Bone Broth and Its Benefits:
A Special Interview with Dr. Kaayla Daniel

By Dr. Joseph Mercola

DM: Dr. Joseph Mercola
KD: Dr. Kaayla Daniel

KD: People have known this for hundreds and hundreds of years – broth is nourishing. It’s warm. It’s soothing for body, mind, and soul. Many physicians all the way back to Hippocrates have connected gut healing with broth and talking a lot about the healing benefits of broth. Because if anybody has digestive problems, joint problems, or any kind of health problems, the first thing to think of is the dietary foundation, and the key component is going to be the broth. There are so many benefits.

DM: Is your diet missing one of the most nutritious foods that has historically been used since ancient times? Hi, this is Dr. Mercola, helping you take control of your health. Today we are joined by Dr. Kaayla Daniel, who is the vice-president of the Weston A. Price Foundation and who has written the book Nourishing Broth: An Old-Fashioned Remedy for the Modern World, which will help us answer that question. Welcome and thank you for joining us.

KD: Thank you so much. Well, as you know, broth goes back all the way back to the Stone Age before they even had pots to cook in.

DM: Yes, indeed. Why don’t you give us a little background and perspective on your work as a nutritionist and how you became interested in, you know. What catalyzed and stimulated your interest in making broth as a nutrient and using it for a variety of different health challenges?

KD: Yes. There’s a long history coming into this book that I co-authored with Sally Fallon Morell. It goes back actually to the mid-1990s. At that point, I had already ceased being a vegan or a vegetarian. I have been one of the many people who had believed all the seductive promises…

DM: How long were you a vegetarian for? Were you a vegan or a vegetarian?

KD: I was a vegan, but not for long. All that grazing all day long didn’t work too well for me. But I believed all their seductive promises of how a plant-based diet could heal our personal health and planetary health. I wanted to believe it. During that period, when I was trying to become really healthy myself, I explored macrobiotics, Ayurvedic diets, food combining, raw food veganism – you name it. I finally found my way back to an omnivorous diet such as our ancestors all over the world would have eaten.

I started as many people do, with a focus on all the muscle meats – the steaks, chops, and so forth. But then I realized I also needed organ meats like liver. And then guess what? We also need to be nose-to-tail eating. It means using the carcass, the bones, the cartilage, and the skin, too. That brings us to broth.

DM: Terrific. Did you have any specific health challenges that were worsened by leaving out animal foods from your diet?
KD: Well, I was very thin. I was skinny and I was a bitch before the popular *Skinny Bitch* books came out. I didn’t have a lot of energy. I wasn’t strong. I had terrible acne. I knew that I had to get very, very healthy and gain a lot of energy if I was going to pursue my passions and fulfill any kind of mission in this world.

DM: Okay. And then what was your background in work and training as a nutritionist? What is that journey like?

KD: Well, early on, I was just reading everything that was out there and got a very broad picture of many, many trend diets and philosophies regarding nutrition. At a certain point, I realized that I didn’t really want to be a writer for all the popular magazines. I was writing for *New Age Journal*, *Vegetarian Times*, and many, many other of those publications. I realized I wanted to have my own credential. I wanted credibility. That led me into a PhD program in nutrition at the Union Institute & University in Cincinnati. As part of that program, I did several papers having to do with the healing power of broth, cartilage, and gelatin.

DM: Wow. So, you were involved in this really in the early days of your career.

KD: I was. Back in 1997, my favorite editor at those magazines, a woman named Luise Light, connected me with Dr. John F. Prudden, who’s known as The Father of Cartilage Therapy. I did about 10 interviews with Dr. Prudden, and the idea was we were going to do a book together. Unfortunately, a year later, the doctor died. He couldn’t appear on the talk shows and the book didn’t happen. But all those years, I’ve had these amazing interviews with so much good information.

You might be thinking what does cartilage have to do with broth? Dr. Prudden, of course, he was using cartilage in the form of injections and then later supplements – and pretty high doses of it. He was actually healing incurable diseases – severe osteoarthritis and autoimmune disorders such as rheumatoid arthritis, scleroderma, psoriasis, and colitis. The last work in his career was healing cancer with these bovine tracheal cartilage supplements (BTC). He was not using soup. I want to be totally clear here. He was not using broth. But if you’re making homemade nourishing broth, you’re using bones, cartilage, and skin, or at least I hope you are, that’s going to get you a nice dose of cartilage.

DM: That’s interesting. We’ll go into that in a bit. I’m curious about Dr. Prudden. What type of physician was he?

KD: He was the best of the best of Harvard, Columbia, and so forth, and then he went off to the Korean War. He was employed as a surgeon. He was patching up severely wounded soldiers at Fort Sam Houston. He started as a surgeon. His dilemma was these terrible, terrible wounds were not healing and cortisone, which was all the rage at the time, was making matters worse. He discovered that cartilage, the cartilage powder, could actually speed up wound healing. Accidentally, he discovered that psoriasis near people’s wounds was also healing. That started him on this whole journey to see what else cartilage could heal.

He found his way to osteoarthritis, autoimmune disorders, and finally to cancer. His first cancer case was a woman who had a horrible breast cancer with a terrible, terrible wound. No one thought that he could heal the cancer. They just wanted to help her with this awful wound. He gave her the cartilage, and not only healed up the wound but she recovered from the cancer.

DM: That’s terrific. What type of cartilage was he using?

KD: He used bovine tracheal cartilage. There are many kinds of cartilage. They all have some healing power. But the bovine tracheal cartilage, it’s sustainable. It’s good for the environment. There are problems with shark cartilage: it requires extremely high doses, such high doses that it’s prohibitively
expensive and it makes people nauseous and unable to eat. And environmentally, we can’t endorse shark fishing, of course. The bovine tracheal cartilage is the ideal one. There are some studies as well on chicken sternal cartilage and many others. He found benefits from lizard cartilage. Any cartilage is going to do. Let’s make lots of soup with different forms of cartilage.

DM: It’s intriguing that you worked with Dr. Prudden or at least interviewed him and captured a lot… It sounds like you were able to capture a lot of his knowledge and sad that you weren’t able to compile in a book with him directly. But would you say it’s a fair assessment that much of the material that you learned from Dr. Prudden is in your new book Nourishing Broth?

KD: Much of it is. Of course, there is other material as well because it’s not just cartilage in the broth; it’s the components from bone, skin, collagen, and the bone marrow. We’re going to get marrow in broth and all the individual components that scientific research includes. Things like the amino acids – proline, glycine, and glutamine – some of those protein sugars that people are familiar with like glucosamine and chondroitin sulfate, they’re all going to be in your homemade broth.

DM: Terrific. Why don’t you review with us the historical precedent for using broth as a food and how it’s been used through the ages? Because I think having an understanding of that perspective would be helpful for many of us to see how important it is to integrate it into our diet.

KD: Yes. I think very early on during the Stone Age period, people realized that if they were cooking meat on the spit, over the fire that some of the good juices were dripping. People didn’t want to lose them. They started thinking of ways to capture those juices. They noticed probably that a turtle can complete as a pot to cook in and they might have saved that pot. And then they discovered they could use animal skins and make a pot out of those. That’s how really the early soups got going. Of course, back in that era, they were gnawing on drumsticks and getting cartilage and collagen that way as well. That’s probably how it started.

And then as long as people were living off the land in small villages, they would often have a soup pot going on the hearth. That worked really well until the Industrial Revolution, at which point people did not have the money for the fuel. It’s something of a myth that people have always had a stock pot going on the hearth or on the stove top, because when the Industrial Revolution began, people did not have the money for the fuel. They couldn’t keep the fire going. During that period, many people who were trying to nourish the poor and spare them from disease and malnutrition got ideas about making more economical and portable soup – powders and bouillon cubes.

During that same period or even a little earlier, they started working on gelatin. Now, we can make homemade gelatin, basically condensing down the broth, so that it’s more affordable and harder. Old cookbooks have that. The military and organizers of expeditions – such as, say, Lewis and Clark, Shackleton, Stephenson trips to the Arctic, or Sir Henry Morton Stanley going to African in search of David Livingstone – they wanted to carry what they call portable soups. There were all these inventors coming up with bouillons, powders, and all variations of what Native Americans were doing for many years, which would be pemmican. You would think soup would be the least portable food ever invented, but people really got on the case of making it portable.

Now, a huge event was Napoleon and his armies, because at that point, the armies were gigantic and they could not live off the land. They could not exactly have men carrying these great big pots of soups sloshing along as they went. He put out a call for some way to make delicious nourishing soup that could be used by the military to keep them healthy and energized. Because see, the older ones, the dried ones,
the stuff taste terrible. They wanted the soldiers well-nourished, but they wanted the soldiers to enjoy their meals as well.

The winner of Napoleon’s competition was Nicolas Appert. He had basically invented canning. From the early canning experiments, we finally got into Campbell’s soup with John Dorrance, a Massachusetts Institute of Technology (MIT)-trained chemist and gourmet cook, who came up with the idea of condensing soup. Early on, Campbell’s soup was a very high-quality product that boasted about the high-quality ingredients. They weren’t going to use any wilted vegetables or rejects from the butchers.

DM: What year was that? Would you say?

KD: Around 1900, that’s when they got it going with the condensed soups.

DM: But were they using cans back then?

KD: They were using cans. The idea of condensed was so that they wouldn’t be so heavy and so that they would be easy to transport.

DM: I don’t know that plastics were [already] invented back then, like the BPA and the phthalates that were integrated into the liners that lined the can. They were probably just regular tin cans or aluminum. Or maybe not aluminum but…

KD: They probably weren’t the healthiest thing, but the ingredients that [went into]…

DM: The soup were good.

KD: The soup. They were totally real ingredients. All those early ads, they boasted about how they won competitions. They were using recipes of the most famous chefs of the era. They boasted of how much butter was in there. They let housewives know that this was the finest way to nourish children. It was a very different product from what we have today in the supermarkets.

DM: When do you think it shifted and what were the factors that contributed to that? Just the profit motive I would imagine would be the primary one.

KD: Yes. The big shift happened in the 1950s when the company went public. Because when John Dorrance was alive, the soups that were offered and how they were made, it was all based on his singular good taste. I mean, he was an intellectual. He was a gourmet chef himself. He even grew tomatoes in his backyard, trying to find the perfect tomato for Campbell’s tomato soup. But after John Dorrance died in 1930, things seemed to stay okay for a while. But in the 1950s, there was a greater incentive for higher profits, and that’s when it started to go downhill.

Around 2011, Douglas Conant took over as chief executive officer of Campbell’s. He actually came right out and said that things are so bad at Campbell’s that they were taking out chickens out of the chicken noodle soup.

DM: Well, fortunately, we don’t have to rely on these really bastardized versions of high-quality foods. We can make our own. I guess we should delve into some of those details now. I recently interviewed Hilary and Mary for their book on the Gut and Psychology Syndrome (GAPS) Diet, which, of course, included a discussion of broth. Some of the comments in there that I’d like you to address were the most efficient way to create this broth, because you referenced that many people weren’t able to afford the energy to be creating the stock pot. Well, I suspect that, with the economy and the way that it is, that’s true for many families today.
The basic question is what the most efficient way to create this is and [what are] the different options that you have. Obviously you can use a gas stove, an electric stove, a crock pot, or even a pressure cooker. I’m wondering if you could address those alternatives and maybe the ones I didn’t mention as to how to create this, sort of the basics, and then we’ll go into details about what goes into broth.

**KD:** Yes. I want people to know that broth is actually a fast food; it just takes a little planning. The way I use it – and I’m very busy – is with a slow cooker or a crock pot. Anyone who’s going to work in the morning, you can go off in a rush, but throw a few basic ingredients into that crock pot, turn it down low, and come home to the smell of nourishing broth. That’s the way we can have wonderful soups and stews. It’s economical, it’s fail-proof, and it’s modern. It’s an old-fashioned remedy for the modern world – that way.

Many people will have the soup pot going on the stove all day. Our grandmothers did that. That’s still an option, of course. Many people with really huge families are going to use that method as opposed to a crock pot, which would be creating a smaller amount. But we have many, many options.

**DM:** How about the pressure cookers? Do they produce as high-quality a broth? Does the time pressure saving introduce any compromises in the process?

**KD:** I’m not aware of any. It’s not what I do myself. I mean, I figure I’m too hot to handle. If a pressure cooker’s going to explode, it will happen in my kitchen.

**DM:** Okay.

**KD:** Many people use it, of course. I think the crock pot or just the stock pot on the stove is plenty simple. It’s not like you need to be hovering over the stove watching this.

**DM:** Okay. Well, why don’t you expand on some of the reasons why someone listening to this or watching this video would be motivated to engage in this process? What are the benefits that they’re going to receive by integrating broth into their diet?

**KD:** There are so many benefits. Broth – people have known for hundreds and hundreds of years that broth is nourishing. It’s warm. It’s soothing for the body, mind, and soul. We wouldn’t have the bestselling book series *Chicken Soup for the Soul* if people didn’t instinctively understand that.

Our ancestors knew that. Florence Nightingale, for instance, in her book, *Notes on Nursing*, recommended broth in the forms of meaty and also as something added to many other foods to increase the ability of the patient to digest food and to get well. People have known for many, many years that it’s perfect for healing people who are ill. In fact, old cookbooks always had a chapter on what they call invalid cookery or convalescent cookery. I think we all instinctively know that.

More recently, some science has started to come through. There’s very little on soup itself, but there was one study that came out and found that in fact hot soup will open up the airways better than hot water, and cold water has no effect at all. If you got cold or flu, chicken soup or, for that matter, any kind of broth is going to help. And I think we all know about the Jewish penicillin.

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**DM:** Sure.

**KD:** Everybody talks about that.

**DM:** Well, in the GAPS Diet, it’s used to help heal the leaky gut. I would imagine that would be the collagen component. Or are there other elements in the broth that would repair the gut lining?
**KD:** Absolutely. Many physicians all the way back to Hippocrates have connected gut healing with broth. We have Galen, Moses Maimonides, and Agathinus. We have many, many physicians going up to the present time with the healing through the GAPS Diet or Jordan Rubin’s the Guts and Glory Diet and the Body Ecology Diet of Donna Gates. Many, many people who are busy healing the gut are using broth as an essential part of that diet.

**DM:** Now, you had mentioned earlier that you worked with Dr. Prudden in the use of cartilage. Can you expand on how one would incorporate cartilage into the broth? Because typically, you think about cooking the whole animal, like a whole chicken, I would imagine if you’re achieving that purpose. But if you’re just going to throw in beef bones, you’re not going to get the cartilage. How do you get the cartilage? Do you have to use… Well, with chicken I guess you could use the feet, the necks, and the heads. But are there any simple recommendations you can use to increase the cartilage component?

**KD:** Yes. Sally Fallon Morell and I get a lot of questions about how to make the most nourishing broth. One of the ways to make sure that it’s gelatinous, that it gets really jiggly – that’s a sign of a well-made broth: it gets jiggly after you refrigerate it. To make sure it’s jiggly, we’re going to throw in some chicken feet and possibly a pig’s foot. But we can also use a lot of the joint bones. A knuckle bone is going to give us a whole lot more cartilage, collagen, and that gelatinous quality than, say, a shank bone from the leg. The shank bone, of course, is going to give us more of the marrow, so it’s great to just use a mixture of bones. But in terms of what would be the perfect bones, perfect proportions, or perfect animal, I really urge people to relax and just make broth – a variety of types of broth – and it’s all good.

**DM:** Okay. The typical grocery store is not going to have this available. How do you get access to these forms of bones – the bones with joints – to make sure they’re high quality and they’re not from factory-farmed animals?

**KD:** This is an issue that many of us face when we decide to include meat in our diet – how to get quality meats from animals that have been raised humanely, preferably on pasture? Some of us, depending on where we live, are going to need to order and get it shipped to us. Some of us can obtain, say, shank bones and soup bones very easily anywhere we live. But maybe the difficulty is finding chicken feet, so maybe we’re going to order a whole lot of chicken feet and freeze them. We all find our ways. But we’re very blessed because of the ancestral diet trend that there are now so many sources of quality meats, bones, and other products.

**DM:** Would you say a reasonable strategy would be to contact, for those in the United States – well, actually anywhere – a Weston A. Price chapter leader in your area and maybe have some local resources?

**KD:** That’s a wonderful idea. Go to WestonAPrice.org chapter leaders, that’s the very best way to find your local farmers. And for a lot of people, what works really, really well is, say, on Sunday, cook roasted chicken. You have the wonderful chicken meat, then maybe you’ve got some chicken feet in your freezer, you make broth from the chicken carcass, and it’s all good. Very, very easy and using all parts of the animal – nose-to-tail eating right there.

**DM:** Once you’ve made this broth with this whole carcass like a chicken, do you normally recommend keeping the meat in there, strain it out and use a different recipe or strategy? What type of vegetables do you recommend adding to it and at what time in the process?

**KD:** Well, it’s all good. In my family, we enjoy the roast chicken at the first day. I’ve got a small family, so maybe there’s some more chicken meat and maybe I’ll make a chicken curry or something like that for another meal. And then I’ve still got a lot of carcass. I’m going to heat that carcass. I don’t want to overcook that too much, so I’ll pull off the meat, but then I’ll be making broth with the remaining carcass. Now, there’ll be plenty of gelatin under the roast chicken just from baking in the oven. In order to have a
really gelatinous broth, you need to add some chicken feet, too. The chicken feet, that’s a good secret for excellent broth.

**DM:** Okay. Now, you had mentioned Dr. Prudden’s use of the bovine tracheal cartilage. Is that something that’s available, too, to use in the soups?

**KD:** There is cartilage in just about all of the joints.

**DM:** Okay.

**KD:** In the human body, it would be elbows and knees. But there’s collagen throughout our body. Collagen is the most common protein in the body. As long as we’re using plenty of joint bones, we’re going to get lots of cartilage. We don’t specifically need to make sure we’re getting that tracheal.

**DM:** Okay. That’s good. Now, I would imagine like anyone who’s promoting an approach that is not widely adopted in the culture, you might get some resistance to what you’re informing people of. Your naysayers, what are they… What’s your response to people who say that this isn’t all what it’s cracked up to be? Even though it tastes good, the healing properties are not what they’re promoted to be?

**KD:** The biggest challenge for a lot of people today is they’re accustomed to opening packages and quick-cooking food. They’re not accustomed to working with recipes, and many people are intimidated at the process of just making broth. But in fact, it is fairly simple. Just some new habits.

But the biggest resistance comes from people who may now be omnivores, but at one point, they were vegans. They understand that they need broth for healing. But the idea of dealing with what they call pork stews, that can be very intimidating. Many people really feel uncomfortable handling the carcass. That’s just something to get used to. It is part of the cycle of life and part of using the whole animal, honoring the whole animal that way.

We do need to do the broth if we’re going to have healthy joints. I mean, how many people do you know who have arthritis problems? Many people who are into fitness have problems with their knees and joints. The secret is including a lot of broth in the diet. All the athletes and the old bodybuilders – the old bodybuilders knew they needed gelatin in their diet.

**DM:** Are there any specific consistent challenges that a person new to this process might encounter and that you have any advice for?

**KD:** My advice is to relax, because a lot of people get very obsessed with how to make the perfect broth. Basically, you really can make it easy. You can throw these things together. It’s all good. No worries. If your broth doesn’t have a rich taste, if it doesn’t become gelatinous, there are things to do. For example, adding the pig’s foot, the ham hock, or whatever to make it more gelatinous. Use more knucklebones. If it’s very watery and doesn’t have that much flavor, the usual reason is people have like two bones in a great, big pot full of water. That’s just too weak. We need to use quite a few ingredients.

**DM:** Okay.

**KD:** In terms of the vegetables, the classic mirepoix – onions, celery, and carrots. You can’t go wrong with that.

**DM:** Okay. And when do you integrate those into the soup? At the end, I would imagine. Or can you put it at the beginning?

**KD:** I do a little of both. When I’m making the basic broth and cooking it for, say, all night or all day, or in the case of a beef or a lamb broth, for several days, there will be some carrots, celery, and onions in
there, but I will strain them out. When I’m making the final soup or stew, that’s when I’ll start over with new onions, celery, carrots, or whatever other vegetables I may be using. For example, in a lot of beef soups, I’ll be using something like kale. You don’t want to cook kale for a long time. It’s going to create a miserable flavor for you. You do add that before serving.

DM: Okay. What is the difference between stock and broth?

KD: That is a great question. Talk to five experts, and you’ll get five different opinions about that. It’s very controversial. Sally Fallon Morell and I use the terms interchangeably in our book, because we figured if all the chefs and culinary experts can agree, we’re not going to worry about it.

DM: Terrific. So just relax and not fret.

KD: It doesn’t matter what you call it.

DM: What are your favorite recipes?

KD: That really depends on the season. In the summer, I like the lighter soups – chicken soup and fish soup. In the winter, more of the bean soups, which, by the way, are incredible if you make them with the ham hock. They’d be very gelatinous, delicious, very filling, and very fulfilling.

DM: Can you comment on the use of gelatins or gelatin powders?

KD: Yes. We’re very blessed to have high-quality gelatin powders and also collagen hydrolysate products. For people who aren’t yet making their own broth or they’re not making it often enough, we can add those healthy supplements to our food or to our broths and stews. The gelatin, the strength of that is it will gel. If you make a weak broth, for example, you don’t have enough of those good knucklebones, or you don’t have your chicken feet (they haven’t come in yet), you can add more of the gelatin powder and get your gelatinous broth.

For the collagen hydrolysate, that is just amazing because you can add it to hot liquids or cold liquids. It’s not going to gel and create a yucky texture. Many people will add it to, say, coffee, tea, a commercial soup, or to any kind of foods. It has no taste, no texture, no what they call “mouth feel,” and no smell. It’s a wonderful product.

These all came to us, thanks to the whole gelatin industry that began in the late 18th century. There was a tremendous amount of research being done throughout the 19th century and into the early 20th century. Scientists at that time saw gelatin as a miracle food. They thought it was going to save the world from malnutrition. It was going to feed the poor. They saw it as a miracle food. They almost… You could say it was the soy protein of the 19th century.

But unlike the soy protein, there was no downside to it. Well, there was one downside. They had hoped that you could live on gelatin alone. But sorry to say, you cannot live on gelatin alone. You do need some of those muscle meats, vegetables, and a rich and varied diet. It’s just that the modern diet tends to be devoid of gelatin and other products containing collagen. It is an important part of our rich and varied diet that’s going to promote health.

DM: All right. With fish, are there any specific tips – any types of fish? Do you put the whole one, the whole fish in? Do you skim out the bones? How do you separate the bones from the broth?

KD: With the fish broth, you’re going to cook it for a very short-term. It’s going to depend on the type of fish. The fish head is going to provide a lot of iodine. One of the things we were talking about is how the
nutritional profile is going to vary from pot to pot and from animal to animal. Well, with the fish broth, one of the benefits is you’re going to get the iodine from the thyroid and from the fish head. That’s an asset to that. Obviously, there’s a huge difference between some of the small fish, the little dried fish that we can buy, and turn into wonderful broth, and say, making shark’s fin soup. That is a classical, traditional, anti-aging elixir. Magical properties attributed to shark’s fin soup.

DM: Are there any other comments you’d like to make?

KD: I would like to urge people to make as much broth as possible, to keep that crock pot going, to eat a variety of the soups, and to enjoy them thoroughly.

DM: Okay, good. For more information, obviously, they can get your book, Nourishing Broth: An Old-Fashioned Remedy for the Modern World, which is available on Amazon or any bookstore. It’s a great resource, and I really appreciate you making that available to help people integrate this really healing food to their diet.

KD: Thank you. Sally and I are also launching a website, NourishingBroth.com. We’re trying to build a whole broth-making community.

DM: Oh, that’s a great resource.

KD: Sharing recipes, sharing tips, sharing the latest news, answering people’s questions, and talking a lot about those healing benefits of broth. Because if anybody has digestive problems, joint problems, or any kind of health problems, the first thing to think of is the dietary foundation and the key component is going to be your broth.

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