113 – Cinnamon for Blood Sugar Support

Interview and transcript topic	Transcript: Interview with Dr. Richard Anderson	HEALTH QUEST PODCAST

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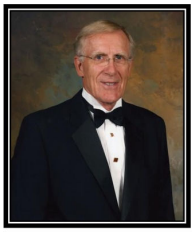

Dr. Richard Anderson

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Steve Lankford: Hello, and welcome to Health Quest podcast. I'm your host, Steve Lankford. Thanks for joining me. I'm glad you're here. I have a very interesting topic for you today. We're going to be talking about cinnamon extract. A lot of people have heard about cinnamon for blood sugar support over the last several years. There's been some interesting and compelling science.

Not all cinnamon is the same. Not all cinnamon provides the same benefits. We're here to look more closely at what it is in the cinnamon research that you need to know.

It's in that capacity I've invited Dr. Richard Anderson, who is one of the original researchers who looked at cinnamon, and who developed a very interesting cinnamon extract called Cinnulin PF. It is my pleasure to introduce to you Dr. Richard Anderson. Dr. Anderson, welcome.

Dr. Anderson: Glad to be here. Excited to talk about the benefits of cinnamon and cinnamon extract.

Steve Lankford: I'm sure, when you're doing the research, it has to be exciting as you start to see what these nutrients can actually do, and what the science reveals to us. Before we get into our topic, though, tell our listeners a little bit about your history and how it is that you became involved with this research.

Dr. Anderson: I've been working at the Beltsville Human Nutrition Research Center for almost 40 years, actually. I have now switched over to do more consulting and part-time work as a visiting scientist at the center. In our work over, like I say, almost 40 years, what we've been looking at is natural products that improve insulin function. Our studies were not to treat diabetes and/or cardiovascular disease, but to prevent it from actually happening.

We look at natural products. Some of the natural products we've looked at; certainly, we looked at chromium. I had improved insulin activity, but then in that work, we actually came across the effects of cinnamon. When we looked at cinnamon, the effects that we saw with cinnamon were greater than anything we had seen in the previous 3 decades.

Steve Lankford: What gave you the initial idea that cinnamon might be useful?

Dr. Anderson: I would like to say that we looked at cinnamon and somehow we could magically tell it was good, but obviously that's not the case. Like I say, we were working with chromium. What we were doing was feeding people a low chromium diet. With that, we wanted to have a limited number of foods, but of course, we wanted foods that people would like.

One of the foods that we had in our diet … because we were going to feed them a low chromium diet and then give them chromium or placebo and see if there were benefits. One of the foods we had was apple pie. We looked at apple pie; of course, it was low in chromium. It stimulated blood glucose; it was high in glucose, stimulated insulin to go up, and that caused increased chromium losses.

We were excited about using apple pie. When we measured apple pie with another assay that we developed to measure the activity of insulin … insulin-potentiating activity, we call it … it was the best of any product we'd ever tested at that time; more than 25 years that we'd been working on insulin potentiation.

Of course, we were sure that it was the apples in the apple pie. That was the first thing we tested, but the apples didn't do anything. We tested everything else, and nothing else did anything, either. Finally, as a last resort, we tested the cinnamon. There's not much cinnamon in apple pie. Again, we found cinnamon was certainly, like I say, better than anything that we had ever tested. We've kind of been going on, based on that.

We did a number of laboratory studies to confirm it in other types of assays. Again, each assay we did relating to either insulin activity, anti-oxidant effects, anti-inflammatory effects … cinnamon worked extremely well.

Steve Lankford: This must have been an exciting discovery. Here you actually see the results of something, and you've actually compared it to the other ingredients, so you know it's not just placebo. There's actually an effect occurring with this one ingredient. Had that ever been observed before?

Dr. Anderson: No, this was certainly the first report of it. When we first observed it, we thought that indeed, the major component in cinnamon is cinnamaldehyde. That's what makes the cinnamon taste and smell the way it does. When we measured that, we were sure that that's what it was, but it wasn't. It turns out it's one of a number of polyphenols in the cinnamon compound, and that's why these little extracts are excited.

No, this was new. Not only was this new, but we were excited because there's studies out there where people look at exotic things, and sometimes you see effects, but nobody ever eats these exotic products. With cinnamon, this is something that, next to pepper, it's the most common spice that we eat. It's something that's out there in the market. All we need to do is eat more of it.

Steve Lankford: When you started doing this research, and you saw results in apple pie, which just has the typical cinnamon that consumers can buy, and that alone gives an effect; were you then looking to see how much more an effect that you could get, than just using cinnamon alone? Did cinnamon alone qualify as something that you could actually make a recommendation on?

Dr. Anderson: Cinnamon alone certainly has good activity. Like I say, there are other components in cinnamon. If you sprinkle just a teeny amount, and only do it periodically, it's no problem. We wanted to, for example, get rid of the cinnamaldehyde in the cinnamon … some of the organic components, they're called … because again, eating too much of these can be harmful.

Also, with whole cinnamon, the salivary glands actually make a protein, when you continue eating cinnamon, that actually is called a proline protein, that indeed binds up some of these components of cinnamon so you don't see an effect. That's why we recommend taking the cinnamon extract in a capsule.

Steve Lankford: When this news first broke, it was cinnamon, just cinnamon, without really the elucidation of what are the issues with cinnamon, and is it better to take something other than just cinnamon? You've given us some of those concerns. Tell us a little bit about the research that you did. What kinds of studies did you embark upon in order to learn more about which of these constituents are the most effective?

Dr. Anderson: When we did our work … keep in mind, I work at Human Nutrition Research Center, so we always wanted to go to the next level to find out, indeed, why. The initial study showed that cinnamon extract was active. What we did then is, we actually purified it. What this amounts to is you put it over a column, it's called, where you can separate the different components of cinnamon.

By doing this, we could measure this insulin-potentiating activity that I talked about before. What we could do, then, is we could separate out these individual components, and that's how we found out that they were the polyphenol components.

Like I say, this is very exciting research, but also from a human nutrition point. Ultimately, we could possibly even synthesize the active components in the cinnamon, but we really don't need to do that. For example, in the Cinnulin PF extract, these components are naturally purified, and the bad things, in essence … the cinnamaldehyde and some of those components … are left behind.

You can take these products for days, weeks, months or years, and have no problem with any signs of toxicity.

Steve Lankford: You mentioned insulin-potentiating effect. Is that the reason that cinnamon extract is beneficial? Describe what that effect actually is.

Dr. Anderson: When you look at function of the body, whether you're looking at diabetes, cardiovascular disease, cancer, Alzheimer's, all of these … you can basically control any of these diseases if you can control the function of insulin.

For example, people think, "How are Alzheimer's disease and glucose or insulin related?" Alzheimer's disease is called type III diabetes. It's diabetes of the brain. Indeed, if you can control the activity of the insulin, which is, like I say, our major goal for all the time that I've been doing research, you can control a number of these other diseases.

I don't know if we'll have time to get into it, but we've looked at some of the effects even on cancer, cardiovascular disease, polycystic ovary syndrome. We can look at almost any disease that relates to insulin, and when we look at the risk factors associated with that, and we measure these effects with the cinnamon, we see beneficial effects.

Steve Lankford: This insulin-potentiating, would that suggest that it makes the insulin that we secrete more effective? Is that what that means?

Dr. Anderson: Absolutely. If you look at, for example, people with type II diabetes, their problem is, it's not that they don't have enough insulin. People with type I diabetes, in the body, the pancreas doesn't put out insulin, so they have too little insulin. That's not where cinnamon works. Cinnamon works with people with type II, or insulin resistance, or the metabolic syndrome.

What it does is, it makes the insulin more effective. For example, in some of our early work, we would measure the activity at low levels of insulin, and then we would add cinnamon extract to it. We could improve the function of the insulin 20- to 30-fold. You could say, "Why didn't you just add more insulin?" You can do that; you can add high amounts of insulin for a while. Insulin, by itself … people think it's a good thing. Yes, in the body, insulin is a good thing, but high amounts of insulin lead to insulin resistance, which actually makes the insulin that we have, not effective.

What the cinnamon extract … Cinnulin PF does, is it makes this insulin that we have more effective. Of course, then we don't need much of it. High levels of insulin circulating, for example, in your blood stream, actually increase plaque formation. You want to keep the levels of insulin that you have circulating, as low as you can.

One of the experiments we did is called a titration, but what it amounts to is you look at, with increasing amounts of insulin, the insulin activity you're measuring goes up. What we could do is, we could increase that apparent insulin activity, but we didn't add more insulin. We added more of the cinnamon extract. When we do that, we could potentiate or enhance the level of the activity to its maximal effect; not by adding more insulin, but simply by adding a factor that improves or enhances the activity of insulin. Of course, this is these soluble cinnamon polyphenols that are found in the Cinnulin.

Steve Lankford: That's so intriguing. Does that mean that the insulin itself is somehow more active and able to overcome the insulin resistance? Does it mean that the insulin resistance's effect is less powerful? Is it somehow affecting both the insulin and the receptors? Where is it that it enables, then, this insulin to become more effective?

Dr. Anderson: With almost all of our experiments, we measure a number of proteins involved in the insulin function. For example, in order for insulin to function, it has to bind to its insulin receptor. Once it binds to the insulin receptor, there's a whole cascade of other proteins that have to be affected in order for insulin to function.

When we look at that cascade of events, we can look at, for example, glucose transport; that is, glucose getting into the cell. We look at the glucose transporters; they're improved. We look at the kinase enzyme that actually puts an activating group on the receptor in order for insulin to function. We can definitely see an effect of cinnamon on that as well.

There's another enzyme at that level of insulin function, that actually takes this … activating this phosphate group off of the insulin, and with that, then, it increases insulin resistance. I bring this up because you can actually make animals that lack this phosphatase … this enzyme that cleaves the activating group off of insulin. Those animals will never become obese, and they don't become type II diabetic. Again, what they do is knock the enzyme out so you don't have that enzyme. You prevent this decrease in insulin sensitivity.

Like I say, there's drug companies that have worked very hard on finding a natural … not a natural, like a chemical, anything that will inhibit this particular enzyme that's involved in insulin functioning. Really, they haven't been that effective.

When we test the effects of these components found in Cinnulin, we can basically knock out this enzyme with a natural product almost 100 percent. What that's saying then, is now this enzyme … since we knock it out … it inhibits the activity of the functioning of insulin. We prevent that activity, so now we have insulin functioning at its maximal activity.

It's in effect, insulin function. It's an effect on factors that involve in insulin binding to the insulin receptor. We can also look at, in order for insulin to function … the transport of glucose … and again, it has an effect on these, too. Basically, all aspects of insulin function are affected by Cinnulin.

Steve Lankford: I'd like to maybe look at one of the studies. Do you have, actually, human clinical trials?

Dr. Anderson: Do we have human clinical trials; we have lots of human clinical trials.

Steve Lankford: What I'd like to hear is, maybe pick one that's compelling, that tells the story a little bit, and describe that for us.

Dr. Anderson: I'll tell you the first one we did. You certainly get excited by the first study as much as anything else. After we discovered, like I say, the in vitro … the effects that we saw in the laboratory … we did a number of follow-up studies and the cinnamon extract worked very well each time.

We did a study in people with type II diabetes. We had 3 levels of cinnamon; 1 gram of cinnamon, 3 grams of cinnamon and 6 grams of cinnamon. To put that in perspective, 1 gram of cinnamon is a few shakes of a shaker; it's a very realistic amount. When we did that, we tested, like I say, the 1 gram, 3 grams and 6 grams. We saw the same effects at all 3 levels, which is basically saying that we could have possibly used even less, but certainly we didn't need to have anything more than 1 gram.

In that, we had basically 3 groups of subjects, like I say; the ones with 1 gram, 3 grams and then 6 grams, because we had to have separate placebo groups. Everybody could count the capsules because they would know, "We're in the high group, the middle group or the low group." In essence, we ran a placebo group for each set. We had a placebo group for the 1 gram, which only took 2 capsules per day. We had a placebo group for the 3 grams, placebo group for the 6 grams.

Again, in each of the cases with the cinnamon, there were very nice responses. In the 3 placebo groups, there was no effect. When I talk about nice responses, we saw glucose improve 18 to 29

percent, triglycerides 23 to 30 percent, LDL cholesterol … that's the bad cholesterol, improve 7 to 27 percent, and total cholesterol improve 12 to 26 percent.

I get excited talking about this because indeed, when this came out, people thought, if you look at the effects of lipids, for example, with statin drugs and things like that, we had the people on 40 days, and after 40 days, we took them off for 20 days, and then we measured the effects. Even 20 days after stopping the intake of the cinnamon, we could still see effects on these. If you compare that to statin drugs, 24 to 48 hours after you stop taking those, you don't see an effect.

It's exciting. In some of the studies that we've done, we don't necessarily always see these dramatic effects. These studies were actually done in people taking sulfonylurea drugs. What these drugs do, is they actually cause the body to put out more insulin. What the cinnamon does in this case is it makes that insulin, that they're putting out, more effective. You basically have a double effect. You have an effect on insulin output, but you also have an effect on insulin function as well.

That's the first study we did. We have, like I say, a whole host of them. We've looked at it in people with polycystic ovary syndrome. We can get those people back basically to the level of the control. We've done studies on Alzheimer's. We've done studies on cancer. We just finished a very nice study on brain function. This was an animal study, but we could actually feed animals a high fructose, high fat diet, and you would see negative effects on cognition and performance, anxiety in these animals. Again, we could prevent this, even by eating a bad diet plus cinnamon; we could get them to the level of the controls. It's an exciting area.

Steve Lankford: Does it make you wonder sometimes why this hasn't become more widely known? How are the medical professional receiving information like this? Is this something that they're interested in at all?

Dr. Anderson: They're certainly interested, but again, sad to say, there's little or no money in telling people to eat more cinnamon … the Cinnulin PF. When we first came out with this work, there was a venture capital company that came to us and gave us actually several million dollars to work on this. What they wanted to do was develop a drug. They weren't interested in giving people an extract of cinnamon. They wanted to give a drug, because there's money in drugs.

It turned out that we published some of our work in an abstract form before we applied for our patent. Within that, then, the patent committee said, "All of your work looks like it's patentable, but Anderson et. al … which of course was us … put out this abstract before saying, in essence, what you've done." The point is, once they found out that this extract couldn't be patented as far as the active ingredients of it, they basically got out of it, because the money goes out of it.

I get calls from people often. When it first came out, I would get hundreds of calls a week of people that had started taking cinnamon extracts, and were seeing very nice effects.

Steve Lankford: Are there differences between different cinnamon extracts? If somebody wants to try cinnamon, are there actually distinctions between the type that would indicate they should try the Cinnulin PF because it's the studied form?

Dr. Anderson: There's certainly a difference. The Cinnulin PF, like I say, what's exciting about that is again, first of all, you can have it in a capsule form, so you can eliminate this problem that I was telling about before, with the salivary glands putting out a protein that binds to it.

We know that Cinnulin PF works. When we first got into this, my brother-in-law, who has type II diabetes, he heard we were working on cinnamon, so he rapidly went out and bought a whole bunch of cinnamon extracts. What he bought was the cinnamon oil; products that were high in cinnamaldehyde.

What this is, it does the opposite. First of all, it's got high amounts of the bad components in it. Second of all, the activity of it is very, very poor. The activity is in the water soluble component. Then it becomes, "Why don't you just take high amounts of cinnamon?" Again, you can get much better effects if you take Cinnulin PF extract.

Steve Lankford: You had mentioned that people who took two capsules a day in the study got the same results as those who took more. Are these capsules that they took similar to what a person can buy, if they buy a Cinnulin PF supplement?

Dr. Anderson: Actually, a Cinnulin PF supplement is better. Again, the Cinnulin PF supplement only has the water extract of cinnamon. It doesn't have these bad components. We've done several studies with Cinnulin PF, too. The one I said was the first study we did, but we've done follow-up studies where we've looked at Cinnulin PF, and we've seen improvements in first of all, the glucose, the cholesterol, the triglycerides, the antioxidant components. We even saw effects on lean body mass, whereas the ones that were taking the Cinnulin product, their muscle mass went up, and their percent fat went down.

We worked with a group from France that does anti-oxidant measurements, and when we measured the anti-oxidant measurements of the Cinnulin PF, again we saw very, very nice effects with that as well.

The reason we really pushed the Cinnulin product is because that product, we know works. Once this work came out, people called me up and they said, "What about product X, Y or Z?" You can buy a lot of other products out there. I said, "I really can't say, because there's no data on it." With the Cinnulin, there's all kinds of data to show that that does work.

Steve Lankford: That's our point exactly here on our podcast, is to make distinctions between raw materials. Not all products are equal. Not all products have been studied in the same way. Products have different compounds and constituents, and different ways of being manufactured. If a consumer wants to have confidence, our recommendation is, take the product that was used in the clinical studies, use it in the way and in the dosage that it was used in the clinical studies, and give it a reasonable length of time in order to work.

My question before was much about, if somebody buys a Cinnulin PF supplement off the store shelf, and it has that form of cinnamon, and they take 2 capsules a day, is that dosage comparable to the 2 capsules that were used in your study?

Dr. Anderson: It's actually a little bit less, but there's all kinds of data that show, like I say, that we could have used less. We had 500 mg capsules. The capsules that you buy are often 150 to 200 mg

capsules. Yeah, the effects should be the same. As I said before, when we tested the 3 different levels, we saw the same effects.

If you buy capsules of Cinnulin PF 125 or 250 mg per capsule, you take 1 or 2 of those a day, you should see effects. It doesn't always work in everybody, but certainly in the majority of the cases, it will.

Steve Lankford: What would be a reasonable length of time, if somebody wanted to try it and start taking it; how long should they take it in order to make a fair comparison?

Dr. Anderson: Certainly, you should see effects within the first week or so. In the first human study, we looked at 20 days and 40 days. We definitely saw an effect after 20 days, and the effects after 40 days were greater than the ones after 20. Usually, the improvements will improve from 1 to 2 weeks, on up until as long as you take it really; until you get down to a very near-optimal level.

Steve Lankford: That brings up an interesting point. If somebody does get down to a near-optimal level, would they just then reduce the dose and continue to take it? If they quit taking, it would they likely lose the effect?

Dr. Anderson: Yes, if they quit taking it, as I said before, in the study that we did, after 20 days, the effects were there. There are some other studies where again, the effects could be lost rather quickly. No, if you stop taking the Cinnulin PF, for example; you've got your blood glucose down to baseline, "I'm going to stop, and I'm going to be fine." No, it's not going to work that way. You're going to have to continue to take it.

Again, you're talking about taking a nutrient. You're not talking about taking a drug. You're taking a small amount of cinnamon, so it's not like taking a drug. People take drugs, Glucophages and statin drugs and things all the time. Those are much, much stronger and have much, much greater possibilities of side effects. When you're talking about cinnamon, we haven't seen any negative side effects. I mentioned this, and somebody called me up. There was one person that called me up, and they were actually allergic to some component of cinnamon. There can be a few people that won't be able to tolerate the cinnamon, but it's very, very low.

Steve Lankford: In your studies, did you determine any contraindications or warnings, either for somebody who is on a medication or has a particular health challenge?

Dr. Anderson: The only one that we see in response to that is if indeed you're taking drugs to lower your blood glucose, and/or taking insulin, you want to monitor your blood glucose quite closely. If you're making it more efficient, and then for example you're taking insulin in addition to it, you could possibly get values that were too low.

Without taking the insulin and things people say, "Can you take too much of it and your blood glucose will get too low?" No. You get down to a near optimal level, and that's it. If you get down to a near optimal level and then take the same amount of insulin, for example, that you were taking before, you can obviously say that this could lead to low blood sugar or hypoglycemia.

Steve Lankford: Certainly, if somebody's under a doctor's care and they're taking these medications, it would seem they're probably already likely monitoring their blood sugar levels, and we will suggest, "Work with your physician. He's your primary care, and let him know what you want to do. Let him monitor you and develop a plan that works with your doctor." Certainly, it's in everybody's best interest if we can reduce the amount of medications that we take, but you should always do that in consultation with your health care provider.

Dr. Anderson, we're very near the end of our time. I'd like to give you the last word. Is there anything that we didn't cover today, that you would like to make sure that our listeners hear?

Dr. Anderson: My advice would be that if indeed you have problems with your blood glucose, or you've been recently diagnosed, try the Cinnulin PF before you try the medications. See if indeed it will help you. If it helps you, you may not have to go on medication at all.

I get calls often times from people who have been diagnosed. They start taking the cinnamon and they never end up taking the drugs. I would say, give cinnamon a chance.

Steve Lankford: I would say give cinnamon a chance as well. It's this compelling research that you've been engaged in for decades, that gives us that confidence that has brought these innovative nutrients to the forefront. I would like to thank you so much for your curiosity, your efforts, and the direction that this research has taken.

Diabetes type I, type II are serious problems and a big challenge for a lot of people. To have something as simple and natural as Cinnulin PF is a great asset to all of us. Thank you so much, and especially for being my guest today on our podcast. It was most interesting.

Dr. Anderson: Thank you, appreciated it.

Steve Lankford: Take care.

Dr. Anderson: You bet.

Steve Lankford: Bye bye.