

Detecting concussion-related brain disease in its earliest stages

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Autopsies have shown that some high-profile athletes who suffered repeated blows to the head during their careers have unusual protein clumps in their brains. Those clumps suggest the athletes had a disease called chronic traumatic encephalopathy (CTE). Now, scientists are working on tests that might be able to detect CTE in its earliest stages, according to an article in *Chemical & Engineering News (C&EN)*, the weekly news magazine of the American Chemical Society.

In the article, Lauren Wolf, a senior editor at C&EN, explains that many of these athletes struggled with symptoms such as memory loss, depression and violent mood swings while they were alive. One professional wrestler, Chris Benoit—who was known for slamming his head into competitors—murdered his wife and son and then took his own life in 2007. An autopsy confirmed that he had clumps of a protein in his [brain](#) that are characteristic of CTE. Scientists studying the disease suspect that, like Alzheimer's, CTE takes root even before symptoms arise. Also, as in Alzheimer's, CTE diagnoses can only be confirmed after a patient dies, and a medical professional examines the brain. So, scientists recently set out to learn more about this puzzling disease.

Several groups have started studying retired and active athletes to see if they can find biological clues to detect the disease while the athletes are still alive. To do this, they're using different forms of brain imaging, including MRI and PET scans. If they succeed, they'll have new tools to help guide athletic rules and manage athletes' health in the future.

Provided by American Chemical Society

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