Dr. Jay Davidson:

This is a chart, just an outline of the liver, which is essentially the detox lifeline in the body a lot of people talk about. Obviously, there's many organs that involve detoxification, the kidneys, and the bowels of excretion, people can say the skin and things, but the liver really seems like it's the big thing with phase 1 and phase 2 detox. So, phase 1 is essentially the preparation phase with the cytochrome P450 enzymes and oxidation, and then takes it to phase 2 where it conjugates and this is where a lot of the fancy words that people probably heard before, glucuronidation, like the whole glutathione and methylation and acetylation and sulfation and things happen.

But the point of why I want to bring this up, right. So it's taking a fat-soluble toxin and making it water-soluble, is generally from a clinical standpoint the weak link in somebody's health is not necessarily phase 1 or phase 2, it's what's called phase 3. Phase 3 is the elimination, which primarily 80% of it is preferred to go down the bile. So the bile is made by the liver. It's also made in the bile ducts and then toxins are processed through phase 1, phase 2 and the liver, as you see, but then it's got to go somewhere. If it can't go anywhere, that's usually the weak link in somebody's health journey, is things aren't flowing. They're not draining. So it's not necessarily detox is the problem, but it's actually the drainage that can often be the problem that can then back up.

So if phase 2's got nowhere to go to dump it into the bile, then it gets backed up. If phase 2 gets backed up, guess what? Phase 1 gets backed up. If phase 1 and 2 are backed up, then you're not detoxifying. It's not necessarily because there's a problem always with phase 1 and phase 2, oftentimes it's actually the bile excretion in the phase 3 of the liver is usually the weak point.

So, as you look at the bile, it basically is almost like branches of a tree. Really small and then they just get into bigger trunks before it basically just combines with the pancreatic duct. Then that dumps into the small intestine and then that's where those toxins get in the bowels. And then hopefully you poop them out.

But with this, it's the movement. The movement is key. So as I look at what are key takeaways with the liver and with the bile movement is bile is released to assist in digestion of fats and neutralize acidity. So if you have a lack of stomach acid, meaning I'm not producing enough, oftentimes it's actually because of a lack of bile.

So if there's not enough stomach acid, it's typically because there's not actually enough bile movement coming in to neutralize the acidity, so the body naturally puts less stomach acid. So instead of trying to increase stomach acid, always with digestion the functional medicine approach is really going to the next stage of getting the bile flowing and moving will actually help the stomach acid. And when you have low amounts of stomach acid, that's poor digestion. And it's also a gateway just for microorganisms too, where if you can't break that down.

Then there's some pretty cool research on what's part of slowing bile flow down. So, the technical term for slow bile flow is cholestasis. So when you see estrogen induced cholestasis, basically what that means is that high amounts of estrogen, being estrogen dominant, actually has been shown to slow bile movement down. Now what's interesting with this is your preferred method of actually excreting estrogen is through the bile, but if you have too much, it can actually clog up the bile. So keeping the bile moving can be very beneficial with helping with hormones. So anybody that's struggling with hormone imbalances and estrogen dominance is a pretty common and major thing that's going on right now.

I mentioned glyphosate earlier, too. Glyphosate is sprayed all over the place. It's in rainwater, it's in newborn babies. They're finding it pretty much everywhere. CDC actually, I should have put this in there, CDC, I think it was about three weeks ago, did a study and they just released that. They looked at almost 3,000 individuals and there was a third of them, or a quarter of them, where I think were like kid ages too. And 80% of the people that they survey, and they try to pick a wide geographic area to cover what would be

the mass population percent, so it wasn't just a select area. But 80% of them had glyphosate in their urine and that was just within the last few weeks.

But this paper came out in 2013, and just showing that glyphosate impairs bile acid synthesis and secretion, basically shutting down phase 1. So, when you're exposed to glyphosate, we obviously want to detox and detox it through the liver and process it out, but glyphosate actually slows that whole process down and actually impairs the bile movement. So it not only slows phase 1 down, but it also slows the excretion down too.

And you know gallbladders, which the surgical name for removal of a gallbladder is cholecystectomy. That's what you see toward the bottom of the last bullet point. But on an average, there's about three-quarters of a million individuals per year getting a gallbladder out, but here's what I thought was interesting with this research. They said up to 15% of the population of the United States has asymptomatic gallstones, meaning you have no symptoms. You have no idea that there's gallstones in the bile. Gallstones in the bile happen when there's a lack of flow, a lack of movement.

So motion is life. Movement in that bile is really important and they said 20 to 25 million Americans have gallstones and three-quarters of a million undergo a gallbladder removal. I can tell you that Advanced TUDCA, taking TUDCA. And TUDCA is an acronym, so T-U-D-C-A. Everybody pretty much says TUDCA because the long name, which is tauroursodeoxycholic acid is just a mouthful to say, right? Tauroursodeoxycholic acid. So we always just say, "TUDCA." But it's basically helping to open up the liver and bile ducts.

I put a picture here of the drainage funnel. The thing to understand is there's a difference between drainage and detoxification. Detox is, "I'm going to grab on to chemicals and pull them out of the body." Drainage are the normal pathways that just need to flow and move.

The base of that funnel you see at the bottom there, is the colon. That means if you're not pooping, if you're trying to detox at the cellular level or the mitochondrial level, or try to flush your lymph or flush your liver. If the colon's not moving, it's backing everything up. It's basically clogging up that sink and that's when reactions happen. That's where herxing and having symptoms really will occur.

So one of the most common places that I see clinically to actually be clogged up in this funnel is the liver and bile duct system. When that's clogged up and/or the colon and it backs everything else up, basically from a literature standpoint, there's this thing called the blood-bile barrier where instead of the toxin byproducts dumping into the bile and going into the small intestine, large intestine, and pooping them out, essentially it gets sent into the blood circulation. When it gets sent in the blood circulation that's when people develop rashes and itchiness in the skin. That's when kidney problems occur, lungs. In the literature they call it endothelial damage of the kidneys and the lungs. It's basically just because the drainage pathways are clogged.

So, if your goal in listening today is like, "Oh, I want to really move my lymphatic system." The key thing to understand is that the liver and bile ducts have to be moving, and the colon has to be moving, in order for the lymphatic system to drain and move. We just need to understand that there's multiple pieces with the body. Advanced TUDCA is one of the strongest things, really, to open up the bile flow.

I pulled some research and there's definitely, I mean, just we actually have to update our document. We have a 26-page PDF document and there's like 194 references. We actually have to add to it. But I just cherry picked some because obviously, 194 different citations is a little overwhelming. But when you're looking at TUDCA, it actually helped you to excrete bile.

So bile will oftentimes get recycled because it's expensive energy-wise for the body to make. So when you take TUDCA, it actually helps you to excrete more to get rid of those toxins, to flush them out.

The second one there. TUDCA stimulates bile flow, increases by 250%. Again, motion is life. You want to keep movement there.

TUDCA also helps to improve actually the quality of it. So it's not just making more bile, it's actually making better quality and improving the flow of it.

Then the bottom one there just talks about restoring protein folding, cell apoptosis, which is quite big, especially in the cancer world.

Looking at the brain category. This is really cool research from 2020. TUDCA shows a similar effect to intermittent fasting in terms of improving cognitive function. So if you intermittent fast because you want to biohack and turn the brain on, you can actually take TUDCA and it'll show a similar effect of intermittent fasting as far as cognitive function, even if you do eat.

If you have a stroke, well, this is more likely to actually protect it, but if you have one, it's going to reduce the damage by 50%. That's the second one there.

And then MS, amazing. In that category, same thing with Parkinson's. So it's obviously very, very awesome. And our body naturally makes TUDCA. It's a secondary bile acid, but it's made by the microbiome in the gut. And most people from a health perspective, the gut is very not well and there's not good bacteria. When you're not well, you don't make TUDCA. TUDCA is an anti-inflammatory. It actually protects a smooth endoplasmic reticulum, which is why you see research all over the place here from cardiovascular and the cancer world to liver. I'll show you diabetes in a second. It's just really beneficial, but most times when you're not well, you're actually not making this. This is why it's such a helpful thing as a supplement to get it into your body.

TUDCA sharply reduces the number of cells that die during a heart attack. So if you're taking that and unfortunately have a heart attack, it'll prevent damage from that.

The last one there, TUDCA when given after heart attack has been shown to shut down enzymes that cause improper protein folding, minimize scaring, and helped to ease less myocardial dysfunction. So heart dysfunction is what that's showing.

And then just some more research on diabetes. Reports improving hyperglycemia, which is basically high blood sugar associated with type 1 and type 2 diabetes.

TUDCA, the second one there, TUDCA improved diabetes induced severe albuminuria and podocyte injury in the kidneys. So it's very helpful in the kidneys with high blood sugar. TUDCA also has been found, the last one, to help regulate fatty acid breakdown and help regulate insulin resistance.

So, it's pretty amazing when you take some time if you go on PubMed or just do some deep diving in TUDCA, which is, you can see on the screen there, tauroursodeoxycholic acid, in the parentheses. It's pretty amazing, the research that's out there. It's one of my favorites, used it for years. I pretty much brought it to the functional medicine world probably seven years ago. It's a water-soluble bile acid and it really helps to move phase 3 liver. So I am putting it in here with the liver because that's its primary mode, but it does so many other things.

Now, when you're looking at the ingredients a couple things that we mixed in here, N-acetyl cysteine, melatonin, fulvic acid. So, the fulvic acid is the carbon technology along with when you're looking at the other ingredients, it says polysaccharides. That's part of the carbon technology.

Melatonin, when you hear about melatonin, you think, "Oh, this for before bed. It's to fall asleep." No, melatonin here is actually used as a driver. So it won't make anybody fall asleep. The way that we have it connected to this TUDCA molecule is that it's basically used as a driver. Melatonin is essentially one of the strongest antioxidants out there. That's why it's so beneficial to have awesome sleep because it's when your body heals and restores and all that.

But when you're taking Advanced TUDCA with the melatonin, it's not going to make you tired. It's used as a driver. And melatonin can actually get down into the mitochondrial level. So that's really the reason that we're using that and then N-acetyl cysteine is just a really good combination with the TUDCA to really help that liver side and support.

Michael Roesslein:

Yeah, thank you. I would love to see that PDF. So I'll hit up your... I got somebody on your side, I'm going to find that because I'd love to read more about TUDCA. But I recently wrote a pretty detailed article on TUDCA and I thought I was going to be focused primarily on bile, the liver, detoxification and you'd posted a few links there for brain health and cardiovascular. It's no joke. This whole presentation could have been on research around TUDCA and different body systems and different benefits and different things that I couldn't even honestly figure out the mechanisms on how some of them are related, but it is a powerful systemic addition to anybody's protocol.

It's something I've been taking consistently for about five years probably. I switched to yours a couple years ago and we used it also in my wife's protocol because rice, she's reactive to, and every other product had rice in it. The TUDCA product that we had found before, and so I was also skeptical of the melatonin because I thought it would make me sleepy and it definitely does not.

My non-alcoholic fatty liver was diagnosed by ultrasound. So this was not going by ALT and AST numbers. It was about 18 months from someone telling me, "You have mild to moderate fatty liver," to, "Your liver looks awesome." I did a couple other things, but this was twice a day part of my own regimen through that time. I have also noticed the cognitive brain clarity type... I don't want to call it symptoms, effects, positive effects from it as well. So yeah, it's really pretty incredible stuff.

Dr. Jay Davidson:

Yeah. It's really an amazing formula. What I believe really why we get such a huge systemic positive response is the smooth endoplasmic reticulum that's inside the cell protecting that. Because that's in many, many cells within the body. So I think that's the primary mechanism of why it's so beneficial throughout the body.

It is a strong product, meaning it's going to open up the bile. When I say strong, most people with chronic illness, the bile is not flowing. The analogy that I love to give is, if you have a fire hydrant and you have a hose hooked up to it and the hose has been sitting out in a hot place, let's say where I'm at, Puerto Rico, and it's been outside for a few years. Well, that hose is going to not be the most flexible. It's probably going to shrink a little bit. If I just crank the fire hydrant on, that hose is probably not going to handle it. That's the analogy of many people that are struggling with health issues have poor bile duct system, which is essentially kind of the hose that's been sitting out in the sunshine.

So, a little bit goes a long ways. I always recommend to actually take this with food, especially when you start off. The standard dose, and you can see, is one capsule twice a day. I don't recommend to open the capsule up. Nothing is harmful about it if it's just mixed in water, but TUDCA is the most bitter substance you will probably ever taste, which is why it's so beneficial for the liver. It's almost unpalatable. The one thing that I have seen parents do is they'll slice strawberries and then sprinkle it on and that's for kids, that'll help cut some of that bitterness and make it palatable-

Michael Roesslein:

It's no joke. I've tried it.

Dr. Jay Davidson:

Yeah. Yeah. I recommend leave it in the capsule. So, one cap twice a day there and if you're sensitive, just once with a meal, once a day. As far as side effects, potentially just too effective right away. So, meaning that it's kind of opening that fire hydrant up. So again, a little bit goes a long ways.

But it is, I mean, when you look at literature, I just did a deep dive. Even on all the ingredients with pregnancy, which is obviously a very cautious time. All the ingredients are safe, even for pregnancy.

It's just the fact that opening the bile up when somebody's never maybe had it moving great and they're pregnant. It's like, well, and I would always err on the side of being cautious. All the literature says it's fine and whatnot. Same thing with the BioToxin Binder. It'd be fine. But I always recommend being a lot more conservative in the pregnancy side of things. Less is more, especially in that case.

It opens pathways up really well. So I think that's really the only side effects. I mean, it is very protective, very safe, but it's just an effective product.