Should You Supplement with Vitamin K2? Transcript

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Webinar Introduction and Logistics

Today's webinar is going to be short and sweet but packed to the hilt with everything you ever wanted to know about the different vitamin Ks. But first, some quick housekeeping logistics. If at any time you run into technical difficulties, there are live chat Zoom staff standing by. We will paste that link in the chat. If they're unable to help, we have nutrition facts staff standing by too. you can reach out to at research webinar@nutritionfacts.org.

Please reserve the Q&A button you see in the Zoom window there to ask content questions. Today's webinar is only an hour long, but reserve some time for Q&A at the end. So, feel free to leave your questions in the Q&A anytime throughout the webinar and the nutrition facts team will be compiling compiling them to be answered at the end. You don't have to take notes or anything. After the webinar is over, we're not only going to send you a full recording of it, but a free link to download all the videos in high def so you can see the videos in all their full resolution glory. Today's webinar is based on a video we created just for this webinar, but should be on nutrition facts in about two months time. But you get to see it right here, right now. Entitled, the purported benefits of vitamin K2. Should you take K2 supplements?

Vitamin K Basics and Bone Health

Let's find out. Vitamin K. Wait, I know about vitamins A, B, C, D, and E. What happened to vitamins FG, HI, and J? It's not alphabetical. Vitamin K stands for coagulation, or at least it does in German. That's the fundamental role vitamin K plays helping the blood to clot. But over the last few decades, there's evidence that it has other roles in the health of our bones, heart, and brain. Kind of reminds me of vitamin D.

I mean, we know vitamin D is important for bone health, but then there's been all sorts of other controversial functions ascribed to it. Some of which have been proven and some disproven. What about vitamin K for bone health, for example? Is the link between vitamin K and osteoporosis myth or reality? It turns out the findings on vitamin K and bone are conflicting and unclear. It doesn't help that some of the major trials were found to be problematic to say the least, as in likely fraudulent containing impossible data with investigators admitting to complete fabrication. And so if you do a systematic review eliminating any fraud, we find there's no evidence that vitamin K supplementation affects bone mineral density or vertebral fractures.

What about the heart? Vitamin K supplementation for the prevention of cardiovascular disease. Uh there's a vitamin K activated protein in your blood that binds up excess calcium and helps prevent calcium from being deposited into the walls of your arteries and stiffening them. So if you give people extra vitamin K, will that protect people's arteries from calcification? It sounds good in theory, but no.

Vitamin K does not appear to consistently prevent progression of calcification, atherosclerosis, or arterial stiffness. For example, artery calcification is particularly common in patients with chronic kidney disease, which can lead to increased artery stiffness, which is an important risk factor for heart attacks and strokes. An earlier trial didn't find any benefit on coronary artery calcification between the vitamin K and placebo groups, but they were using kind of a small dose. So these trials use a whopping dose daily for a year and nada. Vitamin K supplementation did not improve vascular stiffness or other measures of artery health. And in fact, one study on the effect of vitamin K supplementation on artery calcification in patients with diabetes found that calcification tended to increase after supplementation with a type of vitamin K found in a slimy fermented soy food called natto. Now, those with higher levels of vitamin K circulating their bloodstreams do tend to have lower levels of inflammation.

But no wonder where is vitamin K found? The predominant dietary form of vitamin K in the human diet comes from dark green leafy vegetables and cruciferous vegetables. So, how did people get high levels in their blood? Eating broccoli.

Those with higher levels of vitamin K in their blood were eating more vegetables, less meat. No wonder they had

lower levels of inflammation. The recommended adequate daily intake for vitamin K is set at 70 micrograms a day in Europe and between 90 and 120 a day here in the United States. Just two leaves of kale has over 70. And a/4 cup of cooked kale will get anyone all the K they need for the day. Now there is vitamin K found in meat, dairy, and eggs averaging about 5 to 10 micrograms per serving.

Vitamin K and Heart Health

In other words, they are even beaten out by iceberg lettuce, which is mostly water, but still contains like two to three times more vitamin K. Ah, but that's vitamin K1. What's found in animal products is mostly vitamin K2. Do you need K2? Apparently not. Once you get enough plant-based K1, there's no established requirement for K2 because it hasn't been proven that K2 has effects that are different from K1. They both act the same way in the body. Thus, there's not even enough data to take K2 into account at all. So, when the recommended adequate daily intakes are set, they're only talking about getting enough K1 from plants, mostly green vegetables. In fact, most of the bone trials that flopped used the K2 found in animal products, and most of the failed heart studies used K2 as well. Okay. Even though there's presently a lack of randomized trial evidence to support a beneficial role for vitamin K and preventing the worsening of cardiovascular disease or bone health, what if that were to change? What if all of a sudden K2 was shown to have unique benefits? Well, guess what? The bacteria in your gut make K2. That's why fermented foods have K2. Bacteria make it. And the bacteria in your gut not only make it, but it gets absorbed from your colon up into your system, contributing a significant amount of the human vitamin K requirement just in case you miss a couple days of greens. Vitamin K1 is made by plants and is the primary dietary form. Then there are dozen or so types of vitamin K2 which are synthesized by bacteria including several types in the human gut. The exception though is a type of K2 called manacquinone 4 MK4 which is endogenously synthesized in mammals and therefore is found in animal products. Now I don't know if any of you noticed but were mammals too. It has consistently been shown that vitamin K1 from greens is endogenously converted inside your body to the vitamin K2 in animal products. You're made out of meat, too. Though, it took until 2010 before we discovered the human biosynthetic enzyme that does it.

So, no reason at all to take any sort of vitamin K supplement. Eat your greens. In fact, when K2 supplements were looked at, researchers found significant problems in terms of contaminants and mislabeling.

Eat your greens. Now, K2 appears in higher concentrations in certain tissues, including the brain. Again, we make K2 from the K1 we eat and greens, but maybe extra K2 might help. Well, if you measure vitamin K levels in the blood and brains of centinarians, those that live over a 100, concentrations of circulating K1 from vegetables, but not cerebral K2, not the K2 in the brain, was positively correlated with a wide range of cognitive measures. Why? Likely because they were eating green vegetables. And green vegetables don't just have vitamin K. Green leafy vegetables are the most concentrated source of luteine, the eye health nutrient that's taken up into the brain and is associated with cognitive performance across the lifespan. And so in these centinarians, circulating K1 and luteine concentrations were highly correlated. So it's hard to tease out exactly what in greens was so beneficial. It's like when you see data showing lower circulating K1 levels in the bloodstream are associated with the increased risk of all cause mortality, meaning lower K1 levels were correlated with a shorter lifespan. Well, duh. K1 is found in greens. And of all the dietary components correlated with all cause mortality, the best evidence appears to support the intake of green leafy vegetables and salads to reduce all cause mortality. In other words, eat your greens.

To summarize, there's no good evidence vitamin K has bone, brain, or heart benefits beyond just the clotting function. And even if such evidence arose, we can get all the vitamin K we need from vitamin K1 in greens since there's no requirement for K2. And even if some evidence arose that there was some unique benefit from K2, our microbiome makes K2 from the K1 and greens which you then absorb into your system. But what about the one type of K2 only made by mammals?

Uh we mammals. So even if we had some problem with our microbiome, our own cells can make K2 from K1 like the animals we eat do.

K1 vs K2, Food Sources, and Gut Production

This all breaks down though unless you get enough vitamin K1. So the bottom line is eat your greens. All right,

Q&A time. Uh we'll just give the nutrition fact staff five minutes to compile the most commonly asked questions. Then I'll be right back.

All right. First, a big thank you to uh the Nutrition Fact staff who uh who uh does all the the scrambling particularly today because it was just uh didn't have a lot of time uh scrambling to put together a list of questions. Um I always appreciate that because then I just have this nice neat list of questions. Let's go down it. Um first one on my list is if vitamin K doesn't help with osteoporosis, what do you recommend after being diagnosed?

Fantastic question and you are going to love my new book, How Not to Age has a whole chapter uh called preserving your skeleton or preserving your bones. Not sure what I'm going to call it yet. Um but I go through, you know, all the osteoporosis drugs like Fossamax and stuff, all the things you can do. Um and so for the I I was just asked yesterday an interview about it. And so I actually pulled up the chapter and like tried to go through it. Um uh and it's just a huge amount. Um uh and so uh so that's really the the bottom line is that's going to be the most detailed analysis. But um the take-home um probably the most important thing you can do use it to lose it is uh is weightbearing exercise. Right? Astronauts lose 2% of their skeletal mass every month in space because their body's like why am I making a skeleton if if you're not going to use it? Um, people don't understand skeleton is not like some static thing. It's constantly being remodeled, made, broken down. Um, and so it makes just as much as you need. That's why skinny people are at high risk for osteoporosis because they're not putting a lot of weight on their bones. Um, whereas people who are obese and you know, equivalent of carrying around a 100 pounds of extra weight, like 100 pound backpack all day, just walking across the room is doing weightbearing exercise. And so they can have incredibly strong skeletons. Um but skinny people so people eating healthy um are at increased risk of osteoporosis because their body particularly if you're sedentary because your body's like well I don't need to make a very strong skeleton do I because this person is really light so what do we do weightbearing exercise an hour a day seven days a week you can wear like these weighted vests to put a little extra weight on in your bones and so so what is weight bearing exercise something like walking um as opposed to something like swimming where you're really jarring your bones. You're just kind of floating around. Not that swimming isn't good for you, but it's just uh not uh a weightbearing exercise for your bones. So much more about bones coming up. And of course, as with all my books, I turn everything in the book into a video. So, if you want to read a book, eventually the videos will come out and you can see all those as well. All right, next question. Are there studies that shows supplementing with vitamin K2 helps heal broken bones? And the answer is no. Um, I wonder do I have anything about I wonder if I have anything in chapter about healing broken bones. I don't think I do. I am planning on doing some wound healing videos though, but maybe I should do some bone healing videos, too. It's a good that's a good question. Uh, I'm sure there's got to be some good stuff out there. Um, next question. My level of alkaline phosphotase is slightly elevated. Is it possible K2 could help lower it? Um, well, as always, treat the cause. Why is your alkaline phosphotase raised? It's raised in two scenarios. bone disorders or liver disorders. So you need to get your liver function tested. Um so that's just the start of an analysis to find out exactly why and then treat the cause. Um and the cause is not uh I can't imagine a cause for which K2 would do anything. Um whether it's your bones or your liver. Next question. Is there any definitive evidence that Crohn's disease of the colon uh interferes with production of vitamin K2 and thereby causes aos atherosclerosis over time? Um uh thank you for that question. Even if you have a disorder like inflammatory bowel disease that mucks with your your microbiome and that interferes with that absorption, excuse me, with that uh conversion from K1 to K2, you don't have to worry about it because all the cells in your body do it as well. Um uh or all the cells that have been tested so far.

Uh remember, we're mammals. We actually are our own cell. We don't have to rely on our bacteria to make K2 from K1. Not that we need K2 at all, it seems like, but um if you wanted to get K2 in your body, no problem. Your body makes it.

And the fact that your body makes it probably means it does something, right? Even though we can't figure out what it is, if your body's making it, it probably does something. But you don't have to worry about it because your body makes it. Your cells in your body, even if you have a sterile gut, even if you took antibiotics, wiped out your gut, you'd still make K2 from K1 because you are a mammal. Um, okay. Where am I? Okay. Many vitamin D supplements also include vitamin K2 supposedly because there synastic effects. Is vitamin D supplementation less effective if it does not include K2? That is marketing BS. It's a marketing ploy. um they add K2 because the internet or whoever thinks K2 is good for the bones and so oh uh vitamin D is good for the bones and so let's put them together and we can sell more of our supplement versus somebody else's supplement. Um but that's a good sign

that you don't have a supplement manufacturer that's evidence-based. The fact that they're selling garbage like that. Um, I mean, just because now I mean you could argue, look, they're just selling what people want, not necessarily what works. I mean, that's capitalism. Um, okay, that's fine. But I'm sure they advertise it as like being beneficial, like it says, synergistic effects. Um, but as we learned in that short video, um, those the the studies that appeared to show beneficial effects from K2 for bone were fraudulent. Fabricate data fabrication retracted. And so if you just look at the studies that have not been um shown to be fraudulent, you don't see um that the beneficial effects that we used to think um were attributed to vitamin K given the data fraud.

If I make next question, if I make a point to eat natto three times a week, will this be enough K2? 100% plant-based. How much natto is too much? You don't have to eat natto at all. Right? What does natto have? Vitamin K2.

But you make vitamin K2. Your gut makes vitamin K2. Um, but only if you eat K1, right? It doesn't make K2 out of nowhere, out of from scratch. It makes it from K1. So if you don't eat greens, your bacteria can't make K2. Your cells in your body can't make K2. Um, again, not that we necessarily need K2, but not having enough greens, we might not get enough K1, which is important for blood blood coagulation. Uh, so, um, you don't have to eat natto at all. Um, I've actually tried it. I was so curious about it and it really is snotty and slimy, but it's actually not bad. I don't know. So, if you like it, go for it. I It's a whole soy fruit. You can actually see the little soybeans in there. I prefer uh tempeh. But yeah, I think I think I only bought it once, frankly. But I ate it all.

Brain Health, Supplements, and Summary

I mean, it's tasty, but yeah, it's a pretty gross texture. Anyway, that's that's you know. Anyway, okay. Next question. Does anyone's vitamin K level help with controlling type 2 diabetes? That is not something I even remember hearing as a as any kind of theoretical thing. Before I say no, let me just uh do a quick um I mean you think when you think vitamin K the in terms of purported benefits, it's bone, brain, and uh and heart. Um, but let me see. Vitamin K and diabetes. Never even heard of such a thing. But let's let's check it out. So, what am I doing? How do I check out stuff? I go to the medical database of the National Library of Medicine, PubMed. Um, and Oh, okay. I spelled vitamin wrong. That that that'll it's basic some basic problems here. Okay. Vitamin K, diabetes.

Okay. Okay. What do we got? Um um Oh, I see. Yeah. So, the only um uh things that are there is for um because what's number one killer of diabetics is heart disease, right? It it dramatically increases your risk for heart disease. So, they're worried about aththerosclosis, artery calcification, blah blah blah. And so, you test vitamin K out in diabetics as a particularly high risk. And so you don't have to have as many people in a study. Um so uh and and and but what we learned is that it does not indeed seem to help the heart um whether you are diabetic or not.

Okay. My wife is battling lung cancer. I am so sorry to hear. Um and we think she's winning. Oh, okay. That's better. Um a doc recommended vitamin K2 supplementation. Um we only eat whole plant-based with lots of broccoli.

Broccoli is good. In fact, cruciferous vegetable was specifically good for lung cancer and I think bladder cancer and one other cancer in terms of survival.

Um, I'm just actually working on cancer survival videos right now. And I actually haven't read all the the crucifous vegetables and bladder cancer, but there's a bunch of studies out. So, there may be something there. I'll find out. Um, but I remember I do have a video talking about lung cancer. Um, those with lung cancer living significantly longer who are eating cruciferous vegetables. Okay. Anyway, uh, eat lots of broccoli. That's great.

Um, you said there's no reason really no reason for supplementation. Is there any benefit for her to keep taking it? So, I would ask that doctor, um, why why K2 supplementation? Doesn't make any sense to me from a cancer standpoint, from any kind of standpoint. Um, but let's find out. Um, and I mean, my guess is the doctor is going to be like not going to be able to give you any answer whatsoever. Um, but maybe or Yeah, I don't know. Trying to think. I can't even think of a All right. Well, hey, let's, you know, we got we got a second here. I'm do I'm doing a PubMed search right now. Okay. All right. Lung cancer, vitamin K. Um, okay. Let's see.

Okay. Um, we got prostate cancer. Um, pancreatic cancer. I'm not seeing anything. Um, yeah, I'm not seeing

anything. Lung cancer. They're talking about anti-coagulants and effects of chemotherapy. Um, people can get throbo embolism, blood clots. Um, blah blah blah blah blah. Yeah. All right. Not seeing anything. Um, so ask and if that if your doctor comes back and says, um, oh, it was because of this study. Send me the study. I'd be happy to look at it. In fact, look, maybe there's something there and you know, I could do a video about it. And thanks to you asking the doctor, we help other people in your wife's uh situation. All right. So, yeah, let me know what they say. Uh but it doesn't make any sense to me based on what I saw on vitamin K. Okay. Uh next question. My friend uh because of an awful surgical error, cannot eat most vegetables, including green and leafy. Um she takes vitamin K. Does she need it? Um, now I'm assuming this surgical error created some kind of intestinal stenosis.

Um, where where you can't eat kind of high-fiber foods because you could get stuck, you know, like, you know, um, in which case green smoothies would be perfect. This is a perfect scenario for green smoothies, right? You can have all the green leafies you want and you never don't have to worry about any kind of intestinal blockage with any kind of surgical scarring. So I would prefer that to vitamin K unless I'm totally getting it wrong and there's other some other reason um uh yeah so yeah let's uh that's a good question you know something that I actually didn't mention you know there's a warerin or couadin is a blood thinning drug um that is and that works the mechanism of its action is it interferes with the effects of vitamin K remember vitamin K helps with coagulation And so if you interfere with it, you get an anti-coagulant. Um, and so there's lots of circumstances. So for example, you have like an artificial heart valve or something. Um, may have to be on couadin uh for, you know, for life.

Q&A: Osteoporosis, Supplements, and Deficiency

And what they tell you is don't eat dark green leafy vegetables. Why? Because all of a sudden you get a bunch of vitamin K. You overwhelm the drug and then you then all of a sudden your blood clots normally. And that's bad if you want to be have uh thin artificially thin blood.

Um, now they shouldn't tell you don't eat grains at all. What they should tell you is to eat a stable amount of grains and then they just titrate the level of couadin up to to your grains consumption. Um, so you still want to eat a lot of grains. Um, but you want to eat the same amount of grains from day to day. Um, so then they can keep the the level of couadin and they can measure the effects of that with something called INR. So they can they can they can just match it. But so they're assuming that no one eats any greens. So they just say keep not eating green. Don't eat greens. Meaning keep not eating greens. But of course, if you're smart and you're eating lots of greens, the advice should be keep eating lots of greens and we'll just, you know, give you lots of the drug. Okay. Anyway, um, next question. Does cooking affect vitamin K2 content in greens? Now, uh, greens don't have K2, they have K1, but of course, your body turns the K1 into K2. So does your bacteria and your microbiome. But so changing that question to does cooking affect K1 content in greens? And I am going to say no.

It's not something I ran across. And when they do these studies, they're typically giving people cooked greens, but I wonder if there's any kind of decimate uh cooking. Let's see. Vitamin K cooking effects. Um um Oh. Oh, interesting. Um so actually cooking improves vitamin K bio accessibility because it kind of you know it um it uh it swells and breaks open the cell walls. Um and so actually improve so cooking greens actually appears to improve vitamin K uh um bioavailability. Okay, here's one. Let me just look at this study right here. Um vitamin MK.

Oh. Um. All right. So, uh, All right. Let me just actually look at this really quick. Um, they're talking about microwaving. See if I have a So here we go. Microwave.

Okay. Microwave broccoli, for example. Vitamin E. We don't want vitamin E. You want vitamin K? All right. Where'd you go? Vitamin E. Huh? Not there. All right. Um, so I'm going to say uh no, but if I find anything different, I will let folks know over social media. Um, because I hate getting stuff wrong.

Uh, but it does not look like it's a significant difference. So, you should eat greens in whichever way will get you to eat the most of them. Okay. Okay. Precision vitamin A broccoli K.

Vitamin K. Oh, there we go. Vitamin K. R. Oh, yeah. Okay. There we go. So, raw broccoli um the retention of vitamin K um was uh 1.54 milligrams per kilogram.

And whether you steam it, blanch it or boil it or microwave it actually goes up. Um uh so uh uh so that's good. So improves the bioability. Other um uh there's other you know vitamins like uh betaarotin for example um is you get more beta in your blood supply eating cooked carrots and raw carrots, more lycopine from cooked tomato products like tomato paste compared to raw tomatoes. So, it looks like vitamin K is a very similar thing, but you can get remember how I said a single leaf of kale uh was like what?

Half of your half your dose uh something like that or um and a quarter cup was like more than you need in a whole day. Quarter cup of cooked greens. Um and so it's such a small amount of greens that you need.

Even if there was even if there was, you know, more bioaccessibility in in cooked greens, it does not take many raw grains to to get there either. Remember how iceberg lettuce had a whole bunch? So, um um eat greens whichever way will get you most of them. And remember, my daily dozen recommendation is for at least a serving of greens a day and a serving of cruciferous vegetables which tends to be green leafy and as well. Okay, where are we? Um okay. Uh doc, what is your favorite green? Arugula question mark. Arugula is my favorite raw green. Oh, actually, no. I would say pclain. Pcelain is totally yummy. It's this crazy weed that grows out of the cracks in the sidewalk. Um, but you can actually cook it. I mean, you can actually grow it. Um, and it's really cool. It's tasty. It's got a little tart bite to it. Delicious. Um, but you can't buy it. Um, well, I was going to say you can't buy commercially. I think I found it at like a farmers market once, but anyway. Uh and uh and then favorite cooked greens probably losenado kale, that dinosaur kale, that really dark, you know, kind of almost black kale. Um although I just tried for the first time sweet potato greens. Why? Because grew a lot of sweet potatoes. And guess what?

Sweet potatoes didn't make any sweet potatoes. Just made a lot of greens. It like put all its energy into greens and didn't make me any sweet potatoes. But that's okay. I ate a whole bunch of I ate big bags of sweet potato greens. So that was cool. and they were tasty, but favorite is probably still less kale.

Okay. Oh, um Oh, the question is what about K3 through K7? Those are different types of K2. Um so there's like 14 different types of uh something on the order of 14 different types of K2. Um and so that's what we're talking about.

And so everything other than K1 is considered K2. Okay. Hey, is there any sort of feedback loop mechanism which controls the conversion of vitamin K1 to K2 based on vitamin K2 supplementation? Oh, interesting. Um, so this person is thinking, well, if you actually take vitamin K2 pills, which I don't recommend, and you know, I even noted that even if you wanted for some reason to take them, you know, when they actually take them off the shelves, there's all sorts of problems in terms of contamination and not having what it actually says it has. But anyway, if you were actually taking actual somehow actual K2, would your body downregulate the conversion from K1 to K2? Good question. I don't know. I wouldn't be surprised. Um, yeah, I yeah, wouldn't be surprised, but I yeah, I do not know that. Um, uh, I had read that oh, that Japanese study using K2 for osteoporosis. Perhaps this was a faulty study. How can a regular person know what studies are faulty? Um, well, uh, you know, there's a great website. um called retractionwatch. I wonder if it's.org. Is it? Let's look. Re retractionwatch.org or is it going to be.com? No, it's wonderful. Okay. And what it does is it tracks retractions of scientific papers. Um, and so I mean if you're interested in all these crazy fraud stories and um that's that's one of the what's nice about that website is it is it gives you kind of the backstory. So like on PubMed you'll go look up a study. Um so like for example if you go to the look up the Japanese study that you saw before and you look at it now it may very well say it was retracted. Um, and so before when you saw the study instead it says a big retraction notice, but it usually doesn't give you any information. It just says this is retract and you're like, "Huh?" Um, and then but you go to retra. So you go to retraction watch, you're like, "Oh, what's the dish on this?" Um, and uh, and you you find out, you know, was it, you know, what kind of crazy hy jinks were they up to? Um, and you know, does the author Sometimes the author agrees, sometimes the author self- retracts, said, "Oh, I totally screwed up the the the statistics or whatever. I'm so sorry. I take it back." Um, in which case it's kind of uncontroversial. Like even the author of the study themselves says, "We don't like the study." Other times, um, the scientists actually, uh, you know, it's pulled by the journal, but the scientists, uh, disagree and say, "No, it should not have been retracted." In fact, there's a really fascinating case um that I uh that I want to do a video about. I don't know if I I I well I it's a little risky legally um but I'm I'm going to do it anyway. Um the uh so Herbal Life, you know, there's this big gazillion dollar multi-level marketing company, you know, Herbal Life. They make lots of supplements all over the world. Um, so there was a a really serious case report of a fatal liver toxicity. There have been a lot of studies, um, lot of case reports of people having liver toxicity, but this may have been actually the first fatal case. Um, and so just to let everyone know, like don't take Herbal Life

supplements, you know, you Anyway, um, and uh, so the Herbal Life uh, company, which is uh, has this infamous history of suing everybody in sight who says anything bad about them. um uh strongarmed the publisher to retract the paper. Why was there anything wrong with the paper? No, they retracted it for legal reasons. Meaning the the they got so much pressure from this corporation which had lots of lawyers um that threatened to like sue the the publisher out of existence that they retracted the paper. That's the first time I've ever seen anything like that. And of course the authors are like this is outrageous. like we're trying to help people and oh this is crazy. They even took the paper down. Like you can't even find it. It doesn't even it's not there with a little retraction. Like they they tried to expune it from the planet but I actually found a copy so I could show people. Um yeah. Oh, it's just totally slimy. But of course then they make them after us. Anyway, but all sorts of juicy stuff. Where did I learn about that?

Retraction watch. So it's a great website. Anyway. Okay. That was a little off on tangent there. Okay. Uh oh. Okay. Does next question. Does vitamin K help with the absorption of calcium? Is there any case in which you would take calcium supplements for bone health? Oh, okay. Um uh no. Vitamin K and calcium are kind uh separate things. We used to think there was some kind of calcification thing theoretically, but that didn't turn out. That didn't pan out. Um, and are there any um cases you take calcium supplements for bone health? No. Um, and I have a video. Are calcium supplements safe? Um, and appears they're not safe.

Actually cause a hypercoagulable state, thickens your blood when you get a big spike in calcium when you when you take this unphysiologically normal um, you know, concentrated source of calcium. We should get calcium from our diet. And what's the best way? What's the best source? The healthy source? Dark green leafy vegetables with the exception of three. spinach, um, beet greens, and Swiss chard. Fantastic grains, but stingy with their calcium. Um, and so you want to get all the other ones like, oh, bok choy and kale and collards and go crazy. Okay, what's next? Um, what about Oh, what about vitamin K from apple skin compared with leafy greens? I didn't know there was vitamin K and apple skin. Um, let's find let's let's find out. Is is this person just trolling me here? Vam. I mean, there's lots of wonderful stuff in apple skin.

Q&A: Greens, Blood Thinners, and Special Cases

Remember I did a video about how apple peel help with like powdered apple peel, just straight peel helped with uh some kind of inflammatory arthritis. I forget, but it just shows don't peel your apples. Vitamin K. Apple peel. What do we K?

Ah, Apple Beetles got vitamin K. Um, all right. Yeah, there it is. That's cool. Okay. Um, how I'm trying to just see if it tells me really quick how much um uh and then we can compare it to the greens.

Ah, large red apple. All right. All right, let's let's see if we can see if we can find out really quick. Um, remember Cus, we're we're looking for about 100 or so micrograms for the day for vitamin K. Um, see if it gives a vitamin K.

Oh, you know what? We should look. I don't know what I'm doing. Um, so, uh, what if you want to find the nutrition information for anything? What you do is you go to the USDA nutrient database. So, let's do that right now. Um, and I'll give you the URL. Um, in fact, let me uh paste it into the chat. Um, oh, I should have been doing that. Every time I say URL, like uh, you know, I should paste it into the chat. But let me do that right now.

Okay. Where is the chat? Chat chat. Chat. uh chat. Okay, here is the USDA nutrient database. In fact, uh researchers from all over the world come here. This is your tax taxpayer dollars hard at work in a really good way. So, they've looked at God there must be 100,000 or more foods like everything like you know breakfast cereals, real food, whole food. Okay. Um so, and it and it gives all the types of apples. Let's just I'm going to click on Fuji just to see what we see. And um Oh, I'm not seeing any vitamin K. Um let me see.

Apple. It's possible they just didn't um uh uh didn't uh measure it in that case. Let me go. Oh, yeah. Yeah. All right. So, uh I Oh, that's without SK. Okay. Without skin. All right. Without skin, um an apple has less than one microgram. You'd have to eat a 100 apples, 100 peeled apples a day to get um enough vitamin K. So, but let's see. Um Whiskin. Oh my god. The pro the problem is there it's the website's too good. Um and so there's like a thousand, you know, there's a thousand things for apples and so all right, here we go. I found one with skin um vitamin K.

Ah, two. All right. So, you get less than one in a uh Okay. Well, that's that's kind of disappointing. Um Well, okay. But that's per 100 grams. I don't know. A large apple could have like 200 gram. So, we're talking about four four micrograms. So, one leaf of kale would had like 35 or something and an apple has like four. So, you know, so a/4 cup of cooked greens or 25 apples or tw Yeah. So, yes, there is vitamin K, but eat your greens. Okay.

Okay. But that's Hey, something I didn't know. Okay. Any questions on K2 needs during pregnancy or shot? Oh, shots for newborns. Yeah. Some of vegan moms. Any instances where supplement supplementation can be recommended in those cases? Ah, that's actually a really good um um all kids get a vitamin K um all infants get vitamin K um shot um at birth K infant see I wonder if there's just a um just be you we we're born with very little stores and of course you get in breast milk but before you get in breast milk they want to get your your your your your your levels up. Um and so uh that's why uh the current recommendation um is that all kids get a vitamin K shot at birth.

Um is there anything else? Oh, that's interesting. Some European countries, I didn't know this, uh, let families use an oral form of vitamin K instead.

Um, but oral vitamin K is not available for newborns in the United States. Oh, that's interesting. Okay. Um, so, um, so you're thinking, oh, the poor little kid getting a shot that that right when they're born. um but they just need that one shot of vitamin K and that'll get them uh enough to then maintain their levels um with breast milk. So uh uh all right so yeah so um the recommendation is indeed vitamin K shot upon birth um because you don't want a rare bleeding disorder. Um okay um that's a good question though. All right, where are we? Oh, should you still eat lots of greens if you're taking blood thinners? No. If you're Well, there's different kinds of blood thinners, but if you're on a vitamin K blocking blood thinners, the answer is yes, as long as it's a stable level and they give you enough couadin um to to counter your grains intake. Uh so yeah, so that's critically important. You can't just be not eat grains, not eat grains, and then eat a lot of grains without increasing your dose. Um and your doctor can do that by testing your INR to make sure that you're getting enough. Um, is there sufficient harm from Is there sufficient harm with taking K2 or is it just a waste of money? Um, well, uh, remember when you take K2, you're not taking K2, right? I I to showed that study with the they took supplements off the shelf, there all sorts of contaminants. You're not they weren't actually buying what you're getting. Um and so if you so supplementation so supplement market is so poor that some of these supplements um are uh are infamous for just um being very difficult. You know this reason I don't um recommend melatonin supplements. Not because I don't think melatonin may be useful in terms of like helping with jet lag and stuff, but it's because all the contaminants that have been found. Um because it's just there's no there's no downside for a company.

Why would you test for contaminants? Because everyone else isn't testing and then you'd have to raise your prices and you get pushed out of business. So there's no regulation to level the playing field saying everybody must not have harmful contaminants. Uh anyway, and why? Because of the lobbying from the submit industry. Um, and when I say supplement industry, that's pretty much the drug industry. I mean, there's this kind of dichotomy where there's like the good supplement industry and then the bad big pharma.

Guess who owns most of the supplement industry? Big pharma. All right. Um, they own Yeah. Anyway. Okay. Um, and so you shouldn't be surprised that they're using their political will to to do bad things. Okay. Oh, so uh, is there harm taking K2 just a waste of money? If you could actually get actual K2 without contaminants or anything, then it would just be a waste of money. Um, but uh but because this we got bad supplement market, it might be even worse than that. But that's the best it would be is a waste of money at least based on the current science. Okay. Are there any specific symptoms that would indicate a point to someone having a vitamin K deficiency? Yeah. So um um uh bleeding disorders um uh uh so yeah so um if your if your blood isn't qu um coagulating the way it should clot the way it should all sorts of things u vitamin K is just one factor there platelets and all sorts of other things that go into making your blood clot I mean the reason it's such a a a an incredibly [snorts] complex process is because your body is just living a knife edge all the time, right?

It has to instantly clot off, you know, the cyber tooth chunk that just got taken out of your leg, right? Otherwise, you bleed to death. So, it has to at any moment like clot off like crazy. At the same time, if you're not being bleeding or being bitten, you have to be super super liquid. Otherwise, you clot up your brain, your heart, and die in an instant, right? That's what causes most about 90% of strokes causes heart attacks is clotting where there shouldn't be

clotting. So, it's amazing. Same thing with the immune system, right? The reason why people can take eat a peanut and then literally in a few minutes die is because your immune system is right on the edge of catastrophic overreaction at all times. Why? Because we evolved in the context of being killed left and right from, you know, from bact microorganisms.

Um, and so we have to deal this really fine dance of not overreacting but not underreacting. It's amazing that any of us are alive. It's very cool. Anyway, okay, that was a little uh that was a little tangent. Okay. Are there any specific symptoms? Okay. Um, how efficiently is K1 convert to K2?

Closing Remarks and Upcoming Webinar

How about folks with disbiotic gut syndrome like take bad antibiotics? Yeah. Okay. So, so that that was a point I made um that even that so this person is worried well wait a second what if I have dispiosis what if I don't have good gut flora what if I just took antibiotics wiped out um my good gut floor and so then where where am I going I get my K2 well we learned in 2010 we used to just think it was your bacteria making uh K2 for you but now in 2010 we realized ah our cells have an enzyme that make K2 so even if you had zero if you were you know had a bubble boy scenario where you had zero germs in or outside of you, um you'd still make K2, um your cells would make it. Um and that's the reason why a steak has K2 in it is because the cow made K2 from the grass that it ate um that had K1 in it. Um even if the even if the cow didn't have any bacteria, they'd still make it. Okay. Why? Oh, here we go. Oh, why are all w all my women friends in early 60s getting diagnosed with osteopenia or osteerosis?

Is that model wrong to compare our bone ah bone density that of a 28-year-old woman of childbearing age or being overdiagnosed? Oh my god, IT'S A FANTASTIC QUESTION. That's uh that's that's you know that's how I start my chapter on osteoporosis. So when you're uh you know you get that zcore, you get the score saying, "Whoa, you are a standard deviation lower um than you than you should be on your bone mineral density. Quick, we got to put you on drugs. We got to do all this other stuff." That's not compared to people your own age. That's compared to a young person. So I mean, you normally it's normal for men and women to um lose bone mass with age. And so it's not saying you're abnormal for your age group. You're saying it's you're abnormal compared to a young person. You say, "Well, okay. So it's important to understand, but still, don't you I mean, you have weaker bones than you did when you were younger, and so don't we want to do something about that?" Well, the critical thing, the the critical factor, the reason we care about obviously bone meal density is because we want to prevent fractures. Something like hip fracture can be fatal. all sorts of terrible things happen. Okay, but the primary determinant of whether or not you break your hip um or suffer these bone fractures is actually not the density of your bones, the strength of your bones. It's fall risk. You could have the weakest bones on the planet, super super weak bones and never have and and and never break your hip because you don't fall. Or you could have really strong bones and fall, break your hip.

Um, and so a lot of the chapter I talk about fall risk, like getting rid of uh like throw rugs and things, things that can make you slip and then fall and hurt yourself regardless of your bones. So yeah, fantastic question. Um, yeah. Um uh and then I talk about the pros and cons of actually uh treating um uh uh low bone density and it's you know it's complicated and ah fascinating super fascinating and like in fact like one of the uh side effects it's it's rare but one of the side effects of like these drugs like phosmax these bifphosphinates is bone fracture something called atypical a femur fracture where the largest bone in your body just basically snaps like without anything like without break like without falling or anything just snaps in half the biggest bone. So I the irony of that the bone building drug that the one of the rare side effects is that you suffer this absolutely horrible devastating side effect of bone breakage without doing anything. That's crazy. Anyway, but there are benefits too and check out the chapter. It's very cool. Um, in fact, I, you know, I'll probably do a web Yeah, I'll do a webinar on it. Yes. Yeah. Uh, it's it's it's all sorts of good juicy juicy stuff. So, you don't have to wait for the book. Okay. Um Um, uh, do I think there's anything? Oh, okay. It looks like we are Oh, we're done with the K questions. Um, it looks like And then there's all sorts of good non-K questions. Uh, we're almost out of time, but maybe we can get to a few. Um uh do you think there's anything uh uh oh concrete that'll come from the White House conference on on nutrition and health? Oh yeah, there was really I mean the most exciting thing um was the announcement of this greener by default um initiative in New York City. New York City hospitals, the meals are plant-based by default. Meaning, I mean, you can still order meat, like go out of your way, but if you don't say anything, they will bring you plant-based meals. Like, wait a second, in a hospital, healthy food. Mind blown, right? Mind blown, right? In the what? Probably, right? It's the largest city in the

country, right? One of the largest city in the world. And there are hospitals, plant-based options by default. Why isn't that in every single hospital in the country?

Right. In fact, as far as I'm concerned, it shouldn't be by default. It should be pipe. It's like it's not like you can ask for cigarettes and the default is no cigarettes. No, no cigarettes in a hospital. We don't want to. That's a bad role modeling. But anyway, at least it's better than what is now. So, that was super amazing that that was that was announced by this was Eric um the work of Eric Adams, the plant-based mayor of New York City. Anyway, oh, let us end on that super cool optimistic note. Thank you so much for joining. Make sure you go to nutritionfacts.org/subscribe for announcements of upcoming webinars.

We have six webinars scheduled for 2026, one every month. The next one is on preventing and treating foot pain. gonna be covering plantar fasciitis and other other causes of heel pain, uh, ankles, sprains, bunions, ingrown toenails, you name it, for July 24th, 2026 at 2:00 p.m. Eastern time featuring, brand new material for my upcoming book, How Not to Hurt: On Diet and Lifestyle Approaches to Pain Management. I hope to see you there.

And of course, all proceeds I receive from all my books are donated directly to charity.