

# Chronic brain damage not as prevalent in NFL players, say researchers

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A study published online today in *Sports Health: A Multidisciplinary Approach* provides a different take on previous information regarding the prevalence of chronic brain damage in retired NFL players.

Researchers performed in-depth neurological examinations of 45 retired NFL players, ranging in age from 30-to 60-years old. The analysis included state-of-the-art [magnetic resonance imaging](#) (MRI), susceptibility weighted imaging (SWI), [diffusion tensor imaging](#) (DTI) along with comprehensive neuropsychological and neurological examinations, interviews, blood tests and APOE (apolipoprotein E) genotyping.

"Our results indicated that there were brain lesions and cognitive impairments in some of the players; however the majority of the individuals in our study had no clinical signs of chronic [brain damage](#) to the degree that has been noted in previous studies," said lead author and neurologist, Ira R. Casson, MD of the Long Island Jewish Medical Center, in New Hyde Park, New York and the Hofstra North Shore-LIJ School of Medicine, Hempstead, New York.

The players in the study had an average of 6.8 years of playing time in the NFL and reported approximately 6.9 concussions during their time in the league. The majority had normal clinical mental status. Neuropsychological testing revealed isolated impairments in 11 patients but none suffered dementia. Six players showed symptoms of moderate to severe depression. No players in the study had dysarthria, Parkinson's Disease or cerebellar dysfunction. An abnormal gene which may predict future cognitive issues such as dementia was present in 38 percent of the players, which is larger than that in the general male population.

Player positions in the study included: 14 linebackers, 9 offensive linemen, 8 defensive linemen, 8 defensive backs, 2 wide receivers, 2

running backs, 1 tight end and 1 who played on both the offensive and defensive line. No NFL quarterbacks were part of the sample. Up until this study took place there had been three mail/telephone surveys of retired players, a number of neuropathological case reports and one clinical evaluation of older retired NFL [players](#) in the medical literature.

"The prevailing view that a career in football frequently results in brain damage still needs to be studied further. With additional funding and time, more detailed analysis can take place to determine the long-term effects of playing football and what can be done to help prevent injuries, especially concussion," said Casson.

Provided by American Orthopaedic Society for Sports Medicine

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