John F. Kennedy, Dwight Eisenhower, Richard Nixon, Ronald Reagan, Donald Trump & Gerald Ford

What do all these men have in common?
They all participated in competitive tackle football!
Do Sports Cause Death in Teenagers?

**Riding in a Car:** 25 deaths per million population

**Suicide:** 25 deaths per million population

**Equestrian:** 20 deaths per million participants

**Biking, Snowboarding, Skateboarding, Skiing:** All about 15 deaths per million participants

**Playground:** 10 deaths per million participants

**Football:** Fewer than 6 deaths per million participants

**Swimming:** 140 youth deaths per year
Suicide Mortality Among Retired NFL Players Who Played 5 or More Seasons

Study by Everett J. Lehman, MS, Misty J. Hardin, PhD, and Christine M. Gersic
Investigation performed at the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Cincinatti, Ohio, USA

Followed for 28.9 years after retirement

3439 Football Players from 1959-1988 seasons were studied. (Minimum of 5 Seasons per player)

Overall Mortality, Selected Causes, NFL Player Cohort (1960-2013)

<table>
<thead>
<tr>
<th>Underlying Cause of Death</th>
<th>Observed in the NFL Player Studied</th>
<th>Expected based on National Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Deaths</td>
<td>537</td>
<td>901.7</td>
</tr>
<tr>
<td>All Cancers</td>
<td>137</td>
<td>230.8</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>207</td>
<td>277.1</td>
</tr>
<tr>
<td>Suicide</td>
<td>12</td>
<td>25.6</td>
</tr>
<tr>
<td>Assault &amp; Homicide</td>
<td>4</td>
<td>27.6</td>
</tr>
</tbody>
</table>

Since 1987, NFL Players are 70% less likely to commit suicide than the general population!
Suicide in the General Population & NCAA Athletes

Suicide in National Collegiate Athletic Association (NCAA) Athletes: A 9-Year Analysis of the NCAA Resolutions Database

Study published Oct 2015
Ashwin L. Rao, MD, Irfan M. Asif, MD, Jonathan A. Drezner, MD, Brett G. Toresdahl, MD & Kimberly G. Harmon, MD

9 Year Study of 3,773,309 Participant Seasons

General Population
12.6 per 100,000

18-22 Year Old Non-College
12 per 100,000

College Students
7.5 per 100,000

NCAA Football (Male Only)
2.25 per 100,000
Decrease in Youth Athletics Compared to Youth Suicide Rate

**Graph:**

**Title:** Number of Athletic Participants (Age 6-17) Compared to Number of Suicides in Total US Population

- **Y-axis:** Number of Suicides
- **X-axis:** Years (2009 to 2014)

- **Red Line:** Number of Suicides
- **Green Line:** Athletic Participants
- **Blue Line:** Linear (Athletic Participants)

The graph shows a decrease in youth athletic participation compared to the number of suicides in the total US population from 2009 to 2014.
ABSTRACT: Objective – Participation in sports has been shown to be protective against depression and suicidal ideation, but little is known about what factors mediate these relationships. No previous studies examined potential mediators between sports participation and suicidal ideation and only one study explored possible mediators between sports participation and depression. Increased sports participation could protect against depression and suicidal ideation by increasing endogenous endorphin levels, boosting self-esteem, improving body image, increasing social support, and affecting substance abuse.

FINDINGS:

• An increase in sports participation (Grades 7-12) leads to a decrease in depression by 25%.

• Suicidal ideation decreases by 12% with an increase in sports participation.
1/3 of Americans have had a concussion in their lifetime, 2/3 of these concussions are in males.

Dementia occurs about 63.5 per 1,000 in the US.

Alzheimer’s twice as common in women vs. men.

5 million have Alzheimer’s – no reliable diagnostic, unknown cause.

Other common types: vascular dementia, frontotemporal dementia, normal pressure hydrocephalus.
Does Football Increase Risk of Dementia?

In a study of 438 Football Players Followed for 50 Years...

Same Risk of Dementia as Members of Chorus, Glee Club or Band.
In a study of 296 Varsity Football Players VS. 196 Wrestling, Swimming and Basketball Athletes...

Football players are more likely to have had a concussion

NO DIFFERENCE IN LIKELIHOOD OF DEMENTIA, PARKINSONSISM OR ALS.

>50 Years after injury
allowed their own children to play contact sports.

suggesting that... the more one understands brain injury the more likely they are to allow children to play contact sports!

More than 70% of pediatricians surveyed want to ban tackle football. However, only 5.4% feel comfortable treating a child with Post-Concussion Syndrome (PCS).
Benefits vs. Risks

Benefits of Playing Football:
- Reduces Obesity and Diabetes
- Reduces Depression/Suicidal Ideation
- Reduces High Blood Pressure
- Reduces Heart Disease
- Reduces Stroke
- Reduces Dementia
- Reduces 13 Types of Cancer Risk
- Complex Psychosocial Benefit

Risks of Playing Football:
- Brain or Other Injury

Children who choose to play football have an average BMI of 26.3 and thus are at highest risk for complication of obesity.

>1,000,000 American children play high school football. An additional >1,000,000 play youth or other league football.

If even half of those children became sedentary (rejected soccer, cross country and other fall sport options) the resultant increase in sedentary lifestyle/obesity risks would be ENORMOUS! (Hypertension, Diabetes, Cardiovascular Disease, 13 Types of Cancer, Osteoporosis)

BMI of 17-25 is considered healthy.