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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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[01:10] *Cassy Price:* Enzymes help to facilitate the breakdown of the food into nutrients and other particles that are absorbed by and excreted from our bodies. Enzyme supplementation promotes the health of digestive organs by facilitating digestion itself. It increases the efficiency of the digestive process by alleviating some of the burden from our digestive organs and improving nutrient absorption. AOR Zymes contain specific enzymes to digest proteins, starches, fats and hard to digest polysaccharides found in legumes and vegetables that can cause gas and bloating. Get yours today at your local retailer or online at AOR.ca

[01:43] *Cassy Price:* Hi everyone and thanks for tuning in to another episode of Supplementing Health. As many of you know our body systems are very complex and intertwined so symptoms that present in one area of the body may very well be the result of an imbalance in another area. This notion is exactly what Dr. Laura Belus and I will be exploring in today's conversation as we discuss the relationship between hormones and our digestive system. Dr. Laura Belus is an ND and is a firm believer that health is attainable at any age. She has a true passion for health optimisation and guides her patients to achieve their best health possible using simple yet powerful changes to diet and lifestyle habits that create lasting results. Welcome Dr. Belus.

[02:23] *Dr. Laura Belus:* Hi there. Happy to be here today.

[02:25] *Cassy Price:* So, when hormones are mentioned most of us think of our sex hormones such as oestrogen and testosterone etc. but there are many other hormones within the body that help regulate our various functions. What are some of the hormones that influence our digestive process most?

[02:40] *Dr. Laura Belus:* Well that's a great point. A lot of times when we think about hormones we tend to think about the male or female hormones as you just mentioned but there are a whole set of hormones in the body, specifically ones that can impact our digestive system. The two that I think about most definitely would be thyroid hormone or our TSH and that affects how quickly or slowly our body processes the whole entire digestive process. If your thyroid is slow, also known as hypothyroid, some people will find they are constipated and more likely to be bloated. They are not digesting food as well. If you have hyperthyroid you might have the opposite. Things are moving too quickly, cramping, loose stools and again this can all be related to the thyroid hormone which is

interesting, and a lot of people don't often make those connections. Another hormone that I often test with my patients and chat with, especially women, is insulin. Insulin is a hormone that is a lot of times related to blood sugar. Some people know about it, but it also has a big factor in terms of how well we metabolise or break down carbohydrates. Our hunger hormones are all related to our higher or lower levels of insulin in the body. Very much non female or male hormones there, the thyroid and the insulin, but very important hormones when we think about the digestive system.

[04:02] *Cassy Price*: When you read about different diets and calorie restrictions specifically, often you will hear about Ghrelin. I think that is how you pronounce it. Is that also effected by insulin?

[04:15] *Dr. Laura Belus*: Ghrelin is a hunger hormone and there are definitely a whole host of other digestive hormones, you know CCK, Motilin, these are fancy words for things that are secreted or released in our stomach and our digestive tract normally in response to food. So, Ghrelin, again, is a hunger hormone and that is often balanced by another hormone like Leptin. Leptin is our 'I'm satisfied, no more food please' hormone. Yes, both of those indirectly are related to Insulin. If Insulin is high or too high most of the time, then we can get that mis-signalling or misfiring of what we might assume as hunger when in fact it might not actually truly be it is just a hormone imbalance in that moment.

[04:59] *Cassy Price*: Okay. Interesting. So, are there specific digestive issues that are more effected by hormone imbalances than others?

[05:10] *Dr. Laura Belus*: Well digestive issues are complex. There are multiple causes or contributing factors but when we think about digestive issues and hormones I often think about IBS, or Irritable Bowel Syndrome, because those do have a lot of fluctuations meaning that sometimes you might feel bloated, sometimes you might have cramping, sometimes people might experience loose stools or constipation or an alternating of both. Those do have a lot to do, specifically with female hormones. Unfortunately, or fortunately, as women we have a lot of fluctuation in our hormones each and every month as long as we are getting our cycle and that can create changes in our digestive function. That is where a lot of times IBS might be experienced by more women especially around those changes in our menstrual cycle.

[06:00] *Cassy Price*: Actually, speaking of those changes that occur with our menstrual cycle, research has found an increase in GI symptoms occur around that time of menses and even in early menopause which suggest that oestrogen and progesterone, like our sex hormones, and the withdrawal of them might contribute to constipation or other digestive symptoms like you were just talking about. So, if all women are experiencing that hormonal withdrawal at that time of menses or early menopause why do only some women experience the menstrual constipation or the other digestive issues that go along with it?

[06:35] *Dr. Laura Belus*: That is a great question. We want to be clear. Every time we, in research, find a connection with hormones and a symptom or a certain condition that is really important information, but it also highlights that hormones are on a spectrum. There is a balancing act going on. It is never all or none. Even oestrogen levels, for example in menopause, are rarely zero they are just much lower. This idea here that some women might experience more symptoms or less at a certain time of their cycle, for example, or after menopause a lot of times has to do with how quickly those shifts happen as well as their gut function. Remember oestrogen specifically is actually recycled in our gut. It is recycled by an enzyme that is made by our gut bacteria called Beta-glucuronidase. Certain bacteria like to make it which means more recycling of oestrogen which might not mean better digestive symptoms and other women have less of that recycling happening

so they might have more of a constant or a gradual change in hormones throughout their cycle for instance.

[07:44] *Cassy Price*: How do oral contraceptives impact that process or those levels of hormones?

[07:49] *Dr. Laura Belus*: Well oral contraception does have oestrogen and progesterone in it. They are synthetic versions, and they are low levels normally for the entire twenty-one-day period but for many women the oral contraception is during a job that is hormonal. A lot of women don't realise that it is in fact affecting their microbiome and the amount of bacteria good and bad that is present in their inner digestive tract. Other women are very sensitive to synthetic oestrogen and progesterone and we know that those levels of hormones even though they are small can affect the way a woman feels in terms of bloating and water retention and generally feeling sluggish or heavier than normal. The oral contraception does go through our digestive tract, it does get processed by the liver and it does give our body additional work to do. I am not saying that it is not useful for women for other reasons but sometimes this is worth investigating with your health care practitioner if symptoms happen shortly around the time you started your oral contraception or even after you came off. Even as short as a year or two being on oral contraception can affect a women's digestive tract long term.

[08:59] *Cassy Price*: If you are switching between different brands or types of oral contraceptive could that also then have a different impact on your microbiome that you were talking about?

[09:09] *Dr. Laura Belus*: Absolutely. Every pill has a slightly different concentration of the synthetic oestrogen and progesterone, so it is really important to discuss that with your practitioner. Which one are you moving towards? Are you lessening your dosage or are you moving to one that might have, for example, a little but more progesterone and less oestrogen? Well yes that will absolutely make an impact on your symptoms so it is really important to make note of that as well.

[09:35] *Cassy Price*: Are there dietary steps that you can take to mitigate or lessen those impacts while you are making the shift on or off contraceptive or between contraceptives? Just because we know fibre can keep you regular or certain pre and pro biotics obviously help to build that microbiome. Are there certain things like that that you can do to adjust your diet while you are going through those types of transition periods?

[10:01] *Dr. Laura Belus*: Yeah. Absolutely. That is a great question. You know the digestive system as I mentioned is that elimination pathway for our hormones so if anything is blocked up or slow, for example constipation, keep in mind daily bowel movements are considered normal so if you don't have a daily bowel movement, one that feels complete and empty, then you really want to work with your practitioner on correcting that first. Remember if we are trying to eliminate hormones and keep everything balanced the digestive system really needs to be regular in order to do that. Now, where do foods come in? Well specifically foods that are easy to digest so a lot of people do reach for high fibre foods, but I actually find in clinical practice that women do better on a mix of foods. Some might be soluble fibre, some might be insoluble fibre so think of for example nuts and seeds or fresh fruit and vegetables. A lot of people though do better on cooked foods in general. Think of this as a pre-digestive version of your health food. It is something that is going to have a little bit less stress on the digestive system as things are working through. As well I wanted to mention taking extra care to support your liver at this time is really critical. Whether you are on oral contraception or you've recently come off the support here is that the liver does detoxify those hormones out of our body. As I mentioned it is a normal process for everybody regardless of whether you are on the pill, but women need to know that it is something that they can do daily. Something like lemon in

their water or bitter greens like arugula or rapini or dandelion. Those kinds of foods can really support a healthy liver and a healthy natural detoxification system that is safe while they are on the pill or when they are off to keep the hormone systems working at their full capacity.

[11:58] *Cassy Price*: If you are experiencing both digestive issues and other signs of hormonal issues, whether it be acne or night sweats that are common hormonal imbalance signs, do you as a practitioner usually recommend addressing one over the other when you initially start treatment or do you kind of address them together?

[12:23] *Dr. Laura Belus*: Yeah, that is a great point. How I work in my clinical practice is that I tend to do a little bit of both together, however; one exception to that rule is those that have constipation where if we are not having the daily bowels, we are not going to be move the needle on the hormonal piece until we have those bowels emptying out daily. Most of the symptoms women are experiencing, for example acne or the night sweats or irritability or PMS those often have more to do with the hormones themselves so it is important that we address that hormonal piece as soon as we can and normally for many women that can be right away or within a week or so after we have started to get the gut back in balance and those bowels regular again.

[13:08] *Cassy Price*: Awesome. Jumping back a little bit you mentioned the microbiome earlier on and probiotics have been in the spotlight frequently since the discovery of the microbiome. We are now hearing a bit about postbiotics as well so can prebiotics, postbiotics and probiotics influence your hormonal function?

[13:30] *Dr. Laura Belus*: Absolutely. As I mentioned this recent discovery of estrobolome which is the effects of certain microbes or bacteria in our gut impacting how we detoxify or recycle oestrogen, that is just the tip of the iceberg. The idea here is that what is in our gut does actually influence the hormones that might actually come back into the body or leave the body for good. That balance is really important so absolutely there is a large place here for probiotics, prebiotics, postbiotics but what does that actually look like for the individual? Well, it really depends on if there is an overgrowth to begin with. Some women do have overgrowth of bacteria either from too many antibiotics, food poisoning or low stomach acid and other issues and they now need to clear or reset their microbiome in some capacity before we add in additional bacteria. However, from a hormonal standpoint in general, a lot of research has been done on specific strains of lactobacillus bacteria and their positive effect on the estrobolome or the oestrogen balancing effects in the gut so I am definitely a fan of supporting that microbiome with some version of the lactobacillus family.

[14:47] *Cassy Price*: Do you find there is certain strains of bacteria that is more detrimental as far as negative bacteria to the hormone balance?

[14:55] *Dr. Laura Belus*: That is a great question. Depending on the individual when we do for example some of my patients will run more advanced stool testing and we will see certain, what we call, opportunistic bacteria. Those are not necessarily bad bacteria on their own but if we have those levels overgrown, they can become a problem, and this could be certain strains of streptococcus or even e-coli and not always the problematic ones that people might now about. So, it is an overgrowth often that is associated with a problem. I wouldn't actually say that clinically I only see a few strains of specific bacteria causing hormonal effects, it is really the balance overall because we are talking about a very big ecosystem here in the entire digestive tract with the microbiome.

[15:43] *Cassy Price*: Do you find candida plays a role in that balance as well?

[15:47] *Dr. Laura Belus:* Oh, big time. Candida being a yeast separately, absolutely. We know that has a lot of issues in terms of symptoms that women will report, and I find that candida overgrowth is often more associated with long term oral contraceptive use or other infections that might have come along where women have just been experiencing bloating, fatigue, often constipation but not always, for many, many, year. When we investigate and we test we do see candida playing a role but sometimes people jump to that conclusion when it is in fact what we call dysbiosis, an imbalance of the bacteria, not yeast, in this case candida, that could be the culprit. So, it is really important to understand what might be affecting your gut and of course your hormonal balance because it is really not the same culprit for every woman but there is a short list of problematic strains that we can investigate.

[16:44] *Cassy Price:* So, we know sugar feeds a lot of these bacteria, correct? So then when you are working with patients how do you get them to, or do you even get them to reduce your sugar intake to help with that balance in addressing their hormonal issues as well?

[17:05] *Dr. Laura Belus:* Yeah. If we know or we highly suspect that there is either an overgrowth of bacteria like the dysbiosis I was speaking about or candida yeast, or some version of that, I'll have most of my patients on some version of a low fodmap diet. The fodmap diet is literally an acronym for a long version of a group of foods that are fermentable and are often higher in fibre and very healthy, but they can create a lot of gas and bloating and unfortunately uncomfortable symptoms for women and men. So, I normally recommend that for a short period of time we are trying to reduce those symptoms of bloating and discomfort so the low fodmap diet which you can still eat fruit on the low fodmap diet. Years ago we fully restricted all sugars. I don't find that as sustainable and as useful for my patients today but the low fodmap diet is a lower fibre and a lower fermentable diet in general so that means less gas production as we are working on rebalancing the microbiome.

[18:06] *Cassy Price:* Okay. That makes sense. There has been a lot of talk about hormones within our food sources as well. So, meats that have been grown with growth hormone or other hormone injections and even some of our soils having in it now that we've put them into plastics and stuff like that and there has been more, I guess, influence from our lifestyle, right? So, do those hormone levels impact our own hormones and can they perpetuate the type of digestive issues that we have been discussing?

[18:46] *Dr. Laura Belus:* You know the hormone debate and the hormone in our food supply is still as strong as ever, let's put it that way. Each country is unique in terms of what growth hormones or antibiotics are allowed in the food supply. For example, here in Canada, farmers are not permitted to add hormones to dairy products, to dairy cows, for the purpose of milk and milk products but they are permitted to add growth hormones for beef cattle. So, if we were wondering "Do all of my meat and dairy products have hormones in them?" Probably not, at least in Canada, that might not be the case but beef for example is something where those hormones are permitted. When we add hormones to any food that we are consuming later, there is the idea that that is going into our circulation and having to be processed in some way shape or form. I always recommend knowing your source and if possible, always choosing organic for dairy products and meat if you do consume those items because again you are going to get less influence of external hormones. We have our own body hormones to worry about, putting in additional hormones can really throw things off. You also mentioned something important which I would classify as hormone disruptors or plastics or environmental chemicals that are in household cleaning products or beauty products or plastic containers. These things like BPA or Folates can really disrupt our hormonal signals. They act as a hormone even though they are not truly a hormone and yes for many women this can unfortunately increase risk of certain oestrogen related cancers potentially. It can definitely create more symptoms

and they are toxic. They have to be built up in the body and then recycled and cleared out so it definitely gives your liver a lot more work to do including your gut so as much as possible, avoiding those plastics or those additives as much as we can is definitely going to go a long way in terms of keeping our hormones healthy.

[20:54] *Cassy Price*: You had mentioned that thyroid plays a big role, a lot of those hormone disruptors will impact the thyroid as well, is that correct?

[21:02] *Dr. Laura Belus*: Absolutely. That is a great point. As well as heavy metals, fluoride in our drinking water, EMFs so being around certain individuals are very sensitive to electronics or Wi-Fi signals and this is a very emerging area, right? There is lots and lots of information coming out almost every year on the thyroid but it is a very sensitive organ so it makes sense that even a small amount of something in our environment, in our food or in our water would affect that organ and as we mention thyroid is the regulator of our metabolism which means it is the regulator of our digestive tract as well so very much connected to digestive health and overall hormonal health.

[21:43] *Cassy Price*: Studies have mentioned that women are twice as likely to be affected by IBS than men, is that strictly because of our hormones or are there other factors playing into that well?

[21:57] *Dr. Laura Belus*: That's a great point. I wish I knew the answer definitively to that, but we would argue that with the hormonal changes that women experience each and every cycle that they do have more susceptibility to those ebbs and flows and specifically the rise and the drops in hormones so the week or so before their period, leading up to their period, and just the first couple of days of their actual period itself, those represent very strong fluctuations in hormonal balance. As I mentioned, that also includes additional water retention which can lead to bloating and then with those levels dropping suddenly some women will actually crave or consume more simple carbohydrates or sugars that they might not eat on a normal part of their cycle. Then of course we also get food triggers causing more symptoms as well. I would say that a large portion of the two times more likely for women piece is perhaps related to hormones. I wish we knew that definitively, but we do know definitively that there are those fluctuations hormonally happening to women and there is a connection to the gut as well.

[23:09] *Cassy Price*: When you are suffering from digestive issues and you get those cravings, if you satisfy them does it add extra burden onto your digestive system because you are having to process foods that you are not used to but also more foods?

[23:23] *Dr. Laura Belus*: Yeah, again depending on what you are giving into and when, anytime there is a digestive disturbance or imbalance regardless of women's hormones, or if we are talking about men or children regardless, we want to go easy on our digestive tract. Normally I recommend smaller meals, smaller snacks, pre-digestive foods, warm cooked foods as much as possible, less large raw salads and things that will be easier for the gut to handle in general is always going to go a long way. If a craving comes on and we consume a food that we normally don't consume its not the end of the world but it is kind of expected that we will see some sort of symptom change at that time and I always encourage patients of mine to reflect on that, note that because sometimes it is the food, sometimes it is the amount of food, or the timing of when that food is eaten, for example a snack after a full meal is completely different than a snack mid afternoon on an empty stomach. For a lot of my patients, they can tolerate that on an empty stomach but adding it after a meal for example does increase the digestive burden and of course symptoms.

[24:34] *Cassy Price*: Okay. You have mentioned that cooking the foods helps a lot but there are some that think that the raw foods have more nutrients. So, is there certain foods that are better cooked and actually provide more nutrients cooked than raw that people should be aware of?

[24:52] *Dr. Laura Belus*: Yeah, definitely raw foods will have the natural enzymes of the produce item intact, right? There will be this ability for the food to digest itself in your gut as it normally should, however; if we are not cooking the food, and there are many ways of cooking the food to reserve and protect nutrients for example, lightly steaming instead of boiling. That is a great example where we are not going to be getting rid of all of the nutrients when we are cooking the item. I do recommend that if you are suffering from digestive issues then of course a mix in general of raw and cooked foods is great for everybody and a variety is key as well but for those that do have the digestive issues and are working towards creating more balance, I do encourage them to be consuming at least 70-80% of their produce in a cooked form even if that is lightly cooked. Remember quantity is also very important. A lot of this these produce and raw foods are normally very nutritious but have a lot of fibre which is hard on the digestive system so just being mindful that we might need to reduce the amount or the frequency of which eating those foods might be part of the picture for at least the first two/four or six weeks of someone's healing journey.

[26:16] *Cassy Price*: We have talked a fair amount about constipation through our conversation, but if someone is suffering from diarrhoea or loose stools would it be similar protocol for treating that or would there be difference in the way you would handle getting back to a regular stool from that state vs. from a constipated state.

[26:39] *Dr. Laura Belus*: That is a great question. Loose stools have a lot of different origins in terms of why those might be occurring. Now it might be something that has more to do with the brain gut connection. Someone might feel anxious or nervous and that creates what we call a faster transit time in their gut, so things move through a lot quicker and they are running to the washroom with more loose stools. That is a possibility. In other individuals and a lot of women that I work with specifically we are testing their guts and sometimes we see that there are strains of bacteria that can cause looser stools so in those cases we might actually be fixing or trying to rebalance the gut bacteria even with something like a beneficial type of probiotic yeast for example which is called *Saccharomyces Boulardii*. That can be helpful for the short term to help that system regulate itself and prevent, unfortunately, the looser stools that might be due to an imbalance. Also, something to note is sometimes gluten or dairy, sometimes food that people are not really aware of, they think "okay it might cause bloating", but a lot of times they are not aware that those foods might actually be contributing to looser stools or a lot of urgency running to the washroom. If we get rid of those foods and see how the gut responds that also is a great place to start.

[27:58] *Cassy Price*: Can other brain gut interacts override hormonal influences as well?

[28:04] *Dr. Laura Belus*: Yeah, the gut, we say, is the second brain. A lot of research has shown that it is a two-way street. Our mind and how we cognitively think can affect our gut and a lot of people can very much relate to this with being nervous or thinking about an upcoming meeting or presentation and having your stomach in knots and running to the washroom. The opposite is also true. Having your gut bacteria actually signal to the brain how we might feel and how we might react to a certain situation and it has a lot more to do with the neuro-connection, which is more to do with our mood, anxiety, depression, connected to our gut bacteria. There is definitely a lot to be said about that connection there and it does exist but that is another reason for us to balance the microbiome because we know it is affecting so many other parts of our body.

[28:56] *Cassy Price*: Awesome. I guess my last question because we are coming up close to our time, is women with endometriosis or PCOS often suffer from different hormonal fluctuations than just the standard menses cycle, so do those two conditions have a significant impact on hormonal or digestive health as well then?

[29:21] *Dr. Laura Belus*: Well the PCOS, I work with a lot of women with PCOS and its hard to say with a blanket statement with the digestive piece does everyone have the same effect. Some women, or many women with PCOS might experience bloating and a lot of them do experience weight gain. That might be associated with that hormone insulin that we were talking about so that is definitely worth looking into for those individuals. Specifically, digestive systems and endometriosis, there is a lot more research in this area, we know women with endometriosis have elevated oestrogen levels but they also often have a release of inflammatory markers or signallers called prostaglandins for example and those can create more pain but there is research to support that can actually throw off our digestive system. A lot of women feel more bloated. Many of my patients will refer to it as endo-belly which is this bloated lower abdominal expansion that will be constant at least for the two weeks leading up to their period and even halfway through their period. Definitely more water retention, more pain and more discomfort. Again, there is research to support that having the right kind of bacteria in that large intestine in the actual entire digestive tract can really support that recycling of oestrogen that we spoke about earlier.

[30:42] *Cassy Price*: Okay. Well thank you so much for taking the time to walk me through all of this. There is so much there that I think is really fascinating and impacts so many people. I really appreciate you taking the time to share your knowledge with me.

[30:58] *Dr. Laura Belus*: Great. I'm happy we had the chance to chat. This was wonderful way to bring a lot of topics that I think effect a lot of people together.

[31:05] *Cassy Price*: If our listeners want to work with you or get a hold of you, how can they go about doing that?

[31:09] *Dr. Laura Belus*: They can reach me online at drlaurabelus.com or [@drlaurabelus](https://www.instagram.com/drlaurabelus) on Instagram and I am very active there.

[31:20] *Cassy Price*: Awesome. Wonderful. Thank you to all of the listeners who tuned in today and thank you again to Dr. Belus for joining me.

[31:26] *Dr. Laura Belus*: Thank you.

** * * Outro Music * * **

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