Introduction to CoQ10 and PQQ

All the antioxidants are great, but CoQ10 is just not only an antioxidant. It is running your energy production and defending your cells at the same time.

That makes it very, very unique. At the mitochondrial level, it simply is doing something different than other antioxidants. it also is fat soluble and most antioxidants, including the master antioxidants, glutathione, are water soluable.

They do beautiful work in the parts of the cell where water soluble antioxidants work, but that's not where CoQ10 works. It works in fatty membranes where an enormous amount of oxidative damage actually happens, including the membrane of your mitochondria and the surface of you LDL particles.

Welcome to Vitality Radio, the podcast that helps you make sense of natural supplements and thrive without pharma drugs. I'm Jared St. Clair. Hello and welcome to Vitality Radio.

I'm Jared St. Clair. It's good to be with you again. Before I get into this, I want to thank a listener named Jackie. because this whole episode is her idea.

So Jackie, thank you so much. She wrote in and asked me to break down CoQ10 for her, asked if there was an episode, and I thought there isn't an episodes, but there probably should be.

And I'm always looking for episode ideas. If you have an idea, jump online, vitalitynutrition.com, open up a chat and say, Jared, tackle this one for me.

I won't always do it. It depends on the episode and if I think it's something that's got some universal appeal. This episode is interesting. We're talking about coenzyme Q10 and also PQQ.

I'll talk about what those two things are. And I'll explain to you why I think if, even if you're thinking, ah, any oxidants, CoQ10, I don't really need to hear about this.

Why this is a topic that I Think everybody does need To hear. So like I say, if You want me to dig into something like this, please do. I've been getting some great recommendations lately and I have done three or four shows based specifically on listeners like you saying, Hey, Jared, i want to Hear more about This.

Let's talk about molecule Coq10 because I'm old enough to remember when Co Q10 wasn't a supplement. But guess what? It's always been a thing because our body actually makes this stuff and you've heard of it.

You've seen it in mass retailers. That's in Costco about twice a year. I go into Costco and I get this shuddery feeling like, oh my gosh, they've got all their supplements on deal and they're all up front and there on some crazy price and it looks really appealing and some of their Supplements are fine and others of Their supplements are like And I've done shows on walking through the Costco supplement aisle.

In fact, we'll link that episode. Fact, I probably need to do another one because they're recycling things through there all the time and talk to you about which ones I think are fine and others, which I.

We don't want to spend our money on because remember the biggest thing with Costco is this. They're always looking to give you the very best price on the thing.

And when it comes to paper towels, that's a pretty useful thing when Most people are taking it because they're worried about cardiovascular wellness and most people who are worried because it kills about a third of Americans.

What CoQ10 Does in the Body

So of course it's something that we should be concerned about. But you know why else a lot of people take CoQ10? Because they are on a statin drug and you may be one of those people and statins prevent the body from making CoQ10 or at least at its optimal dose.

So let's talk about this whole thing because there's this internal factory producing this thing. And that's a theme that you'll hear from me often during our shows that a lot of what I talk About is stuff we can't get from inside our body.

We got to get it exogenously from outside and other stuff. This stuff, we just don't make as much as we used to. Maybe that is a hormone or maybe it's something like Coq10.

But CoQ10 sits right at the center of how your cells turn food and oxygen into usable energy. And your ability, unfortunately, like so many things in health, peaks somewhere in your 20s and then slides downhill from there.

By the time you hit your late 30s, your 40s into your 50s your internal production has already dropped off meaningfully. And that decline shows up first in the tissues that need the energy most, which is your heart, you brain, and your muscles where so much ATP is used.

There's a second wrinkle and it's big one. And that's the one I mentioned about so many Americans taking statin drugs for cholesterol. And, that drug actively works against your body's ability to make CoQ10.

So, today, I want to give you the real education on a few things. What Coq10 actually is and why it matters. Why does our body make it in the first place?

And what does out body do with it? What's a difference between ubiquinol and ubiquinoe? If you're familiar with CoQu10 and you've seen these two things, Sometimes they look interchangeable.

They're not. We'll talk about that. How to tell if you're getting a natural one made through a fermentation process or a synthetic one, made out of tobacco, believe it or not, or potatoes.

And where PQQ fits into all of this. If you've not heard of P Q Q, PQQ is pretty fascinating stuff. And why I finally decided on the seventh version of Ultimate Vitality Multi to include both of these ingredients in the multivitamin and whether or not the amount that's in there is good enough for what you're trying to do with CoQ10.

So that all ahead. Let's get into Coq10, let's build this from the ground up because once you understand the mechanism, everything else in this episode should click into place.

Co Q10 is a fat soluble compound found in membranes of your mitochondria. Boy, do we hear a lot about mitochondria nowadays, right? This is the little energy plant inside your cells.

We all have heard of this, and lately, if you're listening to a lotta shows like Vitality Radio, you've heard about it a LOT. You've got hundreds to thousands of them in a single cell, in an hard-working cell like a heart muscle cell.

Inside those mitochondria, there's an assembly line called the electron transport chain, and that assembly is where the real energy of your body gets made.

A molecule called ATP, adenosine triphosphate, which is the actual currency your cells spend to do everything that they do. make your heartbeat, contract a muscle or filter your blood.

CoQ10's job on that assembly line is to be the shuttle. It carries electrons from one station to the next. Without it, the line stalls and ATP production drops.

So this isn't a nice to have nutrient that gives you a little boost. it's a non-negotiable part of the machinery. That's why your body bothers to manufacture it in the first place.

It's too important to leave to chance in the diet. And it's why so many people actually start taking CoQ10 in their 30s, 40s 50s because they're noticing a significant drop off in a lot of these areas, especially cellular energy.

Now here's the part that makes Coq10 special though. This is the theme that I want you to carry through with me through this entire show because it wears two hats.

Hat number one is the one I just described, the bio-energetic, co-factor, central to making energy. But hat number two is that it's a genuine antioxidant and it is often called one of the kings of antioxidants.

While it sits there in your membranes doing this energy job, it also neutralizing free radicals, unstable molecules that damage your cells and lead to aging and oxidation.

It also helps to protect against the oxidation of your cholesterol itself. which is a big deal, and we'll talk a little bit more about that when we talk about statins, the unstable molecules that damage your cells, including the oxidation of your cholesterol particles, which we will talk more when talking about CoQ10 and statin drugs.

So this is a big deal for a lot of reasons, but two in particular, cellular energy and prevention of oxidation of the cells and the free radical damage that happens there.

Because it's fat soluble, it makes it different than a lotta other antioxidant, concentrates in the organs that are the most metabolically demanding and most membrane rich.

Your heart carries the highest concentration in your entire body. That's no surprise. because your heart never gets to rest. Then your liver, then your kidneys, and your brain.

These are engine room organs. They are the ones most exposed when your CoQ10 runs low. And when you think about these things, liver kidney, brain, heart, pretty critical organs, right?

And it does run low. Your natural production peaks young and declines with age. Like I mentioned before, certain kinds of physical stress and certain medications pull it down even further.

So you have this essential dual purpose molecule that your body makes plenty of when you're 25 and noticeably less when your 50. five or 54 like I am.

That gap is the whole reason that we're having this conversation. Now, there's two forms of CoQ10 out there, really three, but two primary forms and it gets confusing because it's kind of like vitamin C.

You've got Mineral ascorbate forms of vitamin C like we have in vital C and then you've got just ascorbic acid and they even have like liposomal vitamin c They're all vitamin.

C, but they're different versions, right? That's kind of how this is with coq10 There's ubiquinone and ubiquinal Now I say i'm old enough to remember when ubiquine known first came out co q10 I'm also old.

Enough to remove when you pick when all came up But that's a much more recent thing and not a more recently discovery We'll talk about the difference between those two but a More recent discovery in terms of how to make it so that we can take it as a supplement.

Now, if you walk into a store like Vitality Nutrition or you're scrolling around online at vitalitynutrition.

Ubiquinone vs. Ubiquinol

com or some other website that sells supplements, you'll see ubiquinone and ubiquinal and oftentimes both of them will say CoQ10 on the label. and you'll usually see that there's a significant price increase between CoQ10 ubiquinone and Coq10-ubiquinol.

They are two forms of the exact same molecule and the difference comes down to a chemical state that that form may be found in. Ubiquonone is the oxidized form, ubiquinal is reduced form meaning it's carrying a couple of extra electrons.

And here's the important part. Inside that electron transport chain that I described, your body is constantly flipping this molecule back and forth between these two states.

Ubiquinone picks up electrons and becomes ubiquinol. Ubiquanol drops them off and become ubiquanone over and over, thousands of times. That flip is the actual work.

Both forms are real, both are useful, and your bodies needs the ability to cycle between the two. When you take either one, your body can use it. Take ubiquinone and a healthy body will convert a good portion of it to ubiquinole.

It's already in that reduced antioxidant ready state in the bloodstream of a health person. Roughly 90 to 95% of the CoQ10 circulating is actually in ubiquinal form.

So that's the form the body prefers to keep on hand. Now, it's not the same as like a methylated B vitamin, but it kinda is the thing. Basically, the ubiquinol form has already had the work done.

And you'll learn here in a minute that age plays a major role in this as well, in terms of how well your body can make ubiquinol from ubiquinoe versus just giving it ubiquinal in the first place, making the job much, much more simple.

Now, the practical question is, which one do you buy, right? And this is what I believe you need to understand. It's not a hard yes or no on ubiquitone versus ubiquinyl.

For a lot of people, especially if you're younger, I would say under 40 for sure, but even under 50 or 60, there's evidence that ubiquinone may be good enough.

But you have to ask yourself a couple of questions. If your digestive system is in pretty good shape, things are humming along that way. And like I say, you're under 60 for sure, but under 50 or under 40, even more so.

Ubiquinone, much less expensive, probably a very effective and efficient way to do this. You also need less of it when you are under forty than when your over 40. Because again, your peak is about 25 years old.

So really anybody over 25 would probably benefit from some CoQ10. We'll talk a little bit about that when we go into my multivitamin here in a minute.

If you're older, like me, I'm 54, so I would consider myself right at that borderline. I think maybe 50 is the number that we should look at based on the research that I've done.

That over 50, ubiquinol is probably the optimal one to do. Not that it's not better to use ubiquinal at a younger age. In fact, if you are looking at it and saying, you know what, not too concerned about the difference in cost, which some people are, some aren't, get it, supplements can get expensive, And this is why I'm having this conversation.

So otherwise, just I just say ubiquinols better buy it. But I don't think everybody needs it necessarily. And in fact, I included ubiquine known in the ultimate vitality multi because it's less expensive and I didn't want to drive the price of the multi higher.

There are a lot of people that use that multivitamin that are under 50 years old that maybe don t need that different form. Right. We'll talk about that again.

I m jumping ahead a little bit here. Getting into the multi, but let's talk about this thing because cost matters and ubiquinol. It's like double the cost in most cases, uh, somewhere close to that.

Anyway, I didn't actually look at it before we started to make exactly sure, But I think it's around that double ish price. So I would say if you're under 50. and your gut is in pretty good shape, I would probably take ubiquinone, save the money, get an optimal dose, and we'll talk about what an optimum dose is here in a minute.

If you're over 50 or if you are under 50 and you have a lot of gut issues, you may want to consider ubiquinole because ubiquinal is much more easily absorbed.

Your gut doesn't have to do as much work, so that's the gut side of it, you tend to just need more of the more usable form. And there's evidence showing that people over 60 really benefit from a ubiquinol form versus a Ubiquinone form, so you just have to figure it out based on that.

Under 50, good digestion, Ubicuinone, over 50 or bad digestion or both ubiquinol. That's probably the easiest way to look at it. CoQ10 can be produced two fundamentally different ways.

The first is a natural fermentation process. Some of the best things in life are made through natural Digestive enzymes, systemic enzymes things like not all kinase, so many wonderful things.

CoQ10 is not different that way. You take specific forms of yeast and let them ferment and those yeast produce Coq10 as part of their own biology the same way that your cells produce it.

So that's the natural form, the closest thing to a bio identical and that is called the all transform of Co Q10. That's a description of the molecule's shape, its actual geometry.

And it matters because the all-trans shape is the exact shape your own body produces, so it is bioidentical. At the cellular level, your body recognizes it without any hesitation.

The second way is chemical synthesis. Historically, this has been done from petroleum-derived starting material. which is awful, or from a compound called Solanusol, which has pulled from tobacco stems and potato leaves, interestingly enough.

And it's built up through a chemical process in a lab. The problem isn't just where it starts, because where is starts is not necessarily great, especially the petroleum option, but it is what you end up with.

Synthetic production creates a mixture of shapes You get some of the correct all-trans form, the bioidentical stuff, but you also get the mirror image known as the cis form which does not exist in nature and which your body did not evolve to use.

Cheaper synthetic material can carry a meaningfully High percentage of that unusable form, your body simply doesn't recognize and utilize those the way that it does the natural shape.

So you paid for a certain number of milligrams, but a chunk of what you swallowed is a shape that your. Doesn't even know how to use. natural, fermented, all trans is the gold standard.

And there is a dominant name in the world for CoQ10, and that is called Kanika, a Japanese company. It's K-A-N-E-K-a. Now, most of what you see on the market will not say Kanik in bold print right on front of the label.

Some of it does, somewhere on in front on label, but it's going to say the brand name, right? Solar Ray, Natural Factors, companies like that.

Natural vs. Synthetic CoQ10

And then oftentimes it'll say Kanika lower and have a little symbol showing you there, or on the back in the supplement facts panel, it will say it's from Kanica.

Or sometimes it would say, It's all transform. or sometimes It'll saying naturally fermented. You're looking for some

tell on label that tells you one of those things.

If it doesn't say any of things, a brand is not going to not brag about their quality of CoQ10. If it doesn't say it's all trans, if it doesnt say its from Kanika, who is the pioneer in all this and makes the best CoQ10, and it dosnt' say, or it doens't' naturally fermented, then you've probably got a synthetic Coq10.

So look for one of those things. All trans. Naturally fermented. Kanica. One or more of these things is what you want to see. All that we carry at Vitality Nutrition, period, is that form.

We do not carry the synthetic form, I never have, and never will. It is cheaper and you can get it on grocery store shelves, you find it at places like Costco and Walmart.

You don't want it. So, don't waste your money. Even if it's 20 or 30% cheaper, it is probably significantly less effective than that. So that's what you're looking for when you are looking at CoQ10 in terms of quality.

Now, what about potency? What's been studied? And let's talk about this dosing thing because it's really important and it probably, well, the two most common things that I hear from people when they're curious about CoQ10 is how much should I take and do I want the ubiquinol ubiquinoin form?

So we already talked about ubiquinal ubiquine and hopefully I made that clear enough. The dosage is a little bit more tricky because depends on what you're taking Coq10 for.

I don't consider CoQ10 part of my vital five because I think everybody needs it, especially younger people as we discussed. But it is one of those things that's a really powerful potential game changer in overall health and longevity for a variety of different reasons.

And so it should be on your list of things to at least consider as a preventative maintenance thing. There are certain things it's very specifically good for, but the dosage really matters here.

So think of it in two tiers. There's a foundational tier, the amount that supports just healthy energy production and antioxidant defense day to day for generally healthy adult who wants to keep the tank topped off as their own production declines.

Who wants a powerful antioxidate to help with all the things that antioxidants help. And that dose can literally be anywhere from about 30 milligrams, which is what I included in the Ultimate Vitality Multimedia.

All the way up to 100 or even 200 milligrams. I think 30 to 100 milligrams is a good dose for just kind of basic foundational support and with a fat soluble fatty meal.

But then there are reasons why you might want to take a lot more than that. The targeted tier would be things like cardiovascular health and cardiovascular disease.

In 2014, University of Copenhagen followed 420 people with significant heart challenges over two years. They took 100 milligrams of CoQ10 three times a day.

So 300 total milligrams, of ubiquinone, on top of the standard care. And the results were the kind that make cardiologists sit up and pay attention. The group taking Coq10 had roughly half the rate of major cardiac events compared to the placebo group.

and about half the mortality. 9% of the people on CoQ10 died over those two years versus 17% on the placebo. Their symptoms and their physical capacity improved right along with it.

This dose was 300 milligrams of ubiquinone specifically in people with cardiovascular challenges. So these are people presumably with previous cardiac events, that sort of thing.

Then there's a piece of work that came out of Sweden published in 2013 the year before that paired 200 milligrams of CoQ10 with 200 micrograms of selenium in a group of healthy older adults and followed them for about four years.

Pairing these two is clever because selinium feeds the enzymes that help keep Coq10 in its active ubiquinol form. The result, the supplemented group had more than 50% lower cardiovascular mortality than the group taking placebo.

So almost exactly the same results, but over even an extended period of time. And the part that genuinely struck me, when the researchers went back and checked years after the supplements had stopped, that protection was still showing up more then a decade later.

That's a remarkable finding for two nutrients that you can get in a health food store. Think about that. So they took it for four years, but they had protective benefit for at least 14 years.

really, really impressive.

Dosage, Research, and Statins

It means to me that any CoQ10 is better than no Coq10. And of course, consistent use would be the best of all worlds. Higher potencies have shown up in other studies as well.

In 2005, in the University Hospital Zurich in Switzerland, 300 milligrams, again, a day was used with people dealing with recurring neurological head pain.

and there are other studies on migraines specifically as well. And about 48% of the CoQ10 group cut the frequency of those episodes at least in half. So about half of people got about 50% reduction in frequency versus only 14% in the placebo group.

Coq10 also runs all through the fertility research, where higher doses have been studied for egg and sperm quality, both situations where the energy demand inside the cell is enormous.

That's the through line across every one of these. Harder working tissue has to work. And CoQ10 helps that tissue work harder at higher than the normal hundred milligram dose that we talked about or 30 milligram does that.

We talked. So if you've got a cardiovascular concern, whether it's family history or actual history of your own, then Coq10 yes, 300 milligrams minimum.

And I would use that exact same strategy that I talked, depending on your age and your gut health. whether you take CoQ10 as ubiquinone or ubiquinal. If I personally were dealing with cardiovascular concerns, I would take ubiquinole period because it's obviously the best form and a heart attack or a stroke can be the end, right?

So we don't want to mess around with it. But if you're in the more preventative range, then ubiquine owner, ubiquina based on those criteria that I mentioned earlier.

And if your dealing head pain, migraines, neurological headaches, things like that, definitely worth a shot at 300 milligrams per day to see what it can potentially do for you there.

Now, let's talk about this statin piece. I don't want to go into too much detail here, only because I just did a whole show on statins. And I'll refer you back to that episode in the show description as well.

But let just talk this so you actually understand the mechanism, because a lot of people know that statens reduce CoQ10. That's actually, in fact, there are even cardiologists to their credit, even though they're still recommending statans, which I strongly disagree with, that are also recommending at least Coq10 along with it.

They are the most prescribed drug in the country. And then understand how they interact with CoQ10. You just have to understand, how do they work, period.

Statins lower cholesterol by blocking an enzyme in your liver. That rate limiting step of something called the mevalinate pathway. that pathway is the production line your body uses to build cholesterol.

Block that enzyme, you make less cholesterol, which is exactly what the drugs are meant to do. But guess what? If you block the Mevalinate pathway, It's also how your body makes CoQ10.

They branch off of the same road. So when a statin shuts down that early step, it doesn't just turn down cholesterol, It turns down your bodies own manufacture of Coq10 right along with it.

And we just talked about this, how protective of cardiovascular system and the heart specifically Co Q10 actually is. So it's just like when they prescribe diuretic drugs for heart disease or for high blood pressure and that leeches more potassium out of the body, more magnesium out the electrolytes out which leaves the heart more exposed.

It's the same thing with CoQ10 and cholesterol and cholesterol drugs. Here we are trying to prevent heart disease with a statin drug by depleting perhaps the most protective antioxidant for the cardiovascular system.

So while I'm not your doctor and I am not the guy that says don't take these drugs, Well, I am the guy that says don't take these drugs, but I'm not your doctor.

So I not saying that to you specifically. I just generally saying I hate statins. Gotta be on CoQ10. It's as simple as that. And I would recommend, again, all the criteria I mentioned earlier, which Coq10 you decide to use.

I'd recommend a minimum of 200 milligrams, and I actually think optimal is probably in that 300 milligram range, maybe even 400 milligrams. There is some research, not as compelling because it's mixed on Parkinson's disease and slowing down Parkinson disease at high doses, like 1200 milligrams of Co Q10, My dad had Parkinson's disease.

You may know I saw the withering effect of that disease that is brutal. I wouldn't wish it on anybody. And we don't know how effective CoQ10 is there, but I think if I were to deal with that, I would definitely at least give it a shot.

But the research is very mixed on that. Whereas all of these other things are much, much more clear. All right, so basically that's CoQ10, ubiquinone, Ubiquinol, which one, how much, all of that.

And then there's one more ingredient that is like besties with Coq10. It's called PQQ. Piroloquinolinequinone. That's why they're called pqq. it's found in foods like parsley, green peppers, Green tea, Kiwi and papaya.

and unlike Co Q10 your body does not manufacture it. So if you want to get it, you gotta get into your diet or you got to supplement it. CoQ10 works inside your existing mitochondria as we discussed.

PQQ does something Coq10 does not do, but that is clearly related to what Co Q10 is doing for your body. Research was first published in 2010 on this because it is really a new discovery.

I never heard of Co P Q Q until about 10 years ago. But the research is really cool. This was done in the Journal of Biological Chemistry out of the University of California, showed that PQQ can actually stimulate the creation of brand new mitochondria.

There's a technical term for this, mitochondrial biogenesis, but we're talking, it makes mitochondrion. That is really impressive stuff. PQQ helps to switch on the cellular machinery that builds new energy plants.

It works through a master regulator inside the cell, a signaling protein that tells the cells, make more mitochondria. If you put those two facts side by side, you see why they're such a great team.

CoQ10 makes your current mitochondrial run better and it defends them. And Pqq helps you build more of them and protects them too. One optimizes the factory you have, the other one helps you open up new factories.

That's real synergy, not two things that happen to be marketed together, but two that work on different parts of the same problem. And that problem, declining mitochondrial energy as we age is arguably one of most important stories in how we feel decade to decade.

On the human side, the cognitive research is where PQQ gets interesting. In studies on middle-aged and older adults, Me? 20 milligrams of PQQ a day over about 12 weeks supported measurable gains in memory and attention compared to a placebo, which tracks because your brain is one of those enormously energy-hungry organs that lives and dies by mitochondrial function.

And here's a detail that I love. In some of that research, when they combined Pqq with CoQ10, the two together outperformed P qq on its own. Different tools, same goal, better result when they work side by side.

So there's a branded form of PQQ called Bio P Q Q made in Japan through a natural fermentation process. But, oh, and I forget to mention this, this is really important.

Almost all ubiquinol is naturally fermented. Still look for that on the label. Look for the Kanika, all that stuff, but there is not much synthetic out there.

And the same can be said about PQQ. So you're not as worried about pqq, you are not worried as much about ubiquinol being synthetic, but you always just looking for a reputable brand like Natural Factors, Solare, Vitality Nutrition, making sure you getting a high quality version of these things.

PQQ and the Antioxidant Team

So why would I select CoQ10 over other antioxidants if I'm just looking at it as an antioxidant? I am not necessarily overly concerned about my cardiovascular wellness.

It's a little bit of a tough one, but I will tackle it because I think it's important and it is a common question. Glutathione, Vitamin E, vitamin C, resveratrol, grape seed extract, azazanthin, zeaxanthan, lycopene, lutein.

So many antioxidants. And it's not a competition. There isn't really a winner and a loser here. The antioxidant system is a team and the more antioxidants really the better.

But CoQ10 does hold a few positions on this team of antioxidants that others simply can't play, which is why I elevate it towards the top of the list as antioxidants go.

And that's why it is one of these antioxidants, that is now in the ultimate vitality multi along with lutein and zeaxanthin, and of course PQQ. and we put 10 milligrams of PQQ in the multi.

which gives you half of that clinical dose, because I think at any age, 10 milligrams makes a ton of sense. And if you want to take additional, now you can take half as much, take an additional 10 milligram.

Most PQQ on the market is a 10-milligram Pqq. I noticed that when I was formulating the Ultimate Vitality Multi. So I thought, well, this will keep people basically spend half-as-much money on your P Q Q.

If you decide that you wanna use P q q plus the ultimate vitality multi, which is what I'm doing, as of developing the new Multi and deciding to do this episode on CoQ10 and PQQ, I am now a new user of extra Coq10 PqQ.

I was not someone using it before, but I've been converted. And my wife and I now are both utilizing Co Q 10 and p q q and using a little less of the P Q.

Well, half as much of P q Q because of what's in the ultimate vitality Multi. But I digress. So I talked about the

competition. There isn't a competition, all the antioxidants are great.

But CoQ10 is just not only an antioxidant. It is running your energy production and defending your cells at the same time. That makes it very, very unique.

At the mitochondrial level, it simply is doing something different than other antioxidants. it also is fat soluble and most antioxidants, including the master antioxidants, glutathione, are water soluable.

They do beautiful work in the parts of the cell where water soluble antioxidants work, but that's not where CoQ10 works. It works in fatty membranes where an enormous amount of oxidative damage actually happens, including the membrane of your mitochondria and the surface of you LDL particles.

At least I believe we know. Your doctor's going to disagree with me here. But the evidence agrees with that cholesterol on its own is not the enemy. There are so many other things, but we do know that oxidized cholesterol known as VLDL is much more problematic than just LDL itself.

And CoQ10, the thing that statins prevent your body from making enough of is the primary defender of the LDL that you have keeping it from oxidizing and actually causing real problems.

Do you see why statins just don't hold up and make as much sense as everybody tries to convince us that they do? The other thing, and it's an important one, is that CoQ10 is an incredible teammate, not just with PQQ, but with vitamin E.

Vitamin E neutralizes a free radical and then it gets used up in that process. and it has to be regenerated if it's going to go back to work. And CoQ10 is one of the things that actually hands it back its charge and says, go do it again, vitamin E.

So Coq10 doesn't just fight on its own, it actually keeps teammates in the game longer. And the fourth thing about CoQ10 that I think is so awesome is that it's the antioxidant that your body makes itself.

It makes less of as you age and that this common medication that, I hope, becomes less common, the more people find shows like mine, statins drain from the body.

That combination, you make it, it central to energy, protects the fatty parts of your cells, recharges other antioxidants, and it is declining right when you need it most.

is what earns it a place as an extraordinary antioxidant. So I talked about the Multi and I won't belabor it too much. I have an entire show where I talk about all the updates and upgrades to the multi, I'll link to that in the show description.

But basically I decided based on everything you just heard that CoQ10 and PQQ deserve a spot in The Ultimate Vitality Multi. It's important to understand, too, that I would have put CoQ10 in the Multi years ago, but Coq10 was so much more expensive years.

It would've driven the price of the multi through the roof and it has come down in price. Thankfully, competition has increased. Kenneka is the kind of gold standard Co Q10 company, But they're not the only ones making a good natural one now.

And that's when the. Price came down. which is amazing. So we finally had competition and the price dropped, supply and demand, all those things. And CoQ10 became something I could throw into the multivitamin without increasing the prices, which was such a big factor for me because I still wanted the multi to be this incredible value.

And I didn't put a massive quantity in. A, I don't have a lot of space. And B, it's still kind of an expensive ingredient. But I did put what I thought for everybody is at least a baseline dose that would be useful.

That's the 30 milligrams, which is the first dose of CoQ10 that ever made it to the marketplace way back when. Because there were good clinical studies showing that amount was helpful.

I put much higher dose as a percentage. of PQQ, 50% of what the best studies show PqQ does. And I did that A, because again, P Q Q is much more expensive than CoQ10.

So we're still keeping the price in check, but I felt P q q at 10 milligrams is fantastic across the board for everybody supportive of more mitochondria, which we all want.

and I would say most of us probably feel like we need from an energy standpoint, but also it allows you to take half as much PQQ, just 10 milligrams a day to get that optimal dose of 20 milligrams, which saves you money on the bottom line.

That's why they're in there. And I hope that that all makes sense to you. So Jackie, again, thank you for bringing this topic up. I don't know why I didn't think do one right after I did the multi, but I all kinds of things filtering through my head all the time on what I'm going to talk about on this show.

But again, if you are listening, whether you're someone who's already suggested a topic or there's a topics that you'd really like to hear about, I'm all ears.

I would love to deliver a show that YOU want to here. Reach out to me. Either you can make mention on Spotify, you do it on YouTube, or you could do on our website, VitalityNutrition.com.

You can come into Vitaly Nutrition and tell us yourself or give us a call on the phone. 801-292-6662 I hope this episode was useful for you, and especially if it would be beneficial for somebody you know and care about, please send it, share it.

Like it subscribe. Give me a five star review. Any of the things that helped this show grow. I would greatly appreciate it until next time. Hello, everyone.

I hope you enjoyed this week's episode of Vitality Radio. Just a reminder that this podcast is for educational purposes only. This podcast has not been evaluated by the FDA.

Thank you.