



What To Eat? with Dr. Colin Campbell (China Study) and Dr. Kaayla Daniel (The Weston A Price Foundation)

We are what we eat. But what do we eat? Should we be eating meat? Or is a plant-based diet a healthier way of eating?

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Searching for answers on the World Wide Web inevitably leads to more questions, making us even more confused. Are supplements beneficial, or a waste of money? Are there certain principles of nutrition that everyone should follow or does “optimal” vary from person to person?

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To provide some clarity on the subject we have Dr.

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Colin Campbell the author of The China Study and Dr. Kaayla T Daniel of The Weston A. Price Foundation as our guests. Although they come from opposite schools of thought, our goal will be to find areas of convergence and demystify one of the biggest dilemmas of our time: nutrition.

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Full Transcript:

Priya Menon : Good evening, everyone. Hello and welcome to Cure Talk. I am Priya Menon, Scientific Media Editor at Cure Talk, joining you from India; and I welcome all of you this evening to a discussion on “What To Eat.” This is our 80th episode. Nutrition and diet are a popular topic; and today we once again attempt to tackle the question of what you should eat to stay healthy, specifically the issue of animal products. Today, so, we have with us two very distinguished panelists. Dr. Colin Campbell is a Jacob Gold Thurman Professor emeritus of nutritional biochemistry in the Division of Nutritional Sciences at Cornell University and a best-selling author. His first book “The China Study” examines the relationship between chronic illness and the consumption of animal products. His new book “Whole: Rethinking The Science Of Nutrition” posed serious problems with the way nutritional research is conducted. We also have with us clinical nutritionist, Dr. Kaayla Daniel, who serves on the Board of Directors of the Weston A. Price Foundation and Farm-to-Consumer Legal Defense Fund. Inaudible discuss the healing properties of animal fats for everything, from digestion to inflammation.



Priya Menon : My co-host of the evening is Julie Dulude. Julie is a professional writer. She has been writing professionally for over 15 years, both as a journalist and as an advertising copy writer. As someone who has experimented with veganism, raw food, juice, and water fasting as well as GAPS and Paleo diet, she is well versed to be moderating the discussion today. Towards the end of the discussion, we will be answering questions sent in via email by our listeners. If you want to ask a question live, please press 1 on your keypad to let us know and we will bring you on air to ask your question. Welcome to the show, everyone. We are what we eat, but what do we eat? Should we be eating meat? If so, how much meat or is a plant-based diet a healthier way of eating? Although Dr. Campbell and Dr. Daniel come from opposing schools of thoughts, our goal today is to uncover some areas of convergence. With that, I now hand over to Julie to begin with the discussion. Julie, you are on air.

Julie Dulude : – Thank you, Priya. Welcome, Dr. Campbell and is it Dr. Daniel or Dr. Danielle?

Dr. Kaayla Daniel : – Dr. Daniel.

Julie Dulude : Dr. Daniel. I wanted to make sure I get that right. While you should both know that I have a juicer and a Vitamix sitting on my kitchen counter, but I also have homemade bison broth and grass-fed liverwurst in my freezer. So, it's truly an honor to be here with you both. (Pause) We'll get right... We'll get right in. We'll get started right away. People who are familiar with your work know that there's a lot that you two disagree on, but for those who aren't familiar, can you give us each a short summary of what you consider to be the key principals of a health-promoting diet? Dr. Campbell, we'll start with you. What did you learn from the China Study?

Dr. Colin Campbell : – Well, the China Study, first off, is a book discussing a broad array of topics and research that I did for over 45 years. The China Study itself, that project, that's only one part of it, but what we learned when we looked at the totality of the data, not just the China Study, that was only one part of it. What we learned was that the closer we get to consuming a whole food, plant-based diet, the healthier we are going to be on a variety of illnesses that might otherwise occur.

Julie Dulude : And by whole food, are you specifically referring to plant-based foods or just any food in its whole form?

Dr. Colin Campbell : Yes. I am sorry. I must say a whole food, plant-based diet. Vegetables, fruits, whole grains, legumes, and so forth. Yes and by whole, I mean for the most part intact foods, you know, rather than just taking out the sugar or the fat or something like that.

Julie Dulude : And Dr. Daniel, what is the nutrient-dense diet and why is it so important to our health?

Dr. Kaayla Daniel : Well, the Weston A. Price Foundation diet is an omnivorous diet. It's rich in animal foods as well as vegetables, nuts, seeds, and grains. You might say we enjoy all of it, a rich variety of it, and I think it's unfortunate that so many health-conscious people today think the most nutrient-dense foods are vegetables in fact the most nutrient-dense foods in the world are animal foods, particularly organ meats, and animal foods provide all the nutrition we find in plant foods and more. So, there is an abundance of vitamins, minerals, and other micronutrients, but also lots of protein and fats, which is what makes them dense in calorie. So, one of the big problems is when people try to attain such nutritional density from plant foods, they have to eat massive amounts of these foods and that can be far more than most people would like. For example, to get the protein in a 4-ounce piece of steak, for example, they would have to eat about 9 cups of spinach and I think that's more than even Popeye might want to eat.

Julie Dulude : Dr. Campbell, I would like to give you a chance to respond to that and to get into the studies and the science a little bit more as far as..., to what led you to the conclusion that the only way to be healthy is to eliminate animal protein altogether?

Dr. Colin Campbell : Yeah. First of, animal foods are not nutrient rich. I noticed Dr. Daniel refer to protein as



being an important nutrient. That's the problem, not the solution. First. Secondly, animal foods have almost no antioxidants and there is a class of nutrients that have the most effective..., are most effective in preventing disease and improving health is the antioxidants. The animal foods may have a little bit if the animal happens to have been eating the plant-based foods prior to their slaughter. So, animal foods don't have that. They have too much proteins. Protein is a big, big problem. It actually increases cancer and heart disease. That's been known for a 100 years. Also, the animal foods don't have any of the complex carbohydrates which are very important for gastrointestinal health. So, the animal foods really, in my view, don't have any nutrients that are not otherwise that are obtained from plant-based foods.

Julie Dulude : As I understand from reading your book, Dr. Campbell, you believe that there really isn't a phased level of animal products that we can be eating on a daily basis. Is that right?

Dr. Colin Campbell : Well, the ideal level of protein in a diet is that which is provided by a whole-food, plant-based diet. That's around 8%, 9%, 10%, maybe 11% protein and that is actually the number that has been first established as long ago as 75 years ago and that is reviewed many times since. It is around 10%, 11%, at 12% or so. The plant-based food, that's all that we need. When we start consuming animal-based protein, two things happen. First off is, there is a very significant problem with the protein itself, but more to the point, when we consume that kind of food, we tend to displace the kinds of foods we ought to be eating and so that..., that's basically a double effect in the sense, you know, the protein is causing problems, often times come along with fat, that causes problems as well, and in the process we decrease the consumption of plant-based foods and that really makes it a very difficult challenge. Now, some people, of course, can eat more animal protein and animal foods than others. We differ to some extent, but so can some people smoke cigarettes too until they are about 90 or 95 years old and even make a claim, they got there because of their smoking cigarettes. That's kind of ridiculous. The number of people that actually can survive that onslaught is really a minor fraction of the population.

Julie Dulude : So, on the one hand, you know, Dr. Campbell, you are saying that animal products are and the protein specifically is the cause of chronic illness and on the other hand, from Dr. Daniel, as far as I understand it, you know, animal fats specifically if not the cure are a key part of healing chronic illness. Is that right, Dr. Daniel?

Dr. Kaayla Daniel : I think we need whole foods, real foods, and slow foods with all the nutritional variety and density they include and that those become the healing foods. Those are the foods of our healthy ancestors all over the world and that's essentially what mother nature provided us and there is not a culture in the world that willingly survives on plant foods alone.

Julie Dulude : Yeah. So you definitely believe that, you know, animal foods are a crucial part of a healthy diet?

Dr. Kaayla Daniel : Well, absolutely and I enjoy my fruits and vegetables too, no doubt about that part.

Julie Dulude : So, if you look down at a plate, Dr. Daniel, at a dinner plate, I mean what... How would you divide up your plate? What percentage, you know, should be vegetables? What percentage should be animal-based protein?

Dr. Kaayla Daniel : Well, that's going to vary from person to person. I would certainly have some animal foods on each of my plates, but I would also have some good vegetables too and when I am enjoying those vegetables, whether its broccoli or spinach or carrots or whatever, there would be plenty of butter in there so that the beta-carotenes and the lutein and the other micronutrients that are rich in those foods are able to be converted into a form that our bodies can actually use because one of the problems with the arguments people have about plant foods being nutritionally dense is that what's there, what's in that food is not necessarily what we are able to absorb, assimilate, and utilize in the body and on top of that, many plant foods contain what we call anti-nutrients or toxins. For example, spinach. Even if you agree that it contains a whole lot of protein and other good nutrients, that spinach also contains oxylates that contribute to kidney



stones. So, eating nine cups of spinach in lieu of eating some animal food such as a piece of steak has that potential problem in there, but your question was about the plate and I would say a varied plate, not just one thing. Some vegetables and some meat and some people do tolerate grains well and if they do, fantastic and you will improve the nutritional density if you put some of that good bison broth, you mentioned in there, instead of water.

Julie Dulude : Uhhh... So, I am... I am hearing, first of all, just some disagreement about even the fundamentals of diet, about what constitutes nutrients and how nutrients are absorbed. What... I mean, isn't science supposed to be the objective third party here? Why is it so hard for us all to agree on the facts? Dr. Campbell, maybe you could start with a little bit of your learnings that you reported in your book "Whole" about how nutritional science is failing us.

Dr. Colin Campbell : Yeah. One of the reasons that there has been so much confusion is because the way we study nutrition and the nutritional properties of foods, we tend to study one nutrient at a time out of context of the whole body and that can..., and we can get all kinds of results when we do that kind of thing, misleading results as a matter of fact. The nutrients should be consumed as foods. We already know, for example, that when we consume nutrients in isolation as versus nutrient supplements, we do not get the health benefits that otherwise might be expected. As a matter of fact, beta-carotene, and I disagree with Dr. Daniel on this, beta-carotene primarily comes from plants. It does not come from liver and liver is mostly the retinol derivative of beta carotene. In any case when there was a study done some years ago now, 20 or so years ago, a big study comparing people who took beta-carotene from supplements compared to people getting beta-carotene from food and these were heavy smokers. It turned out the beta-carotene from the supplements actually increased cancer risk, not decreased it, and there have been lot of studies now showing that. So, when nutrients are consumed in isolation or when we study in isolation, we get all kinds of interesting products, but they are really irrelevant compared to the whole food and I don't agree that the oxylate content or spinach causes kidney stones. I know of no evidence showing that spinach causes kidney stones, for example. So, I call that process reductionism and that's what I wrote the book "Whole On." Its a very different way of looking at nutrition so that we can get away from this kind of confusion. When we take whole-food, plant-based diets and we feed them to people and that's now being done with more and more frequency, people resolve their problems very quickly. We can cure heart disease, even with people with advanced heart disease. This had been done just brilliantly, that whole-food, plant-based diet with people with heart disease, their heart disease begins to resolve within a matter of weeks and is very dramatic. We can actually cure type 2 diabetes with the whole-food, plant-based diet, same thing. Type 2 diabetes disappears. I would challenge anyone who happens to be listening to this, if they have a heart problem or if they have a diabetic problem as well as obesity or a number of other things, just try this diet and they can see what happens. The so-called Paleo diet, Weston Price type of diet cannot do that. The high-protein, high-fat diets, no one has ever done that before and so, in fact, the differences are very dramatic.

Julie Dulude : Uhhh... Okay. To your point about nutrient absorption though, I mean do you think that the nutrients from a plant-based diet can be absorbed without things like meat or oils or..., you know, other foods?

Dr. Colin Campbell : Yes. Yeah. That's a perfect example actually. It turns out that if there is oxylate in some foods and there is some other things sometimes called antinutrients or a nutrients that affect absorption in isolation. In reality, that's the way nature works. Nature works..., uses those kind of substances to control the rate of digestion sometimes, the rate of absorption and rate of utilization otherwise. That's part of nature. We study in isolation, of course, we can become alarmed by some of the results we might see, but in reality if one looks at the content of nutrients in the blood and the functions of those nutrients upon absorption, the levels consumed in plants are perfect. The body has a capacity to choose how much to absorb at any point in time or how much to digest or how much to circulate and so forth and so on and furthermore, the plants have a very rich supply of all kinds of nutrients, more or so at the right level.

Julie Dulude : Okay. Thank you. Dr. Daniel, I would like to give you a chance to respond to that now and explain why you think we can't all agree on the fact here?



Dr. Kaayla Daniel : Well, thank you. I would first like to say that I did not say that beta-carotene can be found only in animal foods, but I did say that true vitamin A can only be found in animal foods and most people do need true vitamin A because they are not healthy enough to convert beta-carotene into true vitamin A and likewise, with the vitamin K1 that we find in lots of the greens, we are usually not able to convert that into the true K2, which is what we need the most and so it goes with the say EFA and DHA fatty acids. Yes, we get lots of Omega 3s from the plant foods, but most people are not healthy enough to make the conversion and there are numerous other deficiencies as well. What we see frequently besides deficiencies of vitamin A, D3, and K2 is the vitamins everybody knows about B12. There is also B6 and choline deficiencies, CoQ10 deficiencies, carnitine, iodine, calcium, zinc... It goes on... So, yes, there is a lot of nutrition in plant foods, but there are some missing pieces and many people are coming up short. Where I would agree with Dr. Campbell is that these studies that are coming out of universities today are really funded by people who can take nutrients and turn them into pills and potions and powders and patent them. So, that's giving us information that's very limited. Its all about profits and not about education.

Julie Dulude : Okay. Thank you. Right now, we are talking about meat and whether or not to eat it and if you do eat it, how much, but you know, you could easily substitute any word for meat. It could be salt, it could be oil, it could be coffee, it could be soy, and we will be having the same circuit of conversation here, which kind of goes back to the idea that no one can seem to agree on the facts. Dr. Daniel, I think this is a good time for you to share some of the science that you wrote about from the Whole Soy Story.

Dr. Kaayla Daniel : The Whole Soy Story has a subtitle, The Dark Side Of America's Favorite Health Food, and I go into 70 years of studies that link soy consumption to digestive distress, malnutrition, immune system breakdown, reproductive system problems, the development of cancer and even heart disease, but a lot of people do think that I am the anti-soy lady and its surprising to them that I actually enjoy some soy foods, including old-fashioned fermented miso soup. Its wonderful! So, the problems really are with modern industrially processed soy foods that are eaten to excess. A little bit of old-fashioned soy foods once in a while in the context of rich and varied diet, that's fine and I enjoy it myself.

Julie Dulude : Thank you. I find myself thinking back to the dramatic examples that Dr. Campbell just talked about, about curing heart disease and other diseases in a matter of weeks with a plant-based diet and you know, if a cancer patient came in to your office, Dr. Campbell, from what I understand, you would put that person on a strict plant-based diet immediately and if that same patient walked in to Dr. Daniel's office, if I am not mistaken, Dr. Daniel, you would start that person on a very different diet that would inevitably include animal products

Dr. Kaayla Daniel : Well, it would depend on the individual, but the reason that so many people initially do well on plant-based diets is not because they have excluded animal products but because they have cut way back on heavily processed products, products high in white flour and sugar and hydrogenated vegetable oils and pasteurized milks and many of the really unhealthy products that are a part of the modern diet and the diet I am recommending to people would be very nutrient dense. It would be organic, grass-fed, pasteur-free range. It would be highest quality animal products and a wide variety of them and in addition to that I do agree with Dr. Campbell, there are certain problems with protein, but the protein disagreement I have is with say, the way some supposedly Paleo people will eat only the muscle meats. They are only into steaks and chops and I am recommending nose-to-tail eating because the protein we need in our bodies would include the collagen and the gelatin we get for making bone broth out of the carcass of the animals and we need the organ meats. We need nose-to-tail eating in a variety of high-quality proteins and that's not factory-farmed proteins and by the same token, vegetable should be organic because there's a lot of problems that we can get from supermarket, pesticide-heavy vegetables and fruits.

Julie Dulude : Yes, I definitely agree with that. Probably one of the largest culprits for most Americans at least is processed foods and we would all be a lot healthier tomorrow if we struck those out of our diet, but I think the bottomline here is that, you know, if people felt better on either of these diets, the plant-based diet or nutrient-dense diet, if we truly were curing heart disease in a matter of weeks, then I kind of think that the results would be self-motivating enough for people to stick with it and at least from my perspective, that's not



what I see happening out in life. I see people flip-flopping from one philosophy to the next, going from being vegan to vegetarian or vegetarian to eating large quantities of meat or vice versa or if not meat, then gluten-free, eat right for your blood type, you name it. It seems like one way of eating causes some problems but not others and other diet might not be sustainable. So, it would appear that people aren't feeling substantially better no matter what they do and my question to you guys is why, you know, why is that? What advice do you have for people who are trying to take charge of their health and not getting anywhere? Dr. Campbell, we'll hear from you first.

Dr. Colin Campbell : Well, for one thing, this is very sad. There is not a medical school in the United States that teaches nutrition. It has some lectures, but they do not teach nutrition and I have lectured to at least a 150 or close to 200 I think, now medical schools and medical conferences here in the last four or five years and finally, a lot of doctors now are beginning to switch, you know, their practices and they are beginning to understand. So, the people who are given this advice, who are given individual patient's advice, these people have had no training in nutrition and they are willing to admit that in many cases. So, that's problem #1 So, at the same time, whether the practitioners or in fact when the researchers in my community as well, as I said before, they tend to focus on one nutrient or one chemical at a time. That's the basis for the entire pharmaceutical industry, for example, and so there's all that kind of confusion. As far as flip-flopping is concerned and drawing from what I just said, people really don't understand nutrition very well because doctors don't understand it, first off. Secondly, we are flooded with all kinds of claims being made especially in the media coming from various and sundry kind of companies who are obviously looking up for their products. At the same time, these industries, these food industries and the drug industries, I should say, they have really been seriously interfering in the development of National Food and Health Policy. I know this very well because for about 20 years, I was one of the experts on these expert panels. I testified before Congress. I was on national, you know, being challenged on national audiences if you will and I know that the policy that is developed is what in turn gives rise to advertising, gives rise to school lunch programs for example, gives rise to all kinds of general recommendations that come from the government. Unfortunately, those recommendations often times are either too moderate to make a difference or in fact are actually in the wrong direction because again we really don't...., as a society, we don't really understand well enough what nutrition can do. I started out my career, being raised on a farm and having a high-protein, high-fat diet. I did my graduate work with the idea of promoting higher consumption of protein, but through the years, there's lots of students with lot of projects, I actually saw the exact of the opposite what I myself personally had been doing and what I, in fact, was trained and now I can tell we have seen just ample examples of people go on a whole-food, fat-based diet. All matter of ailments are clarified and cleared up really quite quickly, faster in some people than in other people. Obviously, there are differences, but there is no one that gets worse because of a whole-food, fat-based diet. If we compare, in the short run we see these dramatic results, you know, low protein, low fat, you know, basic or plant based, that's really what the ticket for good health really is.

Dr. Colin Campbell : In the terms of long term, Dr. Daniel mentioned she doesn't know of a society that survived on this kind of diet, but I can tell you that if you look at the..., compare different countries or different societies with respect to the consumption of fat and protein versus colon cancer, breast cancer, heart disease, and few other things, if you compare these countries where people's diets are very stable for the most part, the countries that have the lowest consumption of protein and fats also have the lowest amount of heart disease and cancer. That's what we saw in China too. In one case, we had something like 265,000 as I recall, that's the reports were given without a single case of heart disease and so what I am basically saying, in a short term we see these results and we see the same thing in terms of the long-term results. So, this is not true that, you know, its too difficult to stay on this diet. That's a matter of taste preferences and if people try this, I should say a whole-food, plant-based diet without added oil and sugar and salt, if they do that, their taste preference begins to change and the first thing you know, people are doing that and they take two or three or four weeks in some cases, maybe little longer, first thing you know, people actually crave a salad instead of the high-fat junk food that they were eating before. I do want to say the one thing where I agree with Dr. Daniel, we can find some areas for agreement, namely that has to do with the sugar and white flour, of course the salt, but the sugar and white flour, I totally agree that the refined carbohydrates are a problem. I think we both would agree to that, but unfortunately that generalization about carbohydrates being



a problem..., that's a misstatement. What people should be saying and who are concerned about the refined carbohydrates. They should be very specific about that, not talk about total carbohydrates because the total carbohydrates all come from plant-based foods, should be in the native form, that's the... Yeah, I am sorry. Yeah. Go ahead.

Julie Dulude : Oh, its okay. Yeah. I just want to make sure we give Dr. Daniel time to respond. Dr. Daniel?

Dr. Kaayla Daniel : Well, there are lot of issues brought out there. Let me try to run a few by here. People who have come to me after being on plant-based diets, they have often read books like the Skinny Bitch books and it seems very trendy and very fashionable to become vegan and initially many of them do start to feel better because they have gone off all those refined carbohydrates. They have cut back on lot of sugar and so forth and initially they feel good, their skin looks better, and they are very convinced initially and then things start to go south and at the point they come to me, their thyroids are down. They are having major reproductive failures. They have got very low energy. They have fierce cravings for sugar and foods that are addictive like that. They are having memory problems, focus problems, and mostly they are just thinking about food all day long because human beings were not designed to graze all day like cows. We have got big brains and little bellies unlike those big animals that eat plant foods all day and grow up big and strong. So, I can't say that I am seeing people doing well on plant-based diets. Of course, the people who are are not going to be calling me up for help, so you know, that goes with the territory, but again, just to say it again that I agree with Dr. Campbell on some of these issues and some of the biggest problems of the standard American diet do have to do with all of these processed and packaged and junk foods and fast foods and when we start moving towards whole foods of any type, most people do start to do better.

Julie Dulude : Thank you. I think I would like to circle back quickly to something, Dr. Daniel, you alluded to earlier on in the conversation which is that there are no vegan societies historically that we know about from, what I understand. Is that true, Dr. Campbell? I mean its sort of..., it does seem that the diet you are suggesting, it seems sort of unnatural to human evolution.

Dr. Colin Campbell : No. If we are talking about 100%, yes, its difficult to find people who have survived 100%, you know, whole societies for example, but I know of lot of people who have lived to be quite old, lot of records of this. When they have consumed a 100% plant-based diet, they are very healthy, you know, and so they passed, but part of the problem if we look around the world today, we can find a lot of societies that get close to that. They may be not quite a 100%, but if one goes through their total diet, not more than in many cases, you know, just a few percent on average of their diet may be from plant based, I mean animal-based foods and that might be something like yogurt. Occasionally some societies might rely a bit of fish, but what we are now learning as I say that the whole 100% is for anyone who has got a problem that they, you know, they want to solve their problem with their health, they can essentially be treated by a whole-food, plant-based diet. Its really quite remarkable. But I have to agree that there aren't, to my knowledge, very many, if any, indigenous groups, I should say, that have survived a 100%. I have heard of some, but I haven't personally seen it for myself, but so..., still the closer we get to a whole-food, plant-based diet, we see these quite remarkable effects.

Julie Dulude : Yeah, I mean... Certainly we have vegan, you know, vegan society now. In the past, it doesn't seem like it and this is a sort of me speaking off the cuff here from my experience, when I was vegan, it certainly cleared up some major health problem for me, but there were other areas that sort of left me wanting, mainly energy and trying to get back into exercise and I guess the sort of conclusion I came into in my mind is that if we all want to go on a plant-based diet, yes, we will probably reduce our risk of cancer and heart disease and all of these, you know, conditions that you speak of because our toxin threshold would be so low, but I kind of, again this is just a personal conclusion that I came to for myself, felt that is it possible that our bodies are designed to need that, you know, we evolved eating meat and that we need it for something and so that even if our meat supplies are contaminated, if the tradeoff is between living a longer life but being cancer and disease free versus having the energy to live a fuller, richer, but shorter life, that maybe I would choose the latter option, and I would like to give you just a quick opportunity to respond to that, Dr. Campbell. I know its not really a question.



Dr. Colin Campbell : Yes. Just recently, the man who just set a world record in weightlifting is a 100% plant based. The man who just set the world record in the marathon at age 88, again at 90, and then a world record at 92, he is a friend of mine, he eats 100% plant based and I have actually become acquainted with a number of professional world class athletes who when they changed, actually their performance went up, quicker recovery time if they are in intense exercise, certainly longer endurance time, actually stronger, believe it or not. As I said, this fellow in Toronto just set the world record on that. I have another friend who owns 15 gyms around the world, he is a trainer of professional athletes and he set world records, national records I should say when in his 20s. When he got to his 40s, he went 100% plant based and he actually broke some of his records that were set in the early years. So, I really have to disagree. Energy if its done right, this is the problem, it really has to be done right, has to be whole food, plant based, you know, plenty of hydration by the way along the way, that energy..., I mean, its... They would feel more energetic, not less. I just don't know how that can be true, really, when people say that.

Julie Dulude : Yeah, Dr. Daniel, I would like to give you a chance to speak to this idea of whether we need meat and how our bodies evolved over time.

Dr. Kaayla Daniel : I think some people can be healthy vegetarians, but if they are eating high-quality eggs and/or dairy and I do think that people for a limited time can often benefit from plant-based diets that can help them with some detoxing, but long term that's not my experience and in terms of the athletes, there's a lot of disagreement there. There are many, many athletes who do eat an abundance of meat and that goes way back and some of them eating too much and many of the athletes as they are typically trained are going very heavily into really poor-quality foods, poor-quality protein powders, too much of it. So, many of them could very conceivably do better at least for a while on a plant-based diet, you know, going to real food from powders would be an improvement for sure, but all the top athletes I am acquainted with are taking bucket loads of supplements and people on vegan diets were taking bucket loads of supplements to compensate for the nutrition they are not taking from the plant-based diet, can do well for a while, but I certainly prefer real food to lot of supplements.

Dr. Colin Campbell : Can I make a quick comment on that? I am not talking about people on the whole-food, plant-based diet taking supplements. I am opposed to that, so please don't... That's not what I am talking about. I am usually... Just whole foods and the vegans that I know do not use supplements, so that's a different kind of person.

Julie Dulude : You know its clear to me that the human body is just amazingly complex, far more complex than we are even beginning to understand and is that possible that the reason why its so hard to tease out the truth here is because you are both right and that may be the added everything-in-moderation applies. I mean, Dr. Campbell, I believe you said again that, you know, there is no safe amount of animal protein, but you know, what about a diet that's mostly plants and we treat meat as our condiments?

Dr. Colin Campbell : I am sorry, didn't understand the last thing you just said. What about the person who is....?

Julie Dulude : Umm... I am just revisiting the idea of everything in moderation and what, you know, is... What about a diet that's, you know, 90% plant based with limited amounts of animal protein? Can you remind us what the China Study said about that?

Dr. Colin Campbell : Well, I should.. I should first make a remark that some of us in this field really don't like the idea of moderation because moderation means different things to different people. If you tell people they can have two cigarettes and that just in moderation, the first thing you know it becomes habitual and they start consuming more. So, moderation, there's a discretion we have, moderation kills. In other words, the idea is... My view is that the goal on the basis of science, strictly on the basis of science, the goal is 100% and basically I honor the step that everybody takes towards that goal and the closer we get to it, in many cases they have kind of become health problems that last 5% as critically important because if they continue to have, let's say, I will take 5% to 10% a day, then all of a sudden they start creeping back to the



high-fat, high-protein diet again because of the addictive taste. It really is an addiction, fat is, and so I don't subscribe to this moderation idea because I say it's a kind of a slippery slope. If you say a little bit of this, a little bit of that, that's okay. Little bit of something means something different to a lot of people.

Julie Dulude : Dr. Daniel, what do you think about the idea of moderation?

Dr. Kaayla Daniel : Well, I say that a Weston A. Price-type diet or for people who cannot tolerate the dairy or grains, a more Paleo diet, then that in many ways can be a moderate amount of a lot of different foods including fruits and vegetables and of course the animal products and because it can be quite balanced, it can be very satisfying and people don't go down a slippery slope, they are satisfied and they are satiated, their taste buds are very, very happy. They feel full. We hear the word nourished a lot and one of the best things to nourish us well would be broth and that's something that has been lost for many people on a moderate diet and the fact that broth is now trendy and I hate that word because it's such an ancestral food, it's been around for thousands of years, but the fact that broth is now fashionable and people are trying it again. What they are saying is, "I feel so nourished, I am not having the cravings. My body and my mind are feeling so happy like I am meant to eat this."

Julie Dulude : I am not sure..., one of you, I am not sure which, if you could just take a little bit of a step back away from the phone, your breathing is..., we are hearing your breathing. Thank you, Dr. Daniel. Let's see.. I was going to... Also, I wanted to follow up with you, Dr. Daniel, on the idea of toxin being stored in animal fat and meats and because of that that's why, you know, we would all be well advised to eat low in the animal chain to minimize the toxins that we ingest and understanding as you said that there is a range of diets that can be nutrient dense with different amounts of vegetables versus meats, but what do you think about this idea that we will need to minimize animal protein as much as possible because of the toxins and fat?

Dr. Kaayla Daniel : First of all, toxins are also in fruits and vegetables ingrained. It's part of the modern world. There is toxicity everywhere, including our water which is a big source of toxicity, but the fact that it can also be in the animal products is why I so strenuously recommend that we get grass-fed, pasteur-free range in organic products and I would recommend that right across the board. If you are eating supermarket fruits and vegetables, your plant-based diet is still a very toxic diet. It's full of pesticides and herbicides and GMOs and other health hazards for sure. So, we do need to take care with the source of all of our foods.

Julie Dulude : Thank you.

Dr. Colin Campbell : I... Should I comment on that? There have been extensive studies showing, especially with respect to toxic... There are all kinds of toxic chemicals that we can talk about, but some of the more serious are the halogenated or chlorinated or brominated type of compounds. 95% of our consumption of those kinds of toxins come from animal-based foods, especially fish, because what happens it's a biological sort of concentration that occurs up to the food chain that when people..., when the animals are eating the plants and they can't metabolize these toxins, they begin to accumulate. That's why the level of toxins in meat is so much higher than it is in plants. It's simply not true that plants have all these toxic materials in them. I agree there are the problems concerning GMOs, I don't like that and one has to be somewhat careful, of course, of not using plants that have been recently sprayed with some of the junk that we put on it, but plants can be really quite free of toxins, especially if it's organic.

Julie Dulude : Yeah. I mentioned earlier that, you know, I was on a plant-based diet and didn't quite feel good as I wanted and also then I went to a meat diet, a heavily meat diet, and that was too heavy for me and landed back somewhere in the middle which is what brought back up the idea of moderation. When we look at people and what they have been eating the world over from the eskimos to cultures who eat more of a plant-based diet, doesn't that indicate that there is no one-size-fits-all diet and that the right diet depends on your unique biological blueprint. Dr. Campbell?

Dr. Colin Campbell : What... Yeah. That's a good question. The differences that we have between us as individuals or perhaps with respect to the society or groups that we belong to, the differences are that some



of us can tolerate some of the difficult foods more readily than other people, but what we are all..., what is common to all of us regardless of these differences and responsiveness, what is common to all of us really is when a whole-food, plant-based diet is consumed, that we move in the right direction so to speak. For many people if they have got a serious problem, it's basically sparing their life, other people who are reasonably health, some more moderate things kind of occur, you know, cholesterol tends to go down, triglycerides tend to go down and so forth. So, the differences that individuals sort of... The individual differences we have is with respect to the degree of responsiveness, not in terms of the direction of the responsiveness, that is, if we consume a whole-food, plant-based diet, we tend to drift in the direction of a healthier body, more for some people than for other people.

Julie Dulude : Thank you, doctor, and Dr. Daniel?

Dr. Kaayla Daniel : Well, I would like to mention Dr. Weston A. Price's 1945 book "Nutrition And Physical Degeneration" because he documented the radiant good health and freedom from chronic disease enjoyed by people eating traditional, nutrient-dense, omnivorous diets that were free of sugar, white flour, pasteurized milk, partially hydrogenated fats and other modern ingredients and what a lot of people don't know is that Dr. Price searched the world for a culture in which plant foods without animal products could provide all the requirements of the body for growth and for maintenance of good health and he found that they did not exist and it was the greatest disappointment of his life. He wanted to find people succeeding on a plant-based diet and he did not find that and he actually found the reverse that when he found cultures living near each other, some plant based, some eating the animal foods, the plant-based diet people were doing poorly compared to those on the rich omnivorous diet. So, a lot of people don't know that about Dr. Price's work.

Dr. Colin Campbell : Can I comment on that? Yeah. I have read... I have read Dr. Price's book very carefully, underlined it, studied it very carefully. He didn't have a single table in the entire book that had anything to do really..., real data that had anything to do with nutrition and health. He studied 14 indigenous groups in different parts of the world. He was a dentist and he went to these different parts of the world, I am sure he was a well-motivated man, very interested in what he was doing obviously, but he was studying 14 different groups of people who worked with different kinds of foods to some extent, that's true, but it was really the dental caries and the dental arches that he was measuring. He showed lot of photographs in his book. He did not, in fact, have the kind of data that we got in China, for example, I mean nothing. We had at least a thousand times more information than what he did. He did not go do that kind of work, that was not his intent. He was interested in looking at dental arches and dental caries as an indication of health and that was a good survey that he did because people who hadn't come in contact with the western world in these places and there were a number of these people hadn't. They maintained really good tasters as a good indicator of health, but as far as the amount of animal food they were consuming had varied between different groups, but I saw no evidence in that book whatsoever that he was looking for people, you know, vegetarian or, you know, plant-based eaters to see if they were better. I didn't find it. We are reading two different books, I guess.

Dr. Kaayla Daniel : We are not reading two different books. He wrote more than one book. He wrote a lot of work, a lot of papers, a lot of publications over many years.

Dr. Colin Campbell : What you spoke is about the Physical Degeneration, I think... I forget the title of the one that I think that was published in 1939, I believe.

Dr. Kaayla Daniel : 1945.

Julie Dulude : I am going to have to interrupt, guys, because we are running close to the end of our hour. We want to save some time for audience questions. Thank you, both, for such a spirited and lively discussion. I am going to turn it back to Priya now so we can hear the questions other people have.

Priya Menon : Thank you, Julie. I think that was an amazing discussion. Dr. Campbell and Dr. Daniel, we



have a list of questions sent in from our listeners. I am seeing that we have covered quite a bit of the questions in our discussion so far, so I will quickly go over some of the questions. Our first question says..., is for Dr. Campbell. The listener asks dairy may negatively impact prostate cancer. Do you know if calcium from plants and other non-dairy products need to be tracked when counting the daily 1,200 mg of calcium?

Dr. Colin Campbell : I think there are two questions, you know, one having to do with prostate cancer and one having to do with calcium intake. If the questioner is discussing this in the context of the effect of calcium on prostate cancer, yes, it turns out that the higher the consumption of dairy, the higher the risk of prostate cancer, but that's not necessarily just because of the calcium. The evidence tends to suggest there is the protein in the milk itself, in fact, our own work conducted over a period of 27 years, probably 20, which demonstrated multiple times over that the more significant chemical carcinogen we consume is the protein in cow's milk. So, what people have been now observing higher prostate cancer, higher dairy; the same as higher dairy, higher osteoporosis as well, but its not just with respect to calcium.

Priya Menon : Thank you, doctor. Thank you, Dr. Campbell. Dr. Daniel, the next question is for you. Our listener asks, your book "Nourishing Broth" talks about the health benefits of old-fashioned bone broth. Why does broth have the power to heal and have sciences identified the healing components?

Dr. Kaayla Daniel : There have been very, very few studies on broth itself and one of the reasons for that is there is no profit motive there, but we have many, many studies on components in broth, from the 19th century and early 20th century, many, many studies on gelatin, the collagen component of broth. So, there are those studies and then more recent studies on individual components such as glutamine, glucosamine, chondroitin, the amino acids, proline and glycine which are essential for joint health and actually overall health. Every part of our body needs good proline and glycine and also glutamine. So, we have many, many studies on the components of broth. So, that doesn't tell us exactly how much broth or exactly what ingredients should go into the broth when we make it, but I definitely recommend homemade broth with plenty of bones and cartilage and collagen. So, its one way we do nose-to-tail eating. Its what mother nature provided for us.

Priya Menon : Thank you, doctor. Dr. Campbell, the next question is for you. What do you recommend as a sugar substitute for people who cannot eat sugar due to diabetic complication? Stevia, xylitol, erythritol – which of the artificial sweeteners are the safest?

Dr. Colin Campbell : I recommend none. In fact, what I would recommend is to try with a little will power to just get away from the consumption of sugar itself and its possible. Its quite easy to do. It may be little more difficult for some than others, but I don't recommend any sugar substitutes just the same as not recommending any sugar itself.

Priya Menon : Thank you, doctor. Dr. Daniel, this question is for you. The person writing in is a nutritionist and says, most vegetable oils, canola oil, and even olive oil are processed and refined. These oils have been bleached, deodorized, had chemicals added to increase their fry life. Knowing this, how can we as dietitians recommend these oils as healthy alternatives to butter, ghee, and other cooking fats?

Dr. Kaayla Daniel : I am having trouble hearing the question. I gather its about butter and good, old-fashioned fats that I would recommend like butter and coconut oil as opposed to industrially processed vegetable oils, which are a known health hazard for any number of reasons. So, I recommend going back to what our ancestors did and getting our vegetable fats in the vegetables themselves.

Priya Menon : Thank you, doctor. The next question is also for you, Dr. Daniel. For years, we have been told eating red meat is bad for us and we should only eat it once a week or less. Is that true if you are eating high-quality, grass-fed meat?

Dr. Kaayla Daniel : I think some people benefit from red meat everyday. That's not a typical person and many people may be at once a week. I always do recommend a rich and varied diet including types of



meats. When people are avoiding red meat, they tend to start moving into other things like perhaps too much fish from contaminated oceans, perhaps too much of the wrong kind of poultry, or worse some of these plant proteins such as hemp protein and soy protein and pea protein and substitutes for other technologies proteins.

Priya Menon : Thank you, Dr. Daniel. Dr. Campbell, the next question is, the US government recently changed its stance on cholesterol saying that it is not a nutrient of concern for overconsumption. Can you please comment on this?

Dr. Colin Campbell : Yes. I missed the first..., your first part of your statement. What was it you are talking about?

Priya Menon : The US government recently changed its stance on cholesterol and it said that cholesterol is not a nutrient of concern for overconsumption.

Dr. Colin Campbell : Yeah. I agree with that recommendation of the US Dietary Guidelines Committee. I know that kind of work quite well. We have for too long relied on the idea that cholesterol itself causes heart disease or cholesterol in the food is related to the cholesterol in the blood, when in reality we have known for more than a 100 years, its not the cholesterol, its the animal protein that does that and there were really some brilliant studies done but ignored showing that when cholesterol was compared with animal protein in terms of its ability to increase cholesterol in the blood and subsequently develop atherogenesis as early stage of heart disease. Its the animal protein that does that, its not the cholesterol. So, I..., I have always been troubled with the idea that we focus too much on cholesterol. Its a reductionist idea, its out of context, but by the same token, when we have cholesterol in the food, then we are consuming animal-based foods. So, cholesterol turns out to be really a marker of the kind of food we are eating, its not related to the cholesterol causing the disease. We need to clarify that relationship.

Priya Menon : Thank you, Dr. Campbell. We are almost to the end of our hour now. That is a wonderful, great, I would say, very enlightening discussion. Dr. Campbell and Dr. Daniel, it is an honor to have you here with us and a pleasure to listen to you. Julie, you are wonderful. Thank you so much. The recorded broadcast will be available on Cure Talk's website along with the transcript. Please visit curetalk.com for our upcoming shows. Thank you, everyone.

Julie Dulude : Thank you. Thank you, Priya. Thank you, Dr. Campbell and Dr. Daniel.

Dr. Colin Campbell : Thank you so much. Thank you, Dr. Daniel.

Dr. Kaayla Daniel : Thank you. Bye, bye.

Dr. Colin Campbell : Bye, bye.

Julie Dulude : Bye, bye.