Do Organic Foods Really Make You Healthier or Poorer? The Science-Based Truth Transcript

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Introduction: Are organics worth the cost?

You're at the market buying some broccoli and peaches. The organic versions are more expensive, a lot more. And over in the meat aisle, there's the organic chicken and grass-fed beef.

They're double the price. So the question is, are you buying better health? or just paying for a better sounding label. Today we're digging into the evidence about organic foods, what you get for the extra money, what you don't, and how to shop smart without going broke.

Let's look at the evidence and find out. Welcome, my dear listeners, to episode 47. Do organics really make you healthier or just poorer? Everywhere you hear you should eat organic fruits and vegetables, grass-fed meat, free-range chicken and wild-caught fish.

Sounds good. Who wants to eat pesticides or other chemicals? But listeners tell me, when they buy what they're supposed to, the already expensive market bill skyrockets.

So fact number one, the cost of organic foods are much higher. But what about the benefits? So you pay more for organic, but you get more health. And most importantly is the potential improvement in health worth that added cost.

What organic means and how much it costs

Well what if you bought conventional not organic and use the saved money for a gym membership or a heart rate monitor or a better mattress to sleep well or lower the thermostat to get better sleep or you just bought more conventional fruits and vegetables.

What would be better? What should you do? What does the evidence say? Now I'm going to share with you as I always do what we know today, what the evidence shows us today.

This could of course change in the future like anything else I talk about. And my focus for today is on health, health of ourselves. I'm not looking at environmental impact.

I'm not looking at kindness towards animals, I'm specifically looking at the health of us and whether the costs of organics lead to the benefits that would justify that.

Well, of course, we've got to start with at least a common definition of what are organic fruits and vegetables. They are fruits and vegetables that are grown without synthetic fertilizers and without most pesticides, but organics can use pesticides, sort of natural pesticides.

Well, natural sounds like it must be safe. Sometimes that's the case, sometimes it's not. There are some organic allowed pesticides that can be problematic.

So organic does not necessarily mean safe, it just means how the fruits and vegetables were grown. And it's quite regulated. The USDA has a sticker that you're allowed to put on to say certified organic, and it's quite rigorous to get there.

So if the costs were the same between organic and non-organic, it would be a no-brainer. We would say, oh, well, let's have the organic because sure, less pesticides would seem to be better, but the costs aren't the same.

So in part one, let's dive into what the costs really are. And you can go to the market, you can test out what I'm about to tell you for yourself. So the USDA, which is the body of the government that focuses on this type of thing, say that Americans spend about a trillion dollars on food at home, not going out to restaurants or anything, just food we buy for ourselves at home.

That amounts to about $3,100 per person. So for a family of four, Food you buy at the market is about $1,000 a month, could be $1,600 a month, could be more, could be less depending upon what you actually buy.

And the group Lending Tree did some analysis and they found that 50% more if you buy organic. So whatever you're spending a month on food that's not organic, you would spend about 50% more.

That's a lot of money, especially when you're spending already, say, $1,000 a month. It could be $500, $600 a month more if you go down that route. And it turns out about 15% of all fruits and vegetables are organic today.

So that's the big picture, sort of 50% more in cost. Of course, I had to do my local ATB market field trip, just like in my bacon episode where I read labels for you.

So I went and looked at conventional fruits and vegetables and other things and the prices. So if you want to buy Fuji apples, that turns out to be my favorite.

I like the crisp. I like the sweetness. So sure, I go for the Fujis. If you buy the conventional, it was $1.42 a pound. However, if you bought the organic, it was $2.70 a pound.

Brussels sprouts were about 30% more expensive. So $5 for conventional, $8 for organic. All-purpose flour, $3 versus $6. So double the price for the all-purpose flour.

Okay, so then I went to the meat aisle. Gotta look at those two. Ground beef, $6 for conventional, about $9 for organic. Rib eye steak, $23 for conventional, $29 for organic.

And chicken was about $5 a pound versus $9 a pound. Then when I went to the seafood counter, wild-caught versus farm-raised, farm-raised salmon was $8 a pound and the wild-caught was about $17.

Pesticides, residue, and what the evidence shows

So the costs are real to buy organic, thousands and thousands of dollars more. Perhaps three to $6,000 or more if you go the route of organic and wild-caught and grass-fed.

So that's real dollars and hard to argue with that. You might argue it's a little bit less, a little bit more, but it really is more expensive. Now let's get to where it's not so obvious.

Part two. What are the benefits of organic or conversely the harms from eating conventional? So if you poll Americans, 85% of us say, well, they're concerned about pesticides.

So the concept of pesticides and harm is pretty ubiquitous in our culture. But it turns out most fruits and veggies either don't have any pesticide residue or really not very much of it.

But it is true that organics do have less pesticide residue. But does it matter? And how much does it matter from a health standpoint? Well, let's start with the type of study I'm usually not very excited about.

Those done in rodents, mice or rats. So if you look at studies in rodents, they show that there is harm if you give them high doses of pesticides and this is doses that are way higher than what we would ever be exposed to because there are limits to how much residue is allowable in the pesticides we eat.

The EPA has safety thresholds and they're generally met. Also keep in mind, pesticide levels in conventional foods vary a lot by individual food, which I'm going to come back to a little bit later, which are maybe safer, which are

maybe less safe, and by country of origin.

Some countries use lots of pesticides of the worst type and others use less. So there is no simple, simple answer. Okay, but that's rodents and I'm not sure what to make out of rodent data.

Well, there is human data. There are human data that says that being exposed to pesticides is problematic. And these data come from farm workers. Now, farm workers are spraying the chemicals, so they're being exposed to huge quantities of this.

Okay, quite a bit different than you or me who were just eating the foods. And in the farm workers, they found an increased risk of a number of diseases, Alzheimer's, Parkinson's, cancer, fertility, maybe kids that are exposed when their parent comes home and their clothes are all full of the pesticides, maybe an increased risk as well or higher risk.

But what about non-farm workers like most all of us? Well, the studies are not perfect, but let me share with you what I came across. There's multiple meta-analyses.

And remember a meta-analysis is taking a whole group of studies, combining them analytically, and trying to come up with a richer answer than any one study might suggest.

So there's a 2023 meta-analysis. I'll have the link for you as always and the other interesting links in the show notes. And in this study, there were 50 individual publications in it.

So 23 were observational, 27 were interventional, sort of like a clinical trial. Okay, the first thing that they talked about were biomarkers or blood tests.

So you measure the blood of people and you do something with what they're eating, organic versus non-organic. And so they took people that were typically non-eating organic, and in some cases it was tomatoes, other cases it was apples, and they switched out what they were eating.

So they might have been eating conventional, and they gave them organic. And after a period of time, what they found is that in blood samples, the organic eaters had lower levels of pesticides in their blood.

They had higher levels of phenolics. These are chemicals that are in fruits and vegetables. These are the good, what are felt to be the good parts of the fruits and vegetables.

They looked at total antioxidants. We hear a lot about antioxidants. Well, the data there was In the blood, for those who eat organic, or at least in these studies, there were lower levels of pesticides.

They also found in a lot of these studies, this is the observational studies, that people's BMI, their weight was lower when they ate organic. Now, you might say, well, how does eating organic make you lose weight?

probably doesn't have anything to do with the organic food per se. It's that people who are interested in eating organic foods are interested in their health.

They probably ate more healthy in general. Their lifestyle may have been more healthy in general. Well, when we turn to the data on allergies or reproductive functions, sperm count, those kinds of things, the data are really conflicting.

There's no clear answer that organics are safer. Now, let's get to the one area that folks tend to focus on with organics versus not and pesticides. And that is cancer.

Now, I should point out there are no intervention studies. They don't randomize people to either eat conventional versus organic. You might argue that could be unethical.

So this is all based on observational studies, meaning you ask what people eat and you follow them in time and you say, well, I wonder who is healthier, those that ate organic or those that didn't.

So here's a typical study that was in this meta-analysis and that is an observational one. And they found overall there was no difference in cancer rates, cancer recurrence, whether you ate organic or not.

They looked at 15 cancer types. One showed a worse impact for those that ate conventional. 14 showed no impact. And in one cancer, there was even a suggestion that eating conventional had less cancer.

So it's kind of a wash from this study. Well, there was a second study that was interesting. And that was one where they had 68,000 people And they gave them questionnaires.

And these questionnaires asked about what they ate. And there were 16 products. Did you never eat that?

Cancer studies and the limits of the data

Did you occasionally eat that? Did you eat it most of the time? What did they find? They found that in people who had higher organic food intake, they appeared to have lower cancer rates.

So they compared the people who ate the most organic to the least organic. And what they found was there was a 1.3% incidence of cancer. So the number of people who got cancer during the observation period versus 1.9% in the people who ate conventional or 0.6 fewer cancers if you ate organic.

So let's put those numbers into perspective. If a thousand people ate organic versus not, the organic people would have six fewer cases of cancer in that one thousand.

Now, that might sound worrisome. Look here, Dr. Bobby, the organic eaters had fewer cancers. But who are the people who eat organic? These are people who care about their health.

So organic eaters tend to be more likely to be vegetarian, eat less meat, less likely to smoke, they tend to be younger and thinner. And perhaps they exercise more.

Perhaps they slept more. You can't just say that organic people eaters are the exact same as the people who eat conventional. Clearly they're different because they bought the organic.

They might have had more money. Money correlates with health. So yes, there might be a slight increase in this one study. What caused it? Was it the organic food versus not?

Or was it something else? Okay, what's my reading of the data? My reading of the data, there is no compelling, reproducible, clear health issue by eating conventional fruits and vegetables.

That's my take. Could there be slight differences? Absolutely. Could we learn new data in the years to come? Absolutely. Okay, the all-important part three.

What does this all mean? Because we need to balance the real evidence on the cost differences and the possible concerns about the benefits issue. Okay, like I did with the alcohol study where there was conflicting data on cancer, I went through a scenario where we said, well, let's believe that the studies that showed a difference in cancer are real and let's see what that means for us.

So as I mentioned in that study, the one study that did show differences, not the other one that didn't, there was a difference between in a thousand people 13 cancers versus 19 cancer.

So six people fewer would have experienced cancer out of a thousand people who ate organic versus conventional. Now there's something called number needed to treat.

So you just sort of take the thousand people and the six fewer cancers and you come up with 150 or 160. What does that number mean for us? So let's say it's 150. So 150 people would need to eat organic foods and paying the added costs to reduce one cancer.

And I said, eating organic is perhaps $2,000, a person more expensive. So if you do the math, that means to avoid one case of cancer would cost you $300,000. And let me point out that these data are not death from cancer, it's just having cancer now none of us want cancer we all want to avoid it but is it worth it to spend three hundred thousand dollars to avoid one case so this is one way to look at the numbers and just keep this one in But if you buy organic, it can be a problem for your pocketbook and your overall health from a completely different angle.

So let me go through that. So this is different than the 300,000. If you buy organic, you might actually eat fewer fruits and vegetables. And we know fruits and vegetables are supposed to be good for you.

So I went to the market the other day, buy some blueberries. My wife likes blueberries, and she would like organic. Okay, so I went and looked. The blueberries were $9 for a container, for the organic ones.

It was a large container, but it was $9. So do I buy one container? Do I buy two containers? Do I buy three containers? Well, I couldn't spend $27 on blueberries.

I could probably afford $27 for blueberries, but I couldn't justify it for myself or for my dear wife gal. So I bought two things of blueberries, $18 worth of blueberries.

So I, who can afford to buy organic exclusively if I wish to, I don't buy as much when I'm looking at the organic versus the non-organic because the prices just seem so high.

So keep this in mind. Buying organic, you might cut back on how much you bought. Now here's the rub. fruits and vegetables, any type of fruits and vegetables, I'm talking conventional, reduce your potential risk of mortality.

So there was a meta-analysis that looked at how much fruits and vegetables people had. It wasn't organic, non-organic, just fruits and vegetables. And they compared people who had five servings a day versus two servings a day.

And in those with five servings a day, there was a reduction in mortality by 13%, a reduction in cancer by 35%. Oh my God, Dr. Bobby, eating fruits and vegetables clearly is important for us.

Okay, just like I said earlier, these are observational studies.

Why buying organic may mean fewer fruits and vegetables

So eating more fruits and vegetables can be confounded because people who eat more fruits and vegetables, maybe their weight is lower because they're not having as much fat.

Maybe they exercise more because they're health conscious. Now the studies do try to adjust for that, but you can't really perfectly do that. So, if we believe these data that eating more fruits and vegetables are good for you, and if you buy organic, you might buy less, this potentially leads us to a problem.

And we're just gonna dive into that problem now. So studies have shown that 80% of people in the United States don't get the recommended number of servings per day of fruits and vegetables.

Fully 80%, meaning the vast majority of us don't eat enough fruits and vegetables. And in this case, obviously most of these people are eating conventional.

So there was a wonderful modeling study where they took all the data and try to figure out what might it mean for a population of people. And they posited, what if half of all Americans ate one more fruit and vegetable a day?

Because again, 80% of us aren't getting it. So they posited, we're not going to solve this for everybody, but let's say half of Americans get more fruits and vegetables per day.

They modeled and found 20,000 fewer cancer cases might result. That's a big number for just having a bit more fruits and vegetables. But Dr. Bobby, if 20,000 people eat more fruits and vegetables that are conventional, they're going to be exposed to more pesticides.

That'll cause more cancer. So they modeled that too. And if half of the United States ate more fruits and vegetables, they found maybe 10 more people might get cancer.

So 20,000 fewer cancer cases by eating more fruits and vegetables. Yeah, a bit more cancer cases, 10 of them from the pesticides. Pretty easy trade off.

More fruits and vegetables are good for you. Perhaps it might be a small, tiny increasing in cancers, but way over in the direction of fewer cancer cases by eating more fruits and vegetables.

And as I said earlier, even I buy less fruits and vegetables when I buy organic. So for the average person, if you buy organic, you may well buy fewer fruits and vegetables and there'll be more harm from not getting the right number of fruits and vegetables than potentially the harms associated with the pesticides.

Okay, part four. Is there a middle ground? Is there a way to say, well, don't just buy all organic or all conventional? So, as I've said, the organics cost more.

They may have fewer pesticides and the health harms are not obvious, but can we try to lower the ones that might be? Now, I'm not saying this group I'm about to tell you about is a fair and balanced one.

They're not. The environmental working group is organically, is pro-organic. It's an advocacy group. It's not a science-based objective group. They're pushing a certain set of messages.

But, they've done some analyses looking at which foods have more pesticide residues which have fewer. So, although on balance they're not a group I would go to for scientific answers, when it comes to sort of going through the data and saying which foods seem to be more problematic than others, I think it's a reasonable place to look and they've come up with something called the dirty dozen, meaning the vegetables and foods that tend to have more pesticide residues and then there's the clean 15, the ones that tend to have fewer.

All right, so what's the dirty dozen? So if you're going to say, well, Dr. Bobby, I am still concerned even though your data is pretty darn compelling and $300,000 to avoid one cancer seems like something that doesn't make sense, maybe I'll buy a few things organic and most things not organic.

So what are the things that in this group's mentioned are the ones that tend to have more pesticide residues for conventional.

Dirty Dozen, Clean Fifteen, and practical shopping advice

So that would be spinach, strawberries, kale, grapes, peaches, cherries, nectarines, pears, apples, blackberries, blueberries, and even potatoes. Then there's the clean 15. Now the clean 15 typically have a peel or a shell or something that might keep the sprayed on pesticides out.

So like pineapple, corn, avocados, onions, bananas, Things like that tend to have a peel where you can take it out of the peel and in their analysis they tend to have fewer chances for having pesticide residue.

And of course you can wash them and wash off at least some of the pesticide residue. It doesn't eliminate them but it might help. So if you wanna take a middle ground and eat some organic, some not organic, this would be a set of lists that you might find helpful.

Okay, let's wrap up. Looking at the data, pesticide residues are higher in conventional foods, but the health impact of that somewhat higher residue isn't so clear.

Now, if the prices were the same, sure, let's all buy organic. They may be more blemished. There may be other reasons why you don't like to buy organic.

But from a health standpoint, if the prices were the same, buying organic would absolutely make sense. But the prices are not the same and they're not a little bit different.

As we've said, it's about 50% more. Already Americans don't get enough fruits and vegetables. So if we were to say everybody eat organic, likely they would eat fewer fruits and vegetables because the organic stuff is more expensive.

And I gave you that number of $300,000 to avoid a cancer. Obviously this is an exact number. It's just an estimate based upon some of the data. Okay, so you're a family of four.

Do you buy organic and spend $6,000 more? Do you continue to buy conventional and maybe try to boost your food and vegetable intake? So as I mentioned earlier, that's about a $6,000 difference for a family.

That's a lot of money. Perhaps instead of buying organic, take that $6,000 and buy a gym membership for the family or get better mattresses to sleep on.

So you get better sleep or any of a number of things. So that real money, $6,000 a year might lead to more health if you didn't buy organic, but bought other ways of improving your health.

So there are risks, there are benefits, there are costs. There's different ways to look at this. I would really like to know what you think. So do tell me what you're doing, what you think you might do after listening to my episode.

And as always, if you like my episode, please, please let others know about it. It makes me very happy to see more people learning about this. So until next time, as always, I hope you live long and well.