

**Jonathan:** Welcome, everyone. Jonathan Hunsaker here with Organixx, and I'm joined by my good friend, Dr. Daniel Nuzum. Thanks for joining us today.

**Dr. Nuzum:** Glad to be here.

**Jonathan:** We're shooting this video for you today because we get a lot of comments on YouTube, we get a lot of emails talking about aging, how to slow the process of aging, how to reverse aging, what is aging. And so, we're just going to do our best to educate you in this video and several more to come. So, Doc, let's start off with what is aging?

**Dr. Nuzum:** Aging is a process. It's a process of things breaking down, rotting, or deteriorating, or degenerating. It's something that—anything alive, anything living, is subject to this process. We have things that we are doing that are either contributing to the process, fueling that flame, or slowing the process down.

We have five things. So, we have digestive health, we have circulatory health, we have neurologic health, we have inflammation, and we have hormonal health.

The first factor is the digestive system. Digestion. Absorption of nutrients and inflammation in the gut. We go back 2,500 years ago, Hippocrates, the father of modern medicine, said that "All chronic disease begins in the gut." That was 2,500 years ago when the food was clean, the water was clean. There was only organic food, there wasn't anything other than that.

If gut health determined whether someone had a chronic disease or not 2,500 years ago, that's even more true today with GMO foods, chronic antibiotic use, preservatives in the food. All these things destroy our gut health. So, just from that standpoint, chronic disease begins in the gut, number one.

So, how does that happen is really the question. First off is production of stomach acid. The less stomach acid someone produces, the more chronic disease they'll have. We actually do a resting pH test of the stomach. And the stomach should have a resting pH of 4 on the pH scale, so it should be pretty acidic, right? The higher the pH of the stomach, the more alkaline the stomach is at rest, the more autoimmune disorders the person will have.

**Jonathan:** You read online, you always hear people talking about the more alkaline you are, the less that disease can live in the body.

**Dr. Nuzum:** Correct.

**Jonathan:** Right?

**Dr. Nuzum:** Correct. This is true.

**Jonathan:** Okay.

**Dr. Nuzum:** Let me explain this, though. If you alkalize your gut, you'll acidify your tissues. The reverse happens though, if you acidify your gut, drink apple cider vinegar, that helps your gut, right? Well, apple cider vinegar has a pH of like 2.5. So, it's way, way low on the pH scale and it acidifies the gut. If the gut's acidic, the tissues will be alkaline. If you take a bunch of calcium, which is a 14 pH, and alkalize the gut, the tissues are going to become acidic.

**Jonathan:** So, how does that—and I might be going a little bit on a tangent here, but how does that work when it comes to like drinking alkaline water and you're trying to consume alkaline foods? Is that counterproductive for the gut?

**Dr. Nuzum:** The high pH waters, where they've added hydrogen to the water, those are different. Those, they add hydrogen to your system. So, their pH dissipates very quickly after you consume it, so the body absorbs that hydrogen real quickly. Alkaline waters where they're high in magnesium or calcium, or potassium, those, consuming those too often can do damage because they bring the pH of the gut up too high and then it doesn't operate properly.

On the flip side, alkalizing foods, here's an interesting thing, so you—a cucumber is a very, very alkalizing food. If you test the pH of a cucumber, it's 4.5, which is extremely acidic. Again, when you consume that low pH green food, that acidifies the gut. Adjusts the gut pH down lower than it—7 is neutral. If you can get it lower on the pH scale, your digestive processes operate better. If you get up close to 7 or you get past 7, it pretty much shuts down your digestive processes.

Eating, like green foods, green foods are notorious, they're the alkalizing food. We have OrganiGreens. Super alkalizing food, right? These types of things are excellent for adjusting the gut pH because we eat lots of breads, we eat lots of meats and things like that, which have high pHs. When we go and look at stomach acid production, number one. We have to do something to increase stomach acid production.

That's where proper digestion starts is the acids in the—the hydrochloric acid production in the stomach. Then we move into the small intestine and we have the production of enzymes from the pancreas.

So, pancreatic enzyme production. As we age, we kind of run out of—our account of pancreatic enzymes runs low if we don't replenish it. And so, it's kind of like a bank account, and three times a day we write a check, if we don't do something to replenish those enzymes somehow, as we age, we run out.

And so, production of pancreatic enzymes from the pancreas fails as we get older, which is why people tend to have more food allergies the older and older they get, because there's fewer and fewer foods that they can break down because their pancreas isn't producing the enzymes that they're supposed to produce.

The third thing in the gut that is—directly causes a lot of the inflammatory processes that speed up this whole degenerative cycle, is a thing called dysbiosis. And dysbiosis is an imbalance in the microbes in the gut. So, you get too many sugar-eating microbes, or anaerobic microbes, and not enough of the air-breathing or aerobic microbes.

We want more of the aerobic microbes. The aerobic microbes produce the lactic acid in our gut that keeps our gut pH where it should be. If we have enough of those microbes in our gut, they will defend the gut as their territory. They'll keep the pH where it should be, they'll keep inflammation down, they'll fight off other bugs.

If we don't have enough of those good air-breathing aerobic microbes in our gut, or probiotic microbes in our gut, we end up with what's called *dysbiosis*. And dysbiosis leads to leaky gut, it leads to SIBO, it leads to irritable bowel syndrome. And all of those things lead to malnutrition. So, when you have all those things going on, you can't absorb the nutrients that you're taking in.

So, you end up, on a cellular level, starving. You can't rebuild a broken-down cell without raw material. It has to have the nuts and bolts, the boards, the nails, the plywood. If we're going to rebuild a cell, we need all the components for that. And so, if your digestive system can't absorb those components, you can't produce healthy cells. So, the degenerative process just takes a nosedive. Okay, so that's number one, digestive health.

Our next component is actually circulatory health, so our heart, our cardiovascular system. We have production of nitric oxide. Nitric oxide causes dilation of the blood vessels. So, if we get up and we run out back, that extra activity not only should stimulate our heart to produce more pumps per minute, but also, our blood vessels should respond by expanding so more blood can flow through the vessels. And then that can support more activity, right?

Well, that capacity for the blood vessels to open up and to expand and then contract, and so on and so forth, is dependent on the amount of nitric oxide that our blood vessels produce. So, it's something that we tend to produce less of as we get older. So, that's something to correct, number one.

Number two, hardening of the arteries and plugging up of the blood vessels. That's another major factor. Healing is proportionate to blood flow. Period. So, if you cut your finger and you have good blood flow to your finger, chances are it will heal properly. If you have poor blood flow to your finger, the chances are it's not going to heal properly.

So, a high sugar diet, lots of sugar, lots of caffeine and stimulants and things like that will cause a nosedive in your nitric oxide production. So, if you're having those caramel latte frappé-whatever they're called.

**Jonathan:** Deserts for breakfast.

**Dr. Nuzum:** Those deserts for breakfast. If you're having that three times a day, that is hitting your blood vessels. All that sugar, first off, all that sugar loads up your red blood cells. And we've all seen the rock candy on a stick, right?

**Jonathan:** Oh yeah.

**Dr. Nuzum:** So, if you grab that, the rock candy's kind of hard and it could be sharp, right? When you hyper-sugarize your bloodstream, your red blood cells get stuck with sugar on them and they become "candied." There's actually a blood test, there's a lab test that is a standard lab test. It's called the A1C test. When we're testing someone's A1C in the lab, we're testing how "candied" their red blood cells are, literally.

So, kind of like that rock candy, that's what happens on the outside of the red blood cells if they get too "sugarized," if you will. So, if you're eating a heavy sugar, heavy carb diet, our red blood cells get candied on the outside and they irritate our blood vessels as they go through, just floating around through our bloodstream, right? And it sets the stage then for hardening of the arteries.

**Jonathan:** How does poor blood flow affect aging? How does that make us age faster?

**Dr. Nuzum:** Okay, well think of your blood vessels as being the highway of your delivery system. That's the highway. As long as the highway is unimpeded, everything flows well, right? If the vehicles of the red blood cells,

the delivery trucks, or the dump trucks, if you will, whatever, they're carrying the load of nutrition to the tissues. And then they're carrying the load of toxins and waste away from the cells and the tissues.

So, if you reduce that, number one, you reduce nutrition. So, the trucks don't deliver the goods, alright? They don't bring the goods to the local area, number one. Number two, they don't remove the waste. And so, as that waste accumulates, that creates an inflammatory or a pro-inflammatory environment in your body and that doesn't take much to then trigger an inflammatory response in your system.

Your nervous system is your body's control center. It controls everything. So, your brain, your nervous system is in constant—just monitoring everything in your system. So, every cell, every chemical reaction, all of these things are being monitored by your nervous system at all times.

If your neurotransmitter production, those are the chemicals that actually carry the nerve impulses on a cellular level, if your production of neurotransmitters starts to decrease, so does your neurologic function, which means your regulatory mechanism stops regulating things as well. Does that make sense?

**Jonathan:** It does.

**Dr. Nuzum:** So, if you lose that regulatory aspect, things start going crazy. They get out of control instead of under control. If your nervous system, let's say is controlling your blood pressure and you start losing some of your neurotransmitter production, so your level of control or control ability starts to wane, all of a sudden your nervous system isn't controlling your blood pressure. It spikes and drops and spikes and drops. Or let's say it's not regulating hormone responses, and so you eat a meal and then your blood sugar spikes because your pancreas isn't getting told "Hey, we need insulin." Because it's the nerves that have to tell the pancreas to do that.

As we get older and our neurotransmitter production starts to wane, our nervous system stops controlling things as stringently. And so, our margin of error gets a little bigger, if that makes sense.

We also have toxicity. There's thousands of neurotoxins. Heavy metals are neurotoxic. Arsenic is neurotoxic, aluminum is neurotoxic. A big one is mercury. You can take brain cells, neurons, put them, grow them in a petri dish, and you put a vial of mercury under the petri dish at room temperature, once it hits a little higher than room temperature, hits about 84-85 degrees, the vapor coming off of the mercury will kill the neurons growing in the petri dish. You don't even have to put mercury in the petri dish, just the vapors.

So, if you're exposed to mercury, or if you've had amalgams in your teeth, the mercury that would accumulate

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from that is all neurotoxic. A neurotoxin kills nerve cells. So, heavy metals are neurotoxic, a lot of the food dyes are neurotoxic. And the reason children get hyperkinetic, or hyperactive when they're exposed to those things is because their nervous system's being damaged. And so, they have a fight or flight response to that.

Over time, that hyper-irritation tears things up. And if you tear something up past the body's ability to repair it, then you've broke something.

**Jonathan:** Is that a natural process of aging? Is it just because of maybe all of the bad stuff we've put in over the last 30-40-50 years, that's just one of the side effects from it? Just making sure that I'm understanding everything and same with everybody watching at home.

**Dr. Nuzum:** Right. So, it's both. As we age, our capacity to eliminate toxins decreases also. So, we tend to accumulate things easier as we get older. That's part of the aging process.

The thing that has happened in our society is that we've just overloaded ourselves with so much toxic—so many toxic things in our environment that it's surpassing our capacity to eliminate these things when we're young and capable, so that by the time we're older and we're less capable, if we're not doing something to systemically detoxify ourselves and systematically detoxify ourselves as we age, things are going to accumulate in our system.

And because of our exposure, our exposure is so much greater today, we have so much more to deal with, I guess, if that answers that question.

**Jonathan:** Absolutely. So, let's get back to you mentioned inflammation earlier.

**Dr. Nuzum:** Right.

**Jonathan:** And how that affects. It's one thing that we're starting to educate a lot of our audience about, and that's even the concept of "inflammaging," right?

**Dr. Nuzum:** "Inflammaging."

**Jonathan:** We'll get to that. We're going to do another video just all on inflammaging. But let's talk a little bit about inflammation and how that affects our aging or maybe makes us age faster than what we should be.

**Dr. Nuzum:** Okay, okay. So, inflammation, our body should have an inflammatory response to things. So, anytime your body's irritated, its natural response and its healthy response is an inflammatory reaction. But those should be short-lived and should never be chronic.

So, let's say someone has chronic inflammation in their gut. Let's say they have irritable bowel. Well, with that they're going to have lots of swelling. Their abdomen's going to swell up and it's going to go down and swell up and go down. Eventually, it will stay relatively swollen. When that happens, that's when the degeneration starts to set in.

The process that a waterlogged piece of wood goes through as it deteriorates is the same process our tissue goes through. If you get a piece of wood waterlogged, what happens to it? It swells up. It will expand, right? And if it stays expanded, it loses its structural integrity. Well, the next thing that typically happens is termites, or other wood-eating bugs will move into that wood and start deteriorating it even faster.

And so, in our system, we call those bacterial infections, or fungal infections, or parasites; those types of things. Those types of things will move into a very waterlogged or inflamed environment. And as soon as infection sets in, the degenerative process just takes right off. It just goes fast at that point because, just like the piece of wood, it may appear to be a decent piece of wood, but once the bugs move in, they just destroy it, they just disintegrate it.

**Jonathan:** What else does just that constant chronic inflammation do that really has somebody who's 45 look 55?

**Dr. Nuzum:** As the tissues lose their structural integrity because there's too much water in them, things sag.

**Jonathan:** Absolutely.

**Dr. Nuzum:** Things just—this sags, this sags, everything just starts to sag. Because the tissues have lost their ability to hold things upright. That makes people look older than they actually are.

The other thing is anywhere that we have chronic inflammation, we have a reduction in circulation. So, the fluid, the blood doesn't flow into that area as well, and it can't flow out as well. Therefore, that extra space with all of that extra water starts to fill up with toxic waste.

When you have a chronically-inflamed area in your body, it typically doesn't stay in that one area. As that inflammatory process progresses, more fluid pools and that expands. Because the circulation in and out of the area is reduced.

**Jonathan:** To kind of wrap everything back up—well, not wrap everything up, but get to the fifth thing, and that's hormones.

**Dr. Nuzum:** Hormones. Okay, so hormones play a huge role in aging. If you include neurotransmitters, like dopamine and serotonin, as hormones, they play a role in 100 percent of our physiologic processes in our body. So, there's nothing that our hormones aren't involved in.

You take reproductive hormones are involved in about 80 percent of our just everyday functions. They're huge. You take cortisol, insulin, and thyroid hormones, they're our metabolic hormones. So, what was explained to me in school, in endocrinology, long ago by an old professor, he was really brilliant, he said "You can live maybe 12 hours without insulin. You can live maybe a week without cortisol. And you can live maybe 90 days without thyroid hormones." Which puts it into perspective how important these are.

**Jonathan:** Sure.

**Dr. Nuzum:** So, if your sugar gets too far out of whack because there's not enough insulin, it will kill you. That's how vitally important this is. If you don't have cortisol in your system, all of the wear and tear from just everyday metabolism, everyday activity, the breakdown of used up red blood cells, let's say, or muscle cells, or brain cells. As our cellular turnover happens, the old cells that have to be broken down so they can be replaced, the process of those cells being broken down is initiated by cortisol. So, if you don't have cortisol, all our old cells turn into toxins that cause septicemia and kill us.

As we get older, we tend to produce less and less hormones. So, there's a natural progression of us producing less and less of just natural hormone production. That's part of the aging process.

Depending on the amount of inflammation that the person has, there's another process that's equally important, that affects us just as much. And that is a hormone resistance. So, you take somebody with hormone resistance, and you test their blood and they'll have all perfect, normal hormone levels, all within normal levels, within the limits, but they have all the symptoms of a deficiency.

And what it is, is when someone's system is really inflamed, the fluid around our cells increases in the tissues.

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One of the side effects of chronic inflammation is your body tends to expand because the fluid volume in the tissue increases. Your body has to create space for that, so it expands.

So, as that happens, now we have more fluid around the cells, that's called extracellular fluid. So, when your red blood cells are passing through your—the highway, the bloodstream, and they deposit a hormone into a tissue, that hormone has to travel through that extracellular fluid to connect to the cells. I mean if it goes through dirty water, it's like going through a demolition derby before getting to the cell. A lot of times, they'll get "banged up" or *oxidized* before they reach the cell.

And so, the bloodstream says, "We have plenty of hormones." The tissues are saying "Where are they?" And so, that's called *hormone resistance*.

So, as that happens, we go back to, remember, our hormones cause a lot of the chemical reactions in our body that rebuild our system. So, as our production wanes, if our resistance also increases as production wanes, oh man, it's a perfect storm.

**Jonathan:** It's exponential, right?

**Dr. Nuzum:** Exactly, exactly. So, all of a sudden, you don't have enough hormones, and the cells aren't receiving them, so things, the anabolic or body-building, or the rebuilding processes don't get initiated. And so, things fall apart. They just start falling apart faster then.

**Jonathan:** Aging, it's not just one thing, right? Everybody thinks "Oh, let's do this. Let's get some cream and we'll look younger, and let's do this and we'll look younger." But you have to understand that there's a lot more to it than just that, and that's what we're trying to do is we really—it's very important for us at Organixx to educate. Because once you understand it all, then you can at least make a decision for what's best for you.

**Dr. Nuzum:** Correct.

**Jonathan:** And what should you focus on, what do you really need, what don't you need?

**Dr. Nuzum:** Right.

**Jonathan:** There's so much misinformation out there, there's so much "You need all these 50,000 different things." But you really don't, you just need to understand it better so that you can figure out what it is you need for your body.

So, to cover the five things, we have digestion, circulation, neurological, inflammation, and hormones. That's really what goes into it.

I'm going to ask you, just really quick, to wrap up this conversation. Is it possible to reverse aging or can you essentially only slow it down?

**Dr. Nuzum:** There are some technologies out there that can turn back the clock a little bit. It is an inevitable process. We have an entry date and an exit date. It is just part of our destiny. But you can age gracefully. You don't have to—everything doesn't have to just fall apart. You can minimize the collateral damage, I guess.

**Jonathan:** Absolutely.

**Dr. Nuzum:** You definitely can do that, yes.

**Jonathan:** Now if I've been living a less than healthy lifestyle, or maybe circumstances have caused me to just, I don't know, to age faster, is it possible to take some years back by—can I implement things in my life? Can I start eliminating the sugar? Can I reduce the chronic inflammation? Can I get my hormones balanced? Can I do all that and actually pull some years back?

**Dr. Nuzum:** Yes, and you can make the years you have better.

**Jonathan:** I think that's a really good point too, making the years that you have left better, and feeling younger and looking younger.

**Dr. Nuzum:** Exactly.

**Jonathan:** You still have that end date that's coming, but we can make it *way* better.

**Dr. Nuzum:** Exactly.

**Jonathan:** Love that.

**Dr. Nuzum:** From here to there, way improved, absolutely.

**Jonathan:** Awesome. Thanks, Doc. A wealth of information as always. I hope you guys enjoyed this video. Stay tuned. We have some more videos coming. We're going to do a full one just on "inflammaging." We're going to do one for hormones for men, hormones for women, how they affect us with our aging. What we need to look at correcting to look and feel younger from that perspective, and just some more videos coming your way.

Thanks for tuning in, and we'll see you on the next one.

**Dr. Nuzum:** Thank you.