Fall November 15th, 2012

Brainstorm: Head Injuries and the NFL, Part 12: Grump Factor

John J. Medina Ph.D.

Follow this and additional works at: https://digitalcommons.spu.edu/brainstorm

Part of the Neuroscience and Neurobiology Commons

Recommended Citation
https://digitalcommons.spu.edu/brainstorm/22

This Book is brought to you for free and open access by the Publications at Digital Commons @ SPU. It has been accepted for inclusion in Brainstorm by an authorized administrator of Digital Commons @ SPU.
I begin this entry on a sad note. While writing these last two installments in our series concerning CTE and the NFL, I found out about legendary linebacker Junior Seau’s suicide.

As you probably heard, Seau died of a self-inflicted gunshot wound to the heart. Some speculate that he chose this method (most people who use firearms aim at the head) for the same reason Dave Duerson killed himself: He wanted us to discern his last request — “Please leave my brain intact for science.”

I would like to speculate about future research as we seek to understand better what role these athletes’ careers had in ending their lives … if that is even the way to couch the question.

If you have stayed with me this long, you will have noticed (and perhaps been annoyed by) a fairly common theme. I have consistently used words like “we’re not sure” or “scientists do not all agree” or “we can only speculate” about many important components of this story. It is almost as if we don’t have a clear story to tell about the relationship between football and CTE. There’s a good reason for this persistent skepticism. We don’t have a clear understanding about the relationship between football and CTE.

That hardly means that I hope there is one, or even think one might soon be in the offing. But — to show you what I mean — here’s the story I would love to have unfolded for you, couched as a five-step process.

1. An athlete suffers repeated closed-head injuries.
2. These injuries lead to brain damage.
3. The brain damage produces a pathological condition (e.g., CTE).
4. The condition results in a psychiatric disorder (e.g., depression).
5. As a result of the depression, the athlete takes his own life.
Unfortunately, there are such gaping holes in this story that scientific truth begins to melt into speculation shortly after Step 2. These gaps exist for a variety of reasons, most of which I outlined in previous entries, followed by the words “we don’t know” or “we need to do additional research.” That’s why I have been so tentative.

Added to this bouillabaisse of skepticism are additional findings from sources far from the gridiron that may eventually lead to a more cohesive story for all — or atomize it into even smaller pieces.

Consider just one: Exposure of combat soldiers to overpressure blast waves produced by high-order explosives, such as those seen in the improvised explosive devices (in both Iraq and Afghanistan). There is growing evidence to suggest that these blast exposures may induce CTE-like symptoms in soldiers. Clinical researchers working with returning veterans have noticed behaviors similar to the behavior of athletes who eventually are diagnosed with CTE: moodiness, memory and attentional problems, issues of substance abuse. One soldier who experienced some of these symptoms donated his brain to science. At autopsy, sure enough, the tau neurofibrillary tangles described in our previous installment were present in his brain.

Is there a relationship between blast exposure and CTE, and are these similar to what professional athletes endure in their careers? Get ready for the answer: Nobody knows.

In my final installment, I would like to leave you thinking about some challenges that researchers face, and large bridges that will have to be constructed in future years, in order to truly understand the relationship between first-downs and suicides. Or IEDs and tau. Only then will I be able to retire the words “needs further research,” for then, at that happy moment, we will actually know.

Comments