



Podcast Transcript

Treatment of Concussions in Children and Adolescents

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Guest

Sally Fryer Dietz, PT, DPT, CST-D Cert.

- Internationally recognized Physical Therapist, Sensory Integration Specialist, and Author
- Founder of Integrative Concussion Therapy to address the need for comprehensive concussion care
- Expert in child development and the parallels between sensory challenges in concussed individuals and developing children
- Operates multi-disciplinary clinics in Dallas, Texas, specializing in pediatrics, concussion recovery, and health & wellness
- Utilizes a range of therapeutic techniques tailored to each patient's needs, including vestibular and functional vision training, CranioSacral therapy, and functional exercise. Offers services such as return to learn, return to play, baseline and recovery testing.

Host

Candace Pierce DNP, RN, CNE, COI

- Nurse leader dedicated to preparing and empowering nurses with ample opportunities and resources to enhance their skills and confidence at the bedside.
- 15 years of experience in nursing, including roles in direct patient care, management, and nursing education.
- Demonstrated expertise and scholarship in healthcare and education innovation, design thinking, and collaborative efforts within and outside of healthcare.
- Engages in scholarship endeavors such as securing funded grants, publishing research, and delivering presentations.
- Fosters empowerment among others to generate and implement ideas, embracing their roles as leaders, change agents, and problem solvers. Currently serves as the Sr. Course Development Manager for Colibri Healthcare, collaborating with nurse planners and subject

matter experts to develop high-quality, evidence-based continuing education for healthcare professionals.

Transcript

Episode 1 – A Mild TBI?

Candace Pierce, Host:

This is Dr. Candace Pierce with Elite Learning by Colibri Healthcare. And you are listening to our Elite learning podcast, where we share the most up to date education for health care professionals. Thank you for joining us for this podcast series topic Concussions in Children and Adolescents. And today, I am joined by Dr. Sally Fryer Dietz, an internationally recognized physical therapist, specializing in concussion therapy, founder of Integrative Concussion Therapy.

Sally, thank you so much for joining us for this timely podcast.

Sally Fryer Dietz, Guest:

Thank you.

Candace Pierce:

Yes, I am so glad that you are here today. I wanted to talk for a minute about why this podcast topic is so important. Currently, specifically in the US for adolescents and children, we have about 44 million youth who participate in sports every year. And of the concussions that we know about, we have approximately 1.1 to 1.9 million sports-related concussions that occur each year.

Of course, you do not have to be playing in sports to have a concussion either. But it's just so interesting to me that we have so many concussions in our youth. Yet the majority of the research takes place in your high school and college age groups.

Sally Fryer Dietz:

Right.

Candace Pierce:

Why do you think that is?

Sally Fryer Dietz:

Well, it is because we have screening procedures in place in high school. So, when you participate in organized sports, if you have a concussion, it gets recorded. Unfortunately for the younger kids, you do not have that luxury. Most of the sports aren't monitored. A lot of concussions go undetected. Your parents don't really know what to do. They go home, they put them to bed or whatever.

Sally Fryer Dietz:

And so, you miss out on all those. The only ones you record are the ones that go to the emergency room.

Candace Pierce:

Well, let us start with what is a concussion. And I know I have seen some debates where people have, you know, debated is a concussion a TBI. And so, can you kind of walk us through what is a concussion? How does it fall into that TBI scale?

Sally Fryer Dietz:

Okay. So, all concussions are TBIs. They are just mild TBIs a traumatic brain injury. And what it reflects is a metabolic shift in the brain. There are different changes that can occur that affect your vestibular system, your visual system. It can affect how you think and process information. So, there is a lot of different factors that are involved to diagnose a concussion, but they are considered a TBI.

Candace Pierce:

So, you don't have to necessarily be hit like full contact sports. What are some ways that they can actually have a concussion?

Sally Fryer Dietz:

So, it's really interesting. One of the myths about a concussion is you think that you do have to hit the head, but in fact, you could fall off a playground and land on your bottom and suffer concussion as well. You could be in a car accident and have a whiplash injury, just the mechanism of the head moving fast through space where the brain actually gets hit against the skull bones can cause that metabolic shift and cascade.

Candace Pierce:

Why do you think that so many people don't necessarily correlate a concussion is a TBI?

Sally Fryer Dietz:

I you know, when you say TBI, people think of somebody who is severely impaired and can't walk or can't move or can't talk, you know, a severe head injury that requires long term rehabilitation.

Candace Pierce:

Like the military. I really think of the military.

Sally Fryer Dietz:

Yeah. Like blast injuries, all that kind of stuff fall under TBI. So, it's you know, we talk about concussions just because that's kind of the popular term that is used to, you know, to discuss sports injury in particular.

Candace Pierce:

I think the term TBI sounds scary and it sounds probably more scary than the term concussion because I remember growing up as a child, concussion wasn't really that. I mean, you at home, you didn't have any follow up evaluation and you went home and TBI just seems to be so much more serious. But really, concussions are serious.

Sally Fryer Dietz:

They absolutely are. And, you know, over the last ten years, we've been able to shed light on that and, you know, prove that they are serious, especially in the young child, because they're growing and developing. And what makes them especially tricky is that it can take months for even an adolescent or

an adult to recover. But for young children, it can the effects of a concussion can show up even years later.

So, you know, identifying it early is critically important. But, you know, before ten years ago, when there was this whole you know, it's almost a machoism about getting a concussion when, you know, how many concussions did you get playing football? And oh, I had tons of concussions. And I've worked with a lot of professional athletes. And I'll tell you, the most common story that I would hear is that their worst concussions they got were when they were kids.

Candace Pierce:

Oh, wow.

Sally Fryer Dietz:

And, you know, it's interesting. And yet, you know, a lot of the problems that they're having today is that it's not just that 1, 2 or 20, but it's the number over their lifetime. It just keeps magnifying.

Candace Pierce:

So, the thought with a concussion is that you would see some type of neurological decline or in their functioning pretty much right after it happened. But that's really not necessarily true, correct?

Sally Fryer Dietz:

It doesn't have to start that way. However, we do have sideline assessments that are very good at looking at those things, because if you've had a fairly significant concussion, you're more likely to have changes in your balance system, your visual control, your immediate recall. There's different tools that we can use to help screen out if somebody had a concussion or not.

There's really no one test that can diagnose a concussion. So you can't just go out there and ask questions and have somebody and the answers them appropriately, assume that they did not have a concussion. And that's again, why it's so dangerous, especially for the younger athletes, because they can they can slip by and then the next day they're waking up with a headache or maybe it's two weeks later, they can't I think they can't, you know, do their schoolwork.

And unfortunately, if they get put back in sports too soon, within those, you know, especially the first 2 to 3 weeks following a concussion, if they have a second injury on top of that, which is when they are most susceptible, it can again magnify it. You have to think of in your brain, you've got it's like you have these little filaments and with each concussion, they sort of break apart.

Yeah. So, the first one, maybe it's like this, a second one, maybe it's like that. The third one, you know.

Candace Pierce:

That was broken.

Sally Fryer Dietz:

They don't go back together.

Candace Pierce:

So, do they go back together when they heal, or is it just. It's broken?

Sally Fryer Dietz:

No, they really are. They're broken. I mean, those. Those connections are broken. You can, you can rehabilitate and especially if you get them early. And that's why it's so important to identify a concussion early for kids who are at high risk for a prolonged injury. And we'll probably talk about that in a minute. You want to get them into some kind of a rehab program, meaning a concussion specialist who's helping to guide that recovery so that they can really maximize all of their other brain function.

The brain is amazing at being able to accommodate and make corrections, but the actual cells themselves, once they're broken, you really have to develop new, new pathways to accommodate for that.

Candace Pierce:

Right. Now I was reading and it said that a lot of times the recommendation is that you have a medical clearance to go back to sports, but you don't necessarily have to have a medical clearance with a concussion to go back to school.

Sally Fryer Dietz:

Well, it's most of the school protocols. You're correct. They don't have that in place. However, there is a progression of if you have a diagnosed concussion, the physician who is the only person who can diagnose a concussion, should be giving guidelines as to when to reintroduce activity. And learning or being in school is just as taxing on the on the central nervous system and your brain in particular as sports.

Right. That's something.

Candace Pierce:

Right. Makes sense.

Sally Fryer Dietz:

You know because your eyes are having to work your balance systems. You've got lots of sounds in the school, you've got bright lights. A lot of times they're flickering lights, a lot of things that can exacerbate symptoms. So, if you have an advocate or somebody who's, you know, at least guiding you, you can kind of touch base on what the symptoms are and really monitor what's the just right activity for somebody.

For some kids, they may be able to go back to school and have no symptoms. Your symptoms really are your guide for other children who might have you them look like they had an even less severe injury.

Right. They could it just could stir up all kinds of trouble.

Candace Pierce:

So, let's go backwards a little bit and talk about symptoms. What types of symptoms do you see in adolescents and children with concussions?

Sally Fryer Dietz:

So, there's a whole variety of symptoms that you can see, the kind of the hallmarks for the big ones. If you have immediate dizziness, that's a big red flag for a potential prolonged recovery. If you have, you know, any kind of balance, dysfunction, or vestibular issue where they're unsteady on their feet, that's another big one. Cognitive impairment. You know, they can't answer questions about where they are, what game they're playing, what quarter it is, what was the score yesterday?

Can they count backwards from 10 to 1? You know, some just very generalized cognitive tasks that can be a big red flag. All these things together can signal a concussion. Those are some of your immediate things. You might see. You could have a child or an adult. Anybody who that could throw up. They don't have to, though.

They could become unconscious. We used to think that if you're unconscious, that meant you had a really severe concussion. It could be. But they also now found that kids or individuals who are going unconscious, it may be almost neuroprotective in some way. So, a lot of those kids end up recovering just fine, whereas against somebody else, you had kind of these prodromal symptoms going on might have a much harder time of recovery.

Candace Pierce:

That's so interesting what you said about going unconscious. I never would have thought of that as a protective mechanism.

Sally Fryer Dietz:

Right. Right. So, you know that the central nervous system does it as good of a job as it can. But, you know, we can't abuse our bodies too badly for us. We really run into trouble from.

Symptoms that that you can have over time. Ah, you know, especially with kids in school, they may have difficulty keeping up with their schoolwork. It might have light sensitivity or noise sensitivity. They may be easily distracted that often can lead to, you know, symptoms of anxiety and depression. You know, concussions are not they're not simple at all and.

Candace Pierce:

Very multifaceted, because a lot of the things that that you're saying for like the long term anxiety, depression, you really don't correlate those to a concussion.

Sally Fryer Dietz:

Right?

Candace Pierce:

You would correlate them to something else. But maybe that is something that needs to be screened is if you have someone struggling with anxiety, depression, attention disorders, have do they have a history with concussions?

Sally Fryer Dietz:

Yeah. And actually, that brings up a good point about what are the preexisting conditions for having a longer or harder recovery. And the big ones are number one is the diagnosis are symptoms of a learning difference or ADHD, depression, anxiety, you know, any kind of an anxiety disorder, those are all you know, those kids are set up to have trouble.

And if you have that kind of history, it's really to that child's benefit to have a concussion specialist guide them through their recovery. Because if you do too much following a concussion or if you do too little, then that can prolong that recovery for that individual. So, it's hard for people to know what's too much or too little.

And then we complicate things with age and social peer pressures and all kinds of other stuff that that can make it a challenge.

Candace Pierce:

Absolutely. I want to talk a little bit about myths around concussion. And I want to start with one that I think most people have heard. When I was young, I had what they thought was a concussion. I was on a elementary school playground. Me and another girl hit head on, had passed it and knocked us out, had huge knots on our forehead.

You know, we went home. And one of the things that I remember from that is they woke me up every hour on the hour.

Sally Fryer Dietz:

That's how they used to do it. And if you think about it, you know, sleep is so important, just like being unconscious. You know, maybe neuro protective. If you need to sleep, you need to sleep. The reason they do that and, you know, initially it's important to keep an eye on what the symptoms are and certainly look at the pupils.

Any sign of being becoming increasingly disoriented or having you know, where it just seems like it's not moving in the right direction could potentially be a sign of a bleed and it could be a slow bleed. So, you know, in that case, we don't want somebody to kind of just, you know, drift off into unconsciousness. That would not be normal at all.

But just, you know, they're, you know, sleeping, breathing comfortably and just need to rest that, you know, that's appropriate for them.

Candace Pierce:

So, do we need to wake them up?

Sally Fryer Dietz:

No, you do not need to wake them up.

Candace Pierce:

So, we can let them sleep.

Sally Fryer Dietz:

Yeah, but don't you know, don't just take somebody home and an hour later put them in bed to go to sleep. We need to kind of keep an eye on them, at least through that acute phase, you know, make sure they get something appropriate to drink, not sports drinks, because that adds to the whole metabolic shift of sodium in the in the brain.

So, we want to get some water to drink. They might be hungry, give them some, you know, healthy proteins, you know, healthy fats, that kind of thing. And certainly, even throughout the whole recovery process, having that appropriate diet to feed the nervous system so that it can heal, it takes a lot of calories to recover from a concussion.

Candace Pierce:

What would you consider the acute phase? Is there a time frame for that?

Sally Fryer Dietz:

Well, the acute phase right immediately after the hit would be. The first the first couple of hours after a concussion occurs. For sure. You know, 2 to 3 hours, you know, something like that. But you kind of it's okay to check on somebody. But if again, if they're if they look comfortable, they're breathing, you know, they're breathing normally.

They're just tired, you know, because it's a big insult on the system. You know, it's good to let them sleep.

Candace Pierce:

All right. So, what are some other myths?

Sally Fryer Dietz:

So. Well, back in the old days, you know, they used to think, you know, if you got your head, head, it was just like getting your bell rung or, you know how I kind of depressed signs for. And that's not a big deal. You know, the losing consciousness is a big one. They used to think that you could only have a concussion if you threw up afterwards.

And some people do, but a lot of people don't. Most people don't.

Candace Pierce:

So, I wonder what started that. Oh, you have a concussion because you threw up after you got hit.

Sally Fryer Dietz:

I you know, I just think because it you know, people look, you know. They you know, they don't feel good. And, you know, so those are kind of your, you know, your bigger ones.

Candace Pierce:

Amnesia?

Sally Fryer Dietz:

And well.

Candace Pierce:

Or not remembering.

Sally Fryer Dietz:

Not remembering is a red flag for a concussion. So that's certainly important information. You know, the difference between a sports related concussion and a concussion that might have happened in a motor vehicle accident or a playground or somewhere else. Is that typically in a sports related concussion, it is observed. You can see the hit. You see what happens.

You see that person initially on the ground and you.

Candace Pierce:

Hear everybody gasp.

Sally Fryer Dietz:

And kind of stumble, you know, and then but you see you see the people who are laying on the ground and then 3 minutes later they get up and everybody cheers and it's great. And you're like, okay, now what happened to have, you know, ten years ago? They probably were back on the field. But, you know, today, you know, anything like that happens, especially with young athletes, kids under the age of 18, you just have to be conservative.

There's no reason to not be conservative. And just at least for the rest of that game, they're out of the game. I don't care what how good of a player they are. If it's your son or your daughter, that's not important in the big picture. You know, you really protect their brains.

Candace Pierce:

So as far as a concussion takes time to recover, kind of what we were just talking about is a lot of people think you get a concussion, but 24 or 48 hours later, you be back on the field. But is that game really worth your life? Right? Were those neurological disorders that are going to occur because of the damage that has been done to their brain.

Sally Fryer Dietz:

Right where you have to? Actually, this reminds me of another kind of myth with young children is we used to think, you know, kids are so resilient. They are you know, they're just they're developing so quickly and all this stuff, they're going to get over it really easily. Unfortunately, because children are developing so rapidly and so many different things going on in the nervous system.

Those effects of a concussion can be longer reaching than, say, you you're a young adult or somebody, a professional athlete or anybody like that.

Candace Pierce:

Right. Because you have rapid neurological changes. And then we're aligning that with high incidences of concussions and the changes in the filaments that you were just talking about, that's why I found it curious. Like as children, since they are developing, could they potentially come back together, but probably not.

Sally Fryer Dietz:

You know, it's not that they won't. Just nobody really knows what the long-term effects are. We have a pediatric practice, obviously, here in Dallas, and we see a lot of developmental delays, developmental kinds of things throughout the whole lifespan. It's interesting to me how in a lot of those histories, not all of them, not even probably half of them, but in a lot of them, there is a history of a fall, fall out of a highchair, a fall on the changing table, you know, a car accident, any number of things that just in the history you might think they recover just fine.

But, you know, all of a sudden, as they're getting older, there's more and more issues that are showing up and but there's no way to tell. Okay. Is that because they had a concussion? It just is part of, you know, that history. And we now know that some of these things can emerge much later. So, again, it just gets back to your much better off erring on the side of just being conservative and protecting them as best you can.

Candace Pierce:

And when I was, I don't even know how long ago it's been since I heard this, but I have always heard that if you fall from how tall you are, that you're okay. But really is that that's probably just a myth, right from the height of how tall you are.

Sally Fryer Dietz:

Yeah, actually, I hadn't heard that one. That's a good one to add to my list. Yes.

Candace Pierce:

Like, if it's a toddler.

Sally Fryer Dietz:

Yeah. You know, I mean, chances are of you hurting yourself, maybe. But what if you fell from your height and you hit the coffee table with the back of your head? You know how it just. It really depends on the mechanism and what happened. And it depends on, you know, the speed that your body is going on. You're riding a bicycle, you know, are you in a car or are you running on a field?

All those things factor into what happens inside your skull. If you if you think about your brain, your brain's kind of like it's like a ball of Jell-O. So just imagine you're holding some jello and you hit it against a wall that Jell-O doesn't just stay solid. It's like, now you got a rebound and it's with that rebound that you have the injury.

Candace Pierce:

So, I know you said earlier that you have worked with a lot of athletes and I know concussion has really been on the forefront with our NFL, with collegiate sports, kind of what are some of those long term effects that you're seeing that that that could be seen in the future with these children.

Sally Fryer Dietz:

The long-term effects from concussions as a child or as an athlete?

Candace Pierce:

As an athlete later.

Sally Fryer Dietz:

It's you know, there's a saying in in schools and most of concussion physicians promote to the same thing three strikes you're out. And the reason for that is the first concussion might not hurt you long term. You know, you may just recover just fine, never even know the effects of it.

Candace Pierce:

Right.

Sally Fryer Dietz:

You might even get away with it. The second concussion, although there's certainly the risk there. But when you start adding a third and more concussions on top of it, those are really accumulative or have a much greater potential for being cumulative. So, you know, if you have somebody who had a lot of concussions as a child and adolescent, they're probably not going to make it to the professional level if they've had enough of an injury.

Candace Pierce:

Right.

Sally Fryer Dietz:

What's interesting is if you look at in terms of who's at risk for the longer recoveries, the individuals who recover the fastest are the professional athletes.

Candace Pierce:

Oh, really?

Sally Fryer Dietz:

You know, so is it because of all their strengthening that goes on or they have thicker skulls, or they've got, you know, more stuff around protecting them, but they're not immune either. You have a you have enough of those injuries. They may not you know, they smashed into another body where a six-year-old that can cause a concussive injury are professional athletes not necessarily going to have a concussion from that, but they would if they got, you know, slammed hard enough on the ice or the ground.

Candace Pierce:

Right. So, the damage from concussions, what you're saying is really that damage is cumulative as it continues to happen. And that's so interesting is if they start as a child and they have multiple concussions and then going up into their life span, just wondering and I know probably the research isn't there yet because it seems like these things are things that are being realized within the last ten years is how these effects have continued to affect people into their adulthood.

Sally Fryer Dietz:

Yeah, one other thing that's worth mentioning, too, is with children in particular under the age of 18, 20, whatever age you want to give it, you are at a greater risk for a second injury within the 2 to 3 weeks following that concussion. Your reaction time is off, your balance is off your vision a lot of times is off.

Sally Fryer Dietz:

And what's especially dangerous about that is there's a you know, a phenomenon, that can cause sudden death as a result of having a second impact. It's called second impact syndrome.

Candace Pierce:

Oh, wow.

Sally Fryer Dietz:

You have a second impact like that within that 2-to-3-week period, you can cause enough, you hear about it, you know, periodically where an athlete died on the field. You look at their history again, and did they have a concussion a week ago. You know what else is going on before that occurred? And it just is the brain can't take it because it's in a healing state when it gets injured again.

And that's the other, you know, reason for being conservative about how you reapproach sports following a documented concussion, a concussion injury.

Candace Pierce:

And it's interesting that you say that because I have smaller children right now and my youngest loves to play soccer. And so, my husband was going to be the assistant coach there. And he actually had to go through training for concussions. It was an online training, but you're starting to see more and more. And it was a recreational league.

It wasn't anything professional. But you're starting to see more and more of your sports that really companies, I guess leagues are starting to do concussion training on their volunteers. So maybe it's a step in the right direction.

Sally Fryer Dietz:

It's a really good idea. We actually developed one that we were sharing with other sports organizations, and you know, our big push this is about this is about eight years ago and you're trying to get where when you know, kids and parents, parents had to go get their kids uniforms or whatever, that they had to have taken a concussion education program in Texas.

Unfortunately, I don't I don't see it as much as it's good to know that in Florida, they've got that.

Candace Pierce:

Yeah, well, we did that for soccer. But I have kids who love tennis, soccer and the have of competitive cheerleader. So, you know.

Sally Fryer Dietz:

Those are all potentials. But you know, there's a lot of benefit to sports, too. It's not like you should take our kids out of sports. You know, you.

You know, you learn about your body. You learn about social relationships. You're part of a team. And there's a lot of great stuff about sports. You don't want to throw the baby out with the bathwater, as they say. But we do need to protect our kids. And if they are injured, then we really do need to take the correct steps to make sure that they can have a safe and as full of a recovery as possible.

Candace Pierce:

Absolutely. Well, we have come to the end of our time for episode one. Please join us for episode two, where we will delve further into concussion management or where we will talk about the difference between children and adults, how we assess, intervene and evaluate with concussions. Thank you so much for being here for episode one. Sally, This has been very informative.

Sally Fryer Dietz:

Thank you.

Episode 2 –Assessment, Evaluation, and Recovery

Candace Pierce:

Welcome back to our series on concussions in children and adolescents. And joining me to continue this discussion is Dr. Sally Fryer Dietz. In episode one, Sally, walk us through dispelling myths and understanding what is a concussion and how they occur. In this episode, we're going to continue discussing the assessing, the interventions, and the evaluations for someone who has a concussion.

Sally, I'm so glad you could join us for episode two.

Sally Fryer Dietz:

Thanks, Candace.

Candace Pierce:

All right. So, I really want to get this started with you see a child that is in sports, maybe a football player that seems to be kind of a pretty popular place and you see someone go down on the sideline. What really happens once we go out there to start looking at whether or not they have a concussion?

Sally Fryer Dietz:

Well, first of all, it you actually start before the start of the season and the first thing to start with is a good baseline test. That is a test that looks at what your cognitive abilities are at that moment in time. And if there is a concussion, we can refer back to that and see if there's a change from that initial testing.

The other thing that should occur before somebody you know you're playing a game is that there is somebody who is designated on the field to be watching for concussion and, you know, different schools, different private schools are different from public schools and what their requirements are and what their protocols are. But many schools have enough work trainer, if they're lucky, on site, who can be there to diagnose some not diagnosed I'm sorry, only a doctor can diagnose, but an athletic trainer can assess the risk of a concussion and refer to either the physician or an emergency room.

Some teams, some high school, you know, competitive teams might have a physician on the sidelines that's keeping an eye on things. It could be a coach. It could be, you know, parents who are trained in concussion signs and symptoms. There's lots of different sideline tools that people can have on their phones, lots of different apps for how to do a screening to see if there's a risk of a concussion.

Candace Pierce:

Do you have an example of like a tool that they could use on the sideline?

Sally Fryer Dietz:

On the sideline? Well, it's more of a training than a tool. There are a variety of apps. I could look at my phone, but you could just Google, you know, baseline. There's an impact app. There's a, you know, just all different kinds of things that can take you through different kind of series of tracking. But what's really most important is somebody who is trained specifically in looking at vestibular function, which is your balance and postural reactions.

Somebody who's trained and understands functional vision, which is looking at the smooth pursuits in the seconds and the VRR, or how your head is able to turn and fixate on an object. You want somebody who's trained and doing a quick assessment of cognitive function like the Maddox questions that ask about, you know, where you are, you know, what inning is it, or did you play sports yesterday?

What school do you go to?

Candace Pierce:

Who scored last?

Sally Fryer Dietz:

Words? That's right. Who scored last? I have actually a personal story. This is Oh, it was probably it was 20 or 15 years ago. My son played rugby. Oh, I'm yeah, I've been a physical therapist, doctor, physical therapy. I've over 40 years. But we didn't have all the concussion science or knowledge that we actually do have today. Mm hmm.

And he I watched him get knocked down, and he was a little goofy afterwards, but then he went on to score two more scores in the game. And after the game he said to us, I think I got a concussion, you know, because I scored. But he was acting kind of fine. You know, He didn't look particularly out of it or anything.

And so really hitting his dad was a physician. We weren't that concerned about it. The next day, he went to school, and he watched the video and he had no recollection that he scored two more tries after that particular hit. And so at that point, you know, we kind of got more conservative, but even then, nobody really knew what was what was going on.

Candace Pierce:

Treatment has definitely changed over time. And one of those additions is the concussion specialist. Kind of what how does that play a role? How do you get training for that?

Sally Fryer Dietz:

So, a concussion specialist is really a term for somebody who has advanced training in concussion management. In my case, I'm a physical therapist. I'm part of, you know, a concussion team all by myself. And that the whole picture, you know, that's just my profession. And I have training in vestibular rehab, functional vision, balance, coordination, how the body works, all kinds of things.

An athletic trainer who is trained in concussion management and they're a little bit better about in their education, at least today, having, you know, concussion management as part of their training protocol. Just like in every profession, though, not everybody's created equal. You know, your background and experience is all different. Occupational therapist can be a valuable member of a concussion management team.

Same thing. But then specialize in functional vision and in cognition. So really looking at those kinds of things, speech therapy can be part of a concussion management team because, you know, the this speech, the fuzzy thinking, cognitive processing, all those kinds of things may play into it. You may have a manual therapy physical therapist who specializes in whiplash injuries and, you know, problems with the neck.

But they have additional training specific to the body and impacts. Same thing goes for physicians. You know, just because you're a pediatrician or an orthopedic doctor does not mean that you are 100% a concussion specialist. You know, you really that needs to be your focus of practice in that you have a deep understanding of what the current literature is, what we need to be looking at, how to assess a concussion and an accurately diagnosed.

Candace Pierce:

Absolutely. Yes. It's kind of like one of those niche areas, but we're really seeing the importance of it. You know, as it has been highlighted, especially with NFL players who are retired and who are saying, hey, I have long term effects from this, that we didn't realize this is where it came from.

Sally Fryer Dietz:

Right. What's more important than just any one specialty or individual? It is the team approach because every single injury, whether it's a concussion or actually just about anything else, they're all individual. You know, we're all different and we all have a different history and we have a different impact and we have a different trajectory for how we recover.

So, you know, you could have somebody who has more vision impairment, or you could have somebody who has more vestibular, whatever. And maybe that specialist, you know, after you have the initial assessment, the specialist who looks at you should be able to refer you. If they cannot if it's not in their wheelhouse to the appropriate person to help with those things.

Candace Pierce:

And speaking of differences and how we all learn, grow. Male versus female, too, do you see a difference? And I know probably more football with males, but what do you see with females?

Sally Fryer Dietz:

Well, statistically, we actually the number of injuries are greater in girls than they are in boys that think a lot of the reason may be just because of skull density, body mass, just, you know, the neck muscles. You know, how what the sport, the highest rate of concussions happens to be with girls soccer.

Candace Pierce:

Well, I have a soccer player.

Sally Fryer Dietz:

Yeah, I know. So that and then the you know, football and in many cases but football and soccer that to you know highest for that although more girls get reported with injuries than boys. Some of that as well may be who's doing the reporting and girls tend to report things a little bit better than boys do. Boys have a lot of lot of times peer pressure to stay in the game and to keep working to mask what the symptoms are.

Whereas girls, if they don't feel good, they usually will let somebody know. Oh, it depends on how competitive they are.

Candace Pierce:

But I wonder if it has to do with the culture around those sports.

Sally Fryer Dietz:

Absolutely. I think so, yeah.

Candace Pierce:

So what makes children and adolescents different as far as assessing them and why they have the concussions? The plasticity in their brains.

Sally Fryer Dietz:

Well, you have to look at sort of the bigger picture where an adolescent is developmentally. And it's not just physical or emotional, but you have a lot of social peer pressures. And just like you just mentioned, the culture around the game. Younger children are developing very rapidly on a different level, in a different way, more in more physical and that kind of thing.

So, it's you have to kind of understand the age group that you're working with and be able to do an assessment that's appropriate. You know, for that age group, you're still going to do the same sorts of things. You're still going to look at vestibular function and balance. But in a seven-year-old, you might have them trying to kick a ball or, you know, stand on one foot or whatever, whereas an adolescent, we might use a biodex machine to really measure their balance or do some more active, you know, VR visual tracking of the stimulus kinds of tools that are a little bit more sensitive to it.

Candace Pierce:

So, it's really understanding and knowing those developmental stages when they come in and you start doing those assessments on them to see where they are.

Sally Fryer Dietz:

Right. And also knowing the history of that child. That's why it's so important for parents to be really kind of forthright in their entire child's history. You know, does their third grader have trouble with reading and writing? It can be in an early sign of a learning disability, whether it's diagnosed or not yet by high school, they may have a diagnosis of ADHD or depression.

Those are not uncommon diagnosis. And, you know, both of those things for those different age groups can set you up for a longer recovery.

Candace Pierce:

And it's so interesting to hear that they could have those prior to a concussion, but they could have those develop because of a concussion. And if that research, you know, is that research out there that really shows the percentage of people that end up with this diagnosis after a concussion. It would be so interesting to test for. I don't even know how you would test for that.

Sally Fryer Dietz:

But I know they don't have it yet. But you have a lot of clinical observations. We see a lot of patterns. Whenever you're looking at overall development, you really have to look at the patterns. You know, no matter what it is having to do with development, it's not just about can you do this or not do that?

But you know what? What's the trajectory of how things happened? It's not uncommon. I've seen kids who were, you know, a student's the top of their class have a bad, you know, concussive injury and they have a really hard time getting back into school and focusing and, you know, thinking and processing information and that that could go on, you know, in some cases, it could go on for months.

And if it's not, this is where that rehab is so important and that guidance is so important because if it doesn't get addressed and a child tries to muscle through that, whether they're masking symptoms or not, but they're going to school and they're coming home a terrible headaches. They can't do their homework. They can't sleep well that night.

They go back to school, they do it again. The sounds are driving them crazy. They start getting depressed. They don't you know; they can't play their sport because maybe they just don't feel like it. Let's put them in there or they're just not ready because they're still symptomatic. And, you know, it can cascade into a long term problem.

Whereas if you have somebody who's guiding you through it, you get your initial rest the first 24 to 48 hours, and then we see what your symptoms are. You go to school. How do you feel at the end of the

day or a half day, you know, did you have a headache retired? Can you think whatever if there's no symptoms, that's great.

Let's go to school again. Have a longer day, no symptoms, you know, a little bit more. And we start adding some exercise. And, you know, we've already had, you know, looked at the other things. So, you can really stage that developmental progress so that they can recover quickly and effectively and to a full recovery for, you know, again, you muscle through it, your reaction times off and you run into a locker and hit your head again and now you've got that square one.

Yep. And you're back to square one plus squared.

Candace Pierce:

Yeah. You got extras. You have someone that has a concussion, they start concussion therapy. What does that look like?

Sally Fryer Dietz:

So, what we do in our clinic, we have a whole variety of tools, just like all the different specialists we have, our speech that we all work together and athletic specialist, manual therapist. And we have a therapy called cranial sacrotherapy, which is like soft tissue manual therapy. It's extremely effective for reducing symptoms. We're seeing, you know, all of our patients for it, whether they're a professional athlete or a child.

It just it helps to calm the nervous system. It helps to release tension patterns in the body that can help to promote the healing. We use that after we do an initial assessment. First thing we'll do is the initial assessment. Looking at the vestibular function, functional vision, cognitive range of motion, all the regular things. But those things tend to exacerbate symptoms because we're challenging the body, you know, when it's just at the beginning of that healing process.

But you have to kind of know where to start. We're still, you know, if they have terrible symptoms when you're doing it, you're going to have to back off and not complete that test. But we'll you know; we'll do that and then we follow it with the cranial sacrotherapy. And I will tell you, probably 95, maybe 97, 98% leave with a smile on their face after that cranial work because it is so effective.

That's your first step from there, we prescribe a kind of at the beginning of a rehab program, depending on the kind of symptoms that were elicited in that initial level. So, if they're extremely symptomatic, you're going to start, you know, with very, very low intensity. Maybe it's just walking around the house, or it could be walking around the block, whatever seems to be the appropriate level of activity for them.

And you measure what are the symptoms afterwards. If the symptoms are a lot worse, it's they did too much. If they have no symptoms, then you can add on the next day.

Candace Pierce:

Makes sense.

Sally Fryer Dietz:

You're constantly it's that just right challenge of giving the nervous system input but not stressing it out. Not doing too much. But if we don't do anything at all, we find that that's more associated, especially in adolescents with more depression and anxiety because they're away from their friends and they, you know, they want to get back to doing stuff.

Candace Pierce:

Right. On average, how long does that initial therapy last?

Sally Fryer Dietz:

There is no average. It depends on the person and on the injury. What you know, the next step with all you know those say they do fine with their they're walking they're able to get you know back to school. We move into what we call our return to learn protocol. And that is, you know, are there different cognitive tasks that are more challenging or last, do we need accommodations in school to be successful?

Same thing just right challenge until they are asymptomatic with learning. Then you can talk about return to play. You can start that return to play with, you know, some just general conditioning, the walking and everything. That kind of is where you start at the beginning. But as far as getting back into your sports, whether you're thinking and using your head on a computer or in school or you're playing the game, your brain doesn't know the difference.

It's input. The brain is having to work hard with both of those things. So, if you're symptomatic with learning, you are not ready to play.

Candace Pierce:

That's so hard for a child or adolescent.

Sally Fryer Dietz:

Especially if they're you are. They were a really good athlete, you know, beforehand. But it gets back to why education is so important. And, you know, really having those discussions about even though, you know, adolescence, they're their own little you know, they live in their own world to a certain extent. But it's a very short period of time in your life.

You know, we're really looking at the big picture. You know, parents can be interesting sometimes because a lot of times parents are really wrapped up in their what they perceive as their child's success in wanting to maybe they were going for that college scholarship or something and they want them back in the in the game. Yeah.

Candace Pierce:

But they can become a barrier to their healing the healing process. Yeah.

Sally Fryer Dietz:

Yeah. But I would say most parents, if you really got down to it, I would say the most important thing that they want for their child is to for them to be happy and healthy. So, if that's our goal as a parent to set our kids up for success, then we want to do all the best things in their best interest down the road.

Candace Pierce:

Do you find that the schools are accommodating to these recommendations, especially as you're getting them ready to return to learning?

Sally Fryer Dietz:

Not always. A lot of a lot of teachers. A lot of coaches. You know, it just gets down to as we all know, everybody is different, and you have some who are really on it and you have others who live in their own world in the way they see things.

But it falls back. On why it's so important to have a good kind of medical team behind you having a physical therapist or occupational therapist who's really an athletic trainer who is guiding your rehab, who can be your advocate in setting up if there needs to be accommodations in school or setting up if there needs to be some kind of a modified school or work schedule, it's harder for a teacher to argue with a medical professional as compared to a parent or the child.

The child is almost like, you know, a helpless in in the whole system because.

Candace Pierce:

They're kind of torn between this is what I need to do.

Sally Fryer Dietz:

And advocating for themselves.

Candace Pierce:

Yes. And even without, you know, a concussion, I know that sometimes children and parents and the medical team have trouble with those five or four plans actually being followed right. So, you go through all that paperwork to then have to fight it in the classroom.

Sally Fryer Dietz:

Right. And those things take a while to get in place even, you know. So, you really can't rely on your school or the educational system to necessarily be on top of it the way they should be, in my experience.

Candace Pierce:

So, and yeah, yeah, here too. So, research I know is showing that nutrition really plays a factor in and the healing from concussions. Can you kind of walk us through what that looks like?

Sally Fryer Dietz:

So, it takes a lot of calories for your brain to heal or even, you know, any kind of injury surgery, whatever you need calories to heal those tissues. So, it only makes sense that you should have good nutrition to feed those cells so they can recover and be healthy. The things you do not want to do are you do not want to drink alcohol.

You do not want to take aspirin. You do not want to drink sugary drinks or sports drinks. You know, a lot of those electrolytes have a lot of salt in them. Those are all like the worst things you could do, especially initially. Think about how somebody is on the field. They get hit with a concussion and they bring them a Gatorade.

Candace Pierce:

Yes, they do.

Sally Fryer Dietz:

Not a good idea. Because you're now flooding the central nervous system with sodium and you're your brain is trying to balance itself out and it just exacerbates all the stuff going in, You know, protein. You

want good, healthy proteins, ideally grass-fed beef and chicken. You know, healthy things that have good, healthy fats with them.

You can have dairy that can be good healthy protein omega threes are really good. Good for you. Lots of water. The first thing you should be drinking is the water. Water you know, it just kind of helps to be our bodies primarily made up of water. And it helps to naturally lay it out. Some of those that imbalance that goes on.

So those are your big ones.

Candace Pierce:

So, I know you talked about the sugar or not the sugar. The salt.

Sally Fryer Dietz:

And sugar, too, is big.

Candace Pierce:

No. Right. That's what I was going to ask you about.

Sally Fryer Dietz:

Yeah.

Candace Pierce:

Yes. Huh. What is it with the sugar you know, because Coca-Cola, they are, you know, the soda drinks that they love.

Sally Fryer Dietz:

Yeah. Any kind of sugar. Sugar drinks, you know, Cokes, ice cream, even candy, stuff like that. It just it's not a healthy it's not healthy for your body anyway. But just chemically, if we're trying to really keep our body as clean as possible so that it can recover as quickly and as easily as possible, then you know, we want to avoid the sugar part.

Sugar and salt are kind of big donors.

Candace Pierce:

So, I know it's sugar that can cause a lot of inflammation in the body. And so, if you're already struggling with a concussion, it just seems like that would be inflammation in the brain per say.

Sally Fryer Dietz:

Right?

Candace Pierce:

So that sugar would then make it worse.

Sally Fryer Dietz:

Right? Yeah. And that's another reason that, you know, kind of brings up medicines you really shouldn't be taking. Definitely not aspirin, you know, but before you take anything, you really need to go through

your physician. Some, you know, in some cases you can take some about not Advil, Tylenol, if you're really, you know, sore, have some other issues.

But I would not automatically give a child Tylenol or or Advil or definitely not aspirin because of the bleeding risk without going through your physician initially.

Candace Pierce:

So, in those first few moments, you see a player down on the field. We're waiting to get them evaluated by a first responder, someone to decide if they're going to take them to the hospital. Don't bring them a sugary drink.

Sally Fryer Dietz:

Right.

Candace Pierce:

As they bring them some water.

Sally Fryer Dietz:

Yeah, don't pull them up until you make sure that they don't have any kind of a neck injury. Assess their consciousness on the ground. You know, if do they have any pain, can they move their feet? Can they move their hands? You know, all the kind of initial screens that you would do from a first aid perspective if all that checks out, they can sit up and you can do a visual scan.

You can do it very quickly, moving your finger very slowly across. Can they track your finger during the smooth pursuits or is there a jump, you know, with the eyes in any one direction? Same thing up and down. Is there a jump that goes on? You know, are their pupils equal? And then convergence is another really good quick screen where you might have your finger or something out in front of them and ask them to keep their eyes on your finger and watch for when their eyes cross and you you should be able to get pretty close before your you start seeing your eyes across about six centimeters or millimeters or whatever, you know, just about right here and be able to tell. But if they have a really hard time and they can't, you know, do it, then, you know, that's a big sign that there's something off with their vision.

Candace Pierce:

And now one of the other things that I saw was eating small meals frequently during recovery.

Sally Fryer Dietz:

Yeah. And that just kind of, you know, again, it actually kind of maximizes the calories that are going in. If you eat smaller meals more frequently, it kind of the higher your protein so that you're not just overloading your body with food and input.

Candace Pierce:

So really, we're looking at avoid overeating no fried foods what.

Sally Fryer Dietz:

Fried fruits aren't really that healthy for you that's not the right kind of fats. You're better off having, you know, an avocado.

Candace Pierce:

Avocado.

Sally Fryer Dietz:

Or healthy nuts or, you know, some eggs or, you know, something that is just a cleaner.

Candace Pierce:

Right kind of food. So, you want some clean proteins and we know in health care that protein is really that that very important nutrient that we need when we are healing, regardless of what kind of wound it's healing. And so really that's also beneficial for the brain, too.

Sally Fryer Dietz:

Right? And you think about, you know, if you've ever been on had a comparison between eating a really crummy diet like you, you know how to do a bunch of night shifts for a month and you're eating McDonald's every night and a Happy Meal in the morning or, you know, you just Yeah, yeah.

Candace Pierce:

You feel terrible.

Sally Fryer Dietz:

You don't feel very good and that's compared to you go on the Whole30 diet or something and all of a sudden, you're like, Wow, I've got good energy, you know? You feel, yeah, you feel better. You can take on a take on the world. So, you know, diet, diet plays a big part.

Candace Pierce:

Absolutely. I've just finished the whole30 so very familiar with about.

Sally Fryer Dietz:

Think about.

Candace Pierce:

That entire inflammatory diet but you really do once you get off the initial sugar salt kick, you really do start to feel better. But I understand that that and you also because you have inflammation that you're now trying to get down in the brain, it does make sense for an anti-inflammatory diet.

Sally Fryer Dietz:

Yeah. You'll see a decrease in headaches in the fuzzy thinking. And, you know, a lot of a lot of other things.

Candace Pierce:

Yeah, well, we are coming to the end of episode two. Is there anything that we haven't covered? Or maybe you want to cover a little bit more in depth before we end?

Sally Fryer Dietz:

I think, you know, the big thing is, is just be as well-educated as you can. You know, don't just think it's not a big deal. You know, when in doubt set them out, you know.

Candace Pierce:

That's a good saying.

Sally Fryer Dietz:

Yeah, just like with kids we just you know where are protectors and it's really up to us as health professionals and parents and teachers and coaches to do what is right for the highest good of that child. And I don't know that anybody would say that the highest good is getting them back out there to play because they're your star player.

You know, it's just let's look at the big picture on why we're doing all these things in the first place so that, you know, kids can play sports safely and we can do the right thing for them if they are injured and we know the right, you know, the right steps, the right advice to get parents. And, you know, so much of it comes from just misinformation and just not knowing, you know, just kind of out of ignorance that that things happen.

So, you have more information now and you can use that to your advantage. And really, you know, do it. We need to do for these kids and refer them to the right kind of, you know, you know, a concussion clinic, a specialty clinic, a specialist who does, you know, the kinds of things that we do.

And you can really, you know, make sure you're covering all those bases so they can have a good, healthy, safe, quick recovery.

Candace Pierce:

You know, as adults, especially as, you know, parents and coaches. Yes this is our adulthood. And, you know, we really want to push our teens to do well. But at the end of the day, it is not that child. That child still has so much life left and that the choices that we make can have negative repercussions on their future and the things that they're able to do.

And so, I'm glad that this information is coming to light, that there's more research going on about concussions, that we're starting to line up the correlations to the causation of concussions. So, I think there's a lot more that's going to be coming out in the next ten or so years to really help us in this area of treatment.

Sally Fryer Dietz:

Yeah, I agree.

Candace Pierce:

We have come to the end of our series on concussions and children and adolescents. Thank you, Dr. Sally Fryer Deitz. The insight I have gained into concussions, especially being a mom of three who enjoys all of the different sports, has really been helpful. So, thank you for taking the time to educate us today.

To our listeners. I hope you've also gained insight into this topic, and we encourage you to explore many of the courses that we have available on Elite Learning dot com to help you grow in your careers and earn CEs.

(SOUNDBITE OF MUSIC)