



2014 CAS Annual Meeting

C10: Claim Issues - Both Emerging and Perennial Traumatic Brain Injury

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The search for the “next asbestos”

Wireless Antennas?



Climate Change?



Genetically Modified Food?



Fracking?



Affordable Care Act?



Traumatic Brain Injury Headlines

Football

[Study finds evidence of degenerative brain disease in nearly all former football players examined](#)

ABC News / October 10, 2014

[Brain injury expert critical of deal](#)

ESPN / October 9, 2014

A scientist studying the brains of deceased athletes with head trauma criticized the proposed NFL concussion settlement, saying it would not compensate retirees who exhibit mood swings, aggression, depression or other aberrant behavior.

[What's Killing American High School Football Stars?](#)

Healthline / October 14, 2014



Traumatic Brain Injury Headlines

Research

[Brain injury similarities in troops, football players spur collaboration, research](#)

The Washington Times / October 15, 2014

The gridiron and the battlefield have little in common, but brain injuries plaguing combat veterans and former football players has doctors and veterans' advocates eager to bring brain injury research out of the "dark ages."

[New test detects concussion impairments that may be overlooked](#)

Pittsburgh Post-Gazette / September 16, 2014

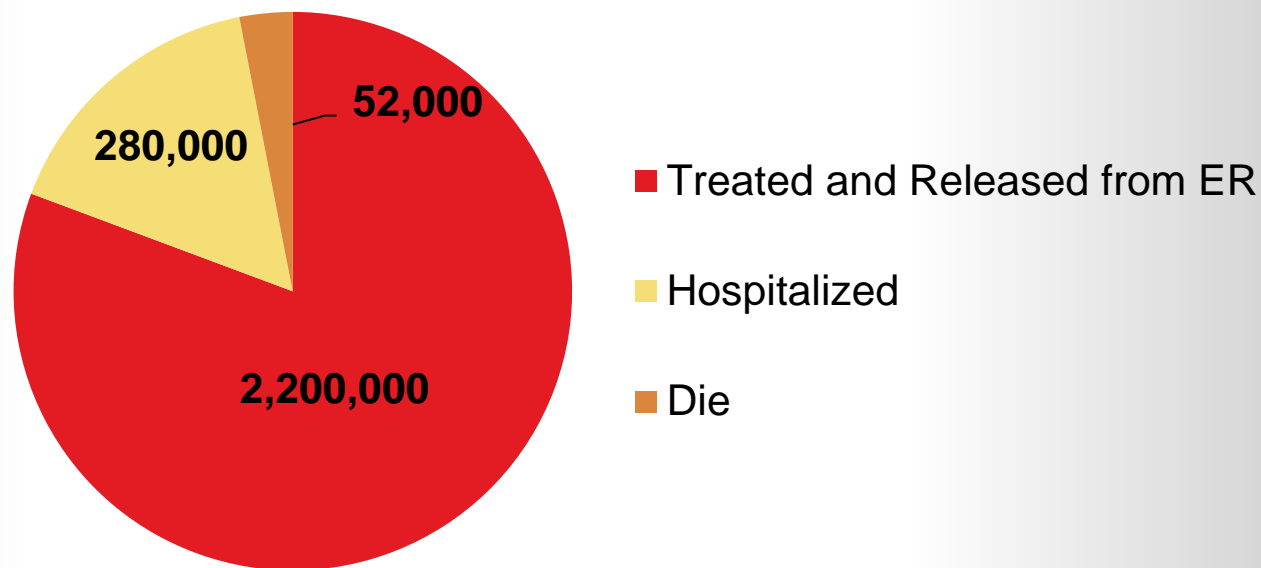
Researchers at UPMC and the University of Pittsburgh have developed a simple new test that can detect symptoms of a concussion current tests often miss.



How prevalent is Traumatic Brain Injury in the U.S.?

2.5 million Traumatic Brain Injuries in 2010

TBI Treated in the U.S.



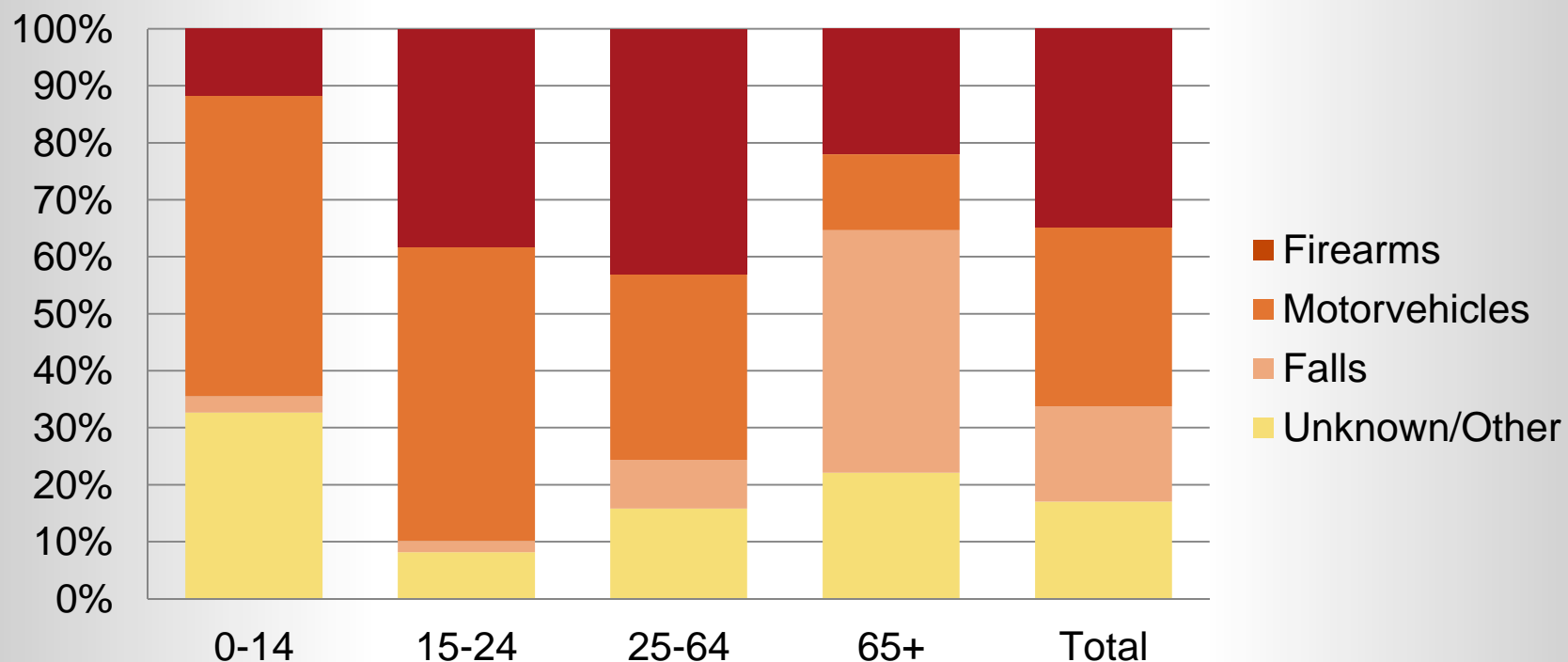
- 75% of TBIs are mild, or concussions

Source: http://www.cdc.gov/traumaticbraininjury/get_the_facts.html

How many deaths are directly caused by TBI?

52,000 people die annually

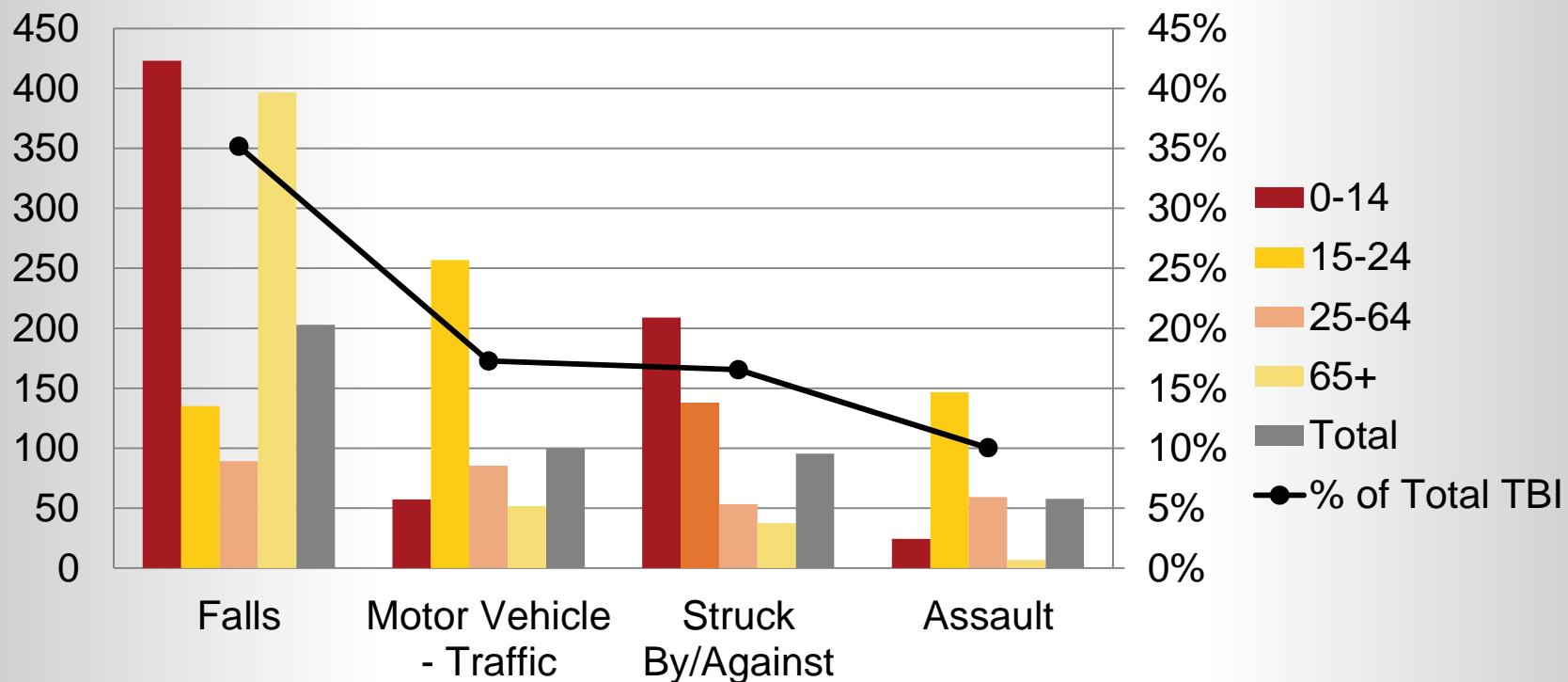
Causes of TBI Deaths by Age



Source: *Surveillance for Traumatic Brain Injury - Related Deaths - United States, 1997-2007*. Centers for Disease Control and Prevention. 2001, Morbidity and Mortality Weekly Report

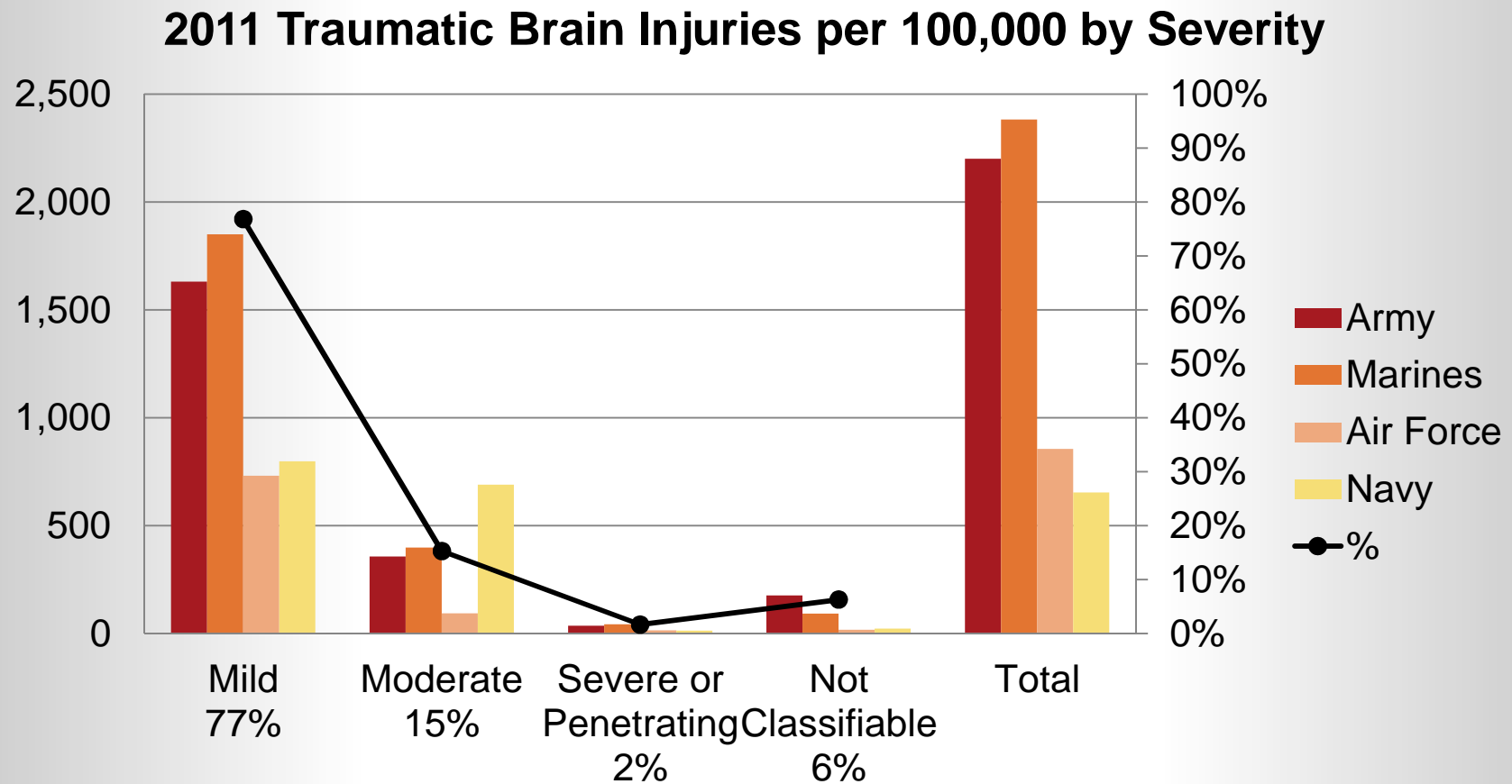
What are the main causes of TBI?

Traumatic Brain Injuries per 100,000 people by Age



Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. *Traumatic Brain Injury in the United States Emergency Department Visits, Hospitalizations and Deaths 2002-2006*. 2010

How is military experience different?



Source: Department of Defense. DoD Numbers for Traumatic Brain Injury

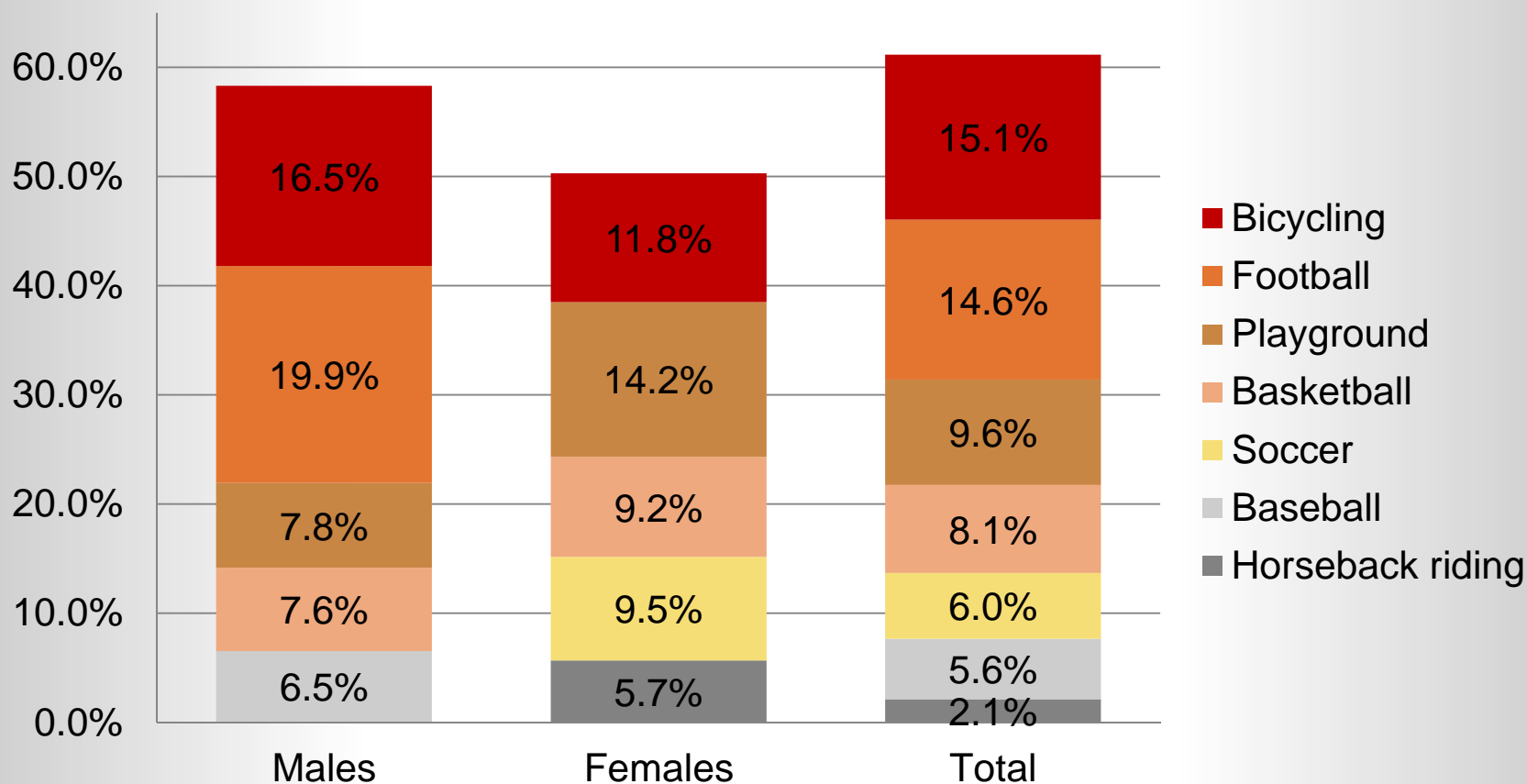
Which occupations pose the most risk?

- The occupations with the highest risk of brain injury include:
 - Construction
 - Transportation
 - Agriculture
 - Forestry
 - Fishing
- These occupations account for more than half of all workplace TBI fatalities.
- 20% of workplace TBIs are caused by slips and falls.
- Workers over age 65 are the most at risk to experience a fatal TBI.



What activities expose people to a TBI?

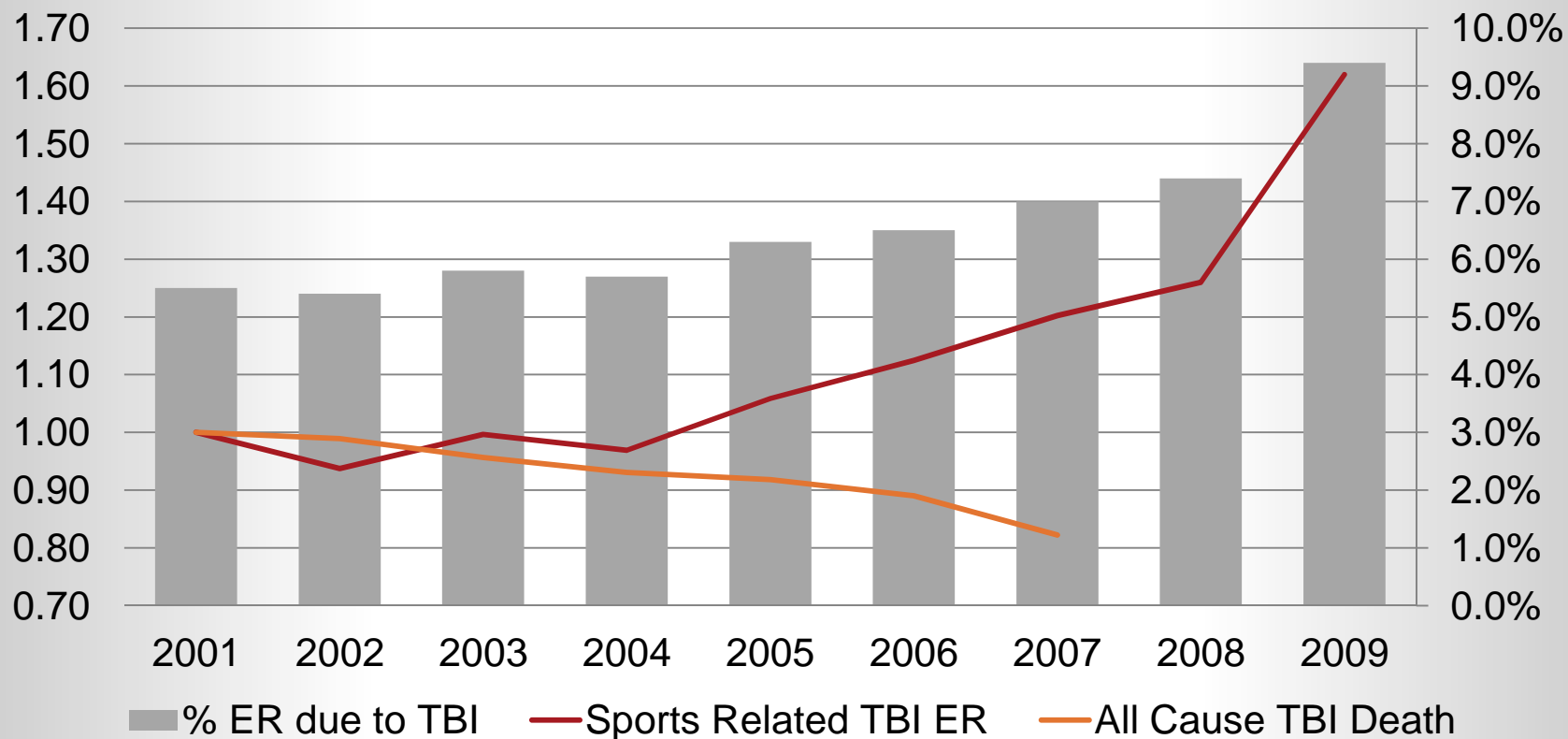
**% of Annual ER Visits for TBI
Children <19 years old, Top 5 Causes by Gender**



Source: Centers for Disease Control and Prevention. *Nonfatal Traumatic Brain Injuries Related to Sports and Recreation Activities Among Persons Aged ≤19 Years — United States, 2001–2009*. s.l. : Morbidity and Mortality Weekly Report, 2011

Has there been an increased incidence of TBI?

TBI Incidence Relativity, Youth 0-18



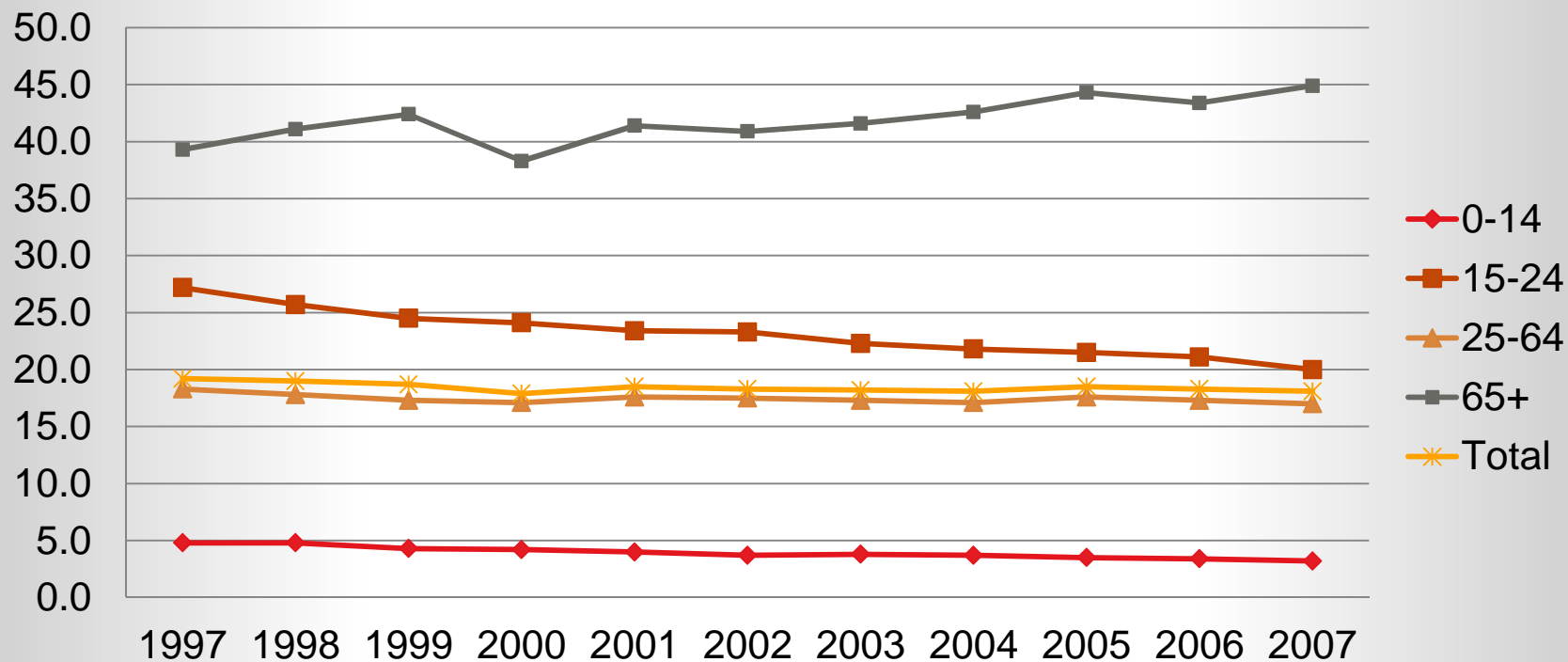
Sources:

- Centers for Disease Control and Prevention. *Nonfatal Traumatic Brain Injuries Related to Sports and Recreation Activities Among Persons Aged ≤19 Years — United States, 2001–2009*. s.l. : Morbidity and Mortality Weekly Report, 2011
- Surveillance for Traumatic Brain Injury - Related Deaths - United States, 1997-2007*. Centers for Disease Control and Prevention. 2001, Morbidity and Mortality Weekly Report

What factors will influence trends?

- Increased awareness
- Aging population

TBI Death Rates per 100,000 Population by age



Source: *Surveillance for Traumatic Brain Injury - Related Deaths - United States, 1997-2007*. Centers for Disease Control and Prevention. 2001, Morbidity and Mortality Weekly Report

What influences recovery from a TBI?

- Age
 - The younger brain may be more vulnerable to injury because it is not fully developed
 - Elderly more likely to die from injury

- Gender
 - Men experience more TBIs
 - Women have longer recovery time and more likely to have long-term issues

- Concussion history - People with prior concussions:
 - Take longer to recover
 - Experience more severe symptoms

What are the long term consequences of a TBI?

- Most people who experience a TBI can expect a full recovery.
 - Only 15% of TBIs result in long term disability or impairment.
- Shortened life expectancy
 - Life expectancy for a 30 year old with a severe TBI is 19 years shorter; 10x more likely to die in next 12 months
- Increased risk of suicide
 - Veterans with history of TBI are 1.55 times more likely to commit suicide
- Increased likelihood for neurodegenerative diseases later in life.
 - Alzheimer's disease, Parkinson's disease and ALS.

High Profile Neurodegenerative Cases

Parkinson's Disease

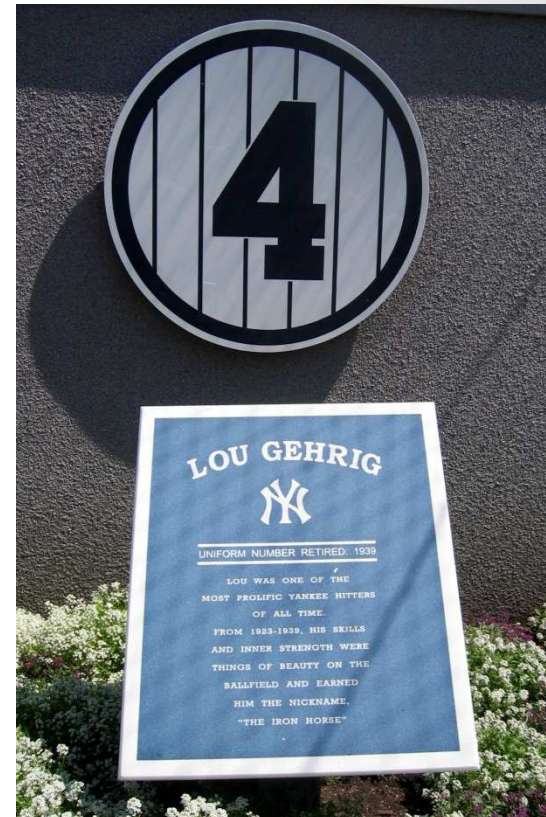
Muhammad Ali was diagnosed with Parkinson's disease at the age of 42. His doctors reported his syndrome was the result of injuries he sustained in his 22 year boxing career.



High Profile Neurodegenerative Cases

ALS

Lou Gehrig died at age 37 in 1941 from ALS, which is now commonly referred to as “Lou Gehrig’s Disease”. However, researchers have since questioned whether his disease was actually the result of repetitive head trauma. During his time as a professional baseball player he suffered at least four significant concussions. Additionally, he played both high school and collegiate football.



What is CTE?

- **Chronic Traumatic Encephalopathy (CTE)** is a progressive degenerative disease of the brain found in people with a history of repetitive brain trauma.
- “CTE results in a progressive decline of memory and cognition, as well as depression, suicidal behavior, poor impulse control, aggressiveness, parkinsonism, and, eventually, dementia. In some individuals, it is associated with motor neuron disease, referred to as chronic traumatic encephalomyelopathy, which appears clinically similar to amyotrophic lateral sclerosis.”
- Prevalence unknown – currently only detected on autopsy
 - In a recent study, autopsies were conducted on brains of 85 people who had experienced repeated mild TBI. The study found that 80% of these people showed signs of CTE.

In what ways is liability from TBI similar to Asbestos?

- Signature impairment
 - CTE results from repetitive brain trauma
 - Mesothelioma is a cancer most commonly caused by exposure to asbestos
- Difficult to prove the cause of other related impairments
 - Symptoms of neurodegenerative diseases may be unrelated to TBI
 - Lung Cancer from those with exposure to asbestos may be due to smoking
- There can be a long delay between exposure and impairment
 - Impairment from both TBI and asbestos can take decades to appear
- Large number of people exposed to injury
 - Traumatic brain injuries are not limited to football players
 - Workers, families and some consumers exposed to asbestos
- Exposure from multiple sources, involving corporations
 - TBI through employment and recreation
 - Asbestos exposure often from multiple employers

What are some current TBI related research studies?

- BRAIN initiative
 - Identify ways to better understand neurological and psychiatric disorders in order to treat, cure, and perhaps prevent brain disorders such as Alzheimer's Disease, Parkinson's disease and traumatic brain injury.
- Identifying CTE in living people
 - Scientists have scanned the brains of living professional football players and have made comparisons to the brains of athletes known to have CTE.
- Military research in cognitive rehabilitation
 - A proven method to treat moderate to severely injured people.

Citations

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Thank you for your attention.