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** * * Intro Music * * **

Welcome to Supplementing Health, a podcast presented by Advanced Orthomolecular Research. We are all about applying evidence based and effective dietary lifestyle and natural health product strategies for your optimal health. In each episode, we will feature very engaging clinicians and experts from the world of functional and naturopathic medicine to help achieve our mission to empower people to lead their best lives naturally.

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[01:12] *Cassy Price:* Hello and welcome to Supplementing Health. Vaccines have been a hot topic recently with the release of a Covid-19 vaccine, so we wanted to share with you the ins and outs of vaccines. Here to share her knowledge on this topic is Dr. Taylor Bean, a naturopathic doctor. Dr. Bean is located in Maple B.C. and passionate about discovering what part of the system is responsible for creating imbalances in her patients. Thanks for joining me today Dr. Bean.

[01:35] *Dr. Taylor Bean:* Yes, thank you for having me.

[01:38] *Cassy Price:* So, like I mentioned vaccines are a super-hot topic right now. In the media these days people are talking about it and they are learning all about the new vaccines as well as learning more about existing vaccines that people are having regularly like the flu vaccine or some of the other vaccinations that we use throughout our life. This has been a bit of a point of debate for many years now so to ensure we are starting kind of all on the same page for the discussion, can you give our listeners a high level explanation of vaccines and what they do?

[02:10] *Dr. Taylor Bean:* Yes, so vaccines - which here in Canada we start at two months, four months, six months, 12 months, 15 months, there is a bit of a variability within what we offer each of those months. The United States starts at birth. Other countries start at birth. Usually at two months. The reason of vaccines is preventative medicine is what the purpose is. So, a vaccine will contain an antigen, it is either going to be an attenuated dead antigen, we've got some that are live, and it is to give the antigen so that your body creates an antibody. So then by way of having antibodies to that antigen that when you then later see it in life you have built a bit of that army to protect yourself verses seeing it for the very first time. So, we start young in infants due to their vulnerability and susceptibility to these infections, so viral or bacterial.

[03:15] *Dr. Taylor Bean:* There isn't a lot that we vaccinate. We just vaccinate multiple times, so people feel that there is a lot that we vaccinate but when we go through the vaccine schedule, we see that there isn't a lot that we are vaccinating against you just repeat it. So, we follow the Centre of Disease Control, the CDCs guidelines, here in BC it is the BC-CDC, by way of following the fact that breast feeding has changed, now it is changing back, where mamas would stop breastfeeding rather early and so as a result of that you've got susceptibility for those babies because there is no protection because through breast milk is where we would be getting that protection from because

mamas would provide those antibodies. So, the schedule then has followed that susceptibility for infants. So, we start at two, four, six and one and so forth and then you go into grade school where you do some different vaccines.

[04:19] *Dr. Taylor Bean:* The essence of vaccines is for you to mount an immune response and create antibodies so that when you do see the infection later you are ready to go. Therefore, that is to reduce the possibility of you needing to go to the hospital because your body has been able to fight off that infection and then you don't need to go to the hospital. So, it is about reducing incident rates, reducing the need of hospitals by way of using this tool for preventative medicine so you are primed and ready for when you do see the infection is the essence of the point.

[04:58] *Cassy Price:* Awesome. What are some of the normal post vaccine symptoms that people will see versus when should they seek out medical care?

[05:06] *Dr. Taylor Bean:* Generally, will be fever. Fever indicates that you are having an immune response. That is quite normal because when we do naturally get an infection you can have all the signs and symptoms of potentially a fever, you have a cough or upper respiratory tract infection. Now when you use a vaccine you are not getting a live fully infection by way of mouth, it's through the arm, so you are asking the immune system to respond. So, you have something mild, typically like a fever, your arm might be a little bit sore as a result because you are recruiting immune cells to come to that site. In terms of beyond that, then we can go to the adverse reporting system that is available to you online whichever province you are in, it is pretty much going to look exactly the same because it's a federal bank that we report to.

[06:07] *Dr. Taylor Bean:* So, I give out the adverse reactions table, that's a three-page table, of the possible adverse reactions. Then listed on there, there can be some neurological ones, you may present even with the symptoms of the infection itself so for example if you get the MMR vaccine, or Chicken Pox Varicella, you can present with the signs and symptoms of that infection, so these are things to look out for. Some of the, with the MMR vaccine or Chicken Pox the symptoms can present from 30 to 40 days post, where the other vaccines are typically going to be from zero to 48 hours to seven days. So, there is a time window that we are looking at and so this is where those that vaccinate, for myself that's here in British Columbia, then I give those handouts to patients so they can be more aware and if it is or is not. If it is, they report to me and I report it. I have never reported a vaccine adverse reaction but then if they are working with public health, a nurse practitioner, pharmacist, paediatrician, then to have that same conversation with them if they think that potentially they are dealing with something a bit more moderate to severe to then have that conversation.

[07:31] *Dr. Taylor Bean:* Then when you, we can get into this, but this is all part of my vaccine optimisation piece, is the conversation that goes around vaccinating and the informed consent piece as well. When it comes to administering a vaccine there is a process, a seven step process, to achieve informed consent. Within that is the opportunity to ask questions. So, I have the ability to have time on my hands so either we book an hour appointment or a 30 minute appointment to then for me to answer your questions so you are fully informed and we don't ever miss a bit at all so when you leave the office, you're like "I know exactly what I'm doing, I know why I'm doing it and if there is anything I know I can report to her." And I will be reporting it and keeping my chart notes very detailed and I haven't had to do that, so that's great. What's great is that access to you, you can read what those adverse reactions can mean on a scale, shall we say, but typically it's going to be a fever and typically there will be a bit or soreness in the arm because you are activating the immune system is what you are doing.

[08:50] *Cassy Price*: Yeah, that makes sense. People are often worried about the ingredients in vaccines, is that a sound fear?

[08:56] *Dr. Taylor Bean*: What's interesting about the ingredients in vaccines...so, I, we will talk about Thimerosal. Thimerosal which is ethyl-mercury they have pulled out of the MMR vaccine and they will still use in a multi vial flu vaccine. The United States has a DT vaccine which has the same amount of Thimerosal, we do not have that vaccine here in Canada. It's Dr. Paul Offit who is a paediatrician vaccinologist has a couple papers that he has written to highlight the concerns of parents, so he has a paper that he goes through Thimerosal specifically and the amount within each vaccine within the United States. So, it is also wherever you are in the world, vaccines can be a little bit different. They are not all exactly the same either. There isn't a whole lot of choices. There isn't a whole lot of vaccine companies but know that there can be variation in the different infections that are used within that vaccine be it a two, three, four, five or six combo vaccine. So, there would be a little bit of modifications within that. So, Thimerosal is not a big one to talk about really because it is not a big one that is used.

[10:17] *Dr. Taylor Bean*: Aluminium is a big subject. Aluminium is utilised as an adjuvant. There are different adjuvants, but aluminium is probably there more commonly used adjuvant. It is not used in live vaccines. A lot of patients think that aluminium is in the live vaccines, it is not. There are no adjuvants in live vaccines because they are live, so we don't need to stimulate immune system. However, the other ones that are not live do. Aluminium, what I would like to demystify is that aluminium vaccines is the same in food and it is not. So, I see memes of people comparing aluminium in food compared to vaccines and that is inaccurate. The aluminium in food is water soluble and what's really interesting is that when you eat food with aluminium in it, you only absorb 0.1-0.3% of it and get rid of the rest. When it comes to vaccines of course you've injected something into your arm. It is 100% present within the arm now but then what it does is splits into water soluble and non-water soluble. So, the water soluble form that you will move out and eliminate. Then the non-water soluble form is what activates the immune system by way of binding to the antigen.

[11:36] *Dr. Taylor Bean*: It's highly antigenic. So now it is bound to the antigen so that we can get an immune response. Then you have your innate immune system, your macrophages cells that come over to engulf that antigen because they've been stimulated so now, they move around and find a lymph node to present to your BNT cells. So, the aluminium is there now within an innate immune cell, Beta-Macrophage typically and it can move around within the body. Now its nano-particulate so then mobilising and moving that out is something that we need to think about how we do that because it is very bioavailable and so that is what I am now working on and discovering things that can help bind to that and one of those key ingredients is going to be silica. So, silica has a binding affinity to aluminium so that's one thing that I have patients do, something that has high silica content which would be Fiji Water. So, Fiji Water has high silica content so those two go together hand in hand. When we look at or people talk about earth's crust and aluminium is high in the earth's crust well so is silica, those two go together.

[12:51] *Dr. Taylor Bean*: So, then we don't really get exposure to silica unless it's a high mineral water in the form of silica that which we need. So, then we go down the conversation of how aluminium came to be safe within vaccines. In itself is very interesting and I go through the steps of that within my lectures. I have an upcoming eight part vaccine optimisation webinar series coming up here in February. It will be once a week so it will run for a few weeks. I go down talking about the aluminium, so I do think it is a good conversation for us to have and how it came to be. Aluminium is one of the pieces that we do need to talk about.

[13:40] *Dr. Taylor Bean:* There are other things that are in a vaccine, yes polysorbate 80 will be in some. There can be formaldehyde, your body does make formaldehyde, so is that one of concern? It wouldn't be top of my list of something to be concerned. Neomycin will be in some of the vaccines, so that is an antibiotic. Then, yes you will be reading a vaccine insert, because anyone can have access to reading a vaccine insert, and here we will see the words NRC5 W138 and this means that aborted foetal tissue has been used in order to grow that antigen. Some of these infections don't bother animals so we can't use animal cell lines to regrow that antigen. You have to use a different medium, so you use aborted foetal tissue in order to do that. There is no aborted foetal cells within the vaccine. People think there is actual cells and there is not. Big question mark though however is going to be whether there is DNA or RNA fragments. That is the question mark there. What does that mean? Does it mean anything at all? That is where other people need to do their research and present that and make transparency an absolute of "yeah, this is no problem" or if it is "we need to talk about different cell lines to use." No, there is not new aborted foetal tissue that is used each time to make the vaccine. No, People think it's just over and over and over. No, they have their cells, and they are using those cells repetitively over and over and over again. So, what they use is what they have, and they use no more new cells.

[15:21] *Dr. Taylor Bean:* These conversations come up all over the place and you know the vaccine inserts do tell us a lot and so these manufacturing companies have it on the insert for you to read and for you to know more and understand more about it. That is where you will see within your social media platforms this kind of conversation and within that I see discrepancies. I see some inaccuracies within that of okay there is new cells used at the time or there's cells within the vaccine which isn't true. So, there are I think details which need to be presented and so this is one thing that does come up, so we need to present the accuracy of that. That is probably the main bits that people come up with in terms of what's in a vaccine. Yes, again if you ever want to know just read a vaccine insert and it will tell you. When you look to read one, you want to get the PDF. It is usually about eight pages long. On my website I do have a vaccine section and you can click on the vaccine section. What I have listed is all of the Canadian vaccine inserts that you can click on, so I have done the leg work for you. Whichever vaccine you think you want; the vaccine insert is there. I do have hard copies also in my office which is nice, sometimes I go through them with patients that come from the vaccine box itself.

[16:56] *Cassy Price:* Those are great insights. I think there is so much misinformation that is out there because of, like you say, names that people don't fully understand, or aspects of it, right, where you might know it's grown in foetal tissue but maybe don't understand that it is not actually taking those foetal cells and putting them in the vaccine. I think that is super interesting. Now research that goes into these vaccines, some vaccines seem like they come out really quick and others seem to have been in the works for years. So, can you give us any insight into what's actually required before a vaccine is released to the public?

[17:35] *Dr. Taylor Bean:* So, typically we've got four clinical trials that vaccines need to go through. Your first clinical trial will involve animals, so in rats, mice. Can they mount an immune response? So, what they are looking for is that, usually if it's for a childhood vaccine, that you are going to be doing it on a two day old pup and see if the baby mouse/rat was able to create antibodies. Is there an immune response that's happening? Then you are following them. What you are doing is taking a two day old and you are extrapolating that to a two month old baby and you seeing that if the two day old creates antibodies well we can extrapolate that to that a two month old would or a four month old would also be making antibodies. Then you are monitoring and seeing how the animal does throughout the trial. Is there a big inflammatory response to it? Do we note any adverse

reactions? This kind of thing. Then you move onto phase two which is going to have a small portion of people within that. Then you go into phase three which is a large cohort, we are going into the thousands, of people that will be involved within that. Then it goes to market.

[19:02] *Dr. Taylor Bean:* Then we are into phase four. Phase four is when it is in market because then you have people who are young, middle age, old, using that vaccine, whichever one we are thinking about or it's younger or older, say the pneumococcal 23 so for seniors, you are then phase four. So, within phase four it is very important for us to administer is to keep tabs as to the response to that vaccine. This is why it is very important, the people that I work with in my office here is "Maybe you'll expect this, don't expect this, but what I do expect is for you to get a hold of me, if you need to call me then let me know." I have a very tight relationship with the people that I administer vaccines with. They know they can get a hold of me right away. I haven't had any. This is what phase four is all about is now that it is out with millions of people using it, now the data starts for us to know how this vaccine works. All of these steps though; phase one, phase two, phase three, does take years to accomplish. Even it will be going on in different countries at the same time.

[20:35] *Dr. Taylor Bean:* So, take Gardasil for example. So, Gardasil for example had different pockets of girls doing the Gardasil vaccine throughout the world so you are collecting that data to then know how it works or not works and so forth and so it is not one isolated place in the states with a few hundred people and then it gets out. No, no, it's typically going to be around the world, different populations, different phases that we go through with larger and larger cohorts and then we have phase four which in Canada they want that information. They want the information in terms of if there were adverse reactions and then they can pull that lot number as well and it goes to a federal bank and then they have a conversation about it. So, this is where the rotavirus was pulled due to the uptake of intussusception that was happening and they pulled the DTaP, the whole cell vaccine, which was pre-1986, and as it was causing some issues.

[21:42] *Dr. Taylor Bean:* It was very inflammatory. Bordetella pertussis, when you get it naturally, is very inflammatory and within the vaccine it was as well so they changed it to the A cellular form and so it is not as inflammatory. So, these are the monitoring aspects that go on and it's important to be diligent with the information even after you have given the vaccine so that we don't miss a beat. I feel that there can be a bit of tightened up in terms of our conversations with patients and even taking good chart notes even post vaccine and giving people the feeling or letting them know that "yes, do get a hold of me" and I am open to have that conversation afterwards. My patients know that if there is anything post vaccine you let me know. It is important you let me know verses don't let me know; I don't want to talk to you.

[22:46] *Dr. Taylor Bean:* I am trying to tighten up the entire experience, the entire protocol when it comes to vaccines so you know you feel heard because I am hearing you and I will be writing this down if it is a problem and if need be I refer people to the children's hospital to the vaccine specialist down there, which I have a couple times not for adverse reactions but more so to have different vaccines done for different ages with them instead because I can't do young kiddos and some vaccines are only licenced for certain age groups so I have referred them down there to do that. So yeah, in terms of the safety and how it's done, that's how it's done and yes it's over a large period of time, that which it's done and then the data since whichever vaccine has been out from that moving forward is also years of data as well. The Polio vaccine is one of the oldest ones, so we have decades of information around that one. Chicken Pox came out, the Varicella vaccine came out in the 90's and so we have a couple of decades of information around that so we have seen a decline of Chicken Pox. We can monitor the people that have had it, so this is where the data continues. The research never stops. It continues. It is not just "get it done" close the book." No, it is an open book

completely and to follow so yes when new vaccines come out, we have no pre-existing information it is just from day one and moving forward and you collect that and then make your decision based on that.

[24:33] *Cassy Price*: How does funding influence vaccine research? I know for other types of studies where the funding comes from, how much, that sort of the thing definitely influences how quickly or how robust the research can actually be. Would it be a similar situation for vaccine research?

[24:51] *Dr. Taylor Bean*: So, that's not something that I know much about since I'm not involved in that area. In terms of the funding, the funding is going to come from the pharmaceutical industry. They will be funding. So, the money of course then, each vaccine costs something, and the price of the vaccine, some of them will be 75 cents some will be \$1.50, and some will be quite expensive. The Gardasil vaccine, I might be wrong in the initial cost, but Gardasil vaccine that one is around \$140.00 per vaccine. Perhaps some of them are around \$5.00. I don't know the value of each vaccine, what I do know is here in Canada, our taxpayer money pays for the vaccine. So, each province will pay for allotment to the pharmaceutical company and then there are publicly funded vaccines, those are all your childhood vaccines, and then there are ones that are not.

[26:00] *Dr. Taylor Bean*: So, if you wanted a vaccine that is not publicly funded, you'll be paying out of pocket or perhaps extended benefits might pay for something like that, but you will be paying for something that is not publicly funded. The flu shot would be publicly funded. Our taxpayer money pays for each of those single flu vaccine vials and then you go in and you get one, you feel that it's free it's not, your taxpayer money paid for it. It's the same thing here in Canada when you walk into emergency or you walk into a walk-in clinic, you're not paying actually with your visa you've already put money in towards it. In Canada that is how that money works. So, whatever the initial cost of the vaccine is worth I have no idea but then our taxpayer money will pay for the vaccine, which I have no idea could be a dollar or could be 10 dollars each, I don't know, and then that money goes back to the pharmaceutical industry, but the pharmaceutical company will be funding that research absolutely because that is how that money goes around.

[27:08] *Cassy Price*: When you have a patient that is looking into a vaccine and they are trying to decide if it's right for them, do you have any tips or tricks to help them ensure they are getting sound or reliable information outside of the vaccine insert?

[27:21] *Dr. Taylor Bean*: It is daunting and especially if you have never thought about it before and now you are thinking about it. "What should I do?" I have a lot of families that come in, usually either their kiddos six months old or a year old and they are unvaccinated. A lot of my patients when they come in to talk to me is that they have found someone who, number one Will talk to them and two they haven't vaccinated because their experience of asking questions to other people was not good. There is a lot of shame and disrespect around those who want to ask questions and as a result of that that has bred massive hesitancy because of the way you are treated. I can rightfully see how that can happen. So, I have seen it happen so many times that it is clear this is an area that I am carving out to allow for a safe place for people to land to have a conversation. Now, where do you get your information from? So, this is where I am trying to educate the public myself through vaccine webinars. I am trying to educate practitioners through conferences, doing podcasts. Podcasts aren't exactly going to have the information that you need or where you are going to go but your vaccine insert is a great place to start. That is a good place.

[28:48] *Dr. Taylor Bean*: Then what I have patients do is understand the infection that their vaccinating against. First off, do you understand pneumococcal? Do you understand meningococcal?

Measles? Mumps? Rubella? Chicken Pox? Do you understand these infections and then it's like "Okay, I have a better understanding of the infection." Then you understand why you are vaccinating against it. Then we weed that out because it is a very blurred area of, "I don't understand why I am doing this?" Okay, then understand the infection first. I think it is also very important to use the word infection because that is what they are rather than use the word disease. I really prefer and will always use the word infection because it is a Chicken Pox infection, it's a pneumococcal infection. Now that infection could potentially go into something different and that might be in a diseased state, Hepatitis.

[29:44] *Dr. Taylor Bean:* So, what's by first off as an infection actually helps clear our mind and be a little bit better at understanding why we are doing what we are doing. So, that is a second piece. Having the conversation with each other, mom and dad, partners, of "What are we doing? Where do we stand together on this?" That in itself is another thing. That is my first question to families, where do you both stand? Are you on the same page or different pages and why? That also helps to clear the air and work together on that and hopefully you can have a good dialogue together about what you are doing because of course at the end of the day the decision is based on what is best for your child. So, those are two big things to get out of the way first off when we talk about vaccinations. Then we get down to the nitty gritty. What is that you want to know? What is it that you want to talk about? One book that I do like is *The Unvaccinated Child* which is written by two naturopathic doctors. It is for anybody that is vaccinated and for people who have not vaccinated.

[30:57] *Dr. Taylor Bean:* The point is to understand the infections and to optimise the health of your child. It has pictures of the infections, it has the signs, symptoms, rates, percentage of contractions so that that is where they go through each of those infections and I think that is important to get to know those because a lot of people don't understand what is pneumococcal, this PCV13 like what is that? I have a lot of people "like what is IPV? What is that?" Well, its inactivated polio virus. "Oh, I didn't even know that." Questions of can you split up the MMR vaccine? No, you cannot. Not here anyways. You can in other countries. You could get a single Measles vaccine if you lived in Japan. You could do the MR vaccine if you lived in France, so there's different countries that do different things. But you live in Canada, so this is what you have access to as a Canadian citizen. So, "Ahh, that brings clarity to my mind." I keep hearing "Just get the Measles vaccine. Can I just to Protasis on its own?" No, you cannot but these are your options so then we go through the vaccine options which they don't realise.

[32:05] *Dr. Taylor Bean:* When you know what you want to do and you understand what you are doing then we can talk about what is available to you and then timing as well, it depends how old you are, how young you are, in terms of what you can be doing. All of these other nuance questions which are good questions which I think should never be mocked at or shamed at in terms of your questions because you have a right to understand what you're doing. You have a right to have that informed consent. What we can do is we can do titer testing and we can see if you have mounted immunity. You can't check all of them, but you can check some of them. You can check Measles, Mumps, Rubella, Chicken Pox and hepatitis B. We can do that. It is a blood draw and so you do the same blood draw when you are pregnant for Rubella and hepatitis B, that same test we can do for you kiddos. So, yes, it's a blood draw but I have done several on them on kiddos to see "Hey did you mount immunity to these at all? That would be really interesting to know if you had and if you have not there is the decision for you to do the MMR vaccine or not."

[33:17] *Dr. Taylor Bean:* So, that's been really interesting even for myself data wise of having kiddos that have just done the vaccine and we check their titers a month later, they had the vaccine a year ago. I'll do it for teenagers, adults. "Let's see do you still have immunity to this. This will be really

interesting to know with and when did you do the vaccine?" Vaccinee induced immunity, your immunity will wane much faster than if you were to achieve it naturally. Titers aren't something that are liberally used or discussed but that is something that can be done, depending on where you are within Canada, it is either going to be your paediatrician or your medical doctor, might be able to be your naturopathic doctor who can do that for you. In the States you can check for Protasis antibodies, we can't here in Canada, but I believe you can in the United States so you have to talk to your health care practitioner, that which can draw the blood and send it off and then you have that information.

[34:17] *Cassy Price*: Awesome. You mentioned your webinar series that is coming up. If listeners wanted to attend it, how could they sign up for that?

[34:28] *Dr. Taylor Bean*: So, on my website www.drtaylorbean.com just right at the top you can see that I am going to be doing an updated version. I want them to be able 30 minutes in length. The information will stick, you don't really have to watch it again. Those are going to be starting about mid-February. For each lecture that I do you'll have an individual handout that goes with that of those papers so it's easy for you to access because I think that's important.

[35:02] *Cassy Price*: Fantastic. Is your website also the best place to get a hold of you if they want to work with you?

[35:06] *Dr. Taylor Bean*: Yes. That is a great place to go because you can email me through there. I am on Instagram @drtaylorbean as well.

[35:13] *Cassy Price*: Awesome. Well thank you so much for chatting with me today. This is such a huge topic and one that I think has definitely been on top of lots of people's minds so thank you so much for joining me.

[35:23] *Dr. Taylor Bean*: You're welcome. Thank you for having me. I love having a place and platform to discuss this.

** * * Outro Music * * **

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