Inbal Eshel: The views, opinions, and findings contained in this podcast are those of the host and subject matter experts. These should not be construed as official Department of Defense positions, policies, or decisions unless designated by other official documentation. Welcome to Clinical Updates in Brain Injury Science Today, or CUBIST, a biweekly podcast for healthcare providers about current research on traumatic brain injury, also known as TBI. This program is produced by the Defense and Veterans Brain Injury Center, otherwise known as DVBIC. And I'm your host, Inbal Eshel, a speech language pathologist here at DVBIC. As a provider, I know how hard it is to stay on top of the research while managing a full patient schedule, so we're doing the work for you, highlighting current TBI research that can help inform your practice in the time it takes you to walk from your clinic to the hospital. In today's episode, I'll be talking with Dr. Anne Bunner. Dr. Bunner is a biologist and program analyst at DVBIC with broad clinical and laboratory experience. In today's episode, Anne and I will discuss the consensus statement on concussion in sport, the 5th International Consensus Conference on Concussion in Sport held in Berlin, October 2016. This consensus statement was recently published in the British Journal of Sports Medicine by McCrory and colleagues. All right, welcome Anne.

Anne Bunner: Thank you, Inbal.

Inbal Eshel: So what is the bottom line up front? What are we going to learn about from you today?

Anne Bunner: This is an update of the 2012 Guidelines for the Concussion in Sport group, also known as the Berlin Consensus Statement. As you mentioned, Inbal, this is an international collaboration that required 33 experts over two years to distill a massive amount of literature into a really accessible article that features a lot of good information that's helpful for providers, athletic trainers, and coaches, and patients as well.

Inbal Eshel: Fabulous. Can you highlight for us some of the most interesting findings?

Anne Bunner: Sure. So one of the biggest differences between these guidelines and previous recommendations is regarding rest. It used to be that after a concussion, weeks of physical and cognitive rest were recommended. But these guidelines recommend 24-48 hours of rest, followed by a staged return to activity, especially physical activity. So the guidelines recommend six stages of activity to return to sport, and four stages of activity to return to school. And as long as athletes are not engaging in activity that brings on or worsens their symptoms, the research shows that aerobic exercise is beneficial for recovery. This is actually consistent with the progressive return to activity recommendations published by DVBIC, which are available on our website, D, V, B, I, C dot D, C, O, E, dot M, I, L, slash resources.

Inbal Eshel: So were there specific other suggestions to making changes to current treatment guidelines, aside from the ones focused on rest?
Anne Bunner: Sure. The authors acknowledge preliminary support for three different treatments, specifically an aerobic exercise program that does not exacerbate symptoms, especially for those with dizziness, physical therapy, especially for patients with balance problems, and cognitive behavioral therapy for those with mood or behavioral issues. There were also some interesting remarks about medication. The authors don't encourage the use of medication to treat sports concussion, but they caution that if medications are used, serious consideration should be given to whether athletes return to sport before ceasing usage of those medications. So, for example, if a patient is taking over the counter pain medications for head or neck pain associated with concussion, these guidelines recommend serious caution about whether that athlete should return to sport while they're still taking those medications.

Inbal Eshel: I see. So what are some of the other implications, do you think, for coaches and trainers?

Anne Bunner: So the main message here for coaches and trainers is recognize, remove, and reevaluate. So coaches and trainers should be aware of the signs of concussion and remove players when concussion is suspected. The most well-established and rigorously developed sideline concussion assessment is the SCAT5, which takes about 10 minutes to complete. Actually, the British Journal of Sports Medicine has published a nicely formatted version of the SCAT5 forms. So that's available for download at their website. But after the initial sideline assessment, the player should be re-evaluated in a medical setting away from the field, away from the distractions by a trained professional. The authors, also, give two firm cautions: the player should not be left alone after the injury and should be monitored for deterioration. The idea here is that what looks like a sports concussion could turn out to be more serious and require immediate treatment. The other caution is that players should not be returned to play on the day of injury.

Inbal Eshel: So is there a timeline for that monitoring piece?

Anne Bunner: That's just the day.

Inbal Eshel: That's just for that day?

Anne Bunner: Mm-hmm.

Inbal Eshel: Okay. Excellent. And what are some of the takeaways for patients based on this consensus statement?

Anne Bunner: It's a good idea for athletes, in sports, with a risk of concussion to be aware of the signs of concussion so they can recognize it in themselves and their teammates. I think it's also helpful for patients to be aware that recommendations like this exist and are based on current literature because primary care physicians have a wide range of knowledge levels regarding current concussion recommendations. And it's important for people to advocate for themselves and the people they care about. The other thing the authors note is that having a low level of symptoms on the first day after injury is a favorable prognostic indicator. So, if that first day, after the concussion, an athlete doesn't have a high number or a high severity of symptoms, then they may be able to return to activity sooner than someone who's experiencing more or more severe symptoms on that first day.

Inbal Eshel: So what are some of the implications here for providers beyond what you've mentioned?

Anne Bunner: There are a number of good nuggets of information in this consensus statement and the associated free review articles that are published with it in the two June issues of the British Journal of Sports Medicine. There are recommendations regarding rehabilitation and referral for specialized interventions for people with persistent symptoms. The authors note that cognitive recovery often lags behind symptom resolution during recovery. So cognitive assessments might be an important part of return to play determinations. They also recommend a clinical neurological assessment for all athletes with sports concussion.

Inbal Eshel: Excellent. As you've mentioned, there are some tools. You said the SCAT5, but are there any other tools that are associated with this consensus statement that might be helpful for providers to check out?

Anne Bunner: Absolutely. So there's a SCAT5 that's specific for children ages 5 to 12, and there's also a concussion recognition tool which is sort of an informational poster that features red flags, symptoms, assessment steps which is
really based on what's outlined in the SCAT5 form.

**Inbal Eshel:** That's all we have time for today. We hope you enjoyed this quick literature update. You can stay up-to-date on future episodes by subscribing to CUBIST on iTunes, Stitcher, or wherever you listen to podcasts, where you can also find links to the articles we discuss and other relevant resources. If you have any questions about the podcast or about DVBIC products or programs, or if you have feedback for us, please feel free to email us at info@dvbic.org. That's info@dvbic.org.

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CUBIST is produced and edited by Deborah Bailin and is hosted by me, Inbal Eshel. It is a product of The Defense and Veterans Brain Injury Center led by acting national director, Dr. Thomas DeGraba and the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury led by acting director, Dr. Richard Stoltz. Again, make sure to check out DVBIC’s website for a clinical recommendation on progressive return to activity for adults. A step-by-step guide to gradually return post-concussive adults to pre-injury activity. Thanks for listening. We'll be back in two weeks with Dr. Don Marion to digest current concussion research.

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