A Special Interview with Dr. Stephanie Seneff

By Dr. Mercola

DM: Dr. Joseph Mercola
DS: Dr. Stephanie Seneff

Introduction:

DM: Hello everyone. This is Dr. Mercola. Today, I'm here with Dr. Stephanie Seneff who is an expert in sulfur. She has a very interesting history from her academic perspective. Initially, she was trained in engineering even though her undergraduate degree was in biology. She has now developed this incredible expertise in sulfur. As we were talking, we learned really one of her other passions is about statins.

I would like her to describe specifically her academic credentials because I think that it's important to put a frame on where your perspective is coming from and then we'll discuss some information about the statins.

DS: I have a Bachelors degree from MIT in biology with a minor in food and nutrition. My PhD is in electrical engineering and computer science also from MIT. I have been at MIT my entire life.

DM: Are you still there?

DS: I'm still there. Now I'm a senior research scientist which is the equivalent of a full professor on the research staff. I supervise PhD students but luckily I don't have to teach.

DM: So you were able to devote most of your time. You literally have a full lifetime academically of going through the literature, reading it carefully, you understand the jargon obviously and interpreting that. That's your profession.

DS: Yes. I have always been interested in biology. Actually, even my work has been related to biology. My PhD was in a model for human auditory processing of speech. So that involved actually reading biology literature to understand how the brain processes speech. And then I have continued in the area of speech. I have a couple of hundred papers in the conference proceedings and in research journals on the topic of spoken dialogue systems. That's generally my area of expertise.

DM: You have taken this expertise and you have actually applied it to data mining, health information, from patient generated databases like VAERS and the ones that appear on Web MD that allow patients to self report side effects from medications.

DS: That is exactly right. I have actually become extremely excited recently about the wealth of information that's available on the web. Grassroots information provided by individual patients where they can describe their experience with a vaccine or with a drug and they fill out a form so

it's extremely nice for us because we get things like the patient's age and we can use that to then compare data from a particular drug or a particular vaccine against age match data from some other drug or some other set of vaccines or some other set of drugs.

By doing that we can look at word frequencies, patterns in these two data sets and uncover really interesting side effects associated with various drugs. We have applied that to the statin drugs with great success and we have a couple of papers coming out in conferences.

DM: So these are new papers coming up but as you mentioned you have published hundreds of papers and peer-reviewed scientific literature so you're an accepted scientific researcher. There is no question.

I'm wondering if you can comment on some of these observations; so you continue to publish and one of your passions now is understanding statins and how they impact on cholesterol and because of your previous – you had a personal issue with your husband and then you obviously have a degree in biology. So there are some connections there and you have the scientific training. So you put together these things and along with your PhD work and data analysis and you have compiled some information about statin drugs.

DS: That's right.

DM: And wrote papers. You have obviously written hundreds of papers. You know how to write a paper. So you submitted these to the credentialed scientific journals documenting some of the findings you found with statins. I'm wondering if you can share what your experience was when you submitted these papers.

DS: I wrote a paper on Alzheimer's. I was very interested in the connection between Alzheimer's and cholesterol, low cholesterol actually, being a source of Alzheimer's and statins in particular because they lower cholesterol are going to make that problem worse.

We wrote a paper that had a lot of references and a good story about the effect of low cholesterol in damaging the brain and inducing Alzheimer's and in that paper we made several references to statin drugs. We submitted it to a journal and it came back rejected. Part of the grounds of rejection had to do with the mention of statins. We took out all the mentions of statins and resubmitted the paper to a different journal and then it got accepted. You can read this paper in the European Journal of Internal Medicine.

DM: That's a very legitimate journal. It was published. The reason I wanted to mention this to our viewers is that it's a very classic example of what's wrong with the entire system. There is this merger of industry into the scientific thresholds. They literally are generating tens of billions of dollars of profits. It's an enormous amount of power to do this that it creates from these profits. So as a result, they have invested significant portions of that into marketing.

One of the most effective forms of marketing is to control the educational processes that essentially educate the professionals. Because the professionals speak to the media and of course

basically talk to the patients. So if you can control the input of data that's fed to them through the editorial review boards of these scientific journals then you really control the whole system.

DS: Absolutely. I think that's exactly what's going on. I think many people are aware of that. That they cannot get their paper published in one of the high end journals if it mentions something negative about statins. I think it's extremely difficult to get such things accepted by these journals because of the influence of the statin industry on the journal. I think that's a very serious problem.

DM: We have one in four Americans over the age of 45 now taking these drugs.

DS: It's shocking.

DM: And it's increasing. It is not decreasing. It is increasing.

DS: Right. It disturbs me greatly that they are not prescribing statins to women in their reproductive years and the doctor doesn't even bother to tell the woman that statins are class X for pregnancy just like thalidomide and they cause severe damage to the neural tube in the embryo likely leading to a miscarriage if you're lucky because otherwise you'll have an extremely disabled child. I don't understand why they're not making this clear to women.

DM: I believe you probably understand it's just that it's such a violent objection to the ethics involved because they know this. This is not a mystery yet they're willing to sacrifice human lives for profit. It's really a sad commentary on the evolution that has occurred and this corporate level of influence. It seems to be the reality that we're contending with nowadays.

We've been very excited about a new antioxidant that we have learned about last year and started promoting earlier this year and that's astaxanthin. It's an extract from marine algae. It's a very potent antioxidant, hundreds of times more potent than vitamin E. It's actually what turns pink flamingos pink.

The marine algae produce it primarily as a defense mechanism against the sun. So it provides them this protection against ultraviolet radiation and the benefits in humans appear to be that it provides them an incredible level of protection against sunburn to ultraviolet radiation damage. I have just found that incredible.

In our previous discussions, we were talking about the influence of sulfur performing this similar role. It seems to me there is a potential for enormous synergy between the two so I'm wondering if you could comment on the use of sulfur in helping protect us against ultraviolet induced damage.

DS: Sulfur is an excellent protection against UV rays. In fact, I have a section of that in the paper that I published in the Weston Price Foundation Journal. There is a box about specifically that that sulfur protects from UV radiation and radiation damage in general. I agree with you. I think it will be great to supplement, to combine those two into a very powerful protection.

I think that lack of sulfur maybe a major contributor to issues with regarding skin cancer. So if there is enough sulfur – and also of course the tan that you developed. I have always felt that if you develop a tan slowly in the spring when the sun is not so harsh then you're ready for the summer sun and you're protected from the summer sun whereas if you wear sunscreen all the time then the first time you forget to wear the sunscreen you are very vulnerable to damage from the sun because you don't have the tan, the summer sun.

DM: Could you comment on the connection between sulfur and skin cancer or expand on that?

DS: I think because skin cancer would be caused by the damage that would be introduced by the UV radiation. In a way it might be that the sulfur is protecting because it's actually using the light to good form, to produce the sulfate the molecule. It might be that that's part of its protective activity.

DM: I guess another role the sulfur forms is literally allows us to become a capacitor or essentially a battery so that when we're exposed to the sun and we're not wearing a long sleeved shirt and we have shorts on so that we can have the ultraviolet rays right on our skin because the clothes essentially block most of that and there is not enough surface area in our hands and our face.

We don't really want a lot of sun exposure on our face anyway because it's going to accelerate photoaging and we have large surface areas otherwise. We don't need to use our face. Although unfortunately and sadly most people that's the only part they're relying on. Could you comment on how sulfur is used by our body to allow us to essentially function as a battery so we can suck up the energy from the sun because there is plenty of energy there obviously. How does that essentially allow us to be some time of solar cell?

DS: I have developed a theory and I have developed it by reading a lot of the literature on the skin, on the production of cholesterol sulfate and on the different molecules, the different cells that produce cholesterol sulfate and then looking in parallel to try to understand how they produce the sulfate and I couldn't find anything in the literature that described how they actually synthesize the sulfate.

But I did find that the same cells all contain a molecule called ENOS (Endothelial Nitric Oxide Synthase) which I believe is actually misnamed. That actually mainly it's a sulfate synthesizer and it only synthesizes nitric oxide under pathological conditions.

DM: Interesting. How do you think that the bulk of the researchers who were involved in developing that and then actually labeling it and doing studies with it missed the sulfur component?

DS: I don't know. There is evidence that's pretty clear that something is fishy about it because you can find that red blood cells have substantial amounts of ENOS just on the interior of their cell membrane. They cannot produce nitric oxide because it would be very toxic to them. The nitric oxide would bind to the hemoglobin and act like carbon monoxide to prevent the oxygen transport. So they're puzzled, why do these red blood cells have this enzyme in them. And then

you see also the platelets and the mast cells also major producers of sulfate, also contain ENOS. And the endothelial cells that line the artery walls – that's the endothelial nitric oxide synthase. Those are the main cells where they first found it. Those cells are situated in the arteries that are close to the skin or the veins. They are prepared to pick up the sun and do the transformation grabbing the oxygen and the sulfur from the air and making sulfate and also forming energy, packing energy into that sulfate molecule that has been extracted from the sunlight. That's basically a solar panel effect that the skin has in absorbing the sun. This is of course a theory of mine.

DM: Sure, and as is a theory, you don't have the specific raw data at this point. I'm wondering if you have any gut feelings percentage wise as to – because obviously this could be one way that we get sulfur. We actually sort of passively diffuse it essentially – well, it's not passive because there is an active component but it diffuses through the skin into our system. Obviously, we can get it through our food and animal-based proteins are a really good source of that and seafood. But percentage wise, how important a contributor that is? Is it a small percentage?

DS: I wish I knew.

DM: So you just don't know.

DS: I would love to know. I would sort of yoyo back and forth and I don't even know for sure that it can actually pull the sulfur out of the air.

DM: It's just a theory.

DS: It feels like it should be able to do that and the oxygen is…

DM: There is logical support to suggest that it's not just producing nitric oxide.

DS: Yes.

DM: I think what he had discussed earlier with respect to electron storage in the body that the sulfur based storages are the primary storage. And then once that fails because the body always like backups, once it fails, it fails so the nitrogen…

DS: Transitions to nitrate. This is again a theory of mine. And then transitions to carbon once nitrogen fails as well. Once you've got nitrogen failing – in the process of trying to get the nitrogen once you no longer have the sulfur, you're going to basically take it from your muscles and you're going to end up with these muscle wasting diseases.

DM: Because we can deplete all our sulfur, not all but most of our sulfur resources.

DS: It's painful.

DM: If you deplete your nitrogen you would be dead because that's your muscles.

DS: Yeah. All of them is painful. Depleting the sulfur gives you things like arthritis and potentially things like multiple sclerosis and Alzheimer's. And depleting the nitrogen gives you this muscle wasting problem where you become crippled and then once you're down to carbon, you start to end up with a situation where you're inviting cancers. I think that's where the only thing left to do to try to salvage the situation is to produce a tumor which can actually help to pull the damage in carbohydrates, the sugars out of the blood and convert them into lactate and then the lactate can work. Lactate is also negatively charged. The cancer actually is an anaerobic machine that converts sugar into lactate. That's partially also trying to solve the problem of the ion charge to produce negative ions to lactate which has a minus one charge.

DM: Sure.