

## **Everyday Immunity Ep. 11 - Phase I Liver Detoxification: What Foods, Drugs, Toxins Inhibit or Activate It**

Hey! Welcome to the Everyday Immunity podcast - a place where we talk about different ways to boost the immune system naturally each and every day. I'm your host Alicia Rosati of Rosati Nutrition.

What is up, you guys?! Welcome back to the Everyday Immunity podcast. I'm your host Alicia Rosati of Rosati Nutrition and I am so glad that you're here! If you have listened to my podcast before, thank you for returning and if you're new, welcome!

So, you guys may notice it's been a while since I've uploaded a podcast episode for you guys. You know, covid was and still is such a learning curve and, you know, there's so much adaptation that needs to be had and I don't think any of us were expecting covid to be around this long and wreak this much havoc in so many different ways. It's been a little bit of a learning curve and a little bit of an adjustment period, but I'm back and I hope to be uploading more podcast episodes for you guys more frequently.

I have a ton of topics that you guys have let me know what you want to hear on and what you want me to speak about, so I have so many ideas coming up for future episodes, so please don't forget to come back. Rate this podcast, whether you're on iTunes or Spotify - it really helps me out if you can leave me a rating or leave me a comment. And I really appreciate it!

So now that we got all that 'admin' stuff out of the way, let's talk about why you guys are here and why you clicked on this episode. We're going to be talking about detoxification and your different detox pathways.

If you guys follow me on Instagram or follow the Rosati Nutrition page on Facebook, you will see that I have been talking about detoxing a lot lately and that's for good reason! Some of you guys may know that I was dealing with a hormone imbalance. You may also know that from one of my previous episodes. And I have been working together with my naturopath and my naturopathic intern to help fix that hormonal imbalance.

Well, one of the things that's really actually helped me, which I never would have thought of, was improving my liver health and improving my detox pathways. Now, estrogen is one of those things in the body that your body must metabolize and get rid of that waste. Well, my liver wasn't doing that efficiently or as effectively as it could be. So, what we did was, through different supplementation and things like that, we improved and are still improving my liver detoxification. And my estrogen imbalance symptoms have greatly subsided. I don't deal with PMS anymore, none of that stuff, which is fantastic!

This whole journey has led me to realize just how important your liver really is. A lot of us think of our liver when we think of like, binge drinking and maybe eating unhealthy foods like fried foods and things like that. But, we don't think of our liver just for overall health, which we really should because it's one of our main, most important organs.

So, I want to do a little questionnaire for you guys. I'm going to ask you some questions so put a finger up for every time you answer yes.

1. Do you feel you're not as healthy as others your age? I'm 24 (I had to think about that for a second) I'm 24 you know, do I look at other 24 year olds as being healthier than me? Do I think I'm on the same plane as them? Where do you gauge that?
2. Do you often experience low energy levels or feel sluggish, yes or no?
3. Do you often have difficulty thinking clearly? Do you experience a lot of brain fog?
4. Do you often feel down and depressed?
5. Do you get sick more than once or twice a year? Are you known for having a cold or a flu?
6. Do you (if you are a lady), if you're a dude obviously skip this question. Ladies, do you experience PMS, irregular periods, fibroids or fibrocystic breast disease? Put a finger up if you do.
7. Do you experience sore, achy muscles for no apparent reason?
8. This one is a little personal. Do you often experience bad breath, stinky stools and bad B.O.?

So, there's 8 questions there, how many fingers do you have up? Guys, it would be 7 questions for you. If you have put your finger up to any one of these questions, you could need a liver detox. Crazy, I know. But the liver is so important and it's involved in so many different aspects of your life and your overall health and wellness that these questions may seem that they've been a little all over the place but they all are linked to your liver health and your detoxification pathways.

So now I want you to think about this. Think that it's not covid times and you're still going to work everyday; you're working a 12-14 hour shift a day, no breaks, no days off, back-to-back non-stop go go go work. You would get exhausted after a little while, right? And sooner or later your work is not going to be as good as it once was and your boss may get mad at you and say what's going on? But, overuse and overworked, you get tired naturally and you get exhausted. It's the same thing with your liver.

Now, your liver doesn't work only 12-14 hours, your liver works around the clock, but, just to keep it more relatable. But, your liver can get exhausted and kind of crap out and not work as efficiently as it should or as it could. And that's because we experience SO many toxins on a day to day basis. A lot of people don't realize how many toxins are out there. And I know I didn't know until a little while ago until I started looking into this, but it's scary. And I don't mean to put this episode out to scare you guys, but it's more to inform you guys. And a lot of these toxins unfortunately, we cannot get away from. So, we have to do something else and that something else may be stimulating liver function and strengthening your detox pathways, detoxifying, that kind of thing so that these toxins are not building up in your body and wreaking havoc.

We are a society of chronic illness and chronic disease and a lot of that is linked to the toxins we come in contact with every single day. So what even are these toxins? There's the typical ones that we think of like air pollution and smog, things that we can kind of see, like when it's foggy out. But there's also things that we can't see. Pesticides, for example. When a farmer uses that on his field, it still leaks up into the air and it transfers and carries for miles and miles and miles. We're breathing that in. Cars on the road - you may not live right on a main road but the gas fumes are not exclusive to just the road that you're driving on. They do carry into the space in front of your house anytime you walk outside.

And don't think that being indoors is any safer because there's a lot of toxins going on in your house. If you like to burn candles, for example, that's a huge source of toxins. If you have any furniture in your house whatsoever or any waterproof clothing, that stuff is also really high in toxins. So, what makes your jacket waterproof is a chemical toxin. What makes your furniture, your carpeting, your bedding, there's a lot of plastics in there and a lot of synthetic chemicals that, when exposed to overtime can wreak havoc on your body, especially if we're not detoxing them effectively and efficiently as we should.

So now do you kind of see why I used that work analogy to kind of get you to understand what your liver feels like? These toxins are everywhere and this even includes things like your food, especially if you're barbecuing meat or cooking with oils at high heat. That can create different toxins that again will buildup in your body. This also includes any food you eat, even natural, good for you foods.

Or even natural hormones that occur in your body. Take me for example. Estrogen is a naturally occurring hormone in my body that I need, but if my liver isn't processing it out quick enough or efficiently or effectively, that estrogen is going to buildup to unnatural levels in my body and that's when it's really going to cause trouble like the symptoms that I was experiencing.

A lot of us are dealing with chronic fatigue, chronic brain fog, illness, and we're susceptible to things and a lot of that has to do with our liver health and how we're processing out these toxins.

So, how exactly does our body even process out these toxins? What's the process? You have a toxin and there's phase I and phase II detoxification that goes on in your liver. In this episode I'm going to talk about phase I specifically and I will post another episode talking about phase II.

So in phase I, what happens is certain enzyme reactions happen where they're trying to metabolize that toxin. Now unfortunately because it's only breaking down these toxins halfway, they're usually actually more toxic than they were in the first place.

Why does our body do this? Well, when it becomes a half metabolite, it's easier for phase II to break it down. But, if your phase I detoxification pathway is functioning at 100% and your phase II is not, now you're left with even more dangerous floating through the body and that's what causes even more damage.

For those of you science nerds like me who may have looked into this, your phase I detoxification pathway includes a group of about 50-100 (I know, that's kind of a big range) enzymes classified as the cytochrome P450 pathway. This is one of the most commonly used enzyme processes to break down toxins in your body, especially if you're taking pharmaceutical drugs or any kind of over the counter thing. This enzyme group, the cytochrome P450, is usually what breaks them down, which is why if you're taking natural supplements, you need to talk to someone who is experienced in this field, because a lot of natural supplements also use the P450

pathway and can either make your over the counter meds or your prescription meds more or less effective. That's where it can become a little bit dangerous when you're mixing pharmaceuticals and natural supplements. This is not always the case, but it is something important that you should keep in mind.

Unfortunately, this cytochrome P450 enzyme pathway's effectiveness really depends on a lot of things. It depends on your genetics, your diet, and also your exposure level to toxins. If you work in a chemical plant, or if you work as a mechanic, let's use my dad as an example. You know, you work in a mechanic shop, you're chronically exposed to toxic chemicals and fumes and things like that. So again, that overloading factor, your liver and your P450 pathway may not be working as effectively or efficiently as it once was or as it should be.

It also depends on your genetics. If you guys ever wanted to, or had the time, or had the interest, I highly encourage you to get genetic testing done, if you're comfortable with it. If you are, I highly recommend you do so. I did and that's how I found out about my MTHFR gene mutation. And I've since come up with an action plan and have made positive changes in my life because I knew of it. And it was linked to so many different things in my life that I thought were all unrelated! But no, they were and I was not aware but MTHFR can also affect your liver enzyme levels, which, mine were a little bit high. If you saw my Instagram video, I did some bloodwork and found that one of my liver enzymes was slightly elevated and that could be due to low folate levels and that could be because of an MTHFR genetic mutation. So together my naturopath and I came up with an action plan and things are all good now. So again, if you could, if it's feasible, I definitely recommend you do some genetic testing to figure out if you have any little area that could use a little bit of help.

Now, I think what's another really cool and interesting fact to note about the P450 pathway is it does make these toxins water soluble. What that means is you can pee it out, in simple terms. One of our detox pathways is our kidneys and that's why you want to make sure your kidneys are functioning properly, you're drinking enough water each and every day, you're going to the bathroom enough times, and you want to look at the colour of your urine. If your urine is really dark yellow or even orange, that could be a sign that toxins are building up and you're not drinking enough water and excreting enough of those toxins quickly enough.

And just a quick little side note, you do have six detox organs which include your liver, your kidneys, your lungs, your lymph, your colon and your skin. But for this episode, we're specifically talking about the liver in conjunction with the kidneys and the colon.

How do we make sure that our phase I detoxification is working effectively? Usually this is not the pathway that most people have problems with. It's mostly phase II that people have issues with. But, just for sake of information. I'm going to share with you guys some different compounds or foods or things that either activate or inhibit your phase I detoxification just for you guys to keep in mind.

Things that activate phase I detoxification and tell it to 'turn on', whether they are good for you or bad for you include: alcohol, nicotine, steroids, exhaust fumes, paint fumes, pesticides, so those

are the things that we want to avoid, but these are the things that need that detoxification response because they are so toxic for you. They're kind of like, "hey, I'm a toxin!" and your liver is like "whoa, need to get you out of me!" That's what's going on with those.

Some things that are good for you that promote that proper detoxification include brassica vegetables (or cruciferous veggies which come from the brassicaceae family. Charcoal broiled meat. You know when you barbecue and you get that nice blackened crust kind of thing? That's not good for you. A high protein diet, especially animal proteins. These are harder for your liver to breakdown, so I encourage you guys to, you know, if you don't want to give up meat entirely, that's totally fine! But, try to get some of your protein, or more than you currently are from plants. It's a lot easier for your body to breakdown and it's still protein. Some of the other things include oranges and tangerines, vitamin B3 (niacin), vitamin B1 (thiamine), and vitamin C.

So now, the following inhibit phase I, meaning it turns down the effectiveness of your phase I pathways. This includes benzodiazepines, antihistamines - so you guys who are chronic allergy medication users like I once was. Now that I found that out, I am going to start dealing with my allergies a lot more often and not running to the allergy meds right away. Some other things that inhibit phase I detoxification include stomach ulcer medications, aging - which is a natural thing that we can unfortunately not avoid, toxins from bad bacteria in the gut. And guys, if you listened to one of my previous episodes, you know that the gut is probably one of the most, if not the most important organ or system in your body. About 70-80% of your immune system is in your gut. And here we see that bad gut bacteria or an overgrowth of bad gut bacteria can lead to a decreased function of your phase I detoxification pathway. Some other things that also inhibit you phase I pathway include grapefruit juice, curcumin - which is the active component in turmeric, and red chilli pepper.

Now, this is not so bad, especially curcumin, because what we're going to be talking about later in another episode and why turmeric is still so good for you. It actually ramps up your phase II and slows down your phase I. It kind of gives your phase II detoxification a little bit of a break to catch up and it kind of gets your phase I to slow down a little bit to say "hey, buddy down the road needs a little bit more time and a little bit more help so we need to pump the breaks a little bit and slow down because we're working a little too well and we need buddy to catch up." So that's what's going on, which is why it's still really good for you.

So you guys, I know I threw a lot of information at you and like I said this is only part 1 of the detoxification episode. I didn't want to put too much in here for you guys to overwhelm you so I am going to be coming out with a part II where we discuss phase II detoxification in the body. And like I said, this is the part that most people have trouble with.

So if you liked this episode, please be sure to leave a comment, leave a like on this episode, let me know your thoughts. Reach out to me on Instagram, send me an email. I love to hear your thoughts or if you have any other questions. I will be leaving some studies in the show notes

which you can access on my website [rosatinutrition.ca](http://rosatinutrition.ca). There's a little podcast tab, you can find this exact episode plus all the show notes along with it.

Once again thank you so much for listening to this podcast episode, it has been an absolute blast! And I hope you guys learned something from today. I hope you guys start to take your liver health a little bit more seriously. But, until next time this has been your host Alicia of Rosati Nutrition and I can't wait to talk to you in the next episode!