calcium to phosphate — keep your immune system from being oversensitive. An inflamed reaction of the immune system creates an interactive supportive environment for the other bacteria, for example, pouring out inflammation fluids containing lactic acid will support bacteria that produce irritants that create more inflammation and more lactic acid. So making making sure your calcium, Vit D, and thyroid are optimized as the first thing. Then, the two types of antibiotic — which have many therapeutic effects besides killing germs — are the tetracycline class and the erythromycin or azythromycin type. You've probably heard azythromycin recommended for treating the coronavirus. That fits into the whole picture that the problem with the virus is the inflammation. Not the presence of replicating viruses; but the inflammation predisposes you to support the viruses. It's the same with bacteria in the intestine. The erythromycin and the tetracyclines lower the inflammation directly, apart from killing the bacteria, so they have several therapeutic functions. The erythromycin category has the extra property of simulating peristalsis, so it's germicidal, anti-inflammatory, and pro propulsive; a propulsion activating effect.

JF: I'm so glad you answered that the way you did — how you gave the recommendation for what else could be going on, before you just jump right into antibiotics. Like you said, what about your thyroid? With gut issues you have to make sure that you're weeding out the bad stuff before you just bring in all the good stuff, like carrot salad and bamboo shoots — those are great — that's your seed. Like weed, seed and feed. You want to bring those into, like, good plants that you're gonna plant in a garden. But they also have to weed out all the weeds that could potentially be the cause for why the gut dysbiosis happened in the first place, and...

RP: Yeah. Just intensifying the vitality of your organism... The bacteria can stay there and no one minds them, so they might be there. You might be eating a lot of dirt, but that doesn't do any harm because the bacteria aren't being stimulated and fed by the metabolic defects of a sick organism.

JF: Yeah, and even the good bacteria — the nice little commensal communities — can actually overgrow [...]. You really have to look at what is the major cause behind the dysbiosis, and then address *that* before you just add all these other things in, or before you just annihilate the whole gut with an antibiotic.

RP: Uh huh.

JF: “What causes stretch marks? Is it possible to reverse or improve them?”

RP: One interesting experience I saw with stretch marks... It was a young cousin of mine who was probably six or seven months pregnant. She had these... they looked about as broad as old-fashioned suspenders, and zig-zags of purple and red shiny silvery scar tissue like material — all across her abdomen. She said, “They have just developed in a few days.” I asked about her diet, which wasn't terribly bad, but not very good. I mentioned oysters and eggs as having all of the nutrients needed, especially copper and selenium, zinc, and so on. It was two or three days later that she said she had eaten a lot of oysters and eggs, and she showed me her belly. It was absolutely perfect. No stretch marks.

JF: Wow. Oysters are high in zinc, right? I've heard that zinc really can help those, and that some of them with stretch marks may have a zinc deficiency as well?

RP: Oh, yeah. Multiple deficiencies. Copper is part of the elastin molecules, so it's an essential factor in keeping your tissue elastic. It works in blood vessels too for protecting them.

JF: “Can Dr. Peat give advice about treating resistance to thyroid hormone? Is it safe to take a high dose of t3 for prolonged periods?”

RP: It depends exactly on your need. For example, I've known people who have had terrible lifelong hypothyroid symptoms; extreme unopposed estrogen affecting her lung function, poor oxygenation, very high cortisol, extremely fat hips and thighs, and so on; basically crippled by her hormone imbalances. She felt a little better by what doctor considered the maximum prescription of Armour thyroid, five grains, at which that the natural thyroid consists of about 1/4 t3 and the rest t4, when it's broken down by digestion. But recognizing that she was recovered partly but still crippled, she found another doctor to prescribe another five grains, and where a normal person at four or five grains would be a total full replacement, that could make up for a total removal of the thyroid gland, *that* five grains had only a small effect, maybe a fourth of what was needed, indicating that only the t3 in the glandular thyroid was having a therapeutic effect. On the second five grain dose that she added, she felt basically twice as good. She found a third doctor over a period of just a few months, so she was taking *15 grains* of Armour thyroid. And so if you look at the 1/4 t3 content that added up to the equivalent of four grains, or a total whole glass, whole gland replacement in the form of only t3. She didn't have any hyperthyroid symptoms but on that dose it was only a few weeks, and she totally recovered her health and went down to ten grains, and then five grains. Her body was simply unable to respond to anything but t3. But given that therapeutic dose, it was only a few weeks before she *didn't* need that much and could reduce the dose to a third. What happens is that in the absence of thyroid function, you shift over into all of these maladaptive things, such as high cortisol, and estrogen, and serotonin, and nitric oxide production — things that all interfere with

your mitochondrial energy production — so your body is blocked from responding to the t3. So you can use pure t3 therapeutically, but when you have used it to help to assimilate the nutrients, then having assimilated the nutrients you are now able to convert t4 to t3 as needed, and so you can get the full dose out of a glandular thyroid, or even a pure thyroxine compound and what most doctors prescribe. And in women, the natural predominance of estrogen, compared to men... In women it is limiting their liver's ability to convert t4 to t3. And so women almost always have a very limited inadequate reaction to t4. Increasing the dose can interfere when it reaches a certain excess. It can begin to displace t3 and have a suppressive effect.

JF: For clarification, can you tell everybody, like when you say, “a grain of thyroid,” can you explain how many milligrams? Let's say they're on Armour, how much would that be with one grain of exactly... 60 milligrams?

RP: The traditional grain weight was a little over 60 milligrams. A five-grain tablet, I think their definition was around three hundred milligrams by weight — maybe a little over three hundred milligrams.

JF: Oh my goodness. There's like 15 grains you said, so that's like 900 milligrams of thyroid.

RP: Yeah...

JF: Wow! So bottom line is, sometimes we don't know how much our body actually needs when it comes to thyroid supplementation. You really have to just keep bumping it up until you feel like you're seeing the results of an improved thyroid?

RP: Yes. Very important to go not only by your symptoms, but by your waking temperature and pulse rate, and then the effect of food on your temperature and pulse rate, and your stable daytime resting temperature and pulse rate.

JF: And so symptoms, even like Reynaud's, like if someone has Reynaud's and they're taking thyroid supplement, but if *that's* still a symptom that's there, that's an indication that they're not getting enough, correct?

RP: Yeah. The temperature of a person's tip of nose, hands and feet, especially the fingers and toes, that those can be shut down in order to keep your core temperature up and functional. Your brain and lungs and heart have to keep their energy going to maintain the organism, but under stress you can cut off the circulation to the extremities, including your tip of your nose. So checking the temperature of those — for example, putting your fingers in your armpit — if they feel unnaturally cold, that's a sign of low thyroid.

JF: Okay, very good. “What are Dr. Peat's thoughts on using a quality negative ion generator while sleeping? I've read so many positive things about them.”

RP: For many years I've kept one operating by my bed. If I could get more of them at a good price, I would probably have more of them running. If, for example, the weather is bad, you can often notice the effect that... A series of studies in Poland — very well, good experiments, measurements — showed that the action on the lung is to provide active electrons, reducing electrically the enzymes monoamine oxidase [MAO], supporting that enzyme's function in the lung, which is mainly to destroy circulating serotonin. Serotonin, in proportion of your general stress, but especially of intestinal inflammation. The intestine pours out a huge amount of serotonin into the

bloodstream, and the lungs are the main site of destroying that serotonin. And these studies in Poland showed clearly that negative ions in the atmosphere accelerate the detoxing of serotonin.

JF: Wow! Is there a particular brand that you like?

RP: The person who was making the one I got, which is very good, decided it wasn't profitable enough. He sold a lot of them and said that the work was too much for the income, so it's a matter of first looking to make sure they don't put out a measurable amount of ozone; that's toxic to the lungs. You should be able to feel a cold wind effect when you hold your hand in front of them, because there's a stream of negatively ionized air being driven away from the electrode that you can feel as an actual stream.

JF: "How do we improve our hearing?"

RP: Classically, thyroid is the most important thing, reduces stress and maintains circulation and so on. But something I noticed when I was on the way to Mexico... I have a big clock on the wall, and I noticed — on route to Mexico — I had a certain distance across the room I couldn't hear the clock ticking, and after just a few weeks in Mexico, coming back to the same room, that same clock was loud and clear at the same distance. And it's the same with eyesight. After spending several weeks at 6,600 feet altitude or higher, my myopia increased close to two diopters. The correction... I went from 11 and 12 down to at 9 and 10 diopter correction after a season at high altitude. But for the hearing clearing up, it took probably just three weeks or so.

JF: Oh, that is so cool, because since improving my thyroid, and eating less PUFA and stuff like that, after years of researching this stuff... My diopter went from -6.75 down to -5, so it's slowly improving. I don't think people realize that you can actually reverse vision problems.

RP: Yeah. I've seen that happen in girls at puberty or mid teen years. It's very common for a girl to experience sudden onset of myopia. If they get their thyroid corrected around the same time, they no longer have myopia, so it's prolonged hypothyroidism that causes progressive myopia. The connection between high altitude and thyroid is that thyroid is what lets your mitochondria produce carbon dioxide and keep the inflammatory lactate as suppressed, and at high altitude the simple physics of the Bohr/Haldane effect on hemoglobin... The reduced air pressure causes your hemoglobin to retain a higher level of carbon dioxide, and so it's creating the same condition in your body that optimal thyroid function does.

JF: Awesome! Re. molecular hydrogen: "I've seen a lot in the online stores with molecular hydrogen tablets and how they improve hydration. What are your thoughts?"

RP: My interpretation of it goes back to around 50 years ago, when I was reading in biochemistry trying to understand how electrons and the reduction oxidation process works. A very well-known biochemist that did experiments in which he starved cells, gave them no external source of energy, but they were still oxidizing something. It was the dehydrogenase enzymes which were delivering energy to the oxygen, even though there was neither fat nor glucose provided as a substrate for these enzymes. So he called it, "nothing dehydrogenase," and his "nothing" includes the gaseous form of hydrogen, because that isn't considered a biochemical substrate, normally. But his enzymes can actually use gaseous hydrogen as a substrate, and these can not only provide biological energy, but they can have the same effect on suppressing free radical activity than [what] running your mitochondria under an ordinary glucose and thyroid system would produce.

JF: So, maybe like these molecular hydrogen tablets in the water, or the generators that are making molecular hydrogen, it might not be a bad idea?

RP: Yeah. Or just sniffing gas out of a little tank of hydrogen.

JF: Ok, cool. “Please ask Dr. Peat what the specific dietary factors are that have made Americans so vulnerable to coronavirus, and also what foods should we be eating to make us resistant to it? What else can I eat to protect once it comes around again this winter. Or *if* it comes around.” It just makes you wonder, like you said, the powers that be, how do they know it's going to come back around?

RP: There are some interesting videos that give some of the background that have never been publicly widely discussed, showing that in previous years, that they called it the flu season, but influenza was never the exclusive infection thing. A large block of the so-called the influenza... no pathogen could be identified at all. Sometimes it was a bacteria responsible, but I think it was 14% of all of the... in which they looked for the pathogen. 14%, 7–14% it were typical in previous years' coronavirus infections. Three of those were the serious type that happened to overlap with laboratory designed intensified versions of the coronavirus, but the coronavirus previously had been known as a cold virus. Several viruses were called *the common cold*. Several studies in this the last couple of years have, for example, the Pentagon did a study to evaluate how effective the influenza vaccine was at preventing influenza. They found, at least did their best to interpret an effectiveness for the flu vaccine, and concluded that it was probably 45% effective at preventing influenza infections in the following season. But during that season, the people... different studies had found twice as many infections by other agents, up to six times as many infections by something other than influenza. So while it was shifting almost half away from influenza, it was doubling or tripling or quadrupling the number of lung diseases caused by other agents including the coronavirus. And so if you look at the campaign and very heavy indoctrination pushing the vaccine on old people in both the U.S. and Italy last year, before the onset of the 2019–2020 flu season, they were basically reducing the likelihood of a flu infection, but greatly increasing, according to these studies, the likelihood of catching some other lung disease. The first thing is not to worry so much about food or supplements or whatever, but to think about what's going on with the actual publicity about protecting against lung disease. The influenza vaccine, especially in old people, powerfully increases the risk of lung diseases. There are eight or ten studies showing that.

JF: Yeah, it's never a bad time to like promote immunity, build your immune system to fight all kinds of things we've come into contact with. But I agree with what you're saying. Go ahead...

RP: The antibody system is not our immune system. It's something that has been fixated on for more than a hundred years, driven by the pharmaceutical industry who wants to equate natural immunity, if they can interpret natural immunity as the presence of antibodies. They want to equate it with their magic bullet drugs. It all derives from Paul Ehrlich's doctrine. But he shared the Nobel Prize with an embryologist who was interested in the whole body's participation in immunity, and that's the innate immune system that has been really suppressed and ignored all during these 110 years. It's our general health — especially Vit D and thyroid, the things that let us maintain the balance between carbon dioxide and lactic acid — that activates in the proper way this innate immune system.

JF: Absolutely. Drop the mic on that one because it's like, improve your thyroid and everything else kind of falls into place. Also get out in the sunshine. It kills coronavirus in like a minute and a half, according to some studies I read.

RP: Yeah, and the action of Vit D and calcium... It's increasingly recognized as absolutely vital, especially for viral immunity, but for immunity in general. What it's doing is not killing viruses, it's activating our anti inflammatory processes. So it's working with aspirin, stopping inflammation, and it's the people who have a predisposing inflammatory condition who even catch the virus, or develop any symptoms from it. Something between 50 and 80 percent of the population can have the virus with absolutely no harm done. It's someone with a pre-existing inflammatory problem, often from low thyroid, low Vit D, low Vit A, some malnutrition, who has the inflammation that promotes the growth of the virus. So, focusing on killing the virus is a completely unbiological idea.

JF: "Can the doctor speak about the best way to lose 20 pounds, especially on my hips and thighs?"

RP: The woman I told you had such a resistance to thyroid hormone, that was her physique, and you can see her ribs and her arms for about like a five-year-old child. But her hips were so wide that she actually had trouble going through a standard doorway. So you have to look at your whole physiology, and not just go by a doctor's TSH measurement. You have to look at your Vit D, make sure your parathyroid hormone [PTH] is at the low end of the normal range. When your thyroid and Vit D are being interfered with, or are simply deficient, your PTH rises. Just eating too much phosphate, meat and beans, for example, are characteristic excess phosphate sources. Too much phosphate will drive up your PTH, the same way a Vit D deficiency or calcium deficiency will drive it up. PTH poisons your mitochondrial energy producing system. You can't lose weight if your PTH is in the above average at range. If you normalize that, you don't have to worry about losing weight because ordinary activity and diet will get rid of it.

JF: "If one does not have access to thyroid, can other measures suffice?" And secondly, "I don't have a gallbladder. How can I improve my digestion?"

RP: Lots of things we'll fill in. Like I mentioned I was using coffee to make up for a low thyroid function, but Vit D and calcium are powerful activators of the energy system, because they keep your parathyroid hormone down. Having all of your minerals... Both minerals and trace minerals are very important to keep your mitochondria operating properly.

JF: That was easy enough. What about the gallbladder?

RP: You don't want to eat a lot of fat at any time. Just the small amount that helps you absorb your Vit D and Vit A, for example. It really just takes a minimal amount, mixed in with your food. It's a very fatty meal that will trigger the need for a gallbladder function. So a fairly low fat diet and moderate sized meals, people don't really suffer from lacking a gallbladder.

JF: I've heard that coconut oil isn't in need of bile to break it down, so that could be a fat they could in?

RP: It's still not good to trigger the reflexes when you don't have the gallbladder. I think it could cause some kind of disturbance, so I think it's better to keep that low too.

JF: Okay, that's the time we have for today. I'm gonna go check out some negative ion generators. Maybe the folks that had their questions answered can send him a little donation so he can get himself another ion generator. I'd like to have one too but they're kind of pricey.

RP: I paid \$30 for something like that. I think you can still find them for 35-40\$.

JF: Cool! Thank you so much Dr. Peat. This has been fun. ■