# 2020 Ehlers Danlos Webinar – Transcript

**this transcript is computer generated*

[00:00:03] They're here and I should be able to hear hi. There it is.

[00:00:24] It says sign in you're not slowing down on the monitor. No. Well, it's a good thing we started there we go. Yay. Okay. Hi everybody. We are actually early which is I think unprecedented. We will be starting in about three minutes. So get your popcorn and have a seat take a biology break if you need it.

[00:00:53] We're going to go just so you're prepared. It's 64 slides in 60 minutes and not too many of them are drive-bys. So this is probably going to go on for about 90 minutes. The link is going to be available.

[00:01:11] I think it's live and then we posted on the website under the webinars. If you if you can't stay the whole 90 minutes, you can watch the last end of it. Okay, Kevin's kind of, you know be on the website with all the slides and all that. Okay, he'll he'll email email the link out after the webinar to everybody that signed up and we will start in two minutes. I'm going to take

[00:01:41] Little paws have a drink of water. Hope you do the same and I'll see you back in two.

[00:01:52] Are we paused turn off your mic video up there there that works. No.

[00:02:11] Where's the long?

[00:02:13] I lied, but then we have to restart it.

[00:02:22] Oh cool.

[00:04:48] The worst

[00:04:55] No, I did it. I got everything done and it's still for its 401 if we started exactly at for think perhaps there would be some sort of cosmic event. Okay. This is a dare ehlers-danlos webinar and this is what we're going to be talking about for.

[00:05:19] The next 65 minutes, what are we treating? So we're going to go into more than you ever wanted to know about are layers. Danlos and high permeability Spectrum disorders. I didn't even know there was a hypermobility spectrum until Tuesday details about the connective tissue configurations and the genetics what are the tissues from an FSM perspective? How do we treat these symptoms and syndromes whether the

[00:05:47] It's of treating or not treating and what can we expect and how do you do this? That's the plan. So there's 13 sub types of Errors. Danlos. Then there's the hsd generalized peripheral localized and then historical so that's older people that were gymnast or really hyper mobile when younger but they aren't now so there's actually a way of scoring this it's called the Baton score and apparently

[00:06:17] There was something different Carter and welcome sun' so this is sort of a patient version of this. Can you put your hands flat on the floor with your knees straight? You score yourself? That's that's one bend your elbows backwards bend your knee backwards bend your thumb back. Can you bend your little finger at 90 degrees?

[00:06:45] So this one number five and it's I don't know they say little finger, but I I'm used to using the index finger and it goes past 90 degrees in the patients. I've seen so a hundred and hundred degrees hundred and five. It's pretty extraordinary. That's the index finger. So maybe the little fingers is more difficult to bend so when it gets to 90 degrees or a hundred and ten

[00:07:14] It's really a thing so this is from the website earlier Stan loves.com EDS is group of genetic connective tissues disorders resulting from college and defects or the defects and proteins that interact with collagen so it is a multi-system disorder and as you'll see there's going to be a lot of different symptom presentations from

[00:07:44] Just bending hypermobile to lethal no two patients for the same because the connective tissues that are affected in the system are different depending on the patient's so it was named less than a hundred years ago

[00:08:04] There are still large portions of patient reports that are unknown.

[00:08:12] 13 subtypes. I had no idea many people with EDS look healthy making the disorder largely invisible and this is from their website.

[00:08:25] It's on there is no cure but as you'll see at the end of this hour there's a possibility that FSM changes this so signs and symptoms body pain dislocations subluxations, which is part.

[00:08:45] Partly dislocated hypermobility arthritis osteoporosis and you'll see that that arrives because of defects in the collagen that hold bone together. If you saw John Sharkey's lecture last year he demonstrated.

[00:09:03] That bone is

[00:09:07] Calcium filled faccia bone is faccia. So when you get difficulties with the collagen that forms the bone you get osteoporosis skin tearing stretchy skin really soft skin because it's missing the collagen at the bottom mitral valve prolapse easy bruising fatigue, gr. Syndrome sprains GI issues.

[00:09:37] Atrophic scarring that's going without a lot of ridge of connective tissue in IT muscle spasms poor. He look at this list pots. Organ Rogers rupture patient dies of an aneurysm. Did he just have

[00:09:56] Arrows down those prolapse irritable bowel disorder anomia flat feet Swan that deformity gastritis joint pain muscle pain surgical complications because the thing won't heal so collagen is everywhere and the genetic changes that result in a diagnosis of Errors downloads by a geneticist.

[00:10:23] Is

[00:10:25] Different for everybody and where it shows up and which kind of connective tissue is in which tissue we don't actually know because nobody studies this stuff because there's no drug that's going to cure it. So this is a slide you can just go back to

but it lists migraines orthostatic intolerance pots mitral valve prolapse. It's lifelong condition.

[00:10:55] So that you were born with but I've had emails from two different patients that say that there are infections.

[00:11:04] Like Bartonella and mycoplasma that cause

[00:11:14] Ehlers-danlos in later years it you're born with it, but it doesn't always show up in the milder forms. So I wonder if the infection basically affects the vagus which causes inflammation which makes the paint shop. So there's that classes. So this is the 13 types classical are layers down those skin hyper extensibility. So if you're patient can do this

[00:11:44] With their skin or this with the skin on the back of their hand or that guys sort of famous on the internet generalized joint. Hope hypermobility. So this is the Baton I'm poured score again. It's autosomal dominant. So if Mom and Dad had it the kids going to have it and it's these are all have to be confirmed with molecular testing. So three centimeters in the neck elbows or knees one.

[00:12:14] A half cent centimeters for dorsum of the hand distal Forum 1 centimeter for the palm of the hand, but I couldn't find a picture of that. So main symptoms of hypermobile EDS tummy problems. So that's the digestion we'll get to that at the end of this dislocation stretchy skin easy bruising. Why would you bruise easily? That's because the basement membrane in the arteries is made of connective tissue.

[00:12:44] So if that connective tissue and the arteries is defective the arteries going to lead more easily bendy joints pain and you'll see that I think that comes from the spinal cord fatigue feeling dizzy. Why would that happen because the ligaments and connective tissue and tendons at the upper neck?

[00:13:11] Are attached with connective tissue to the vertebra?

[00:13:17] Highest percentage of

[00:13:19] Proprioceptors in the body are at the suboccipital muscles. So if those muscles and ligaments are at c1r lakhs

[00:13:30] They see one is going to move and those muscles are more stretchy and they have still have the same amount of proprioceptors. So this condition doesn't affect the proprioceptors. It just affects the connective tissue. So that's why you feel dizzy. So they may look like they have a vestibular entry but it's a cervical genic distributor injury because of the stretching us and see one

[00:14:00] So this little girl is our she's our Target gastrointestinal issues will see why pots chronic pain fatigue easy. Bruising hypermobile joints TMJ osteoarthritis poor healing prone to injuries. So if the patient's history includes these kind of things, I want you to start looking for elders damos because it now

[00:14:29] Is something we can treat?

[00:14:32] And the problem with EDS as you'll see in a few slides is that they don't find it because nobody looks for it palpitations lightheadedness dizziness fainting elbow joints right joint pain and you'll see where that comes from hypermobility mitral valve prolapse.

[00:14:55] Ortho stasis and sinus tachycardia, okay, and we'll see about that.

[00:15:02] Classically DS this one's different. It's autosomal recessive not dominant and it's tnx be Gene. And this is this is the easy bruising. So this kind of

[00:15:18] Ats is associated more associated with bruising and then there's the Baton score for hypermobility, Google.

[00:15:29] Ehlers-danlos and you'll find all sorts of cool stuff. That's where all this came from cardiac valvular TDS. Apparently the connective tissue is specialized in the heart valves. So it's severe Progressive cardiac valve problems aortic and mitral especially skin involvement High permeability in the joint Saudis. It's autosomal recessive, but you notice it's a different Gene.

[00:15:59] That's the one a two Gene.

[00:16:03] The which is different than the one that's in classical. So these are genetic testings that are done by the geneticist that you send your patients to. Okay?

[00:16:19] Valvular vascular EDS, it can be severe can be life-threatening. They'll be a family history and the gene associated with this is the CEO l3i one, which I don't know anything about our Trail rupture at a young age: perforation uterine rupture during third trimester in the absence of previous C-section or severe peripartum perineum tears.

[00:16:49] So this patient went through her life at least until menstruation or teenage years got pregnant and nobody knew that she had errors down those until her uterus ruptured during the third trimester of pregnancy. Excuse me.

[00:17:12] I mean this is really fascinating and this is autosomal dominant. So somebody in the family should know that the person had it carotid cavernous sinus fistulas. Those are up in the neck autosomal dominant.

[00:17:29] Confirm by molecular testing. This patient is going to need to see a geneticist. It is rare very rare potentially fatal and the facial characteristics. Look at that. You wouldn't guess that this kid had something wrong with them small chin big eyes long eyelashes. What's up with that narrow palette midline flattening.

[00:17:58] Deep set or almond-shaped eyes. I mean who would know right interesting many sleep with their eyelids partly open.

[00:18:11] They have easy bruising so very superficial veins and easy bruising.

[00:18:18] Vascular ehlers-danlos so vessel rupture aneurysms. So there's see the aneurysm right there.

[00:18:27] So you test for it with well, you send them to a they get a vascular study and with contrast and radiology and you send them to a geneticist at the end of this webinar. You're going to know more than most people about ehlers-danlos hypermobile. EDS is fairly straightforward. Mostly generalized joint hypermobility.

[00:18:57] Then feature a feature be feature C and two or more of these have to be present in some combination. All these prerequisites must be met absence of skin fragility including Auto rheumatoid autoimmune rheumatoid arthritis conditions.

[00:19:20] That may also include joint hypermobility by means of loss of muscle tone and connective tissue last laxity. So these prerequisites have to be met and there has to be these other things that don't explain it. Okay.

[00:19:40] So this one doesn't have a specific Gene Associated. This one is obvious at Birth bilateral hip dislocation severe joint hypermobility skin hyper extensity extensibility. It's rare. It's autosomal dominant. So these genes are starting to look familiar now, right the CEO LJ LJ n which is collagen 1 a 1 or 1 a 2 and this is diagnosed.

[00:20:09] Sli at Birth and by a geneticist

[00:20:14] Dermis dermat espera. I can't even pronounce this once per axis.

[00:20:21] 80s or de DS9 major criteria 11 minor criteria

[00:20:28] To anyway, it's autosomal recessive and I didn't include pictures I think because the pictures were so creepy. I couldn't put them on but it is a different mutation and these people end up so the cranial facial facial features. Yeah, this one ends up at a geneticist to this one becomes obvious. By the time the child is I don't know looks like two or three

[00:20:59] Congenital lacks muscles congenital or early-onset kyphosis scoliosis which suggests it's going to end up in a car Proctor's office but look at this because there's pictures generalized joint hypermobility with dislocations subluxation peripherally so shoulders hips and knees in particular is autosomal recessive so neither mom or dead has it

[00:21:27] But the uncle they never met and if Dad was adopted brother that he didn't know about or an uncle he never met and these are different genes again PLO D which I don't know what it is and four of these these people end up with a geneticist or if you're

a chiropractor and you see somebody that looks like this don't even go there don't start adjusting the

[00:21:57] Can you imagine what you do to an hour's down those patient when you do a high-velocity Thrust same thing with the osteopath and even the pts. It's like seriously, you start mobilizing these joints and they're going to dislocate that's not a good thing in the spine. So there we go brittle cornea syndrome this one Thin cornea the other pictures on the internet were kind of to creep.

[00:22:27] P to put on here, so I didn't it's autosomal recessive which means it's harder to find mom doesn't have it dad doesn't have it but his great uncle had it. So it's a recessive gene mom's Grandmother Had it and it's recessive.

[00:22:45] And by the time you get down, too.

[00:22:50] The kid nobody knows that it's in the family. So this is what they look like and it is confirmed probably by an ophthalmologist when the kid has visual trouble and then you send them to a

[00:23:08] Geneticist short stature Progressive in childhood. This one is obvious at Birth. And by the time the kid is two or three muscle hypotonia bowing and limbs. They're going to end up in physical therapists. Don't think they're good. If they look like this they're going to end up in the chiropractor's office. But pediatricians in the group will see this autosomal recessive these the genes involved and these people

[00:23:38] Up in a geneticist office and then you have to figure out how to manage them to make their lives more comfortable. That's what I'm saying. We can't fix these their genetic but the potential exists that the FSM protocols can help these patients musculoskeletal muscular contraction oral EDS the pictures on these it's really rare. So it was hard to find photographs of

[00:24:08] The patient's multiple contractures adduction flexion contractures or clubfoot cranial facial features that are evident at Birth or in early infancy and the pictures I saw on the internet were not

[00:24:27] Particular characteristic you wouldn't look at that kid and say wow. She looks weird. I think she has this rare kind of

[00:24:35] Ehlers-danlos but so characteristic cutaneous features skin hyper extensibility easy bruising skin fragility with atrophic scars on I'll show you what you saw what those were before increase Palm or re crinkling. So there's the skin on the palms is more wrinkly because the connected tissue that should be strong in the palm of your hand and

[00:25:05] Not have a lot of wrinkles. When you do this. There's doesn't do that. It's sort of folds in on itself and I'll Have Wrinkles it's recessive which means these patients aren't going to know that it runs in the family mild Pathak. This one is really rare congenital muscle hypotonia muscle atrophy that improves with age. So they're pretty messed up as children, but as the muscles develop and they have more growth hormone.

[00:25:35] The muscles develop but they're still going to have proximal joint contractures. So see this one.

[00:25:45] Two out of the 11 people known to have this kind. Okay, so hypermobility of distal joints. So her knees hips and elbows contract.

[00:26:00] Butter fingers and toes and ankles are hypermobile autosomal dominant or autosomal recessive which is going to be confusing for the average geneticist and it has that collagen 12 a 1 so there are collagen is everywhere in your body. So there are a lot of genes that are responsible for it.

[00:26:27] This one for the dentists and the group severe and intractable periodontitis at early ages childhood or adolescence and the key for the periodontitis is the gingiva the gums don't attach to the teeth. So see where the periodontal ligament is how the tooth is constructed see that okay.

[00:26:57] So they're that connective tissue that makes the tooth and holds the tooth to your gums. Is it made right? There will be a family history of a first-degree relative who

needs the critical tried Tara and it is autosomal dominant. So it's easier to find so if mom had a dad had a uncle Ralph has it

[00:27:22] You they know that when the kids teeth starts coming in and the gums bleed. They know that its genetic and I mean, that's the good news and they the bad news is there's no way to treat it. So high permeability Spectrum disorders are similar downloads, but there's no Gene identified because there's so many genes.

[00:27:52] Similar patterns pathologies is the ehlers-danlos group, but there's no clear genetic markers and the pathologies aren't as severe but they involve similar symptoms. So you're still going to have digestive issues. You're still going to be diagnosed with fibromyalgia. You're still going to have joint pain either because of the discs and the spinal cord or because you actually your joints bend the wrong way.

[00:28:22] Or been too much generalized hsd High permeability Spectrum disorders many hypermobile joints peripheral just the hands and feet localized hypermobile at a single joint or group of joints and for our purposes. We're going to treat it as the same as 4 hours. Demos same pathologies and mechanisms. It's just they're just not as

[00:28:52] Serious, but I suspect they're more common. These are more likely to be missed because it's not such an obvious life-threatening Mass historical hsd older people who are hypermobile one younger, but aren't now so these are the people that come in to see you now older has a very wide range can be any place between 40 and 70 for right?

[00:29:22] They were they come in for neck pain and low back pain.

[00:29:28] They were gymnast in their teenage times. They were ballerinas up until the time they were 25 or 30 and a ballerina is considered old and they're very hyper mobile, which is

[00:29:46] Helpful in their profession and their applications their Hobbies.

[00:29:52] But when they're adults older they have facet syndrome. They have disc injuries extremity joint involvement caused by The Joint trauma when you're a ballerina

or a 25 year old gymnast. So we'll treat the joints for sets Des the vagus autoimmune issues inflammatory issues and guts issues. These are going to remain after

[00:30:22] Their joints are more degenerated. They're not as hypermobile. So the eight hsd disorders have all of these.

[00:30:35] Symptoms that go with them and the patient walks in with pots. You never think I never think to check them for hypermobility. I can think of three patients right now that I missed never thought of it chronic pain fibromyalgia fatigue easy bruising. I have a patient a friend right now than in a move to Australia.

[00:30:57] And wait and find out she had Heller's danlos until about what two years ago.

[00:31:04] Arthritis, look at that.

[00:31:07] Now the joint hypermobility is the presence of too much movement at any given joint.

[00:31:15] What it is part of a chronic condition and cause cause varying levels of physical disability. It can of the high permeability can occur with no other symptoms and be advantageous if you're a gymnast so nobody cares if you're a ballerina at the age of seven and you can do the splits, nobody cares your cheerleader in high school and you can do the splits.

[00:31:42] That's not a problem.

[00:31:45] Joint hypermobility as a part of the condition that causes pain and fatigue like fibromyalgia.

[00:31:52] Part of a chronic condition. It can be accompanied by GI dysfunction. You'll see how that works out headaches, duh C1 C2 are hypermobile cardiovascular issues dysautonomia as sleep disturbance Etc. What it isn't is its you're not just flexible. It's not harmless because it's just pain joined hypermobile conditions are not always visible.

[00:32:21] Because the people avoid making the movement that makes them socially weird not something that everybody experiences not I can't do this what's never could even when I was a kid, so it's not something that you can develop or that everyone experiences and it's not always cause for concern especially if they're not other symptoms. So that's what it is. And this is what it is.

[00:32:49] Okay.

[00:32:52] Now marfan's is interesting because it's a genetic disorder that affects connective tissue caused by a completely different mutation that tells the body how to make fibrillin. It increases a protein called tgf-beta the increase in transforming growth factor beta whatever that is causes problems and connective tissue throughout the body which in turn creates the features and medical

[00:33:22] Worms associated with my friends. I'm just reading that slide to you because that's what I knew about marfan's accept the fact that its genetic and you see patients that come in with hands that look like this who can do that.

[00:33:38] But my Marfan is associated with mitral valve prolapse aortic dissection, which is doesn't usually turn out well retinal detachment. Oops. Fibrillin one Iraq, no doubt. Dactyl e which just means spider like extremities extra long arms extra long fingers there nearsighted because of the connective tissue in their eyes and they often have scoliosis and its genetic so dad has more fans.

[00:34:08] It's

[00:34:10] Right. It is recessive. It looks like so Mom doesn't have marfan's.

[00:34:18] And out of the four kids just do the Punnett Square remember when they made you take genetics and you learned how to do these in the major crazy. Okay, so to if they have four children or one child, there's two there's a 50% chance that if Dad had more fans to there's a 50% chance that that child will have marfan's does that make it dominant or recessive?

[00:34:48] I guess it makes it I don't know. I'll let you guys figure that out, but it is difficult but not always disabling. This was interesting Michael Phelps.

[00:35:03] Gold medal swimmer built the muscles protected the joints and one. What was that? Five six? Seven Olympic medals basketball players great actor Vincent. I don't even didn't even know his name, but everybody knows this guy Howard Stern Abraham Lincoln and then you look up marfan's on the internet and that's the worst.

[00:35:32] A scenario so

[00:35:37] Ehlers-danlos has female predominant looks like after the age of nine. So in early childhood you got about a fifty-fifty chance of getting it diagnosed. There's more males, right? So this is the incidence where it shows up.

[00:36:00] Right

[00:36:03] But look some people our age 60 before it's diagnosed. That's nuts. And if you missed the diagnosis don't feel bad. So I feel less bad after feeling seeing the slide about the patient's I missed 20 years ago. So latency of time between the first symptoms and the diagnosis and 636 patients.

[00:36:32] So

[00:36:33] Age 45

[00:36:36] 35 to 4. Look at that.

[00:36:39] There are some people that aren't diagnosed until they're 50 or 60. That's interesting.

[00:36:47] Pain distribution lots of pain in the lower legs Upper Limb spine other joints

[00:36:56] Now this is interesting.

[00:36:58] And this goes along with if you're a psychiatrist or a GP or a psychologist or if you're treating fibromyalgia patients and the incidence of body pain makes them show up as fibromyalgia.

[00:37:15] Or neck injury or low back injury patients, but they have this psychological profile that is characteristic of a large townhouse.

[00:37:26] Anxiety depression eating disorders and that relates to the vagus will talk about that autonomic dysregulation, which is another word for pots or pots like syndromes sensitivity to external stimuli. So everything jacks up their sensory cortex and high emotional reactivity. So the event is this big and their reaction is that big so you can download this paper at are layers down lowes.com, or you can find it on PubMed.

[00:37:58] The American Journal of medical genetics published in 2017. So this is the paper.

[00:38:07] And it is fascinating.

[00:38:12] That I've had patients who are that come in and say yes, I'm bipolar I have anxiety and depression and oh, yeah, my blood pressure is kind of wonky.

[00:38:26] And they're on medication for the emotions, but they're 55 years old and nobody is diagnosed. I was down those.

[00:38:36] That was interesting.

[00:38:38] So the neuro connective tissue phenotype, right how they show up.

[00:38:47] They have anxiety and Joint laxity, okay?

[00:38:53] But that creates behavioral symptoms Psychopathology as we would call it. So increased internalization decreased proprioception anticipatory anticipatory anxiety. There's some part of your brain that knows that when you do this thing that everybody can do it's going to hurt you.

[00:39:20] Vagus is in charge of of telling your brain. This thing is going to create tissue fragments and the hippocampus. Remember the vagus Workshop. The hippocampus gets paid to remember things that hurt you.

[00:39:39] So the vagus the hippocampus the amygdala that anxiety phobias somatic illnesses dysautonomia blue Scarab sclera easy. Bruising eczema dyskinesia. It's means you don't know where your body is in Space the kids that say, I'm just clumsy dislocations prolapses heterotrophic scars of those ones where there's the scars in.

[00:40:09] Said so normal scars. There's a raised lump on the top heterotrophic scars or where the

[00:40:18] The skin there's a there's a ditch where the scar is.

[00:40:23] Defense mechanisms identified at the extreme of continuous axis fight or flight avoidance and dependency. So those are behavioral somatosensory includes increased olfactory sensitivity. If your vagus is continually off your mid brain is continually jacked up. The midbrain is connected is sort of all information that goes from your

[00:40:54] Frontal lobe

[00:40:56] To your sensory cortex

[00:40:59] Passes through the amygdala and hippocampus is how you know, that skunks are not nice and gas is not nice. You smell that it goes through your magdala and and hippocampus before it gets to the sensory cortex. So there's an emotional learning and evaluation that happens in between the time. You smell it in the time you get to where your sensory cortex knows what that smell is.

[00:41:29] It passes your your hippocampus and amygdala evaluate the smell before it gets to your sensory cortex eye contact difficulty. Once again, that's an avoidance thing selective photophobia dismay difficulty taking a deep breath that's vagus dysphasia

trouble swallowing choking palpitations joint pain and enhance sensitivity to weather and chemicals. There's an article

[00:41:59] Alan Townsend letter we should have on the website fairly shortly if it's not acid already there. No not there. I sent it to Kevin but he's been really busy and actually I'm not sure if I sent it but this enhanced sensitivity to whether and chemicals is related to this.

[00:42:21] Connection between the vagus the amygdala the hippocampus and the sensory cortex and the cortex everything goes through the amygdala and the hippocampus and all that information. So the the whether the Vegas has stretch receptors in the blood vessels that go to the back of your skull and in the dura.

[00:42:48] And so when the barometric pressure goes down, there's less pressure holding those blood vessels contracted. Does that make sense? Especially if the connective tissue basement membranes in the butt in the body of the blood vessel is not

[00:43:04] Normal not strong enough.

[00:43:09] And barometric pressure goes down the blood vessels stretches because the basement membranes not that strong and the vagus goes. Whoa. This is a problem and the amygdala and the hippocampus go. I remember this. This always gives us Hoops headache.

[00:43:27] So when the barometric pressure changes

[00:43:32] The vagus send stretch receptor responses to from the blood vessels and the dura to the hippocampus and the amygdala.

[00:43:45] And it all functions together.

[00:43:51] And that's why they're sensitive to weather and chemicals. Isn't that cool? So this is a great slide go back and check on that. So the biology is this so the normal connective tissue looks like this earlier is danlos looks like this. It's just not made right.

This is how the how connective tissue is made. The amino acids are put together. They make Tropa.

[00:44:20] And those make fibrils and the Fireballs make fibers. So nanometers 300 nanometers fibrils are one micrometer and the fibers are tens of micrometers. So these are really tiny structures you put them all together and they make your Tiff file.

[00:44:44] That holds your knee together and it makes the ACL and the PCL and your shoulder labrum and the ligaments and all that. That's amazing.

[00:44:55] Structure function. So this is how those are put together. I don't know enough about it to even give a reasonable explanation. But this is what I found on the internet. So that's that's what I put on the slide. Some of you probably know more about this than I do now the genes that go wrong. Look at this college and Gene.

[00:45:24] Is up here. It makes right goes to the ribosomes puts together the pro-collagen chain. These genes can go wrong that Gene can go wrong.

[00:45:39] So this is the mutation effect structure synthesis and stability in certain types of ehlers-danlos EDS for idia 6 if it doesn't hydroxylate

[00:45:53] Or make the right disulfide bonds EDS 7

[00:46:00] Defective pro-collagen

[00:46:08] Collagen fibril self-assembly. So the this is why there are so many genes involved in their lives down those look how complicated it is. And any one of these genes can go haywire and I guess in a less technologically advanced or less kind Society they want to died out as it is recessive.

[00:46:38] And especially will reproduce and we keep the child alive, but it has certain disabilities that you saw in the other.

[00:46:48] Section where the problem happens so osteogenesis imperfecta scurvy. This is y so this hydroxylation is done by vitamin C right collagen fibers. Anyway, so where

the problems happen now how what is the vagus nerve have to do with ehlers-danlos? So the vagus nerve affects everything.

[00:47:17] Thanks keeps anxiety and depression at Bay opposes the sympathetic response to stress conveys information from the organs to the brain. It's not just the organs 80% of the information that goes from your body to the brain goes by way of the vagus. The vagus Workshop is going to be even bigger this year than it was last year controls the throat muscles to send food and are down the right tubes insulin secretion.

[00:47:47] Action and glucose in the liver suppresses inflammation by the cholinergic anti-inflammatory path pathway fainting when over stimulated leaving leading to Temporary loss of consciousness and bladder control.

[00:48:04] Controls digestion is responsible for feeling full increases gastric juices gut motility stomach acid and actually determines their there are sensory receptors in the small intestine that determine what nutrients you're getting tells the brain. Hey, you should really start craving pickles. Excuse me. Well, it's because you need something in the acid of the contents of the pickles.

[00:48:33] Yes, and that comes out of the vagus sensory receptors in the small intestine lowers blood pressure in the case of illness emotional study decreases heart rate vascular tone. It controls every muscle involved in speech so patients with vocal cord dysphonia spastic.

[00:49:01] Spasmodic dysphonia gag reflex swallowing coughing. So this is all in the Vegas reflex.

[00:49:09] So this slide just didn't have the Precision but look at this ehlers-danlos upper cervical instability serve academic nucleus the trigeminal nucleus neuralgia, right? Look at these arrows. It's you can I don't know maybe make the picture smaller or look it up.

[00:49:29] Vagus nerve anxiety autoimmune. So these are all interconnected vertigo eustachian tube Meniere's

[00:49:40] Right cervical sympathetic

[00:49:44] Cervical spinal cord

[00:49:46] Vestibular instrument insufficiency

[00:49:51] Decrease look at this.

[00:49:54] It's just

[00:49:57] Just saying

[00:49:59] So

[00:50:01] These are common clinical observations in parallel patients with ehlers-danlos. And then look at the vagus nerve and are EDS patient what controls gastrointestinal issues? The vagus Potts has to do with the vagus.

[00:50:18] Right orthostatic, tachycardia, the vagus hypotension the vagus cardiogenic sympathy syncope the vagus no significant arthritic arrhythmias means it's not the cardiac nodules that are problem. Right? All of this is the vagus. So how does it work the vagal afferents notify the brain limbic centers of infection and Trauma pathogen Associated molecular patterns damage associated.

[00:50:48] Ciated molecular patterns tissue fragments the midbrain limbic sucker centers

[00:50:55] So in our world 89 upper the regulate they they get jacked up. They suppress the vagus and during stress injury infection threat, the vagus is suppressed because it gets in the way of survival tissue injury is constant with EDS. There are constantly

[00:51:17] Constant dams damage Associated molecular patterns that are associated with their earliest and lows now. This makes me wonder about the acquired are ehlers-danlos that comes with infection. Does that have to do with The Pimps? So that's the pathway

[00:51:39] So how does the vagus work to regulate the immune system? Well sacral nerves go to the colon. The vagus nerve goes to the spleen and regulates.

[00:51:56] T cells and macrophages and macrophages

[00:52:00] Celiac llangollen those go to the: and all of this feeds back into the immune system. It is an immune. The vagus is immune regulatory. So how does airless danlos affect the vagus? Well the damps that come from the tissue injuries suppress the vagus but my theory look at the branches the vagus is everywhere because of its Connections in the blood vessels. There's no place in your body.

[00:52:30] That doesn't hear doesn't communicate with the Vegas because everything's attached to everything but I think in addition to the dams the vagus is attached to everything in your small intestine. Look at that.

[00:52:48] And every time this page and the stomach, so every time this patients stands up the I don't know 20 pounds of liquid and food and stool that's in the digestive system.

[00:53:04] Pulls on the intestines

[00:53:08] And that pulls on the Vegas so it's connected physically structurally to the vagus every time the patient stands up the connections cause traction injury to the vagus and impair vagal function.

[00:53:22] Go back to the psychological aspects anxiety depression Eating Disorders autonomic dysregulation sensitivity to external stimuli High emotional reactivity all are associated with limbic system activation and that's associated with the vagus. And that's associated with the membrane. You see where I'm headed with this, right? All right. So, how do we treat it?

[00:53:50] Fsm treatment so the first thing I did on the first airless danlos patient. I saw was I treated 124 and 77 on her for an hour alternating I think and I did it actually on her her major symptoms that she told me about were just the fact that she couldn't she couldn't hold a water bottle. She could not do that.

[00:54:22] So she couldn't do that her hand muscles wouldn't work. So I ran it from neck to hands and in 60 minutes. She could pick up a water bottle. That was kind of cool. Then she came to a seminar to three months later.

[00:54:38] And I looked at her pain diagram so I ran 124 and 77 with contacts at her neck and feet and that worked. I think it was between an hour and an hour and two hours. It was after at the end of the day at a seminar if you were in Denver a couple of years ago. Thank you was 2018. So this this particular 124 and 77 reduced hypermobility in every hypermobile and

[00:55:08] Yes patient that I've treated and there's probably 10 in the last two years.

[00:55:16] Finger range of motion returns to normal that was kind of interesting. They're used to bending to a hundred and ten with the index finger and all of a sudden it stops at 80. I was weird elbows and knees were not as responsive. So at the end of 60 or 90 minutes elbows and knees were still hyper bendy skin laxity was reduced that was kind of interesting and that brings me to

[00:55:41] I keep saying we can't put tissue back this not there. What are we doing? When we run 124 and 77. I have no idea none. Anybody gives me a dynamic Ross. If you're listening if you come up with a model for how it is that 124 and 77 works. I'm with you. That'll be fun and the effects last about a week and male patients typically don't retreat them.

[00:56:10] Selves. Yeah, right. I've lived. This is this I'm 28 years old 30 years old. I'm not going to treat myself female patients tend to treat themselves. So that was interesting. So 124 is what you treat with the connective tissue, but that doesn't change the pain diagram when I saw the pain diagram in the earliest and most patient. It looked like cervical trauma fibro patient circles that shoulders elbows hands now,

[00:56:40] Is the outside world the earlier is downloads world thinks that this comes from the joints.

[00:56:49] It went away with 40 and 10 the body pain that you had one away with 40 and 10. So think about this pain diagrams of the same. Well, what's the disc annulus

made of connective tissue if the connective tissue doesn't work, right? What's going to happen to the disc annulus? Mmm. It's going to have little cracks in. It's going to leak right the nucleus material can then affect the spinal cord. Just same way that cervical trauma fiber does.

[00:57:20] People assume the pain is from the joints, but in our world is 40 and 10 you look at that pain diagram. And if I did my job, right you're all thinking about fibromyalgia. So you'll treat these people for 40 and 10 to get rid of the pain, but you may or may not think of treating the connective tissue. So from now on every time you see a fibromyalgia patient asked him to bend their fingers can they touch their wrist with their thumb? I don't do the other parts of the Baton.

[00:57:49] But those are easy you can do those with them sitting in a chair. Then 100% of the time you treat the vagus. How do we treat the vagus? Well quiet the activity of the medulla where the vagus comes from and the midbrain which turns the vagus off and then treat the vagus for trauma if it's getting traction injuries. It's definitely traumatized increased secretions and vitality and the vagus.

[00:58:19] And the ability to treat the vagus in 60 minutes makes FSM unique. It helps reduce the psychological issues temporarily to improves digestion. They get up off the table. They don't have pots anymore reduces inflammation, which can be responsible for the joint pain and you put the contacts at the neck and abdomen because technically the vagus stops at the abdomen, but I guess you can run at night to feed once again this goes 60

[00:58:49] Minutes now in the vagus Workshop all of these run for four minutes the other night. I treated an airless downloads patient for 90 minutes and 30 minutes of that Iran increased secretions of the vagus because it made her so Stone she couldn't talk and I just any time I went off of it she got on Stone. So I stayed on it her heart rate stayed the same didn't change.

[00:59:19] So I'm just saying then the concussion in Vegas you have.

[00:59:26] Concussion in Vegas is a perfect combination contacts at mekin abdomen. So remember 6.8 changes genetic factors. Does it really?

[00:59:36] Mmm, maybe

[00:59:40] So the basic concussion protocol 6.8 38, but then you still need to do 40 and 90 for forty and eighty nine. Now. The question is 40 and 92 because these people are hyper sensory aware. Not sure if this would help why would you want to quiet down the sensory cortex? Because this mid brain the amygdala and the hippocampus have been screaming at it for

[01:00:09] Seven years and so there are sensory cortex is hyper aware because the amygdala and hippocampus diaper.

[01:00:24] Sensing threat no matter what the patient does and then trauma in the vagus increased secretions. This says four minutes each. I've had one experience where I ran 81 and 109 for 30 minutes patient just kept feeling better. It was interesting now after you get rid of the tendinopathy these so you may have to treat 124 in 1981 as well as 124 and 77.

[01:00:54] Zork impetus is slides so from the from module to the painting it module 1 the pain and injury.

[01:01:03] Right, so 40 and 396 reduce the nerve pain then treat if these tissues have been chronically injured. Are you going to have adhesions between the nerve in the fashion? So even if you get rid of the ehlers-danlos on the first day three days later, you're going to have to treat scarring between the nerve and the fashion because you're not going to do that. The first session release the adhesions move the nerve and fashion. Remember that you moving really slowly.

[01:01:32] And then what do you need to do? Your cerebellum has no idea where this arm is in space.

[01:01:40] Right because in 60 minutes you just changed everything so increased secretions reconnected to the brain increased secretions in the nerve the spinal cord followed followed the spark 84 the cerebellum, and this one is where I spend most of

your time because we're not sure if you want to increase secretions in the sensory cortex or decrease them that one I haven't played.

[01:02:10] With

[01:02:11] But I'd increased secretions in the cerebellum with the context of the spine and the nerve end you can do this from negative feet. You can do it from neck to hand. We had pictures for neck to hand, but you could run this neck to feet and have the patient stand up and just do a side to side weight shift and then move their hands.

[01:02:37] And then move the affected muscles so you can see this patient three times in the first week run connected 124 and 77 for a while and then do this part like on the second or third visit and that week.

[01:02:56] And then so you see how it kind of put it together into a treatment plan and then the digestive issues. You're going to have to treat small intestine or sibo and

[01:03:09] So trauma and vitality in the parasympathetics, you got to be careful. If it's the diarrhea kind of sibo treat the infection. Why would there be infection while because it's sibo and they have dysbiosis and bloating every time they eat that's their definition of digestive problems. But in our world, what is it? Well, the vagus regulates the pancreas digestive enzymes the small bowel and

[01:03:39] : so you can I mean this is an hour's worth of treatment even on a customcare so you can take sibo add the vagus to it. So you treat the parasympathetics and include the vagus.

[01:03:59] And then treat I would treat just the yeah, I generally with sibo. I just treat the small intestine.

[01:04:11] But if

[01:04:14] Enzyme secretions are problem. You notice we're not dealing with the eyelets or dealing with the pancreas and digestive enzymes. So that's a thought. So remember this from the core disc and fassett pain patterns are pretty much identical.

You kind of can't now the sides are reversed but can tell the difference sassette pain is worse with extension disc pain is worth with flexion.

[01:04:44] These patients are hypermobile at every joint. They're going to be worse with flexion and extension. So you're going to treat for sets and discs. How do you do that? I would do Subacute facets and Subacute discs, I'd modify it to take out 91, right? It's not a one visit fix. This is going to be the part of their pain that gets bad. Every time you have to strengthen and stabilize spinal muscles patient will need to treat themselves.

[01:05:13] Regular at home. These people will end up with customcare 's and then see a good physical therapist that knows how to stabilize the spine and that's just a setup for neck and low back.

[01:05:25] Extremity joints

[01:05:28] Create a protocol. I don't have any DS protocol and customcare and I got to tell you I'm not going to make one you can do this modified. I would copy clone extremity joint MLT be Subacute. It's not a cute. It's not chronic. You don't want to do chronic and just modify. It shortened it. What is the problem what gets torn and broken the connected tissue right the ligaments? Yep, The Joint capsule. Mmm.

[01:05:58] 4214 is meniscus. If you haven't been to the Advance, this is new for you and 190 once attended. So you get the flat tendons around tendons and pretty much everything made of connective tissue. And the joint then when the joint bash is around what gets damage inflammation. What's in the joint what tissue is it cartilage gets beat up.

[01:06:23] Periosteum because the connective tissue and the tendons and the ligaments attach to the periosteum. So get it gets inflamed. It might even get torn and broken 191 is the tendon 195 is the Bursa 100's the ligaments connected tissue 5939.

[01:06:45] 49 then vitality and all those parts so you could create an EDS joint protocol and EDS fassett and disc protocol. That's pretty much the unit whatever you want. It's not like we know what we're doing with this one. So so far I've seen 10 patients in the

last two years. The results are normalized range of motion like in 60 minutes it my brain. I don't understand it.

[01:07:14] Reduce body and pain is 40 and 10. That's easy reduced anxiety and depression their mood changes when they get off the table and it doesn't hurt. They don't know what to do with it. Not sure why so the vagus or just, you know, we've treated the vagus or affected the vagus or is it just that you're less anxious and depressed when your body paint is a seven and they improve digestion.

[01:07:40] Results last about one week. No patient has been followed long-term and there's no negative outcomes or side effects the thing I forgot I just remembered what I forgot to put in. Where is it? It's up in the spine.

[01:07:58] This is place where I guess I need to put it.

[01:08:03] In one of the others down those patients, I treated 124 and 77 did great every place else but in his neck it was 124 and 443 the dura so the door is made of connective tissue pretty dense connective tissue. So it's torn and broken and the draw that's that's the thing.

[01:08:25] All right.

[01:08:27] So what don't we know? Well you just

[01:08:32] There's so many things. We don't know because I only have ten patients. Once you get to 50 or a hundred patients in case reports either stuff I do or stuff you do can we help with the vascular effects connected tissue treat the arteries treat the capillaries right trauma torn and broken inflammation by tality. Can you change the genetics? Remember 528 the so fragile

[01:09:01] Frequency to repair DNA in the connective tissue Maybe

[01:09:06] Sixpoint 838 we don't know who it's not going to work on the more severe forms. Obviously, we don't see them much.

[01:09:16] The high permeability syndromes. We see all the time. Just miss it not going to miss it now. Can you modify the treatments? So they last longer we don't know that patients need a customcare. So what do we need is a group everybody that's on this.

[01:09:34] More cases. Obviously, I need you guys to start recognizing it and treating it more experience with what works and what doesn't work. How do how do we know so we in our patients can have realistic expectations?

[01:09:54] You can't say to somebody piece of cake. I mean I kind of do that but I really don't know what 10 cases when you get to a hundred then you kind of know I need more long-term data. I need any data. I'd love treating but I'm terrible at collecting data. I don't do the range of motion. I don't do the band score and I should but the first ten cases you don't expect to be able to treat it. So you don't really check right simple. Hi, boo.

[01:10:24] Mobility is fairly common in musculoskeletal patients, but EDS is rare in the general population. And the good news for us is nothing else works very well in these patients. So we have really a chance to as a group to make a huge difference in these patients lives. So the symbol of the owners danlos website is you know, when you hear her hoofbeats look for horses not zebras.

[01:10:54] Aras well, the Eds patients are zebras. They come with a constellation of symptoms and nobody recognizes. So that's what we know what we need to do what you can do go back and read this over again.

[01:11:13] The advance this year is livestream only which is good news and bad news. I'm going to miss seeing you guys and I'm going to miss the great food at that at the hotel in Phoenix, but we're going to do a five-day livestream, which means I'm going to be recording a five-day. We're not going to use an old one because as you'll hear from Kevin, I was changing slides two o'clock this afternoon.

[01:11:42] So the the core will probably be slightly different David. Moseman can't help himself. He puts in new slides. The FSM Sports was supposed to be in Phoenix. But Kim Pettis is holding it January 9th and 10th. You can find the directions for how to sign up February 25 and 26 is the advanced so

[01:12:06] My problem has been multitasking and we don't have the schedule or all the speakers yet. I have some of them but that's on my list for tomorrow. Now that I got through this webinar and then February that's 25th and 26th, February 27th. And 28th is a symposium with Jim Ashman Jerry Pollock. Jim Turner John Sharky now, they did doesn't have to fly from Ireland.

[01:12:34] Everybody is going to be live streamed zoomed but they will have their slides and their faces kind of like this Diane across from Australia. I'm hoping she take a takes up the mantle of how is it that we change connective tissue in?

[01:12:53] Ehlers-danlos. She might actually know she's got some really interesting ideas about micro RNA and practitioner case reports now because this is live stream and we're not having to print packets everything is going to come electronically. The due date is not till February 12th. That's two months away that gives you time to see a patient recognize the high permeability and submit a case report.

[01:13:23] A symposium case report is 30 minutes.

[01:13:27] And 20 slides. I guess we could do 15 minute case reports and that would be ten slides or 12. You guys can do that you have time and there's a $500 honorarium for I think maybe it's 250, but we don't have to pay plane fare or hotel rooms so I can afford to pay the speaker's more which could be kind of fun.

[01:13:55] And we aren't limited to quite the time that we were like, so I'm just saying you've got some potential. I won case reports. There's 80 some out of you listening to this you can do this. I believe in you find and hypermobility patient and treat them change their lives because that's what we do. That is your Market you guys are changing medicine medicine thinks this condition is untreatable and uncurable that these patients live

[01:14:25] Pain, that's not true. Not on our watch not in our world.

[01:14:32] That gives you the ability to change lives and we're doing it one practitioner the time so every single one of you that is watching this webinar has the ability to change this patient's life this one right here.

[01:14:48] Whether she's seven or 25 or 40 or 65, you have the ability to change her life. And when you change her life, she changes her world and you did that you have the ability to do that. So do it. That's the webinar. I think we have QA looks like we have more questions Kevin's got them or going to do QA.

[01:15:18] And it's only 10 after 5:00. So if you click on more we're going to bring up the chat as well kind of bring up the chat locusts.

[01:15:28] The chat there and what I did oh.

[01:15:36] Okay, and then go ahead and click on the Q&A as well that they'll just open up another window.

[01:15:47] Well, it's kind of put it over it.

[01:15:51] Oh crap. No. No, that is the weirdest pointer. Well, once I switch it to this little thing, that's okay. I'm going to close that.

[01:16:07] Okay, I'm going to do the chat first and then I'll get to the other ones.

[01:16:13] All right. Oh.

[01:16:20] Simona did you get sound? Okay. Not sure what I need to do now. Well learn how to

[01:16:32] Okay.

[01:16:36] Copy of the slides. Yes, Kevin will send them to you. Everybody has them he couldn't send them out before because I didn't finish him until three o'clock basically people with the 80s or not. Just the athletic gymnast type. Oh, no, they're totally Carly

that they're totally the clumsy trip kid who trips over their own feet and gets picked last for the team's absolutely

[01:17:03] Yes, you know what's interesting Renee is I have an airless down those patients as Friday and I have emails from

[01:17:18] Yes.

[01:17:20] From patients. I don't think you can see I don't have pots anymore. They can move at the moment without passing out.

[01:17:28] Okay, Mary Jo you've never treated. I don't know if you've treated are losers if you treated the vagus and somebody with pots it doesn't go away because your midbrain your amygdala and hippocampus can turn off the Vegas faster you turn it on so they may have to treat the vagus twice a day. I don't care you're on 94 81 now if the Vegas has been turned off because of infection.

[01:17:58] Still have to fix the John faction the mold in the sinuses the mold and the gut you have to or the Bartonella or whatever is causing the vagus to go off. You have to fix why the Vegas is off.

[01:18:12] And it's the Vegas that cause the pot so but you have the ability to treat the vagus and find out if the the Vegas is always cause of pots so that's not even an F.

[01:18:25] So you fix the vagus and then look in the history. It's always in the history. Why is the vagus off?

[01:18:33] Think about it infection stress trauma are Les damos. So figure it out. When did it start what triggered it? What else do they have? But yes, you can say you don't have pots today.

[01:18:51] Then you have to figure out why.

[01:18:56] Okay, they're going to have Painful fat cells that make sense.

[01:19:02] If similar frequencies are run multiple times a week is there are risk for frequency fatigue. Not that I know about. I don't think so 124 and 77 always works 40 and 396 always works. You have to figure out what's driving it. So I don't think it's frequency for fatigue so much as you didn't fix the cause, so if somebody has nerve pain like me I've C6.

[01:19:31] Disc

[01:19:33] And I can treat the nerve pain to get rid of my thumb pain and treat the tendinopathy. But unless I can fix the disc of the bone spur on my neck and start doing my exercises. I'm going to still have nerve pain and tendinopathy these every single day and I'm going to have to treat them every single day until I do my exercises and fix the cause see so it's not frequency to fatigue so much as think one step behind what is

[01:20:03] This is obvious the neck the posture and I suspect given that I used to be able to subluxated my right shoulder all the time. When I was a teenager. I'm one of those what do you call it? H HS D. I used to be hypermobile could never do the splits, but I used to be able to subluxated my shoulders and my one hip used to subluxated all the time. So

[01:20:33] I'm probably one of those Dave Burke. Oh goody. I got a cookie from Dave Burke. Thank you Dave. I'm glad I did a good job.

[01:20:40] What's frequency? Well look upset Subacute four sets and Subacute discs on your customcare mode Bank clone that mode and go in and I would shorten it. There's a lot of stuff in there. You don't need for an ETS patient. So 12440.

[01:21:03] And all those tissues kind of like in the joint the same channel a is that are in The Joint but you add that to the disk and fassett frequencies Oh, yay. They Burke liked it. Okay. Now we're going to do the other ones see if we can get that to come up.

[01:21:26] I don't want to poll. Did I erase them?

[01:21:37] I know. I don't know how to do that.

[01:21:41] How about on make it work? Can I go back? Can I get rid of the little pointer?

[01:21:53] A little arrow. There we go. There we go.

[01:21:57] Okay, copy the slides. Yes.

[01:22:04] Oh Massa activation MCAS that's going to Jeff that's going to be in the five-day core or the neuro visceral core module David Mosely does a great job with MCA as it is always associated with the vagus. The reason for the MCAS is not part of the dysautonomia. It's because the Vegas has as its job to suppress or regulate control the immune system go.

[01:22:33] Back and look at the vagus Workshop from the 2020. I'll do it again at this year's Advanced. I'm going to keep talking about the vagus till everybody figures it out. Have you seen glyphosate?

[01:22:52] Nope, doesn't destroy glyphosate can't destroy glycine or you'd be dead. You really need glycine to do everything, but it can impair I receptor.

[01:23:07] Glyphosate is just 57 909 20 Renee. So you might try when you treat the vagus if you think glyphosate is associated because the patient had an exposure and then they developed this set of symptoms either EDS hsd pots whatever.

[01:23:32] You could use 57 909 20 in connective tissue. What tissue is it? What's wrong with it? How can you change it? So connective tissue the vagus 109 connected tissue 77

[01:23:51] I'm saying one case where 57 909 20 was associated with anxiety and it was in the mid brain. That was sort of stunning. Where's my little there it is. There it is. Say it again. Oh, can you speak to the association Mass seldom? That was Jeff. Oh what happened to the glyphosate question?

[01:24:28] Oh, that was Renee. That's at the top. Okay.

[01:24:32] Okay. So have you seen glyphosate being a primary toxin involved with hsd or DS doesn't destroy glycine it interferes with the receptor.

[01:24:43] Can't destroy glycine. That's just not the right way to look at it. It affects the receptor that is sensitive to glycine or response to glycine. So I answered that one answered MCAS. That's you got to watch the new neural visceral that way you have David Moyes Nick talking about his visceral slides. He's really entertaining or going to love it and the five day.

[01:25:13] Comprehensive I do his slides and it's not quite as much fun because I spend more time on the FSM. Then I do on the stable State stuff. What about arms and legs that come out of the socket? Yep. Nope. That is EDS. That's it's like is there any way

[01:25:34] Yeah, 124 and 77 because Joe the why 124 and 191 instead of 124 and 100 and the reason not to do the ligaments. No, there's no reason not to but if you think about it, the ligaments and the tendons 191 and 100 are made of connective tissue, their specialized types of connective tissue or collagen so you have to start with 191 and 77 and you

[01:26:04] Treat 191 and 100, right?

[01:26:19] Hmm Jeff heds patient

[01:26:23] Several times followed the protocols no change. Well, I need to know that look at the rest of the stuff that was recommended and see if that makes a difference Jeff. So he has an e DS patient followed the protocols using three machines 124 and 7740 and ten concussion in Vegas and sibo no change in the pain pattern at all. Well, what's your pain pattern?

[01:26:50] Could be 40 and 89 actually try that if it's just centralized because if you remember

[01:27:01] Central sensitization patients respond of forty and eighty nine not 40 and 10 and if her pain pattern is 6 or 7.

[01:27:11] She's not suppressing it very well. So you're probably pretty safe to try 1489. I tried that and then please let me know if it works any of you that that treat these patients. Be sure and tell me John. Damn. Oh, yeah, John Keenan. Yeah, there's no way to treat these patients with sticky pads because you have to wrap the neck. It has to go all the way around so

[01:27:41] I don't know how old your daughter is but tells her obnoxious and when I treat myself I'm using I'm using wraps. I'm spending the afternoon with the wraparound mean that going to wrap around my hand working on the computer that was yesterday and I could feel it when the when the protocol stopped running. So I just ran it all afternoon because I haven't been doing my neck.

[01:28:11] Sizes and we just found out why my hand hurts yesterday. So yeah, you have to you have to wrap the neck. So a pretty blue wrap with velcro or you can buy one of Kim's specialty ones or you can make one on your own. Yep. Sticky pads. Don't work on the cord.

[01:28:33] Ceds Canadia start from some sort of trauma Richard Finn Kenny. I don't know.

[01:28:41] That's a really good question. How do you change the genes? I think what would happen is that you had EDS and everybody missed it you have trauma. So you tear up the ligaments and get hyper mobile at one joint. And then then you notice the other joints that are hyper mobile because now you're looking for it and you have 40 and 10 paying pattern.

[01:29:09] And all the rest of the wheels come off Richard that's good question, but I suspect that might be it magnetic converters don't whoops.

[01:29:26] Oh.

[01:29:29] Alchemical alignment training, okay.

[01:29:35] You and Richard can talk about that John Keenan did the magnetic converters work? Well for abs they work they work for I use the converter to treat sibo on myself, but it can't polarize anything so you can't do the cord you can't do.

[01:29:57] I guess you might be able to do 124 and 77 right

[01:30:02] Because that doesn't have to be polarized that can be alternating John I would try the magnetic converter and if it's on your daughter I don't know how old she is but my converter protocols run for 2 hours at night and you could make a five hour program and just run it while she's asleep

[01:30:28] Could EDS be related with cold free to constricted capillaries Abdullah I think that could be

[01:30:36] Because if you look at the autonomic effects and you look at the fact that the connective tissue is in the basement membrane of the arteries is

[01:30:51] Abnormal and if the balance between sympathetic and parasympathetic is messed up because the Vegas is inhibited. So you inhibit the vagus you're going to inhibit the parasympathetic those two are joined at the hip.

[01:31:08] I think that's possible.

[01:31:11] So when you treat 124 and 40 you would add 40 and 562 to turn down the sympathetics.

[01:31:20] And then you'd run increase the Vegas. So on the vagus program in a patient with cold feet or constricted capillaries. The capillaries don't constrict on their own the sympathetic sir.

[01:31:35] Dominant and they constrict your capillaries so you don't be lead to death when the tiger bites you.

[01:31:41] So I turn the sympathetics off first turn the midbrain off first because the sympathetics in the midbrain can turn the vagus off faster and you can turn it on. So turn off.

[01:31:57] Turn down the sympathetics and the midbrain and then turn on the Vegas and see if that helps with the cold feet.

[01:32:05] Pemphigoid Madeline Roscoe. Have you seen pemphigoid has alongside EDS period I'm not even actually sure what pemphigoid is. I'm really sorry, but if it makes sense

[01:32:21] Yes, I guess you tell me if you've seen it treat somebody put it together and let me know 142 was not present in treating join extremity. You're right. I kind of forgot so you can do 124 and 120-140 to that makes sense.

[01:32:46] Michael McAvoy, this is Renee. Michael mcevoy's work in a DS and hsd in relationship with our CCX phenotype. Don't know what that is has really helped her with your hsd not familiar with his work metabolic healing. Okay, not sure what that is.

[01:33:11] Rcc Xfinity top so really Renee is posted the link.

[01:33:20] Mmm, next you're able to do they'll be webinars because all of this is continuing Ed's stuff for people that are specifically interested in it. Whoops.

[01:33:35] Where'd you go?

[01:33:40] Oh, come on.

[01:33:45] Where is that Kevin? Where are these coming from? Oh, there it is. No seminar ADHD autism and pandas will do will do autism and pandas ADHD. Dave Burke is already done an advanced Symposium case report on that. So ADHD were kind of covered but I can and

[01:34:14] Phd

[01:34:16] Florida did a great presentation on autism but I'll revisit that and borrow her her data. Oh, come on, I can see her face. So I can't remember a name cool. Cheers that alone are you from Australia?

[01:34:33] Yes, any experiment Daniela local a do you have any experience with 528 and 77 for floor quinone? No, but the the fluoroquinolone laxity that I've treated is 124 and 77. I don't know if 528 would work but it's worth a try.

[01:34:56] The the one that I treated with fluoroquinolone suggests that it is not.

[01:35:06] Helpful, if the patient has an ongoing lawsuit with the pharmaceutical company supplements. You know what your your body uses vitamin C to make collagen? And so I wonder, you know eating the cartilage on the end of chicken wings helps but so vitamin C is the only one I seriously know about

[01:35:33] Oh, what do you suggest for someone that has eased as and very loose skin on the face 124 and 77 is all I know about the other thing you could try is 124 and 355 but it's not really the epidermis. That is the problem. It is the connective tissue basement membrane. That's at the floor. So for somebody that has loose skin on the face you I'd run it from the forehead.

[01:36:04] To the chest Maybe

[01:36:07] And see if that helps but if they've got loose skin on their face they're going to have loose skin everywhere so I do for head to feet Teddy our ATP is EDS patients especially sensitive to covid

[01:36:26] Well if you go back to the covid webinar from March

[01:36:33] Covid attaches to the ace to receptor that is really widely distributed in the capillaries the arteries so the lining of the blood vessels and then all the really well vascularized tissues so the lungs are just

[01:36:57] You know alveoli buried in capillaries.

[01:37:03] Kidneys liver

[01:37:07] So covid effects kidneys liver brain heart and lungs. That's where the H2 receptor is distributed.

[01:37:20] So

[01:37:24] Yes, I would say they are that if you if you have lacks connective tissue basement membranes in the arteries and the capillaries and that capillaries invaded by the virus. The virus replicates inside the capillary and it comes boiling out.

[01:37:48] Their capillaries are more fragile. You could make a case for it. It's hypothetical Teddy. So.

[01:37:56] Treat the 80s and run the flu virus protocols. Now, there's one for just the virus and the lung. That's the first one I did in April March and then an April is when we elaborated on the organs and the brain so I did two protocols in that April and that April webinar.

[01:38:23] One was just organs and one was organs in the brain brain is just thick with capillaries. So I would skip the organs and just automatically do the brain. So yeah.

[01:38:38] I would make sense. You can make a case for it.

[01:38:42] Right. Did I get everybody?

[01:38:45] Okay. Well, this was fun as 535. I'm more or less right on time. I told you it was going to take an hour and a half. Alright, so that is it do good. Things change lives change the world.

[01:39:03] Oh wait.

[01:39:06] Margaret by Margaret

[01:39:10] Eds scar

[01:39:15] No, sticky pads, Jaya sticky pads don't work for polarized positive. They don't work because they don't cover the outflow of the nerve the nerve comes from the the neck on both sides. You have to you can use 4 inch pads, but they're good for one use. I don't know about you, but I can't afford to charge somebody 10 bucks every time I treat their neck if I'm treating them five days a week and therefore

[01:39:45] Town so yeah, no use a wrap.

[01:39:52] Okay.

[01:39:54] And that's hmm. And that's a wrap. There we go. Use a wrap. That's a wrap. We are out go change lives change the world. Love you lots. See you guys next time.