

# Multiple Regression and Marketing-Mix Models



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## Football Facts

- Evolved from Rugby in Europe
- Walter Camp is known as the founding father of football
- In 1876 the first rules were written
- William Heffelfinger was the first player actually paid to play football
- American Professional Football Association (APFA) was the first league of football but then changed its name to the National Football League in 1922

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## How to Play

There are two 11-man teams. The offense team advances the ball by running or throwing the ball down the field. The defense team tries to stop the offense team or make it give up possession of the ball. Once the offense team makes a touchdown or loses possession of the ball, the teams switch roles until all four quarters are played.

Touchdowns equal 6 points each.

Field goals are 3 points each.

2 point conversions are usually 2 points each

### Head Injuries in Football

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YouTube

### Statistics

- Injuries have increased from 223 in 2009 to 269 in 2013
- 1/3 of all concussions are being left off the NFL Injury Reports

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NFL Injury Report  
• 152  
Concussions

NFL Concussion Count  
• 228  
Concussions

Even more shockingly, 49.5% of players never missed a game after having a concussion

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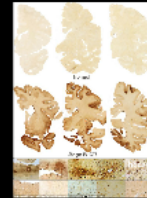
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missed a game after  
having a concussion**

# What Can they Lead to?

**Chronic Traumatic Encephalopathy: a progressive degenerative disease of the brain found in athletes with a history of repetitive brain trauma. This disease can also lead to**

- Memory loss
- Confusion
- Impaired Judgement
- Lack of Impulse Control
- Aggression
- Depression
- Dementia

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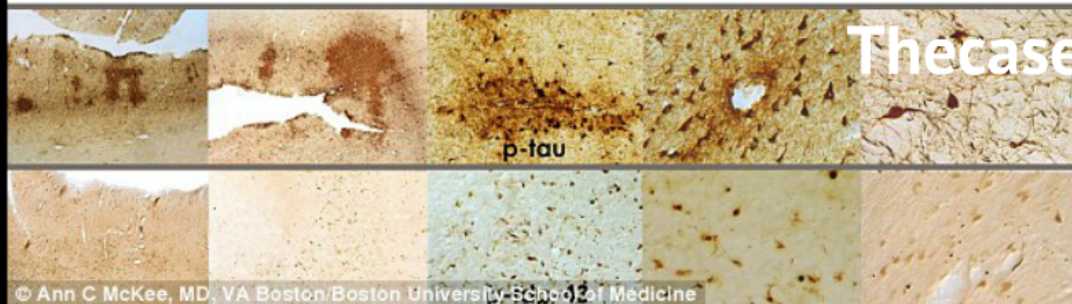
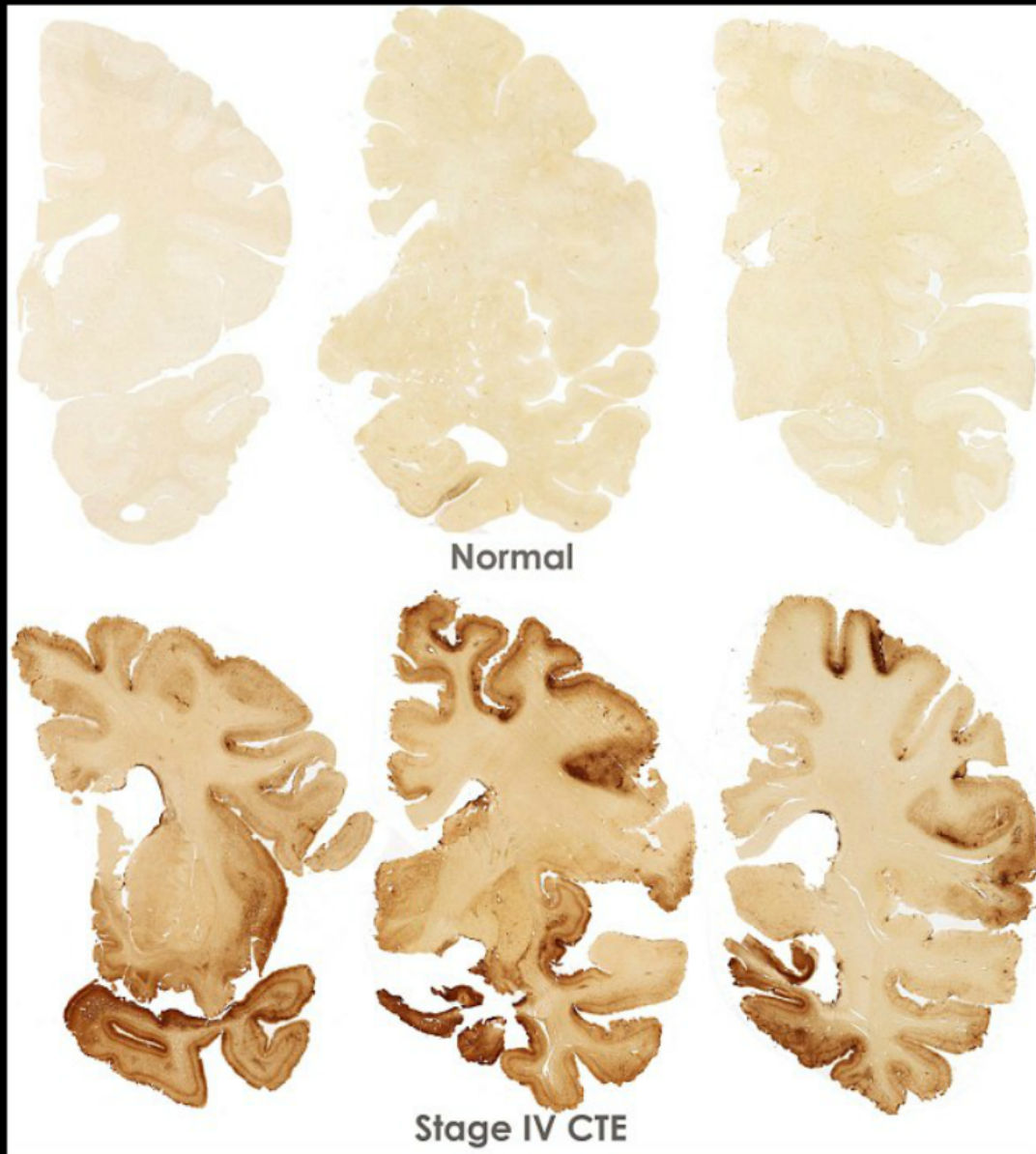
**Lou Gehrig's Disease: Amyotrophic lateral sclerosis (ALS), often referred to as "Lou Gehrig's Disease," is a progressive neurodegenerative disease that affects nerve cells in the brain and the spinal cord. The nerves that are affected when you have ALS are the motor neurons that provide voluntary movements and muscle power.**

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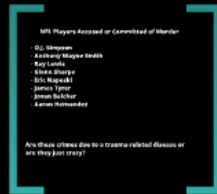


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# Head Injuries & Crime

Brain injuries can be associated with crime



**Neurologists have suggested that traumatic brain injury has strong links to violent behavior**

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## What they are Doing Now?

- Several high school coaches emphasized the NFL teaching new tackling techniques, such as "Heads Up Football," which teaches coaches to train kids to tackle with heads up—instead of using the helmet as a battering ram
- Rules have been implemented in the NFL that has expanded its original rules to prevent "defenseless" players from taking shots above their shoulders.
- Hope in the trickle down effect!