The REAL Reasons Your Heart and BRAIN Need TAURINE Transcript

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Why taurine matters for the brain and heart

All right, in another video I talked All right, in another video I talked about the amino acid taurine about the amino acid taurine and we went through all of its sort of and we went through all of its sort of grand big picture activities and what it grand big picture activities and what it does and all that. And then I had does and all that. And then I had mentioned that because it has so much mentioned that because it has so much activity in highly metabolic tissues activity in highly metabolic tissues like the heart and the brain that we like the heart and the brain that we would get into that in its own video and would get into that in its own video and this is that video. So let's break down this is that video. So let's break down why taurine would be so important to why taurine would be so important to these critical structures. Obviously all these critical structures. Obviously all your organs are important, but your your organs are important, but your heart and your brain are two of the most heart and your brain are two of the most important things for keeping you here on important things for keeping you here on the planet at least primarily. So let's the planet at least primarily.

Key functions of taurine in the body

So let's talk about taurine in the heart and the talk about taurine in the heart and the brain. So the first thing is just a brain. So the first thing is just a quick little review around taurine. It quick little review around taurine. It is a amino acid and normally amino acids is a amino acid and normally amino acids are used in the synthesis of proteins.

are used in the synthesis of proteins. It's an indirect protein synthesis It's an indirect protein synthesis trigger, but also taurine does a number trigger, but also taurine does a number of other really important things and so of other really important things and so it's involved in detoxification it's involved in detoxification of a number of things. It's involved in of a number of things. It's involved in protection of the mitochondria protection of the mitochondria and the cell membranes. It's involved in and the cell membranes. It's involved in antioxidant support. It's involved in antioxidant support. It's involved in immune balance, immune defense activity, immune balance, immune defense activity, but also really sort of but also really sort of immunomodulation.

immunomodulation. immunomodulation. It's involved in the maintenance and It's involved in the maintenance and repair of certain types of repair of certain types of neurotransmitter channels, things of neurotransmitter channels, things of that nature, receptors, etc. And then that nature, receptors, etc. And then also it has function as an osmolite also it has function as an osmolite which we'll get into more. So those are which we'll get into more. So those are the big reasons that taurine is so the big reasons that taurine is so important and why would when we look at important and why would when we look at tissue like heart and brain tissue find tissue like heart and brain tissue find a lot of concentration of taurine in a lot of concentration of taurine in heart and brain tissue? Well, one of the heart and brain tissue? Well, one of the reasons is that all of these things I reasons is that all of these things I just mentioned and a number of others just mentioned and a number of others are really important in excitable are really important in excitable tissue. So what's an excitable tissue?

tissue. So what's an excitable tissue?

Taurineu2019s role in heart health and detox

It's anything that has the potential to It's anything that has the potential to generate an action potential which generate an action potential which creates nerve or neuromuscular activity.

creates nerve or neuromuscular activity. Well, that's your whole brain, Well, that's your whole brain, your whole nervous system really, and your whole nervous system really, and your heart because remember your heart your heart because remember your heart has to have neuromuscular activity to has to have neuromuscular activity to keep beating cuz it doesn't get a break.

keep beating cuz it doesn't get a break. It has beat all the time, right? So yes, It has beat all the time, right? So yes, your skeletal muscle that moves your your skeletal muscle that moves your body around is important also, but it body around is important also, but it gets a break sometimes. Your heart never gets a break sometimes. Your heart never gets a break. Heart and brain going to gets a break. Heart and brain going to use a lot of taurine. So let's go use a lot of taurine. So let's go through some of the things that the through some of the things that the heart is especially going to appreciate heart is especially going to appreciate about taurine. One of the things is that about taurine. One of the things is that your heart can be more sensitive to your heart can be more sensitive to certain types of toxic exposures and we certain types of toxic exposures and we normally hear about your heart and toxic normally hear about your heart and toxic exposures with, you know, certain types exposures with, you know, certain types of drugs that are cardiotoxic and stuff of drugs that are cardiotoxic and stuff like that. But also uh xenobiotic like that. But also uh xenobiotic substances, so things that mimic you substances, so things that mimic you know, hormones and other stuff, but know, hormones and other stuff, but they're really, you know, bad chemicals.

they're really, you know, bad chemicals. Those actually can be very damaging to Those actually can be very damaging to the heart and can be assisted in their the heart and can be assisted in their removal or processing by taurine. It's removal or processing by taurine. It's very important to them. The other thing very important to them. The other thing which can be toxic to your heart can be which can be toxic to your heart can be the buildup of aldehydes and we're the buildup of aldehydes and we're always making aldehydes in our body and always making aldehydes in our body and which is an intermediate chemical, which is an intermediate chemical, but we don't want to keep any around or but we don't want to keep any around or we don't want to keep a lot around. So we don't want to keep a lot around. So our body has these aldehyde enzymes to our body has these aldehyde enzymes to help get rid of the aldehydes. Well, it help get rid of the aldehydes. Well, it turns out in addition to the other turns out in addition to the other things that support those, taurine is things that support those, taurine is very helpful as well. So the lower the very helpful as well. So the lower the aldehyde levels, the less irritation to aldehyde levels, the less irritation to the cardiovascular system among other the cardiovascular system among other things. Then there's something that's things. Then there's something that's incredibly important to the overall incredibly important to the overall support of your cardiovascular system support of your cardiovascular system and that is the antioxidant support. The and that is the antioxidant support. The cardiovascular system and the heart cardiovascular system and the heart proper are very, very sensitive to redox proper are very, very sensitive to redox changes, free radicals, all of those changes, free radicals, all of those sorts of nasty things. Taurine, it turns sorts of nasty things.

Antioxidant and mitochondrial protection

Taurine, it turns out, is a very important part of the out, is a very important part of the defense against those. Another area defense against those. Another area where your heart can be greatly where your heart can be greatly benefited is protection around the cell benefited is protection around the cell membranes and the mitochondria from membranes and the mitochondria from taurine directly. So that means that the taurine directly. So that means that the cell membranes are always in contact cell membranes are always in contact with your blood because they have to with your blood because they have to transmit nutrients and other stuff in transmit nutrients and other stuff in and out. And so if you have a lot of and out. And so if you have a lot of junk around or you're just beating them junk around or you're just beating them up or it's a highly used and high demand up or it's a highly used and high demand tissue like your heart cells are, tissue like your heart cells are, they're just going to get a lot more they're just going to get a lot more wear and tear. Well, it turns out that wear and tear. Well, it turns out that the taurine can help the membrane and the taurine can help the membrane and the mitochondria to stay in really good the mitochondria to stay in really good shape. And then finally, a very shape. And then finally, a very mechanical but super important thing is mechanical but super important thing is its use as an osmolite. Now this will its use as an osmolite. Now this will translate also over to the brain, but translate also over to the brain, but osmolite means that it is a gatekeeper osmolite means that it is a gatekeeper to allow the ions that create the action to allow the ions that create the action potentials, the excitable tissue potentials, the excitable tissue activity activity activity to go acrossed onto first the proper to go acrossed onto first the proper side of the cell membrane and then to side of the cell membrane and then to cross over during the action potential cross over during the action potential when we're trying to create a heartbeat, when we're trying to create a heartbeat, let's say for example. It's important let's say for example.

Osmolite function and heart rhythm support

It's important that we have the ions which are things that we have the ions which are things like magnesium, calcium, sodium, like magnesium, calcium, sodium, potassium, chloride, but it's also very potassium, chloride, but it's also very important that they stay on the proper important that they stay on the proper side of the cell membrane and they only side of the cell membrane and they only cross over when we want to trigger an cross over when we want to trigger an action potential. Well, it turns out for action potential. Well, it turns out for all tissues, but your heart does this a all tissues, but your heart does this a lot, that the movement is gate capped or lot, that the movement is gate capped or regulated by osmolite activity. Taurine regulated by osmolite activity. Taurine is one of your primary osmolite is one of your primary osmolite stabilizers which is very, very stabilizers which is very, very important. So we use a lot of taurine in important. So we use a lot of taurine in cardiac care. We use a lot in damaged cardiac care. We use a lot in damaged cardiac muscle. We use a lot in things cardiac muscle. We use a lot in things like dysrhythmias, like dysrhythmias, etc. And it is extremely useful as a etc. And it is extremely useful as a supplement or an add-on in those areas.

supplement or an add-on in those areas. What about the brain? Well, essentially What about the brain?

How taurine supports the brain

Well, essentially the brain is going to be very similar to the brain is going to be very similar to what I just said about the heart, but what I just said about the heart, but there's a couple of things that are there's a couple of things that are maybe just done a little bit differently maybe just done a little bit differently for the brain. So obviously the for the brain. So obviously the functions around protection of the functions around protection of the mitochondria and the cell membrane, the mitochondria and the cell membrane, the antioxidant functions we talked about, antioxidant functions we talked about, very important. Detoxification kind of very important. Detoxification kind of the same except your brain is extremely the same except your brain is extremely sensitive not only to xenobiotics, but sensitive not only to xenobiotics, but also the aldehydes.

also the aldehydes. And because taurine helps with aldehyde And because taurine helps with aldehyde detoxification, aldehydes are a detoxification, aldehydes are a neurotoxin. They're very bad for your neurotoxin. They're very bad for your brain. And so if you've ever had brain. And so if you've ever had exposure to aldehyde excess, symptoms exposure to aldehyde excess, symptoms like a really bad hangover for example, like a really bad hangover for example, you are neurotoxic.

you are neurotoxic. Turns out that the brain uses taurine to Turns out that the brain uses taurine to help get rid of aldehydes along with a help get rid of aldehydes along with a number of other nutrients that it needs number of other nutrients that it needs for that. So detoxifying the brain from for that. So detoxifying the brain from aldehydes, big, big thing. Antioxidant aldehydes, big, big thing.

Brain detox and aldehyde protection

Antioxidant support like I said, the membrane support like I said, the membrane support kind of the same as what we support kind of the same as what we talked about in the heart. The osmolite talked about in the heart. The osmolite activity, kind of the same with the activity, kind of the same with the heart, but you just have a lot uh more heart, but you just have a lot uh more variety of it going on because the variety of it going on because the different neurological pathways are all different neurological pathways are all triggering different types of action triggering different types of action potentials and signals and you have potentials and signals and you have different patterns of these signaling different patterns of these signaling going on. So as opposed to the heart going on. So as opposed to the heart where you've got sort of one thing you where you've got sort of one thing you want to do and propagate the action want to do and propagate the action potentials through the heart so you get potentials through the heart so you get a nice cardiac cycle out of it and you a nice cardiac cycle out of it and you pump your blood around, very, very pump your blood around, very, very important. In the brain you have important. In the brain you have billions of different pathways using the billions of different pathways using the same mechanics of moving the sodium, same mechanics of moving the sodium, potassium, calcium, magnesium, and potassium, calcium,

magnesium, and chloride around and so that they do it chloride around and so that they do it in the proper manner and you're not in the proper manner and you're not overdoing it or underdoing it. Another overdoing it or underdoing it.

Neurotransmitters, GABA, and calming effects

Another thing beyond osmolite activity for the thing beyond osmolite activity for the brain that's super important is the brain that's super important is the maintenance of chloride channels. So maintenance of chloride channels. So normally when you're making action normally when you're making action potential for your skeletal muscle or potential for your skeletal muscle or your heart muscle or anywhere, you're your heart muscle or anywhere, you're not moving chloride around. You're not moving chloride around. You're putting chloride on the outside of the putting chloride on the outside of the cell and you leave it there. In the cell and you leave it there. In the brain especially, we have specific brain especially, we have specific chloride channel openings to slow down chloride channel openings to slow down neurological activity. So there are two neurological activity. So there are two major and some minor types of chloride major and some minor types of chloride channel activators. There's the GABA channel activators. There's the GABA complex, mostly GABA A, and then there complex, mostly GABA A, and then there is a glycine channel which is separate, is a glycine channel which is separate, but it does the same thing. It opens a but it does the same thing. It opens a chloride channel. So if I always leave chloride channel. So if I always leave chloride on the outside of the cell chloride on the outside of the cell under normal conditions of heart muscle under normal conditions of heart muscle or brain or whatever and suddenly I open or brain or whatever and suddenly I open a chloride channel like in my brain, a chloride channel like in my brain, what am I doing? I'm going to calm down what am I doing? I'm going to calm down my brain. Well, it turns out taurine is my brain. Well, it turns out taurine is exceptionally needed by the GABA A exceptionally needed by the GABA A receptors which are your primary heavy receptors which are your primary heavy hitting chloride channels. Now, what hitting chloride channels. Now, what substances go and hit our chloride substances go and hit our chloride channels that we use in psychiatry or channels that we use in psychiatry or recreationally to slow down the brain, recreationally to slow down the brain, calm it down? Barbiturate type drugs, calm it down? Barbiturate type drugs, sedatives calm it down, benzodiazepines sedatives calm it down, benzodiazepines like Valium, etc.

like Valium, etc. Non-benzodiazepine Non-benzodiazepine Non-benzodiazepine GABA affecting sleep aids like Ambien, GABA affecting sleep aids like Ambien, stuff like that. Alcohol also hits the stuff like that. Alcohol also hits the chloride channels. Upside, if you're chloride channels. Upside, if you're having a seizure, we give you diazepam, having a seizure, we give you diazepam, it can stop seizure in many cases. If it can stop seizure in many cases. If you can't sleep, give you, you know, you can't sleep, give you, you know, Ambien or something, you'll go to sleep.

Ambien or something, you'll go to sleep. If I keep banging on the GABA A channels If I keep banging on the GABA A channels or your chloride channels, what's going or your chloride channels, what's going to be a downside to that? Well, I am to be a downside to that? Well, I am going to wind up down regulating or going to wind up down regulating or injuring those. So, people have chronic injuring those. So, people have chronic alcohol ingestion, people have chronic alcohol ingestion, people have chronic benzodiazepine, barbiturates, whatever, benzodiazepine, barbiturates, whatever, they're going to have down-regulated they're going to have down-regulated GABA-A channels. Well, it turns out that GABA-A channels. Well, it turns out that part of the rehabilitation and part of the rehabilitation and maintenance can be the addition of maintenance can be the addition of taurine to help out. So, under normal taurine to help out. So, under normal conditions without drugs or substances, conditions without drugs or substances, it's helping the GABA channels, etc.

it's helping the GABA channels, etc. Under rehab conditions, it's very, very Under rehab conditions, it's very, very helpful as well. All right. Well, hope helpful as well. All right.

Final insights on taurine benefits

Well, hope that answers all the questions that we that answers all the questions that we got at least around brain and heart. And got at least around brain and heart. And we have other content around taurine and we have other content around taurine and brain, heart, other stuff that you can brain, heart, other stuff that you can look up. Thank

you, you subscribers. We look up. Thank you, you subscribers. We love the community that we built. It's a love the community that we built. It's a good number of people. I'll put some good number of people. I'll put some other videos up for you to look at here, other videos up for you to look at here, and I'll see you guys all in the next and I'll see you guys all in the next video.