

Tessa Mendoza and Darin W. White, Ph.D., Executive Director for the Center for Sports Analytics  
at Samford University.

---

## **Concussions, CTE, and the Future of Football 2021 Sports Attitude Survey Findings**

**Survey Conducted by the Center of Sports Analytics at Samford University**  
September 2020 - September 2021

N=1,311 Adults  
Margin for Sampling Error:  $\pm 3.1\%$

Tessa Mendoza served as director of research for the project under the guidance of Darin W. White, Ph.D., executive director for the Center for Sports Analytics at Samford University.

Contact [dwhite1@samford.edu](mailto:dwhite1@samford.edu) for further information about how the poll was conducted.

---

### **Methodology**

This poll was jointly sponsored and funded by the Center for Sports Analytics at Samford University in Birmingham, AL and the Concussion Legacy Foundation in Boston, MA. Responses were collected from a random sample of adults in the United States. The questionnaire was administered with the exact questions as they appear in this document. Demographic questions are not shown. If a question was asked of a reduced base of the sample, a parenthetical following the question identifies the group asked. The final sample included 1,311 interviews completed on the internet. Qualtrics was used to develop and administer the poll. Participants for the study were sampled by conducting a random and demographically balanced sample of adults in the United States. Data collection began in September 2020 and continued for one year.

This survey uses statistical weighting procedures to account for deviations in the survey sample from known population characteristics, which helps correct for differential survey participation and random variation in samples. The overall sample is weighted to correct for differential probabilities of selection among individuals who are less likely to participate in internet-based polls. Results are also weighted to match the demographic makeup of the U.S. population by sex, region, age, education, and race/ethnicity according to the U.S. Census Bureau's 2020 American Community Survey data. The margin of sampling error for overall results is plus or minus 3.1 percentage points.

Label Key	
Played Football	Played tackle football
Fan	Respondents that frequently watch sports
Parents	Respondents with children

Group	Unweighted Sample Size	Error Margin
All	1,311	3.1%
Played Football	456	5.1%
Male	630	4.5%
Female	677	4.2%
Fan	543	4.7%
Parents	637	4.5%
Parents (with children who wanted to play football)	337	5.8%
Parents (who played football themselves)	241	6.5%

1. Generally speaking, how big of a problem to you think that concussions or head injuries are in sports?

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Major Problem</b>	71.2	57.4	64.7	77.0	66.8	66.8
<b>Minor Problem</b>	23.7	31.7	28.1	19.9	26.1	25.8
<b>Not a Problem at All</b>	5.1	10.9	7.2	3.1	7.1	7.4

2. Chronic Traumatic Encephalopathy (CTE), the degenerative brain disease associated with repeated impacts to the head that has been diagnosed in hundreds of football players in the past decade, is a serious public health issue.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Certainly True</b>	53.2	47.2	48.3	57.5	54.3	51.1
<b>Probably True</b>	39.9	41.6	43.3	36.9	38.9	39.7
<b>Probably False</b>	5.8	9.4	7.2	4.6	5.1	7.7
<b>Certainly False</b>	1.1	1.8	1.2	1.0	1.7	1.5

3. Scientific evidence shows playing football causes brain injuries.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Certainly True</b>	54.3	46.8	51.1	57.2	52.5	50.4
<b>Probably True</b>	39.9	43.7	41.5	38.5	41.3	40.4
<b>Probably False</b>	4.7	7.5	6.1	3.4	4.5	7.3
<b>Certainly False</b>	1.1	2.0	1.3	0.9	1.7	1.9

4. Has information regarding concussion risk impacted your decision to encourage or allow your child to play football?

	Parents	
	With children who wanted to play football	Who played football themselves with children who wanted to play football
<b>Yes</b>	73.5	78.3
<b>No</b>	25.1	21.2
<b>I am Unaware of Any Risk</b>	1.4	0.5

5. On the whole, parents of youth football players under age 14 are well-educated on the long-term risks associated with repeated head trauma, such as CTE.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Certainly True</b>	6.9	10.0	8.2	5.6	9.8	8.8
<b>Probably True</b>	26.4	37.5	34.2	19.2	30.8	31.0
<b>Probably False</b>	52.9	42.8	45.0	60.2	46.2	49.9
<b>Certainly False</b>	13.8	9.7	12.6	15.0	13.2	10.3

6. If tackle football is strongly correlated with CTE, state governments should ban youth tackle football before age 12.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Certainly True</b>	33.4	27.6	30.5	36.0	33.1	37.6
<b>Probably True</b>	44.0	41.6	40.4	47.5	39.3	42.5
<b>Probably False</b>	14.9	19.9	18.7	11.5	18.4	13.0
<b>Certainly False</b>	7.7	10.9	10.4	5.0	9.2	6.9

7. If children playing tackle football are at risk for developing CTE, it is appropriate for the National Football League (NFL) to recruit children to play tackle football.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Certainly True</b>	7.3	11.2	8.7	6.1	10.7	9.5
<b>Probably True</b>	22.7	36.5	29.6	16.3	29.2	23.7
<b>Probably False</b>	30.6	29.4	29.2	31.9	27.9	27.9
<b>Certainly False</b>	39.4	22.9	32.5	45.7	32.2	38.9

8. Implementation of education programs to teach parents of young athletes about concussions and CTE are necessary.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Certainly True</b>	69.2	56.4	59.4	78.3	67.1	72.2
<b>Probably True</b>	24.7	35.1	33.3	16.6	27.7	22.0
<b>Probably False</b>	4.9	7.2	5.8	4.0	4.4	5.1
<b>Certainly False</b>	1.2	1.3	1.5	1.1	0.8	0.7

9. The National Football League (NFL) has taken necessary steps to promote player safety regarding concussions and brain injuries.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Agree</b>	53.9	66.0	58.9	49.5	65.3	56.3
<b>Neither Agree nor Disagree</b>	13.6	12.9	12.1	15.1	12.2	15.2
<b>Disagree</b>	21.1	16.4	20.7	21.2	16.6	18.1
<b>Don't Believe Any Steps are Necessary</b>	0.9	0.9	1.7	0.2	0.5	0.9
<b>Don't Know</b>	10.5	3.8	6.6	14.0	5.4	9.5

10. College football has taken necessary steps to promote player safety regarding concussions and brain injuries.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Agree</b>	48.7	62.0	54.0	44.0	59.4	52.4
<b>Neither Agree nor Disagree</b>	16.8	15.8	16.9	16.8	15.1	17.8
<b>Disagree</b>	21.8	16.5	20.3	22.7	19.8	17.2
<b>Don't Believe Any Steps are Necessary</b>	1.3	2.1	1.9	0.7	0.9	1.4
<b>Don't Know</b>	11.4	3.6	6.9	15.8	4.8	11.2

11. The National Hockey League (NHL) has taken necessary steps to promote player safety regarding concussions and brain injuries.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Agree</b>	38.3	47.5	42.4	34.7	44.5	44.1
<b>Neither Agree nor Disagree</b>	19.2	21.2	18.8	19.6	18.8	19.6
<b>Disagree</b>	19.6	16.5	21.6	17.4	19.0	15.6
<b>Don't Believe Any Steps are Necessary</b>	1.3	2.5	1.9	0.7	0.5	1.1
<b>Don't Know</b>	21.6	12.3	15.3	27.6	17.2	19.6

12. Major League Soccer (MLS) has taken necessary steps to promote player safety regarding concussions and brain injuries.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Agree</b>	34.1	42.8	36.6	31.9	41.6	38.9
<b>Neither Agree nor Disagree</b>	23.7	23.5	25.3	22.4	24.2	24.5
<b>Disagree</b>	18.9	16.5	18.6	18.9	17.5	16.1
<b>Don't Believe Any Steps are Necessary</b>	2.4	4.3	3.9	0.9	1.4	1.5
<b>Don't Know</b>	20.9	12.9	15.6	25.9	15.3	19.0

13. NFL players are well-educated on the long-term risks associated with repeated head trauma, such as CTE.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Agree</b>	76.9	82.6	79.1	74.7	82.6	80.0
<b>Neither Agree nor Disagree</b>	9.3	7.4	8.6	10.0	5.8	9.2
<b>Disagree</b>	13.8	10.0	12.3	15.3	11.6	10.8

14. College football players are well-educated on the long-term risks associated with repeated head trauma, such as CTE.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Agree</b>	68.4	75.7	70.9	66.1	72.7	74.7
<b>Neither Agree nor Disagree</b>	12.4	10.7	12.2	12.5	9.4	10.9
<b>Disagree</b>	19.2	13.6	16.9	21.4	17.9	14.4

15. High school football players are well-educated on the long-term risks associated with repeated head trauma, such as CTE.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Agree</b>	40.0	49.6	44.4	35.6	45.4	51.4
<b>Neither Agree nor Disagree</b>	16.3	16.3	16.6	16.0	15.2	14.7
<b>Disagree</b>	43.7	34.1	39.0	48.4	39.4	33.9

16. Youth football players (under age 14) are well-educated on the long-term risks associated with repeated head trauma, such as CTE.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Agree</b>	28.2	38.8	32.4	24.1	30.7	38.5
<b>Neither Agree nor Disagree</b>	11.3	10.9	12.5	10.2	12.9	10.1
<b>Disagree</b>	60.5	50.3	55.1	65.7	56.4	51.4

17. \_\_\_\_\_ is most responsible for ensuring that youth athletes are protected from long-term risks associated with repeated head trauma, such as CTE.

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Federal Government</b>	12.0	12.9	13.0	12.4	12.2	12.0
<b>State Government</b>	6.7	9.5	7.1	5.1	7.7	6.9
<b>NFL</b>	26.9	28.2	29.3	24.5	28.7	20.8
<b>Media</b>	3.7	4.3	3.8	3.6	4.0	3.6
<b>Youth Sports Leagues</b>	15.9	13.2	15.7	16.2	15.2	15.5
<b>Parents</b>	34.8	31.9	31.1	38.2	32.2	41.2

18. What is an acceptable age to introduce children to tackle football?

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>5 and Older</b>	5.1	8.6	6.9	3.4	6.9	4.2
<b>10 and Older</b>	23.0	35.4	28.5	17.6	28.3	21.8
<b>14 and Older</b>	49.9	40.6	44.9	54.8	47.7	51.0
<b>18 and Older</b>	13.0	12.5	14.1	12.0	12.0	13.0
<b>Never</b>	9.0	2.9	5.6	12.2	5.1	10.0

19. How aware are you about the long-term effects of concussions?

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Highly Aware</b>	18.6	23.0	19.3	17.9	25.4	23.1
<b>Somewhat Aware</b>	43.5	45.0	44.3	42.8	47.0	49.7
<b>Somewhat Unaware</b>	30.1	26.3	30.8	29.1	23.6	22.7
<b>Highly Unaware</b>	7.8	5.7	5.6	10.2	4.0	4.5

20. How aware are you about sports related concussions?

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Highly Aware</b>	21.4	27.5	23.0	19.9	29.9	27.4
<b>Somewhat Aware</b>	41.8	43.0	41.6	42.0	45.6	44.5
<b>Somewhat Unaware</b>	28.9	25.3	29.0	28.8	20.4	24.2
<b>Highly Unaware</b>	7.9	4.2	6.4	9.3	4.1	3.9

21. How aware are you about Chronic Traumatic Encephalopathy (CTE)?

	All	Played Football	Gender		Role	
			Male	Female	Fan	Parents
<b>Highly Aware</b>	12.1	16.3	14.8	9.5	18.0	17.6
<b>Somewhat Aware</b>	27.1	35.1	28.8	25.6	35.2	31.0
<b>Somewhat Unaware</b>	28.4	30.2	30.3	26.5	28.6	28.4
<b>Highly Unaware</b>	32.4	18.2	26.1	38.4	18.2	23.0