

A quarter of former NFL players who died between 2016-2021 had CTE, study finds

At least a quarter of former NFL players who died between 2016 and 2021 had CTE, a study estimates.

[News desk](#)



Researchers calculated a conservative CTE prevalence of 24.5 per cent among 878 former NFL players who died during the period.

Chronic traumatic encephalopathy (CTE) can currently only be definitively diagnosed after death by examining brain tissue.

Lead and corresponding author Daniel Daneshvar is chair of physical medicine and rehabilitation at Mass General Brigham and Earl P. and Ida S. Charlton associate professor at Harvard Medical School.

The researcher said: "Community brain bank studies have shown that CTE affects less than 1 per cent of the general population.

"To find that somewhere between 24.5 per cent and 97.7 per cent of NFL

players from that time period had this progressive brain disease is a wake-up call for the NFL and scientific communities.

“These data, alongside my experience treating NFL players with dementia in clinic, indicate that we need to dedicate resources towards developing a cure.”

The research, involving Mass General Brigham, Boston University and the Concussion & CTE Foundation, examined former NFL players from the hard-shell helmet era who died between 2008 and 2021.

Researchers focused on 2016 to 2021, when brain donation was highest. During this period, 878 former NFL players died and 235 donated their brains.

CTE was found in 215, or 91.4 per cent, of the donated brains.

Most were donated to the UNITE Brain Bank at the Boston University CTE Center, with additional donations from brain banks at Mount Sinai and the University of California San Francisco Alzheimer’s Disease Research Center.

Because most of the players who died did not donate their brains, the researchers estimated a range for the possible prevalence of CTE.

Their most conservative calculation assumed the 215 confirmed cases were the only cases among all 878 players who died, giving an estimated prevalence of 24.5 per cent.

At the opposite extreme, assuming every player who did not donate a brain also had CTE would produce an estimate of up to 97.7 per cent.

Researchers said both extremes were highly unlikely and the true prevalence probably lies between them.

The study also found that 61.3 per cent of NFL brain donors with CTE met clinical criteria for dementia.

Among all donors who had dementia, 95.5 per cent had CTE pathology.

Stage IV CTE, the most severe form of the disease, was strongly associated with dementia and greater impairment in cognition and daily functioning.

"We recognise that these findings will be concerning for NFL players and their families, and we want them to know that help is available," said senior author Jesse Mez, associate professor of neurology at the BU Chobanian & Avedisian School of Medicine and co-director of clinical research at the BU CTE Center.

"We have treatments for many symptoms believed to be associated with CTE, and in our clinic we find that symptoms can improve with proper medical care."

Researchers said future studies should examine athletes who played more recently.

They also said prevention efforts should focus on reducing repetitive head impacts that drive CTE risk, rather than concentrating solely on concussions.