

Physical Activity Following a Concussion - Frankly Speaking EP 11

Transcript Details

This is a transcript of an episode from the podcast series "Frankly Speaking" accessible at Pri-Med.com. Additional media formats for this podcast are available by visiting <http://www.pri-med.com/online-education/Podcast/physical-activity-following-a-concussion-frankly-speaking-ep-11.aspx>

Dr. Frank Domino:

From pro sports to our office, concussion has become a hot topic. Today's guest is Dr. Robert Baldor, Professor and Senior Vice Chair in the Department of Family Medicine and Community Health at the University of Massachusetts Medical School. And we'll be reviewing the controversies around the diagnosis and treatment of concussion. Welcome to the show, Bob.

Dr. Robert Baldor:

Thanks, Frank. Pleasure to be back.

Dr. Domino:

Bob, I'm thinking of a 21-year-old in my practice who came in last summer, he was playing soccer and after heading a ball, he had a few minutes of concussion on the field and thanks to his parents being in attendance, they convinced him to stay out for the rest of the game. The parents and my patient came in and wanted to know did he have a concussion and what should he do? Can you tell me a little bit about the current guidelines around concussion, evaluation, and management?

Dr. Baldor:

I'm glad you asked and I think people who have trouble with word finding and pronunciation after being hit in the head, sometimes that's a sign, Frank. You hadn't been hit in the head earlier

or had you?

Dr. Domino:

Constantly.

Dr. Baldor:

Constantly. So it's concussion. These are really great questions, and I think there's been a lot recently in the literature around restrictions after having a concussion, for recovery, and so that's really I want to talk a little bit about today. There was just a recent review thing, maybe we're doing a little bit too much with the restrictions of activities. But let me back it up a little bit. So, what is a concussion is probably the first thing to clarify. And so, it is a brain dysfunction of some sort that's a result of an injury to the brain. It could be a direct blow to the head or it could be from secondary, the head bouncing around as you might say. And so, we all learned that... I think we were always taught that, "Did you get knocked out?" And if you didn't get knocked out, you didn't have a concussion. And that was real simple to say, "Loss of consciousness equals concussion."

Well, I think what has changed in the last few years is to say, people can have a concussive injury of the brain and not lose consciousness, and so that's really where we get into this more of a muddle around who has had a concussion and who hasn't. So in order to do that, some tools have been developed. There's something called the SCAT, which is the Sports Concussion Assessment Tool and that's been modified a couple of times. And that's really something that's used on the sidelines by coaches or health trainers or whatever, to really look at an individual who's had a head injury to step back and say, "Have you had a concussion or not? Let's do this assessment." And I will say one of the first things that people are talking about if there's a head injury or suspicion for a concussion, the first thing that has to happen is cessation of play, get them off the field, do that formal assessment.

So what are these things that we look at when... The SCAT tool as an example, it's a scoring that

looks at the presence of particular signs or symptoms that the individual has had. So when you see this individual, he had a concussion at the field, I'd go back and say, "Well, how did they make that diagnosis on the field?" And the things that are in these tools... This isn't the whole list, but obviously the idea, "Did you get knocked out?" The loss of consciousness, I mean that's an obvious and easy one. But typically we're not talking on that level and that's the issue. So it's a little bit, "Are you dazed? Do you have a dazed feeling? Is there confusion going on? Is there some drowsiness? How about a headache or a visual disturbance, seeing double?" Those type of things that are going on. Having some trouble with your memory or your concentration. So those are the issues and what these rating tools, such as the SCAT tools, they suggest some questions to be asked of the athlete at the time.

So for example, you've got somebody who was playing soccer, had had a blow to the head, and you asked them... And they're coming off to the sidelines and they say, "Oh, I'm a little dizzy." Or whatever, say, "Okay, you're dizzy. So what half is this? How much time do we have left to play in the game? What's the score? What's the team we're playing? When was our last game?"

Dr. Domino:

So questions testing short term and immediate memory, just to see if it's functioning.

Dr. Baldor:

Yes, these are relatively simple and straightforward things you can do to find out how impaired somebody is on the field. So getting hit in the head and being a little dizzy or something is, "What else is going on there? Are we actually detecting issues that relate to difficulty in thinking, difficulty in concentration, any visual problems that people are having?" And so you add those up and you come up with a score to say, "Oh, this is consistent with a concussion or not." So there's that piece of trying to decide the severity issue that is important.

Dr. Domino:

So if I'm in the office and I'm seeing him, it's now hours to days past that event, are there any things I should be asking him at that time or doing in the way of an evaluation of a patient with

concussion?

Dr. Baldor:

Yeah, so you say hours to days, really these assessments, it is a matter of something that should happen within a day. This is the sort of thing... And really these tools can be used and should be probably used in the office as well. So you're doing a complete history, you're trying to find out what happened, they should have that tool from the sidelines to say, "Wait a minute, how was that diagnosis made? You said you had a concussion. How was that diagnosis made? What was going on with that?" You obviously want to do a follow-up neuro exam, as well. Obviously, if you're picking up any abnormalities on a neuro exam, those are red flags as well as part of that. So you really want to get that sense of what's going on.

And then we talk about, of course now it's after the event so, "Are they having ongoing symptoms?" So what were the symptoms that they were having at the time that went along with the diagnosis of the concussion? And then, "Have those symptoms gotten better or gotten worse or not?" And oftentimes the headache, headache is probably one of the driving symptoms. You get into the sense of fatigue or fuzziness or just don't quite feel right, those are a little harder to put your hands around. If somebody's having some trouble, some photophobia, or auto-phobia where loud noises are difficult for them or light's creating problems for them, or ongoing headaches, that's a little easier to be thinking about.

Dr. Domino:

It's interesting because when I think about this patient, his physical exam was completely normal, he did not report headaches or any fuzziness, but he said he just wasn't right. And when I did his mental status exam, I asked him... Here he is, he's 21, I asked him to do serial of threes and he couldn't do it. And actually, he began to cry during the visit. And I wasn't sure if he was malingering or not. But sure enough, I did a further bit of the mental status exam and he was pretty impaired. And up until that point, I thought, "Oh yeah. He's fine and there's no big deal."

Dr. Baldor:

Well, that I think highlights the need to do a little more thorough history taking and exam. So you did absolutely the right thing and you said, "Oh wow, something is definitely going on here." So that brings up... So that ends up the question and saying, "Well, should you do some imaging in those cases? Is there a need to pursue that type of an approach?" So the imaging you would do would be a CAT scan, and primarily you're looking for signs of bleeding that are there. Some people talk about red flags so, "When should you do the imaging?" And it would be a loss of consciousness for more than 30 seconds, although some guidelines say more than 30 seconds, some say more than a minute. If somebody's lost consciousness for more than 30 seconds I'm getting the scan, I'm not going to wait for that minute. Any focal, neural deficits that you're seeing, nausea or vomiting. Obviously, continued nausea and... Somebody can have nausea or vomiting at the time with an acute injury but if that persists, that's a potential sign for brain swelling and so we would want to do that. But the other one is this persistent disorientation and I think your patient had persistent disorientation going on, so I would've scanned him. I don't know if you did or not, but that would be an indication to do a scan at that point.

Dr. Domino:

I did. Thank you though, I was very concerned and I did do the scanning, that day. It was one of those rare occurrences where I was able to obtain an imaging study within the same clinical day. But thank you, that's great to know. So, you do your history, your physical, you have concerns, they have some degree of impairment for more than 30 seconds or other concerns, you get imaging. Anything else in the work up?

Dr. Baldor:

Yeah, so I think the... In the situation you're describing, people rarely talk about doing the informal neuro psych testing. And this would be to refer them for formal neuro psych testing to get a baseline. Certainly somebody at 21, you'll have standards to compare to to see, "How impaired are they? Are there other things that are going on?" Because that's also part of the... You started out by saying, "Hmm, is he malingering, or what's going on?" That's a tough term to use, but a little bit to try and tease out what's happening. There can be other reasons for people having some of these symptoms and they just happened to have gotten hit in the head. So

neuro psych testing is very useful to really tease out, "How impaired are they?" And that then can guide your ongoing restrictions around what you're doing, but also then can serve as a mechanism to repeat the neuro psych testing, to sort of say, "Are we seeing improvements in these areas or not?" So it's really formalizing as opposed to you just asking some questions and trying to tease out, "Is this person getting better or not?" So it's formal testing that's done.

Dr. Domino:

That's great. Well, thank you Bob. Next I want to talk a bit about understanding the guidelines and the controversy about returning to both sports and academic activities. In a minute or two, can you give us some sense of what we should be telling patients?

Dr. Baldor:

So I chuckle a little bit, because this is... We back this all... Where did this all come from? This really came from concerns around professional athletes and post-concussive symptoms. So you talk about a professional athlete who is out there, severe injuries, lifelong, getting hit in the head, getting banged around, and trying to then look at the evidence related to somebody who is really getting severe head blows on a regular, routine basis and take that data and translate it into say, a high school athlete who's playing a sport. The data out there is really... It's opinion based. We don't have really high quality evidence based data to support a lot of what's being done out there and so those are the issues that come as you try and look at these guidelines. Nevertheless, the guidelines are... They're out there and they're really saying, "If you have had a concussion, no physical activity except walking." Unless the walking even aggravates the symptoms. So this is a little bit... I kinda go with a headache as a sort of thing to be thinking about, "If you're having a headache, how bad is it?" By the way, you can treat the headache with Tylenol if you're going to treat. People say, "We're concerned for bleeds so you want to avoid NSAIDS or aspirin, instead to use Tylenol." In really up... And you would expect a headache to, by three days to be gone as you go with it.

So the idea of removal from play, making sure you're not having another injury to the brain, so you don't having... So you've got an injury in the brain the last thing you want to do now is have

another injury and it will probably take about seven days for the injury to heal up, so that makes sense to me. You've got somebody who's playing a contact sport saying, "You know what, no contact sport for the next week here and then following symptoms as you go along." But the guidelines really talk about different steps and the steps are every 24 hours to do an assessment, and so really no activity for the first 24 hours. The next day then a return to school, seeing how they're doing, reassessing in 24 hours, "Are the symptoms okay? Not having significant headaches or confusion or whatever it is we're tracking." If that's fine, next light aerobic activity, another 24 hour assessment, moving forward and so that you'd finally get a week later, back into your full contact activity. The trouble comes in...

So that makes a lot of sense to me, we want to avoid these physical activities, you do not want to have another trauma to the brain, you don't want to be banging the brain around again. The trouble is, is that they've also said, "You know what? We should have limited cognitive activity, as well. Because that brain's trying to heal up we don't want to stress the brain because of the limited cognitive activity, so they shouldn't be doing schoolwork. But they shouldn't be doing mobile... They shouldn't be on their smartphones, they shouldn't be watching TV, they shouldn't be driving a car." A little... The evidence around this is, it's really weak. This is a [inaudible] it's opinions, that say, "We really need to rest that brain."

So I think what really what you have to sort out here, is the individual person and, how severe was the injury? What's going on as you work through it with those things? Because the concern is for chronic... It's called CNI, Chronic Neurocognitive Impairment later in life. And you do see this in professional athletes who've had repeated physical blows to their head over time. I'm not so sure the data is there to say, "Gee, because somebody was reading after they had a concussion on the field that they're going to end up with this." So in my mind it's really difficult to get around this and you have to work with the school system, you have to work with the patient, you have to work with the parents as part of it. The guidelines are a little unclear and the evidence is unclear as far as I can see.

Dr. Domino:

So it sounds like you should follow their symptoms, gradually return to things, and minimally seven days before they can resume full activities, but certainly if they have any persistent symptoms that time gets gets pushed out. Does that sound about right?

Dr. Baldor:

That's right, that's right. Yep.

Dr. Domino:

I know there was a recent article that further shed some light on management of concussion. Do you want to speak to that?

Dr. Baldor:

Yeah, this is great because this just came out, and it came... It was a Canadian study and it was published in [inaudible] and they were looking at this whole idea of restricting activity. They're saying, "You're taking these young athletes often that are very active in school and so on and all of a sudden you're taking them from being engaged in physical activity and schoolwork and you're sticking 'em on the couch. Is that really the right thing to be doing?" And so they were looking at this and they did a study that was amazing to me. They started with about 8,000 kids, ages five to 17, they had diagnosed with acute concussion had actually been to the emergency room because of that and they ended up with 2,400 of these kids that were followed. 30% of them developed post-concussive symptoms, where they continued after the concussion to have ongoing headache or whatever the symptoms were that they were. Of that subgroup that had those symptoms, a higher likelihood, almost twice as likely to have that if you had no physical activity than if you had some ongoing, limited physical activity. So the folks that had no physical activity were more likely to have post-concussive symptoms than those that did.

Now there is a co-founder here, we don't know from looking at the data were those more severely effected perhaps and that's why they didn't have physical activity because they had maybe a more severe concussion at onset? So we really don't know, that part. That's why it gets back to looking at... Everything we do in medicine, you have to individualize, "How severe was it? Did they get knocked out? Did they lose consciousness or was this a... What was going on?" And

try to grade your response to the degree of the injury. And then also it's a little bit of, "Had they had repeated injuries? Is this their third concussion that they've had this year as a high school athlete or is this the first time it's happened?" So you have to factor all those things in when you're trying to guide a patient and their parents.

Dr. Domino:

It sounds like what you're saying is that the true art of medicine comes into play when we're diagnosing and managing concussion?

Dr. Baldor:

Yes, the true art of medicine is definitely there in this situation where you really have to use your clinical judgment as best you can, there's some guidelines out there but they're opinion guidelines and not a lot of great evidence around this. We can't be doing brain biopsies on these folks to know what's going on.

Dr. Domino:

Bob, any final thoughts on concussion?

Dr. Baldor:

I guess it's an ongoing issue, be aware of the red flags that I talked about as to when we really should move forward to be doing some imaging again, it's that loss of consciousness. If you're seeing a focal neuro deficit, persistent nausea and vomiting outside of the initial event or those with persistent disorientation. Really being a little bit more aggressive with that group whether it's diagnostic imaging or whether it's neuro psych testing do that. But the group that doesn't fall within that, I think we can feel a little bit more comfortable about getting them back into their regular routine, getting them to be engaged, and probably have a better outcome, if they're actually engaged than having them just sit on the couch.

Dr. Domino:

Bob, thanks so much. This is a complex topic and I appreciate your work putting it together.

Dr. Baldor:

Thanks, Frank. Pleasure to be here.

Dr. Domino:

Thank you for listening today, to this discussion of concussion. If you'd like to review the article, it was published in JAMA, 2016, with the lead author, Dr. Gruel. Please join us next time where we'll be discussing constipation its diagnosis and management, in the outpatient setting.