Susan Clinton 0:00
Hi, everybody, Susan Clinton, one of your hosts for Tough to Treat, along with my lovely co-host, Erica Meloe. Welcome, Erica.

Erica Meloe 0:07
Welcome, Susan, how are you?

Susan Clinton 0:09
Good, good. This is episode number 200. Everybody is very excited that we made it to 200. We're looking forward to continuing this episode is going to be talking a little bit about something that we discussed at our CSM course just not too long ago in Boston, I want everyone to be on the lookout, Eric and I are going to put this course together and release it this summer. So you want to keep your eye out for it. We both have some obligations in spring. But we're going to be getting this together, along with some other exciting things this summer. So keep your eyes out for it. And the best way to do that is to email us at three pt@gmail.com. And also remember to go to our website www dot tough to treat.com. And look for our eat for look for our, our old posts there, there's a search engine to help you find things that you may want to listen to. Also, it's just really important to join our email list so that you can get the most up-to-date information that we'll be having coming out this year. Since it's an exciting 200-episode, we're going over two more reviews and doing some contests for that. Yep, yeah, release of our course. And some other exciting adventures. So get on our email list. Don't Don't miss out on this. Yeah,

Erica Meloe 1:33
and we have some good, really good clinical PDFs on there as well that you and I both wrote. So if you're new to the podcast, welcome. But our website has a lot a lot on there. And I listen to the episodes, Susan actually be listened to a lot of them myself. And I just type in the search engine, knee pain or whatever, because I think that we both learned from it. And for those of you who haven't, I would urge you to do that, even if it's just listening to 10 minutes of something that you missed. So

Susan Clinton 2:00
happy 200%. And don't forget, we are also able to be downloaded on YouTube as far as I know. So if you want to just have a quick place an easy place to listen or to go back. We're on YouTube as well. So Alright, enjoy the episode, everybody. Thank you.

Susan Clinton 2:26
Hi, everybody, its Susan Clinton, one of your hosts for Tough to Treat. And I'm here with Erica Meloe, my co-host Hi, Erica. Hi, Susan. Welcome to episode number 200. Day, we're going to dive into something that I that we spoke about, when we did our lecture at CSM. Just a week or so ago. Time flies, and we get the most questions about finding drivers. And one of the things that we discussed at CSM was thinking a little bit more outside of the box. We always are talking about the foot, the thorax, the pelvis, the neck. But I want to talk a little bit about the vestibular system, the specific color ocular system, including the upper cervical, not so much as those

individual things, but the balance system as a driver. Yeah. And so I'm just gonna set it up. And then we can talk about various things that you and I have run into with this. A lot of people are always talking to me about why I am treating the balanced system when I'm treating people with pelvic health problems. And the reason that I do that is because there's we know that there's real musculoskeletal issues that go along with pelvic health problems. But we also know that people when and this is going to be true for just about anybody whether they have pelvic health or not. Whenever people adapt, their whole system has to adapt. So if we have five ankle sprains on one side, and on the right side, and we've totally shifted off to the left it our whole entire system is going to adapt to that. Yep, standing on the left side with a left shift of the center of mass past the line of gravity, all the way over is going to become our new midline. That's where we live. And we can work with people to get back onto the right foot to teach them right foot exercises to shift back over. But if we don't do some other stuff to help the balance system, make the change and make the shift. They're going to stay on the left side, no matter what we do. And this is one of the reasons we see people over and over and over again who have been to many different places and have gotten excellent treatment. But they're not never looking beyond the region of the body that is in trouble and other words where they're having pain. Yeah, yeah. So that somebody could come in with left hip pain. And B, this person, and they're just looking at treating the left hip, and they're not really looking at, wow, maybe we should like to help them gain some mobility back in their ankle, or stability in their right ankle, and be able to now we can work with their vestibular ocular cervical reflex system, and help them begin to make the shift back over to midline so that they're not being pulled over.

So I think in many ways, when we look at this, Erica did a beautiful job at CSM of talking about timelines. And one of the things she talked about was what was the what really got the person to make the adaptation? You know, for this particular thing that I'm talking about simply and we'll get into a couple of other examples here in a minute. But for this one that I'm talking about, specifically, ankle sprains are what caused the shift and this one person, right, then they have hip pain, and now they're gonna adapt some way around that left hip pain. You know, but what's key and so the idea is something got them over there. Now, the next thing is what's keeping them there? Yeah. And for this particular scenario, we'd have to almost argue that the balance system is what's keeping them over there. You know, there's that primary thing, the primary problem is that they moved away from this instability or problem right ankle with these multiple ankle sprains and realized it, yeah, and so they get rehabbed, but their, their center of mass has shifted somewhat. And so they're never on that right foot the same way again, so maybe they lose power, they lose stability, or they lose all these other things. So there's reasons for them to keep shifting, but eventually, the balance system is going to adapt to that and become almost like if not a primary driver, certainly a secondary driver, that is interfering with their ability to regain and re get themselves back into a much more optimal performance posture, just even for walking or whatever it is that they're trying to do.

Erica Meloe 7:07
You know, it's funny, they get rehabbed in their dominant pattern. And the becomes even stronger in that dominant pattern, which is, it's like a vicious cycle, right, and you want to be able

to train the new pattern, and the way into that system, or the way into that, what's the word I'm looking for? The way into that is through can absolutely be through balance. Right. And so go ahead, I just wanted to add those two.

Susan Clinton 7:34
Yeah, it's true. So here's the other situation, and that balance can be changed. balance can be challenged, balance, can adapt balance can become optimized, we can do a lot with a whole balance system. I mean, there's physical therapists that stick with this, when that system is really a problematic system such as , dizziness, and all the other pieces, I'm not really getting into so much of that here. But there's a reason why we want to look at the balance system and challenge that balance system so that we're not just rehabbing an old pattern, or dominant pattern, like you would call it the reason that they started there. But then we're actually kind of helping the person integrate in back into their full optimization of their nervous system, which is really what's going to govern the motor control, and the motor patterns and the motor performance for them. So the the story that I like to tell that kind of helps people understand this is that we see a lot of people who have had nerve root injuries in their lumbar spine. It happens when they're young, that's generally when those things happen. Yes, it can happen when they're older. But it's usually a different mechanism that happens for them when they're older. You know, it's more cinematic, it's has those other types of things that go on. Nevertheless, we have somebody who may have had, and this is why the history is so so, so important. That if they had a nerve root injury in their life, like it's gone down the leg, and it was really bad, whether they had surgery or not, how does the body adapt to that? So when we have something that is that painful, we're going to move away from it. And in the case of a nerve root injury, we have to almost argue that there's an inflate micro fractures that go on, can't tear the annulus , without without fracturing the in plates somehow, right in the main the vertebral bodies. So the body does not like fracture, it doesn't like it traction, and it doesn't like it compressed. So it's so people have to move away from what's , their brain is going to signal something to happen for them to move away from it. And for those of you who didn't listen to this podcast, you can go back and listen to the one called the SOS triangle, and talks a little bit about the mechanism behind this and all of that, I won't go through it. But that's the one that you want to go back and review. The interesting thing about this is what happens is as we, if you think about, I have a right nerve root injury at L four, I five. So my body is actually my brain and my body are going to do something, they're going to side bend me away from that, so I can get off of that very painful, irritated nerve root. Okay, so if you just stand up on your two feet and side bend to the left, what happens to your head, your head goes to the left to right, so you're in at the horizon a skewed Yes. And our central nervous system is primarily organized to keep our eyes on the horizon in a level way. That's, that's a right. It's an old prime order, and mortal reflex, it's a pattern. And if we're not going to walk around with our head sideways, we're not going to do it, we everything that's inside of us tells us to get those eyes level on the horizon. So in order for that to happen, we bring our head up, but worse, our body is still side bend, our head comes back up. And we're not going to walk around with our body side bent on her head up. So we're just going to kind of like the upper trunk actually shifts to the left. So that's where we got that shift that you see in an over an injury. Yes, we can have them back out of that we can do that. We can help them with a

lateral shift. But the problem is now the balance system has taken over and is going to hold on to that old pattern, because it's the only way that they can keep their head up during the acute phase. Yes, yeah. Yeah. So if we don't do anything to rebalance out, the thorax, and the upper trunk, the head, the neck, the eyes, the vestibular system, yes, we can get people to shift back, yes, we can get the pain better. Yes, the nerve root will eventually heal all of those things. But we're going to have this inherent kind of weird, muscular control pattern around where the injury was, and we're going to have a balanced system issue on top of it. So it may not be that the right leg is going to be weak forever because of this nerve root power outage that they had. Be that because they've got this now, thoracic shift, and and righting reflex differential going on in their head is what's keeping them from being on their right side, and therefore maybe perhaps more prone to injury on the right or the left or whatever, depending upon what they're trying to do. Yeah.

Erica Meloe 12:42
You know, just gonna say that also, I'm just thinking, we have not done an episode on this guy. But he had us former patient of mine, he had just the opposite. He had a nerve root injury on his left side. Significant. And he was that sort of like you think about it from our CSM talk what set him up what kept him there the nerve root injury was the nerve root injury. And he suffered that because for whatever reason, but he was a rower. And he was left sweeping the boat. So he got stuck on his left side. So it's almost the the other thing, so when you see somebody who has an injury to one side, and they're still loading that side, what kept him there? So you're like, yeah, the body will absolutely compensate, like, like Susan was mentioning. But when you see that, that that that non habitual, I'm going to offload my left side because I have a nerve or an injury and you don't, and they're still voting that side, that should raise your radar, and go down and more deeper clinical reasoning process. So what's keeping them there? Right.

Susan Clinton 13:47
Right. And for instance one sided sports keep keeps people in a dominant pattern. Balance resets around that. Yeah. So it may be that maybe he wants to get off of that right side. Then balance system is keeping him there. Yeah. You know, so that because everything reorganizes around the balance system to keep us upright, and to keep our eyes on the horizon. That's a way that we can survive in this world, because then our eyes can move around and can scan the environment and we can be these anticipatory beings. The problem is when we start having all of these shifts and changes is we lose the I'm just going to call it very ability of our of our eyes to do all the shifting and moving that it needs to do. And that in turn, sets the vestibular system to even have a different gain. So the if the eyes aren't moving, the vestibular system isn't moving as much either. Yeah. And when the vestibular system doesn't move as much, it doesn't have all of the variability of motions that we can tolerate.

Erica Meloe 14:56
You know, I was just gonna say I'm thinking, because we're on up nice looking at my screen right now I have no need to move my eyes right at all I stare at and this is where we we function. But because Susan and I are such big hockey fans, you think about hockey goalie. He trains

that vision, right? I mean it back and forth, back and forth, back and forth. I mean, I'm like into hockey right now. But back and forth. But you think about that the drills that those guys have to do in just just agility and balance drills. Anyway, I'll let you go. But I just had

Susan Clinton 15:28
to know. It's making me remember a, a wonderful commercial. Eric is in New York, and I'm in pitch, I am always going to be a Pittsburgh penguin fan in Michigan now, but I'm still a penguins fan. But anyway, Mark Andre flurry, who was one of our favorite goalies in Pittsburgh and now was with the Minnesota Wild. When his daughter was born, he was in Pennsylvania and of course, they did commercials with him like they do with , all of the bigger, more charismatic players on the team. But his whole thing was he had the puck, she was in one of those little bouncy swings as a as a very young child, like maybe seven or eight months old. And he's there with the puck, telling her westerpark masa is adorable. Yeah, it is. It's hilarious. But that's exactly , that, if there's reason to do it, we'll do it. But if the reason is taken sometimes that is taken away from us because of things that happen to us in our life. And so we lose that we lose that flexibility that optimal gain, we lose that ability to move up and down and around in the ranges. And for a lot of my clients, even, they have a hard time, when we do eye exercises, they have a hard time, the one they have the hardest time with is looking up, look down, it's easy to look to the sides. But when we add the upper quadrants and going straight up, their head goes up immediately. You know, so they've lost that. And why because as we age, we put on glasses that narrow our reading range down to a certain place, and we have to put our eyes down to see through it. Yeah, that's why they build those glasses that way, or else we be what , when people were readers, oftentimes they're they do all these funny things, like they'll push they're, they'll knock their head up to to read out of their readers. Or they'll drop their head so that they can look above the readers to see something , so you'll see people do these things. And they're the environment is, is what's holding them there. You know, that's, that's a visual loss that holds us into those, those things. Combine that with the musculoskeletal adaptation, and dominant pattern we're set up for no wonder we fall. That's true. That's very true. No wonder we fall even if nothing else is wrong the rest of your life No wonder, our balance system begins to change when we have this balance system involved like this. And one of the things that I'm always screaming about is rotation, rotation, rotation rotation, is we don't rotate, there's no reason for our head, eyes and neck to rotate. And without that we don't have that great functional flexibility between the upper cervical spine, the vestibular system and the ocular system. And without that the proprioceptive system, which sits in our sub occipital space is not really being utilized to its ultimate. So in other words, 50% of the body's proprioceptors are in the suboccipital space. So it's very important for us to know where our head is in space. But it also can also be very limiting when the only input coming into the cerebellum is that the head has been still the head has been still the head has been still. So the motor pattern is going to just say the head is still we just this is where we are. Yeah it's not doesn't stuck in a hat. And then when we have to do something kind of complicated. It's like, Wow, I can't stand on one leg and throw my arm the other way and hold on to the door that I'm pushing and fight the elements of the wind at the same time. Yeah.

Erica Meloe 19:20
Yeah, or even just our reaction times, right? If we saw ourselves or we're falling where we have to grab something, that's when injury absent happens, right? Because if we have to grab something, those should be that should be part of the treatment plan, whatever the driver is, right?

Susan Clinton 19:37
Yes. 100%. So no matter what the driver is, you've got to reset the balance system around it. Because you want what you want to be able to see is after they do these wonderful exercises, and they do these reset exercises and they , can tell that that they're improving and changing as we want to see not only better motor performance, but we want to see, does it really change when they're standing still, as their center of mass really changed? What about standing on one leg? What does that lunge look like? What is the squat look like? Did it really begin to shift and change? And if not, why not. And I would tell you, nine times out of 10, at least in my world, is because nothing was ever done to build that reaction time back in and get that system a lot more. Just a lot more nimble, a lot more nimble. And so when we train balance, it needs to be reactionary. And I think that's the other piece that that gets missed is that people just we just forget that. You know, we're anticipatory beings, we think people just need to be anticipatory of what's going on around them. But we also need to be able to have good reaction times like you just spoke about when people get injured is when they are unable to master their their place in the world in gravity. Yeah, exactly.

Erica Meloe 21:04
They're not recruiting optimally. Bringing my finger here, but something's for lack of a better word off, right? And they just their neuromuscular system, their nervous system just can't recruit appropriately yet. And so they take their path of least resistance or whatever, and are their dominant and then you you may or may not have an injury, you may not, but , and people, I often hear, Oh, we can't do this with older patients. I'm like, Yes, you can actually. No.

Susan Clinton 21:33
We have is now has tons and tons and tons and tons of thing. Yeah, yeah. People standing on one leg working on a Jenga puzzle, or a Jenga tower or reaction times and hitting , the board that's lining up while they're moving. Yeah, they may be having them walk walk on a treadmill, while they're hitting all of these buttons and doing things. Some of the vestibular rehab is like, as you're walking, turning your head side to side faster, slower, finding points to like, look at can you see them all? Can you name them all? You know, as you go by? Can you remember them? When you get through walking down the hallway? What did you see? How many did you see

Erica Meloe 22:10
it when you change the environment? And so I think we talked about this in our CSM talk, you can have them do their their normal routine, but change the environment, have them do challenge the balance system or challenge the vestibular or the the, the VOR reflex. While they're walking, and I liked the Jenga, I think that's great, because, ultimately, people, we're not

doing just one activity, unless we're like a professional athlete. We're doing multiple things at once. And I think that's what you were referring to as well. It's how can I multitask while keeping my balance system intact and be able to react, especially here in New York, or any big city if someone shoves you on the street? Or honestly, if someone screams loudly, which I heard this morning on the subway, I'm like, Oh my God for an older person or someone who has balance issues that could throw you off. And that's not even a physical issue.

Susan Clinton 23:05
Right. Right. Right. So I think those things are important to keep in mind. So simple things people can do, is we always like to talk about, Hey, how can we make this simple and put it in the clinic? You know, first of all, assess it assess the balance. If they're really low level, and they stand on one leg. And for I wouldn't have to say most everybody has some difficulty on one leg more than another. Right? It may be subtle on somebody different different people may be more subtle on somebody who's in better shape or more nimble, even though they've had an injury versus somebody who's been adapting for a long time. But , there's lots of ways to test balance, step up, step down step downs, you're like going down the stairs? Do they really need something to hold them? Do they have the central control? Are they looking down? Can they look up? You know, what's going sidesteps? You know, if they're good, can they stand on one leg and bounce up and down? You know, can they do a split squat or kneel down? How did they get on and off the floor? You know, are they able to maintain and use of rotation in any of these activities that they do? And when they do stand still, how do they stand? Are they kind of rigid? Are they off to one side? You know, is that dominant pattern still very very visible to them. You know, very, very strong to them, I'm sorry, very dominant to them and again, what got them there. So for some people, it may have been maybe an old ankle injury, but they adapted pretty well from it and then they have a baby. And maybe the delivery went fine, but where they carry their baby is what's keeping them there. Right now the teller balances some is changing. Yeah, that's it. Listen, and I hear this a lot when ever I have people who, who have had children, one of the questions I love to ask is when did you stop riding rides? Or where do you sit in the car? And for the ones with balance issues since their first kids second kid was born, will always tell me, I drive. I never, never sit in the backseat, like sit in the passenger seat. I like to drive.

Erica Meloe 25:28
Yeah, yeah, years ago, I used to I don't see many older older patients anymore. But I do have a few will say, who come back to see me. And I used to put weights on their ankles and had them walk with weights just to get that set that proprioception and balance. But for those of you who , treat it, like more of a younger population or more of an active population, this also still Still, this absolutely, still applies. And I think that last week, I had a guy in here to see me he had his his complaints above squash player. And his complaints were, I just feel like my limbs aren't in space. I mean, no joke. That's exactly what he told me. And so for any of you, it could be the thorax stuff, the driver, the neck, the shoulder, the hand, the rest of the knee, the foot, the hip, the pelvis so what I did with him is because squat, you once again it doesn't have to be in a sport, but I the demands of the sport, I put Susan, I put bands around his arms, his forearms and bands above his knees and bands below his knees. So that challenged his balance, and he

could control it better. So for those of you are thinking, why can't what to do single like, balance, just do something else, like the band's challenge his system, that ironically, he was better balanced with that, then he would then without because the his brain said, I need to recruit this, I need to do this. And this. So it's not just there's not one right sort of treatment, but and it doesn't matter what the where the driver is. You need to , once again, what set him up what kept them were but that his his his his narrative was like, I don't feel like my limbs are in the right place. Okay, that's not a typical narrative, you would hear from somebody, right. And so,

Susan Clinton 27:18
I think that that's important. That brings up another point that I think we should also keep in mind is, this system will change. But it needs consistent to change. Yeah. And it doesn't need it to be only one thing. So what Erica did was great, because it got him to start recruiting differently, and having a different input into his system. I'm sure that she didn't, I'm sure you didn't have him walk around with bands for like the next three months. But that was something he can do periodically to put input into a system, maybe he like, Hey, this is better. And that's my feet. And I get when I put this on, that helps me get like set to do my exercise program or whatever. Yeah, but I think that we have to consider like, all of the different ways that the balance can be challenged. And the more we throw people into those types of functional activities, when they're ready, the better. So some of the , but again, keep in mind that many of the things that we're talking about today really need to be environmentally reactive. So they set the environment up to where they have to do something different. In many podcasts, I've talked about people who use double screens, and they have a side bending with the opposite rotation kind of tilt to their head. And that feeds into the triad, the spinal nucleus of the trigeminal system. And that becomes a dominant pattern in their, in their head and neck. And their balance system now is forever changed because of that, and they're doing it in sitting. But it just gets stuck there. And they're there all the time. So guess what that consistent input is what changes it for them, and whatever has been going on so beyond, they can sit on a cushion, but if they keep doing that with their head, they're going to probably still collapse into something that may be the source of their pain maybe that if they even if we get their chair, perfect. If they still do this with their head, they're going to shift in their chair but what does it do to them standing up? What does it do to them, moving around how many people really, really, really look at neck and shoulder clients and the standing position? And they just go right to the neck and the shoulder and start doing things which is fine, but what are they doing and standing sitting and kneeling and all of the other things that they need to move and I know that you talk a lot about that with your clients as well as like, is the shoulder up is it down as , what's the ribcage doing? What's the thorax doing? And does that change if they sit versus stand? Absolutely. There may be a secondary driver in there like from the the feet for the pelvis. Yes. or the balanced system? You know, because the balanced system may be pulling them off and and causing their muscles to recruit in a different way. And then they go to the gym to get stronger, and one side starts to break down where the other one doesn't. And it's like, why is that? That one's there.

Erica Meloe 30:19
Exactly. And then you realize, okay, well and we talked about this in Boston at the CSM. But if

you like I have met patients, shoulder patients, I use this as an example. If you don't, if you put them on the table and have them turn their head and do the straight plane movements, you will miss something, okay? And you have to look at them in standing, even if it's two minutes of a normal, narrow, wide base of support or going on the wall normal, narrow, wide, you they will plateau. And you won't see how their head responds to gravity. When they load the system and standard or how the ground reaction force goes up through the feet, the hips, the knees, the pelvis into the head, because I bet I know myself, I am way worse in standing in my neck than sitting. And why is that? Because I have multiple foot issues. Okay, I have multiple injuries, you need to do your patient a service by looking at them and stand thing and so I'll get off the soapbox. But yeah,

Susan Clinton 31:20
yeah. 100%. And I think it's important to think about what do they do in standing? We talked about one legged stance all the time. Is it just a shift? Or is there an internal rotation of the leg and make shift? Is there a rotation of the trunk? What happens when you put the hands on the wall? But still, again, for some of these people? What is their head and neck posture? And is that is it no matter what you do with everything else is that still stuck there? You know, so we have to figure out some ways to do it. And one of the best ways to begin to unlock and increase the nimbleness of that system is to do reactionary types of activities, you can do it with the eyes, you can do it with the head, you can do it with the eyes, head and neck. For sure, my favorite app is clock yourself, and I just have them with the imaginary clock on the wall. But I challenge them face when they can do it. First, I have many people who start with just sitting and that's all they can do this, walk around the wall in the seated position and get better at it. And then when they're good, they can start moving their nose and keeping their eyes still. So it's head on eyes on Head, head on eyes head on neck, neck on head, that kind of thing. But I you immediately get them up into standing. And then we work on one leg standing. And when that gets better, we start adding the clock into it. So maybe I'll have them put the clock on the other wall where they have to stand on one leg and turn their head to look at the clock on the right on the left. So you can you can get as creative as you want to do. You know, sometimes I'll have people in a corner and I'll say you've got a clock here and a clock here kind of at 45 degree angles so every not every other number they call out you're going to find it on the opposite clock. So that so they start off slow, too. So they look over to the left at the two o'clock mark and then the next one is six, they'd have to look to the right to six o'clock. Yeah. And then stand on one leg and do that or stand on one of those foam rollers or foam cushions or Yeah, or Bosu ball if it's somebody that is meaning to have that nimbleness back into their activity. And for those of you who who may be treated again, athletes are like this, but performing artists need this just as badly. You know, I think that's one of the things that really is not done nearly as well and high performance athletes, particularly dancers. Yeah. You know, because there's they really, really, really need that reintegration back end. And I remember listening to a gentleman who was a physical therapist for high level basketball team. And one of the things that he noticed with one of the athletes that had this pretty major ankle sprain an ankle injury, it was a big one. But anyway, he finally got the guy to start to do some of the other exercises that we want them to wanted him to do because what he did was he filmed him. And when he went up to do a layup, you notice that

he , he didn't have the right type of diagonal reflex activity that was going on to help him land correctly. The other and , he just filmed him and showed it to him. We said, This is why you're having a problem. This is better, but this is why it's continuing to affect your performance. Yeah, I finally bought into it was in allow him to do a whole bunch of like rotational exercises and reaching and lunge and reach and just reaching under the leg to the side, I mean anything that they could have, just re integrate his system as much as possible around rotation and diagonals to help him get that back in and it made a huge difference, but nobody wants to do that they just like fix my ankle and I'm back on the field we're back on the thing and

Erica Meloe 35:30
it right and that may be okay for a short period of time, but it's going to be the ones that that there's gonna reoccur, especially in basketball, you look at basketball, hockey, football, the depth perception of what these guys were women both need to look at whatever speed in tennis is very different, right? And it's not so much like sitting and playing on the Wii and doing but , you need to actually integrate it into a movement patterning, depending on like this guy with his ankle. I think that was that's, that's a great, great, great story. And I , I was gonna say something earlier about a patient of mine, who, oh, years, during the pandemic, she was at our house, outside the city here. And she was playing games with her daughter. And she had issues with meters or close chain arms. And we were talking about balance. So she remember the game Twister, where you're on that remember that Susan with a different colors. I mean, we're dating ourselves here, but you go on the floor, and you're twisting just to

Susan Clinton 36:30
make the game right. Again, yes, yeah.

Erica Meloe 36:35
So she do that with her daughter. And it was it was fun. And she got so much better because of her. Just with the hands, I'm just moving my arms here. And I and you can easily do something like in the clinic pretty easily, right? under percent. Yeah. And even with we're just sort of the, the older population, yeah, that it'd be hard for them to go down. But you can easily , put different color balls on on a table and have them do the same thing. And with with athletes, you're going to, you're gonna want to do depending on what sport they're in, you're going to want to just get them out of their dominant movement pattern, because that's okay that they do their dominant pattern because it's their sport, but in life, they need choices for movement. And so you need to be able to get them on like my left side and rower, he's like, Eric, I don't need to be on the right side of the boat. I'm like, I know. But you need to be able to get there just in case you don't. Because every every single movement pattern I assess with this guy, left, left, left, left, left, left, left, left, left, everything left. So when you're sitting in a chair, you don't need to be on the left side. That's what has, that's what your issue is. And so to sort of circle back to what Susan said at the beginning with the balance, you if you train your vision and the rest of your system in it to be more left sided, that becomes your center over time. Right. And we right and so to Susan's point, we normalize it, we were centered, but we're really not until someone whacks us and we fall. Mm hmm. Right.

Susan Clinton 38:08
And that's why pictures are worth 1000 words. Because take a picture of somebody in front and behind, and you'll be able to see where they're where their patterns are always interesting to me when , that shows up. It's like, oh, I need to work on that a little bit. leaning to the left a little bit, why am I doing that? Yeah. The , so to throw everybody else that for because I started off talking about pelvic health. And then we switched. And now I'm gonna go back to it because I wanted to set the stage. So if you have somebody one of the things we know from the literature, so let's throw some evidence at this too, and tie it together, is we know that hip angles and hip capacity changes with people with stress and urge incontinence. We know that now we've got some good evidence that has been forthcoming. We know we need to build hip capacity. But we also need to look at how people are moving. This is where the one legged stance thing comes in. Because with people with these issues, if you look at this, you're going to see one side or both sides that they cannot control hip rotation. When they stand on one leg. Generally it's gonna go to internal rotation. On one side, they're going to shift and they're going to internally rotate, now put them and start watching them walk and what you'll see is internal rotation happening too soon. We need to internally rotate with hip hyperextension probably close packing of the femoral head into the Assa tabula and with with talking, that's normal, what we need but we lose that when we have when people so what came first the chicken or the egg? I don't know. At this point, it doesn't really matter when they've got the symptom of incontinence, whether it's urge or stress. And they've got these musculoskeletal changes. We know we've got to build hip capacity, but we also need to work on timing and movement of this stuff. Now why does this affect the balance system? Because if you think about people who are leaking, think about the motor pattern and control that they try to employ to stop it. Right? It's not just about the pelvic floor they're trying to maybe over recruit or under recruit their pelvic floor, but they're also over recruiting their adductors and rotators to like, pull things together. Yeah, it's normal, that's a normal response to an abnormal situation, the brain doesn't know what to do. And so it's like, do this. Yeah, I got nothing otherwise. And so, think about if somebody is doing that for , I don't know, a few years, or maybe 30 years. Wow, that would maybe lead to hip dysplasia, or they bro Frary. No, or maybe even set people up for total hip replacements like, and, and think of what solidly start around this. So if this is the way we're walking, and we're not even getting good hip extension, because we're getting this internal rotation too early. And it's affecting the way we walk, it's affecting the way we run. And a lot of times people will have these symptoms, when they try to do those things. They're having it with sneezing, coughing, laughing occasionally jumping or yelling, but now it's going on when they when they're walking, and now it's going on when they're trying to run, or exercise or some other things and the balance system as hold itself around this, that we're going to be doing this all the time, because we're afraid to leak. And we've developed this posture, and we've lost capacity in our hips. And we've got this early timing of hip angles that are that are not really the best for walking. I'm not saying they're terrible, but they're not the best. Our balance system is adapted to that. Yeah. So we may be able to teach people how to lift their pelvic floor, and to have good pelvic floor strength. You know, but there's still like, most people still aren't doing that, well, six months out. And even the ones who do real good pelvic floor muscle training, do better, no question about it, it does help.

But it doesn't, it doesn't get them all the way. And part of the reason is a we're not addressing the hips, and b We're not addressing the balance system. And , because what have they lost? If they're doing this type of movement pattern all the time, they've lost all of their rotational transverse plane motion, or a good deal of it, they've probably got a coronal plane motion that's dominant to one side, their sagittal plane motion is the leads the way so they're doing this sagittal plane motion with this dominant coronal plane shift. And they don't have any rotation in the system like transverse like for good for good stuff. So their balance system starts to pay a price. Yeah. And the balance system isn't going to change until we get it to change. You know, the input of just doing pelvic floor muscle training, I would dare say it's not enough to check the balance system. Hip exercises of their own are good. They're not enough. No, it takes the whole system and working the whole system from the top to the bottom and the bottom to the top to change, it is bouncing makes it worse. And we have to eventually get them to have all of this and be able to bounce on top of it. Yeah. And

Erica Meloe 43:46
can they recruit their pelvic floor standing on one leg? Can they recruit their pelvic floor? You know, appropriately? Yeah, exactly. Whatever the demands of the task bar, but , can they jump? Can they do a box jump? Right, and not leak? Okay. Well, that's, that absolutely needs to get trained, right? You just don't do supine pelvic floor exercises. So that's that just sort of ties it in. And I remember reading the article. Are you talking about the hip? There was one the article I think we mentioned on one of the puck, see if I can find it on hip internal rotation angles. Was that recent season? Or was that one?

Susan Clinton 44:25
A couple of years ago? Two years ago? Not very years ago? Yeah. Yeah. Yeah.

Erica Meloe 44:30
Yeah, I think you may have heard.

Susan Clinton 44:33
We've talked about it before. And we've talked about hip strength. We've talked about squat. And the squat angles. Yeah, that's right. Where you really need to go deeper than 90 but you may have to do assistant squats to help people do that. You know, and I'll bring him one last thing because I know that we've had we have people who do a lot of interesting different things and nobody works with their balanced system other than in the upright position. And I really think there's we need to get people like rolling to get out of bed and rolling on and off the floor. And , I don't know does work with need to have their head upside down? Yeah. Maybe you need to train the balance system in an inverted position.

Erica Meloe 45:24
Mm hmm. I love inversions.

Susan Clinton 45:27

Yeah. So like, what is it that they do? What is it that they need to do? And then show me always my biggest thing is show me show me how you do it. Show me what you mean. Show me and then tell me what's going on with you. And let's figure out what we can do around this to make it better for you. Yeah,

Erica Meloe 45:43
and I'll just finish off with my thing real quick. I have a patient of mine. He's very stiff, older gentleman, longtime patient. It's like I feel a little wobbly. When I walk. I'm like, Okay, well, well, when is that happening? When I bend over? To put the to put my leash on the dog? I'm like, Okay, well, that's not your balance. I mean, that is, but that's definitely a movement pattern that that's the head drop, right? Yeah, he's older. Mm hmm. So, to your point, I like that I like hands and knees. I like getting a lot of the older people. You know, even if it's just crawling, right? I mean, they want to get on their knees. You know, they want to get on the floor with their grandchildren or, or or just pick up after their dogs on the streets here in New York City

Susan Clinton 46:31
right now. Right? The dog park or wherever. Dog Park? Exactly,

Erica Meloe 46:35
exactly. And so, I mean, we could go on and on about this subject. But the squat, the squat episode that Susan mentioned, I think that was a while ago. So if you just go on the website, are tough to treat.com website and type in like squats. There's going to be a ton of episodes. But you'll know there was one that we did. We talked about it. Susan, there was an article during the pandemic. Well, but the floor squat and hip angles. Yeah. Yeah,

Susan Clinton 47:02
awesome. Yep. So I just wanted to put that out there. Everybody remember, the balance system is hugely important, and should be tied into whatever you're doing with your clients get that system as nimble as possible. So they can have a much more variety and variability around their movement choices and movement patterns. A stubborn balance system will not allow that to happen, if you'll just keep going back to where it was before. So that's when that that driver is what's keeping them there. When you can see them change under certain things. But when they just walked back in the door, and you have him standing there, and it looks just like it did three weeks ago, that you've got to really get in there and start really start working on the reactionary stuff and the changing and getting more rotation and so that they can actually begin to free that system up to be much more nimble. All right, we look forward to your comments, as always, and don't forget to leave us a review. We're looking This is episode number 200. And so and 2024 We're looking to get up to 200 Review views. At CSM, there were a lot of people at our at our talk. It was great and we had a podcast so spread the word to all of you new persons who found us. We're so excited that you're here for everybody else. Thank you for being loyal listeners. Let us know what you think. Let us know your thoughts. Leave us a review and we will see you soon. Thank you so much.

Erica Meloe 48:42
Thank you