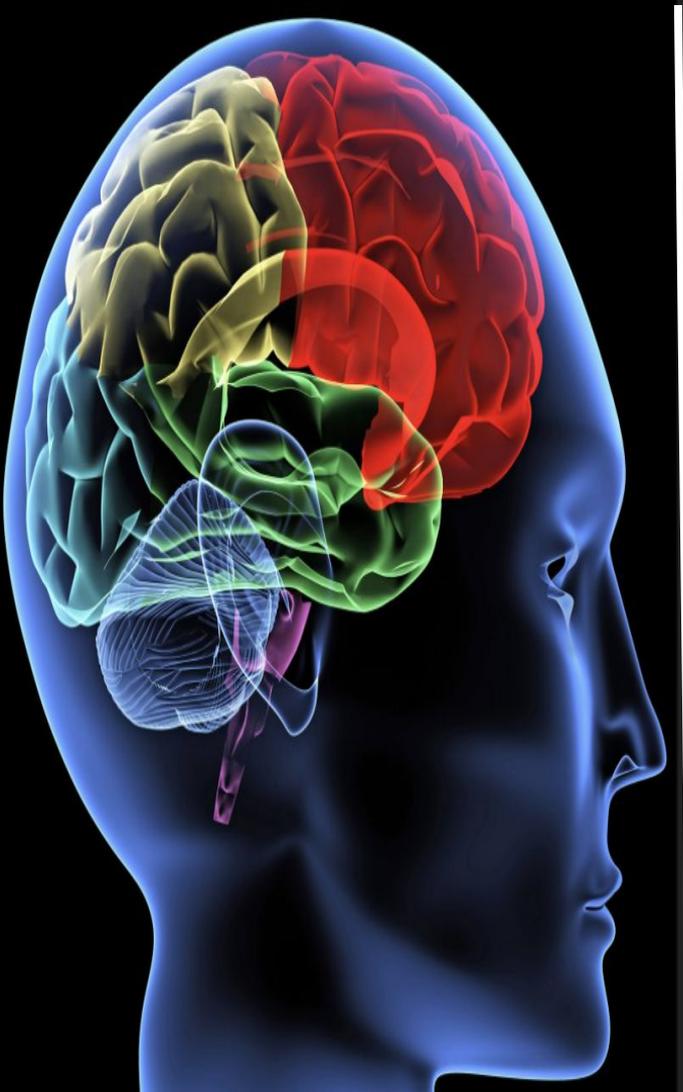


The facts

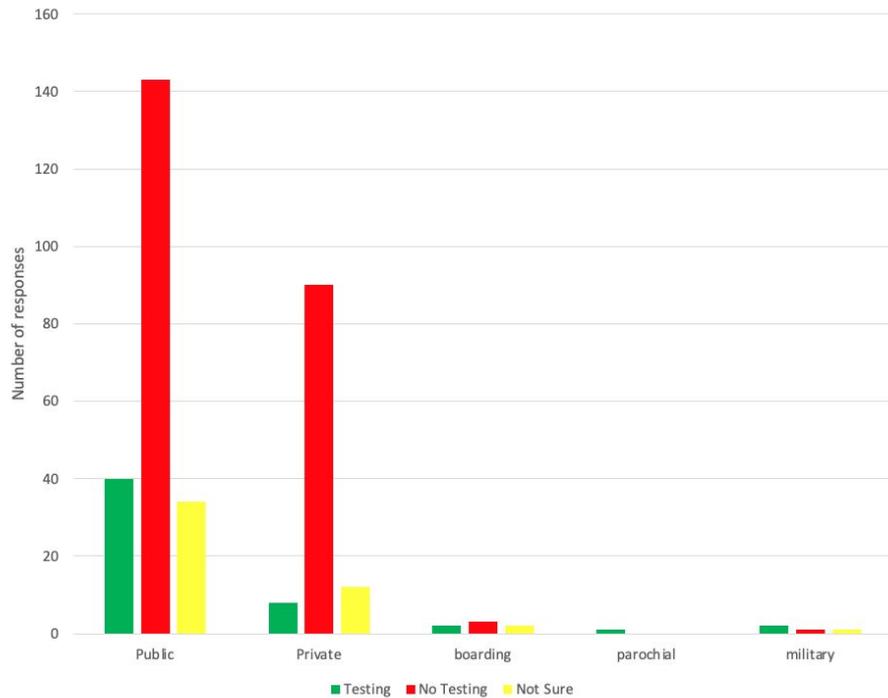
- Ongoing study shows continued increase in concussions among high school athletes.
- A concussion is a mild traumatic brain injury and can occur after an impact to your head or a whiplash-type injury that causes your brain to shake quickly back and forth, resulting in an altered mental state.
- The three sports with the highest concussion rates are boys football, girls soccer, and boys ice hockey
- In December, 2010, New Jersey became the 11th state to pass a sports concussion safety law.
- It is dangerous to assume that the findings from adult brain studies can be translated to adolescent brains which have not been fully developed.
- Athletes who do not immediately report symptoms of a concussion and continue to participate in athletic activity are at risk for longer recoveries than athletes who immediately report symptoms and are immediately removed from activity.



Hypotheses

- The more concussion education an athlete had received, the greater likelihood they would report concussion symptoms.
- Younger generations would have an increase in reporting due to the increase in concussion education that has become required.
- Athletes that are a part of very competitive teams and play or participate in sports that traditionally have a high contact rate (football, soccer) will have a higher rate of concussions.
- There are conflicting results about whether gender affects concussion symptoms sustained.

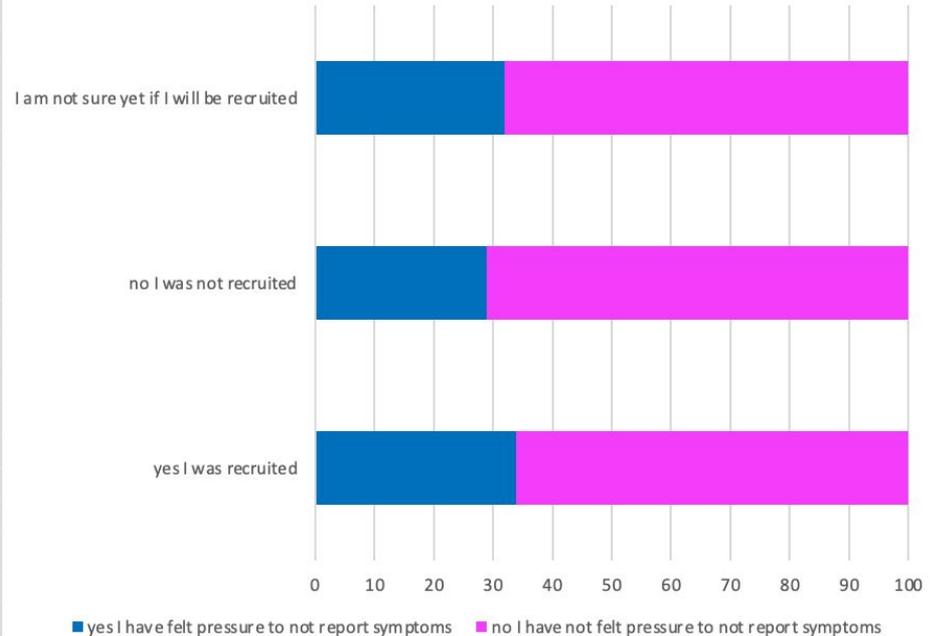
Student school types vs if their school requires testing

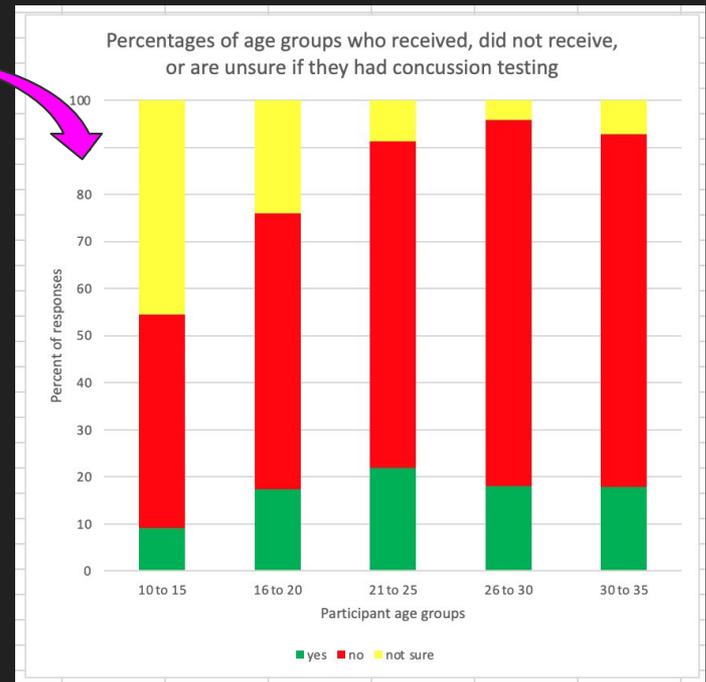
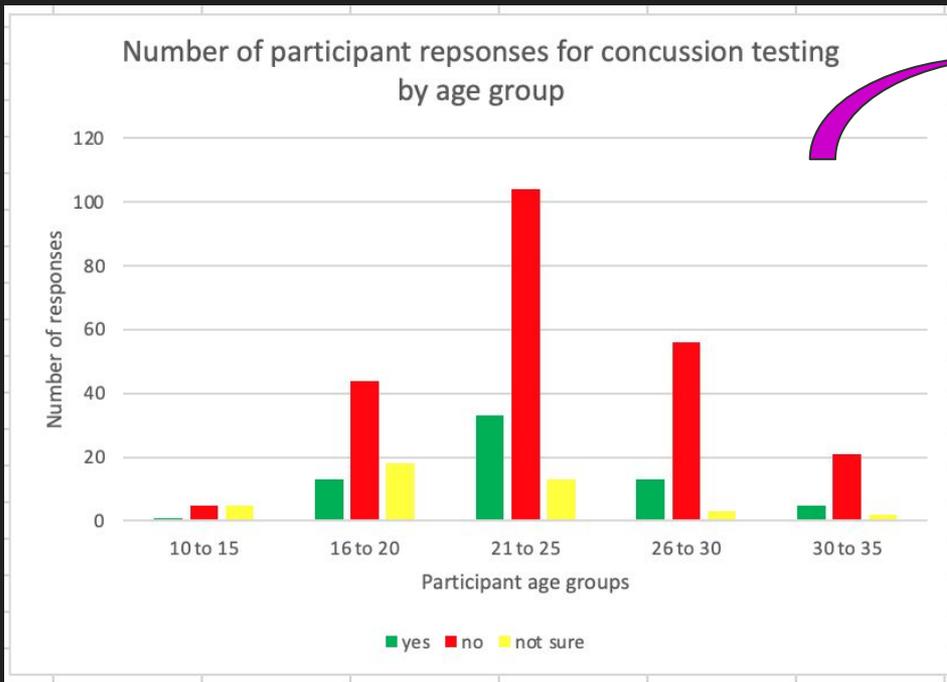


217 participants indicated that they had attended public school, while 110 said private and the remaining 12 were spread out between boarding, parochial, or military. 237 participants said they had never received concussion testing. 143 public school students said they had never received concussion testing, while 90 private school students responded the same. There is no statistical difference between any of the data from boarding, military, or parochial schools. The data between “no” and “yes” and “no” and “not sure” for both private and public schools is statistically significant.

33.85% of participants answered that they had been recruited and that they had felt pressure from either a teammate or parent to not report concussion symptoms after they had sustained them. 165 participants responded that they had not been recruited and had not felt pressure from a teammate or parent. The data is statistically significant.

Percent of participants who felt pressure to continue playing after sustaining a hit based on if they were recruited to play



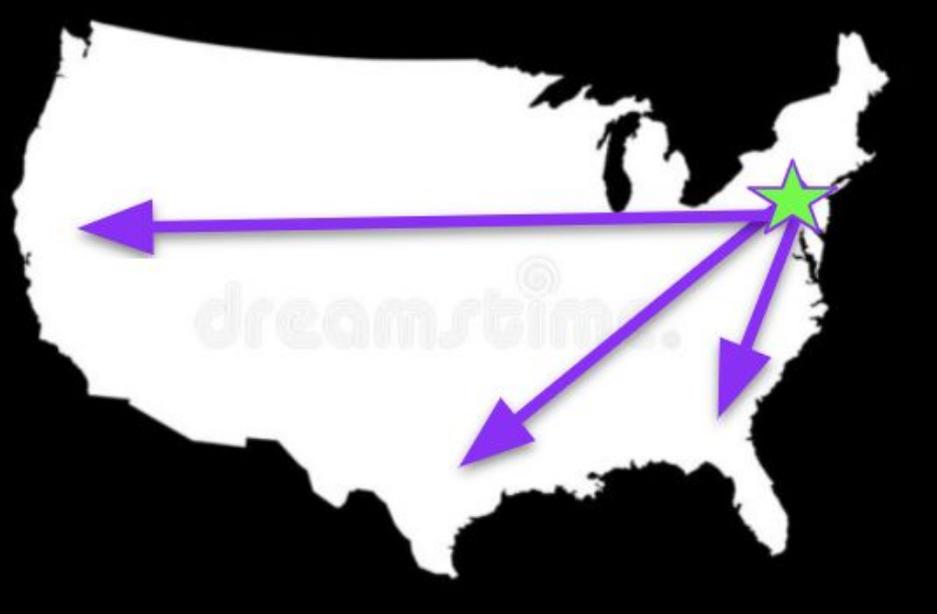


150/339 participants were in the age range 21-25. For each age range, the most responses were “no” for whether they have ever received formal concussion testing in schools. There were 11 participants in the age range 10-15, 75 in 16-20, 150 in 21-25, 72 in 26-30, and 28 in 30-35. There were more “no” responses than “yes” or “not sure” for all age groups except for ages 10-15 where there were 5 responses for both “no” and “not sure”. There is a statistical difference between all bars for all age groups except for the first age group (ages 10-15).

The 21-25 age group had the highest percentage of participants who said they had received concussion testing at 22%. The 26-30 age group had the highest percentage of participants who answered “no” at 77.78%.

Discussion

- Additional statistics: 30% of participants said they had either been pressured themselves or seen a teammate pressured by a parent to remain in the game even after sustaining a hit. 62% of participants responded that they have never received formal education from anyone about concussions. Participants averaged 2.0 hits to their head or neck that had never been reported or received official concussion diagnosis.
- Concussion education needs to increase in order to help athletes understand how important it is to report their concussion symptoms immediately.
- The increase in concussion legislation that has been passed in recent years has not led to an increase in reported concussions.
- Studies are beginning to show long term consequences of untreated concussions and other CTE, making it more important than ever to increase reporting and encourage treatment.
- Better reporting environments must be created to curb this upward trend.



The future and conclusions

- Increasing basic concussion education, especially for athletes
- Working towards baseline concussion testing that is easily administered and widely accessible
- Encouraging parents and coaches to decrease pressure on athletes to continue play
- Create education resources nationally for parents, athletes, athletic trainers, and coaches