



## A Public Message to Athletes Chronic Traumatic Encephalopathy: Q and A Fact Sheet

Athletes and their families may have heard news reports about the risk of brain injury in sports. This can lead to worry that repeated concussions and/or head impacts may cause changes in the way athletes think, feel, or behave. For some athletes, when doctors looked at their brains after their deaths, abnormal changes were seen. Some scientists have called this *Chronic Traumatic Encephalopathy*, or *CTE*, and have suggested that CTE is a result of concussions or repeated impacts to the head during a player's career. Lately, the term CTE has caused much fear and worry for athletes, their families and friends. CTE is real, but just because you play sports, hit your head, or have had concussions does not mean you will develop CTE. In fact, most people don't. So, what do we know and not know about CTE?

### What is CTE?

CTE happens when brain cells have a build-up of an abnormal version of a protein called "*tau*," a substance that can only be seen in brain tissue with a microscope after death. *Abnormal tau* is found in many medical conditions, even in the brains of people who never played sports or had concussions. We still do not know what exactly causes these abnormal *tau* build ups that seem to be associated with CTE. Right now, however, CTE can only be diagnosed **after a person's death**. Special lab tests are used to look for abnormal *tau* in the brain, but there is no lab test for detecting CTE in a living person at this time.

### What are the signs that someone has CTE?

The simple answer is that we don't yet know. Some of the problems reported in people who are later diagnosed with CTE include being more forgetful, feeling depressed, being irritable, and/or behaving in a way that was unusual for that person. However, these symptoms can also be seen in people with other medical conditions that are not CTE, such as depression, anxiety, substance use, or other neurodegenerative brain disorders like dementia.

### Are children who play contact sports going to get CTE later in life?

So far, CTE has not been seen in young children. Doctors have found some evidence of abnormal *tau* in the brains of a few teens after they died, but it is not clear if the abnormal *tau* is related to cognitive or behavioral changes. What we do know is that most people who sustain a concussion or hit their heads do not develop CTE later in life.

### Can CTE be prevented?

Right now, we do not know what causes, or who might develop, CTE so it's not clear how to prevent it. However, we do know that for all sports, we need to: **Protect** the brain by avoiding hits to the head, **Control** contact in practices, **Teach** safe techniques and skills, **Wear** gear that fits right, and **Play** fair. Sports and exercise are important to overall health and we need to make sports as safe as possible. We need coaches, parents, and all those who help with youth sports to learn about concussion and how to protect our kids. Last, we need to be clear that playing sports does not mean developing CTE.

### What should you do if a sports player feels changes in her or his mental abilities?

If you are worried about unusual changes in health, mood or behavior, or about CTE, talk with a licensed doctor who understands concussion, head injury, and brain health. There are treatments to help with these problems.

For other information about CTE, please see "Answering Questions about Chronic Traumatic Encephalopathy CTE" at <https://www.cdc.gov/traumaticbraininjury/pdf/CDC-CTE-FactSheet-508.pdf>

To find a neuropsychologist doctor in your area of the country who understands brains and sports, go to [www.sportsneuropsychologysociety.com](http://www.sportsneuropsychologysociety.com).