

FUTURE FOR FOOTBALL

# STATE OF THE GAME

2023-2024 SEASON



NATIONAL FOOTBALL  
FOUNDATION

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“The Future for Football remains strong at every level of the sport. It is inclusive, builds community and provides many educational and leadership opportunities. **Simply put: it is the greatest of all American sports.”**



A handwritten signature in black ink that reads "Steve J. Hatchell". The signature is written in a cursive, flowing style.

**STEVE HATCHELL**

President and Chief Executive Officer

National Football Foundation & College Hall of Fame, Inc.



# GROWTH OF THE GAME

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## Football is the most popular sport in the United States.

Football provides many benefits to those who play through association with a team or organization and as part of a community.

Football provides opportunities for band members, cheerleaders, coaches, the community, managers, media, parents, players, referees, trainers, videographers, and many more.

Over the years, many organizations (at all different levels) have worked to make the game better and will continue to do so.

Women's involvement in football has increased significantly.

Rules changes, guidance issued on coaching techniques, and tech advancements at all levels have helped make the game better.

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**3.6 MILLION**  
YOUTH PLAYERS

**1.08+** MILLION  
HS PLAYERS

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**81,000+** COLLEGE PLAYERS

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**897** colleges and universities at all levels

**82%** graduation success rate of FBS student-athletes (70% general student body)

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**89** colleges and universities  
**ADDED PROGRAMS SINCE 2008**

# GROWTH OF THE GAME

## INSIGHTS

### YOUTH STATS

- More than 1.08 million players (est.) in high school.<sup>1</sup>
- 3.6 million youth players (est.)<sup>2</sup>

### COLLEGIATE STATS<sup>1</sup>

- 896 colleges and universities playing football at all levels.
- 772 schools among all NCAA divisions, the NAIA and independents
- 123 junior college football programs
- 89 colleges and universities added programs since 2008.
- 81,000 (+) college football players at NCAA and NAIA levels
- 15 colleges and universities will add football programs in 2023 and beyond
- 17 collegiate sprint football teams (full-contact sport for players weighing 178 pounds or less that has the same rules as regular college football).

### EDUCATIONAL OPPORTUNITIES PROVIDED

- 82% graduation success rate of Football Bowl Subdivision student-athletes. Compared to 70% federal graduation rate of general student body.<sup>3</sup>
- NCAA Divisions I and II schools provide more than \$3.6 billion in athletics scholarships annually to more than 180,000 student-athletes.<sup>4</sup>
- Former student-athletes are significantly more likely to be thriving in four out of five areas of well-being (purpose, social, financial, community and physical).<sup>5</sup>





## INCREASED WOMEN'S INVOLVEMENT IN THE GAME

The presence of women in football has steadily increased at every level of the game.

### NFL

- In the 2022 season, women made up 41.3 percent of the NFL league office, 319 women total, 28.4 percent of teams' senior administration, 9.4 percent of team CEOs and presidents, and the number of team assistant coaches rose from 12 in 2021 to 15 in 2022 which is the most of any professional men's league.<sup>6</sup>
- Super Bowl LV had a record-breaking three women on the field with Lori Locust and Maral Javadifar coaching for the Tampa Bay Buccaneers, while Sarah Thomas became the first female to officiate the championship game.<sup>7</sup>

### PRO WOMEN LEAGUES

- The Women's Football Alliance (WFA) has grown from 36 teams in 2009<sup>8</sup> to 64 teams<sup>9</sup> and more than 2,500 participants in 2023.<sup>10</sup> The National Championship Game was played at Tom Benson Hall of Fame Stadium in Canton, Ohio and televised live on ESPN.<sup>11</sup>
- The WFA partnered with the European Women's Football Organization (EWFO) to promote and develop female American Football players in Europe.<sup>12</sup>
- The Women's National Football Conference (WNFC) had their inaugural season in 2019 with 15 teams. The 2023 season featured 17 teams from 14 states and Washington D.C. playing in a 10-week season<sup>13</sup> ending in a four-day Championship festival at The Star in Frisco, Texas featuring youth camps and celebrity flag football game.<sup>14</sup>

## INCREASED WOMEN'S INVOLVEMENT IN THE GAME [CONT.]

### COLLEGE

- The National Junior College Athletic Association (NJCAA) completed its 2023 girls flag football season. A postseason showcase was played at Atlanta's Mercedes-Benz Stadium in conjunction with the NAIA Championship event, with Florida Gateway College winning the inaugural event.<sup>15</sup>
- 15 NAIA institutions competed in the third season of women's flag football<sup>16</sup>, with Ottawa College in Kansas winning its third NAIA title in 2023.<sup>17</sup>
- The Atlantic East Conference has announced plans to offer flag football beginning in 2025, making the Division III conference the first in the NCAA to sponsor varsity play.<sup>18</sup>
- Mexico's gender barrier was broken as kicker Andrea Martinez became the first female to play in the top men's amateur league for American football.<sup>19</sup>
- Haley Van Voorhis, 2021 defensive back at Division III Shenandoah University, became the first female to play an NCAA football position other than a kicker or punter.<sup>20</sup>
- Sarah Fuller, Vanderbilt University: first to play in a Power 5 Conference in 2020.<sup>7</sup>
- Toni Harris, Central Methodist University (MO): first to accept a scholarship to a four-year college in 2019.<sup>21</sup>
- Heather Marini: first Division I position coach in 2020.<sup>22</sup>
- Callie Brownson: first full-time Division I coach in 2018.<sup>23</sup>

### HIGH SCHOOL/YOUTH

- Girls participation in all four versions of high school football (11, 9, 8 and 6-player tackle) increased by 39 percent from the 2018-19 to the 2021-22 NFHS Sports Participation survey. Over the same time span there was a 40 percent growth in girls flag football.<sup>24</sup>
- In the 2023-2024 school year, there will be eight (8) states that sanction girls' high school flag football: Alabama, Alaska, Arizona, California, Georgia, Florida, Nevada and New York.<sup>25</sup> Colorado will become the ninth when the CHSAA will begin sanctioning play in 2025.<sup>26</sup>
- The NFL front office and all 32 clubs are investing resources to grow flag, from backing local girls' leagues to launching scholarship programs. In the short term, it projects 750,000 players involved in NFL Flag leagues by 2024. On the high school front, the league and its allies are advocating for states like Texas, Virginia and Ohio to make flag football an official varsity sport.<sup>27</sup>



- Laguna Beach (CA) High School's Bella Rasmussen in 2022 became the first girl in California history to score two touchdowns in one varsity tackle game, scoring four (4) overall.<sup>28</sup>
- Chicago witnessed what is believed to be the first varsity high school game featuring a head-to-head matchup of black female head coaches competing on opposing sidelines.<sup>29</sup>
- Females are key team contributors achieving high honors, including all-state recognition of kickers in Colorado and Michigan (in 2021).<sup>30-31</sup>
- The Utah Girls Tackle Football league began in 2015 with 50 players and is the first of its kind. The League has since grown to 600 players and 34 teams.<sup>32</sup>

## ATTENDANCE & VIEWERSHIP

- The average crowd size at an NFL game during the 2022 regular season was 69,442, the highest mark since 2016 and the second-largest figure in the last 19 years.<sup>33</sup>
- The increase in college football attendance in 2022 was the largest year-over-year since 1984.<sup>34</sup>
- Of the top 100 most watched shows of 2022, 82 of those were NFL broadcasts, up from 75 in 2021, and five (5) were college football games; and four (4) were college football games.<sup>35</sup>
- NFL regular season delivered record-breaking viewership for 18 weeks across FOX, NBC and CBS.<sup>36</sup>
- Super Bowl LVII was the most-watched Super Bowl ever, as an average 115.1 million viewers tuned in across FOX, FOX Deportes and digital streaming services.<sup>37</sup>
- There were 45 college football games in 2022 that reached more than four (4) million viewers, up from 41 games in 2021.<sup>38</sup>
- ESPN platforms (ABC, ESPN and ESPN2) averaged a combined 2.1 million viewers, up seven (7) percent from 2021 and the most-watched regular season since 2017.<sup>39</sup>

# GROWTH OF THE GAME

## INSIGHTS

### MISC.

- Flag football made its international, multi-sport debut at The World Games 2022, a promising step in the movement to add the sport to the Summer Olympics in 2028 in Los Angeles.<sup>40</sup> And the International Federation of American Football (IFAF) announced that Lahti, Finland, will stage the next edition of the Flag Football World Championships in 2024.<sup>41</sup>
- After leading Mexico to the 2022 Flag Football World Championship, Diana Flores was featured in a viral Super Bowl commercial in 2023 promoting the game and became the first flag football player of any gender to have artifacts displayed at the Pro Football Hall of Fame in Canton, Ohio.<sup>42</sup>
- The XFL returned in the Spring of 2023. The XFL had all its regular-season games and playoffs air on ESPN and other networks owned by The Walt Disney Company as part of a multiyear agreement. Co-owners Dany Garcia and Dwayne ‘The Rock’ Johnson have already announced the league’s 2024 return.<sup>43</sup>
- The USFL is returning for a third season. President of football operations Daryl Johnston confirmed with WVTM13’s sports director Ryan Hennessy.<sup>44</sup>
- Since EA Sports stopped making NCAA Football, fans have been vocal about the game’s return to gaming consoles. In 2024, the game maker will return with EA Sports College Football.<sup>45</sup>
- The NFL announced a VR football game set to release each year for Meta Quest and PlayStation VR. The annual franchise is being made in partnership with StatusPRO, a sports technology company whose virtual and augmented reality products are used by actual NFL teams.<sup>46</sup>
- The Arena Football League has announced its return in 2024 with 16 teams.<sup>47</sup>





# PARTICIPATION

# PARTICIPATION INSIGHTS

**Exhibit 1: National Federation of High School Associations:  
Total Participation in High School Football<sup>1</sup>**

	2016-17	2017-18	2018-19	2021-22	2022-2023
<b>Boys 6 Man</b>	4,546	5,102	5,275	6,696	6,642
<b>Boys 8 Man</b>	19,514	19,554	20,954	20,243	23,669
<b>Boys 9 Man</b>	5,278	4,971	4,992	7,996	4,990
<b>Boys 11 Man</b>	1,057,382	1,036,842	1,006,013	973,792	1,028,761
<b>Boys Tackle Total</b>	1,086,720	1,066,469	1,037,234	1,008,727	1,064,062
<b>Boys Flag</b>	1,210	1,144	945	685	1,105
<b>Boys Total</b>	1,087,930	1,067,613	1,038,179	1,009,412	1,065,167
<b>Girls Tackle</b>	2,143	2,401	2,604	3,633	3,838
<b>Girls Flag</b>	11,254	11,007	11,209	15,716	20,875
<b>Girls Total</b>	13,397	13,408	13,813	19,349	24,713

**Exhibit 2: National Federation of High School Associations:  
High School Football Programs<sup>1</sup>**

	2016-17	2017-18	2018-19	2021-22	2022-23
<b>Boys 6 Man</b>	259	317	373	394	358
<b>Boys 8 Man</b>	841	847	946	1,069	1,084
<b>Boys 9 Man</b>	258	243	244	327	281
<b>Boys 11 Man</b>	14,099	14,079	14,247	13,733	13,670
<b>Boys Tackle Total</b>	15,457	15,486	15,810	15,523	15,393
<b>Boys Flag</b>	76	56	33	40	51
<b>Boys Total</b>	15,533	15,542	15,843	15,563	15,444
<b>Girls Tackle</b>	706	735	1,998	2,584	2,416
<b>Girls Flag</b>	420	350	378	662	913
<b>Girls Total</b>	1,126	1,085	2,376	3,246	3,329

# PARTICIPATION INSIGHTS

## Exhibit 3: SFIA Data Trends from 2023 Topline Report

FOOTBALL PARTICIPATION											
	Definition	2017	2018	2019	2020	2021	2022	1-year change	3-year change	1-year AAG	5-year AAG
<b>FLAG FOOTBALL</b>											
<b>Total participation</b>		6,551	6,572	6,783	7,001	6,889	7,104	3.1%	4.7%	1.6%	1.7%
<b>Casual</b>	1-12 times	3,572	3,573	3,794	4,287	4,137	4,573	10.5%	20.5%	6.7%	5.2%
<b>CORE</b>	13+ times	2,979	2,999	2,989	2,714	2,752	2,531	-8.0%	-15.3%	-5.3%	-3.1%
<b>CORE: Age 6-17</b>	26+ times	1,565	1,578	1,590	1,446	1,574	1,552	-1.4%	-2.4%	-0.6%	0.0%
<b>TACKLE FOOTBALL</b>											
<b>Total participation</b>		5,224	5,157	5,107	5,054	5,228	5,436	4.0%	6.5%	2.1%	0.8%
<b>Casual</b>	1-12 times	2,145	2,258	2,413	2,390	2,642	3,120	18.1%	29.3%	9.2%	8.0%
<b>CORE</b>	13+ times	3,078	2,898	2,694	2,665	2,586	2,316	-10.4%	-14.0%	-4.8%	-5.5%
<b>CORE: Age 6-17</b>	26+ times	2,427	2,353	2,311	2,226	2,110	2,088	-1.0%	-9.6%	-3.3%	-2.9%
<b>TOUCH FOOTBALL</b>											
<b>Total participation</b>		5,629	5,517	5,171	4,846	4,884	4,843	-0.8%	-6.3%	-2.1%	-2.9%
<b>Casual</b>	1-12 times	3,332	3,313	3,065	2,990	3,171	3,201	0.9%	4.4%	1.5%	-0.7%
<b>CORE</b>	13+ times	2,297	2,204	2,105	1,856	1,713	1,642	-4.1%	-22.0%	-7.9%	-6.4%

## High School Sports Participation Continues Rebound Toward Pre-Pandemic Levels

- Boys 11-player football remained the most popular boys sport with the total climbing back over one million participants. The total of 1,028,761 participants marks an increase of 54,969 and 5.6 percent from the previous year.<sup>1</sup>
- Not only did 11-player football top the one million participants, but the increase was the first in the sport since 2013 and only the second increase since the all-time high of 1,112,303 in 2008-09.<sup>1</sup>
- There also was a slight gain (34,935 to 35,301) in the number of boys in 6-, 8- and 9-player football.<sup>1</sup>
- The number of girls playing football – particularly flag football – continued to climb as well. A total of 20,875 girls participated in flag football in 2022-23 – an increase of 32 percent. Seven states now sponsor a state championship in girls flag and more are in the planning stages. The number of girls in 11-player football increased 18 percent with 3,654 participants<sup>1</sup>
- Altogether, boys and girls participation in all versions of football increased from 1,028,976 to 1,089,880 – a jump of six percent.<sup>1</sup>
- SFIA data regarding total participation for flag and tackle football shows year-over-year and 3-year increases.<sup>2</sup>





# SAFETY

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## FOOTBALL IS NOT THE MOST DANGEROUS SPORT

- As it relates to sports injuries, according to the National Safety Council (NSC), in 2021 basketball led the list of organized team sports on the list with 259,779, with football coming in next (222,086). Yet, NSC found that more people are injured by exercise equipment, bicycling, skateboarding/scooters/hover boards and ATV's/mopeds/minibikes than playing football.<sup>1</sup>
- Hockey has the highest rate of concussion-related injuries, followed by snowboarding and football.<sup>2</sup>
- Sports-related injuries have declined over the last several years. Football injuries have decreased by more than 30% since 2017.<sup>2</sup>
- Injury risk associated with high school football is at its lowest in history in 2019.<sup>3</sup>
- A study from the University of Colorado Boulder found no link between youth contact sports and future brain and mental health problems.<sup>4</sup>
- A study of children's (age 5 to 14) sports and recreation by the Stanford Children's Orthopedic and Sports Medicine Center, which includes football, concluded that almost 50% of head injuries sustained in sports and recreation activities occur during bicycling, skateboarding or skating incidents.<sup>5</sup>





# **RULE CHANGES, GUIDANCE & COACHING ADVANCEMENTS**

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## Over the years, rules changes have been implemented to make the game better.

In 2019, Pop Warner became the first national football program at any level to eliminate the three-point stance in further efforts to make the sport safer for young players (for its three youngest divisions). Additionally, Pop Warner's 2016 rule banning kickoffs in its three youngest age groups was introduced at its Pee Wee division in the 2019 season. Instead of kicking the ball off following a score or to start a half, it will be placed at the 35-yard line.<sup>1</sup>

NFHS has recommended more than 130 rules changes, or new rules, regarding players' health and safety and nearly 30 since 2015.<sup>2</sup> Member associations of the NFHS independently make decisions regarding compliance with or modification of these playing rules for the student-athletes in their respective states.

- Since 1985, the NFL has changed or implemented more than 76 rules pertaining player health and safety.<sup>3-4</sup>
- In college football since 2008, an estimated 40 rules changes, or new rules, have been implemented regarding players' health and safety, or to affect pace of play to reduce the amount of contact players are exposed to.<sup>5-18</sup>

## Almost every state high school athletics association has proactively, or by state legislated law, put limits on full contact during football practices and limited exposure to heat exertion. Studies done since these limits have been put in place (or just before) show a reduced number of injuries, concussions and heat-related illnesses.

- All 50 states and the District of Columbia passed legislation between 2009 - 2015 targeting brain injuries and concussions in youth sports.<sup>19</sup>
- High school athletics associations in 46 of 50 states began the 2016 football season with limits on full contact practices in high school football. Examples:
  - **California-2014:** passed a law limiting middle and high school to two full contact practices per week, each no more than 90 minutes long during the 30-day period before and during the regular season. It also banned all off-season practice contact entirely.<sup>20</sup>
  - **Wisconsin and Michigan-2014:** prohibited contact, at some level, during football's preseason and regular season.<sup>21-22</sup>
  - **Florida-2016:** limits contact during regular and postseasons to no more than three days per week, 30 minutes per day and 80 minutes per week. Also bans contact on more than two consecutive days.<sup>23</sup>
  - **Pennsylvania-2016:** limits contact in practice to 60 minutes per week.<sup>24</sup>
  - **New Jersey-2019:** limits full contact drills in practice to 15 minutes per week, down from 90.<sup>25</sup>
  - **Michigan-2019:** no more than six hours of full-pads collision contact per week during the preseason, no more than 30 minutes of collision contact during the regular season.<sup>26</sup>
  - **Florida-2019:** an independent foundation is educating athletes, trainers and coaches on how to protect from abdominal injuries.<sup>27</sup>

# RULE CHANGES, GUIDANCE & COACHING ADVANCEMENTS

- The NFL has asked teams to stop the Oklahoma drill, pitting blocker vs. defender in a battle-type atmosphere surrounded by teammates.<sup>28</sup>
- The NCAA Division I Council made changes to football preseason practice to protect the health and safety of student-athletes while providing the opportunity to prepare them for the football season.<sup>29</sup>
  - Prohibiting athletic activities, such as drills that encourage or create straight-line contact, as specified in policies and procedures established and maintained by the Division I Football Oversight Committee and the NCAA Committee on Competitive Safeguards and Medical Aspects of Sports. This prohibition applies year-round, not just during the preseason.
  - Reducing the maximum number of contact practices from 21 to 18 and restricting full-pads days to nine (9).
  - Increasing the acclimatization period from five (5) to seven (7) days.
  - Additional limits on full-contact practices, including no more than two consecutive days of full-contact practices, a total of no more than 75 minutes of full contact within any practice session and no more than two scrimmages in the preseason.

Maryland passed the Jordan McNair Safe and Fair Play Act, which gives student-athletes certain health-related protections, including the right to speak up for themselves when they are exhausted or overheated and remove themselves from competition until they are ready to return.<sup>30</sup>

A bill brought forth by U.S. Rep. Sheila Cherfilus-McCormick, the Access to AEDs Act, would equip all U.S. schools, and provide training, for administering life-saving treatment to athletes, students and others who go into sudden cardiac arrest.<sup>31</sup> An updated bill was introduced by U.S. Senator Cory Booker in March of 2023. The bill requires the Department of Health and Human Services to award grants to local educational agencies (LEAs), including public charter schools operating as LEAs under state law, to promote student access to defibrillation in elementary and secondary schools.<sup>32</sup>

## Studies show positive signs:

- Published results from the University of Wisconsin-Madison in 2015 reported that concussion rates during the 2014 high school football season decreased concussions by 57% (compared to previous two seasons) after practice contact limits were put in place by the state association.<sup>33</sup>
- A 2016 study showed that a 2014 rule change in Michigan limiting full-contact high school football practices to no more than two days per week reduced head-impact exposure for all players by an average of 42%, with the largest reduction occurring among linemen.<sup>34</sup>
- 2019: University of North Carolina-Chapel Hill research showed “strong evidence” that rates of heat-related illnesses such as heat strokes were cut in half in states that mandated guidelines to reduce exertion-related heat illnesses.<sup>35</sup>



- The NCAA-U.S. Department of Defense Concussion Assessment, Research and Education Consortium is the largest concussion and repetitive head impact study in history. The project, funded by the NCAA and DOD, launched in 2014 and now includes participants on 30 campuses across the country.<sup>36</sup>
  - The initial phase of the study focused on the acute effects of concussion by evaluating concussed study participants with a sequence of tests in the immediate hours, days and weeks after the injury, and comparing the results with baseline tests administered at the start of the study.
  - The second phase of the study, initiated in the winter of 2018, includes comprehensive testing of the participants when they leave college and up to four years after their collegiate sports or service academy career has ended. This new phase will enable researchers to study the intermediate and cumulative effects of concussion and repetitive head impact exposure. Importantly, researchers hope — for the first time — to differentiate between the effects of concussion and repetitive head impact from sports participation with no history of either concussion or repetitive head impact exposure.
  - While numerous studies have come out regarding the research over the last few years, some key findings include:
    - *Concussions in collegiate football are managed more conservatively than ever. The average time between injury and return to play in the original NCAA Concussion Study was 6.7 days (1999-2001). In the CARE study, that figure increased to 16.1 days (2014-2017).*<sup>37</sup>
    - *The rate of same season repeat concussion in the CARE study was 41% lower than in the earlier NCAA Concussion Study. Further, among those who suffered a repeat concussion, the average interval between injuries in CARE was 50.8 days longer.*<sup>38</sup>
    - *Preliminary evidence suggests that age of first exposure to contact sports is not associated with neurocognitive impairment in college athletes. Female and male collegiate athletes take approximately the same amount of time to recover from a concussion, with subtle differences in recovery time depending on the type of sports being played and the division level.<sup>43</sup> The findings suggest that equity in access to sports medical care among college athletes may contribute to these similar outcomes.*<sup>39</sup>
- College athletic training staff are starting to report to medical staff instead of athletic staff and coaches, as the NCAA has recommended as a best practice.<sup>40</sup>
- At the collegiate level, all training and conditioning sessions should be administered by personnel with demonstrated competency in the safe and effective development and implementation of training and conditioning activities, and with the necessary training to respond to emergency situations arising from those activities.<sup>41</sup>

# RULE CHANGES, GUIDANCE & COACHING ADVANCEMENTS

## Numerous entities have issued guidance and guidelines.

- National Football Foundation Issues Coach Guidelines.<sup>42</sup>
  - In August of 2016, the National Football Foundation distributed a set of guidelines, created with feedback from the Texas High School Coaches Association (THSCA) and the American Football Coaches Association (AFCA), to help more than 150,000 high school coaches inform parents about efforts to make their programs safer.
  - The guidelines were sent to and utilized by state high school athletic associations, the AFCA membership base of 11,000, the NFF's 120 nationwide chapters and high school coaches across the country.
- 28 states require coaches to be trained in youth sports concussion recognition and awareness.<sup>43</sup>
  - Hawaii, Oregon, California, Montana, North Dakota, South Dakota, Minnesota, Wyoming, Colorado, New Mexico, Texas, Louisiana, Arkansas, Alabama, Tennessee, Kentucky, West Virginia, Ohio, Michigan, Pennsylvania, New York, New Jersey, Delaware, Connecticut, Rhode Island, Massachusetts, Vermont, Maine. The state of Ohio requires training of coaches and referees.
- Data from the NCAA-DOD CARE Consortium is used to shape rules changes designed to facilitate ongoing objectives in college sports.<sup>44</sup>
- The NCAA Sport Science Institute and leading scientific and sports medicine organizations have developed recommendations for athletics departments and coaches to use as they plan their year-round football practice sessions.<sup>45</sup>
  - The 2017 recommendations serve as an update from 2014 guidance and include additional recommendations for preseason, in-season, postseason and spring practice.
- In 2014, NFHS issued recommendations and guidelines for minimizing head impact exposure and concussion risk in football.<sup>46</sup>
  - Full contact should be limited during the regular season, as well as during activity outside of the traditional fall football season.
  - Member state associations should consider a variety of options for limiting contact in practices. The task force strongly recommended full contact be limited to no more than 2-3 practices per week.
  - Preseason practices may require more full contact time than practices occurring later in the regular season to allow for teaching fundamentals with sufficient repetition.
  - During preseason twice-daily practices, only one session per day should include full contact.
  - Each member state association should review its current policies regarding total quarters or games played during a one-week time frame.
  - Member state associations with jurisdiction over football outside of the traditional fall football season should review their current policies to assess if those policies stand in alignment with the fundamentals discussed within the report and, if needed, modify the policies accordingly.
  - Each member state association should reach out to its respective state coaches' association on designing and implementing a coach education program that appropriately integrates youth, middle school and high school football programs in every community.
  - An Emergency Action Plan (EAP) with clearly defined written and practiced protocols should be developed and in place at every high school.

- In 2018, the NFL launched “Way to Play,” an initiative committed to promoting proper playing technique across all levels of football.<sup>47</sup>
  - Current players and NFL Legends from key positions demonstrate proper technique.
  - NFL coaches explain fundamental concepts, share best practices and advice on how to coach each position on the field.
  - The Playbook, created with the Legends Youth Advisory Committee, is a tool for youth coaches that outlines the curriculum, language to use and fundamentals of the game.
- In 2022, NFL and NFHS launch FREE online course to help teach proper tackling techniques.<sup>48</sup> And American Youth Football, Inc. (AYF), a national youth partner of the NFL, will require all coaches on its regional/national track (more than 50,000) to take the new course introduced on the NFHS Learning Center.<sup>49</sup>
- In February 2020, the Center for Disease Control (CDC) revised its HEADS UP to Youth Sports to improve the culture of concussion by taking a free online training and using what is learned to inform how coaches and parents talk about, prevent and respond to concussions. The HEADS UP to Youth Sports: Online Training is available to coaches, parents, sports officials, athletic trainers and other individuals interested in learning about concussion safety.<sup>50</sup>
- Pop Warner Rules and Heads-Up Football Training has resulted in an injury rate that has 87% fewer injuries compared to non-Heads-Up and non-Pop Warner programs, according to Datalys Institute’s research data.<sup>51-52</sup>



# RULE CHANGES, GUIDANCE & COACHING ADVANCEMENTS

- From 2010-2019, Pop Warner instituted other major safety-focused changes.<sup>53</sup>
  - Teach kids how to better recognize if they or a teammate have suffered a concussion. Pop Warner provides access to CrashCourse, an interactive concussion education program developed by TeachAids, a nonprofit education initiative, and researchers at Stanford University.
  - Offers Rookie Tackle, a program to help kids transition from Flag Football to 11-player tackle. It is played on a smaller field with fewer players and meant to introduce the sport.
  - In 2016, Pop Warner announced contact is restricted to 25 percent of practice time.
  - In 2012, Pop Warner banned full speed head-on, blocking or tackling drills where players lined up more than 3 yards apart.
  - In 2010, Pop Warner implemented the first youth sports concussion policy. Under the policy, any participant removed from play due to a head injury may not return to Pop Warner activities until he or she is evaluated – and receives written clearance – by a licensed medical professional trained in the evaluation and management of concussions.
  - To ensure that Pop Warner stays on the forefront of health and safety issues and any medical developments that may affect our young athletes, Pop Warner formed an independent Medical Advisory Committee in 2010. Led by neurosurgeons, researchers, pediatricians and sports medicine professionals, the committee is focused on the prevention, proper identification and treatment of concussions; hydration awareness and proper nutrition guidelines; and general health and safety issues.
- The University Interscholastic League (UIL) and the Texas High School Coaches Association (THSCA) worked collaboratively to take the unprecedented step forward to make football a safer sport. In October 2017, the UIL Legislative Council passed a rule requiring every Texas high school and junior high school football coach to become certified in teaching tackling as a part of the official UIL Coaches Certification Program that began in the 2018-19 school year.<sup>54</sup>





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# TECHNOLOGY ADVANCEMENTS

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### TECHNOLOGY ADVANCEMENTS THROUGH THE YEARS ARE MAKING THE GAME BETTER.

The reliability and performance of helmets is an area of increasing study, and various tech businesses are creating new helmets to improve game safety.

- For the third straight season, 99 percent of NFL players wore high-performing helmets.<sup>1</sup> This is a jump from 41% in 2017.<sup>2</sup>
- The NFL helmet safety rankings for 2023 ranked the VICIS ZERO2-R Matrix ID Trench the number one performing helmet, followed by the VICIS ZERO2-R Trench. The rankings are based on the ability of the helmet to reduce head impact severity measures in lab testing.<sup>3</sup>
- Guardian Caps are now mandatory in the NFL for all preseason practices, as well as every regular-season and postseason practice with contact.<sup>4</sup> They have also become mandatory for all Canadian Football League practices.<sup>5</sup>
  - Since 2011, Virginia Tech researchers have been providing unbiased helmet ratings that allow consumers to make informed decisions when purchasing helmets. The helmet ratings are the culmination of over 15 years of research on head impacts in sports and identify which helmets best reduce concussion risk.<sup>6</sup>
  - A total of 30 varsity football helmets have been rated using the STAR evaluation system. Impact tests evaluate a helmet's ability to reduce linear and rotational acceleration of the head resulting from a range of head impacts a football player might see on the field. Helmets with more stars provide a reduction in concussion risk for these impacts compared to helmets with less stars.<sup>7</sup>
  - A total of 34 youth football helmets have been rated using the STAR evaluation system. Impact tests evaluate a helmet's ability to reduce linear and rotational acceleration of the head resulting from a range of head impacts a youth football player might see on the field. The lab tests are based on data we collected directly from 10- to 14-year-old youth football players that wore helmets equipped with sensors. Helmets with more stars provide a reduction in concussion risk for these impacts compared to helmets with less stars.<sup>8</sup>
  - A total of 34 flag football headgear have been rated using the STAR evaluation system. Impact tests evaluate a headgear's ability to reduce linear and rotational acceleration of the head resulting from a range of head impacts a flag football player might see on the field. Headgear with more stars provide a reduction in concussion risk for these impacts compared to helmets with less stars. Group ratings are differentiated by pre-determined thresholds.<sup>9</sup>
- One neurologist believes a new helmet concept will save high school football. Modified testing showed the BrainGuard helmet reduced rotational force by 25-50% compared to the top helmets on the market.<sup>10</sup>
- A new technology and helmet design by Savior Brain and Stanford University involving liquid shock absorbers has the potential to diminish the impact of head injuries by 33 percent.<sup>11</sup>

# TECHNOLOGY ADVANCEMENTS

## INSIGHTS

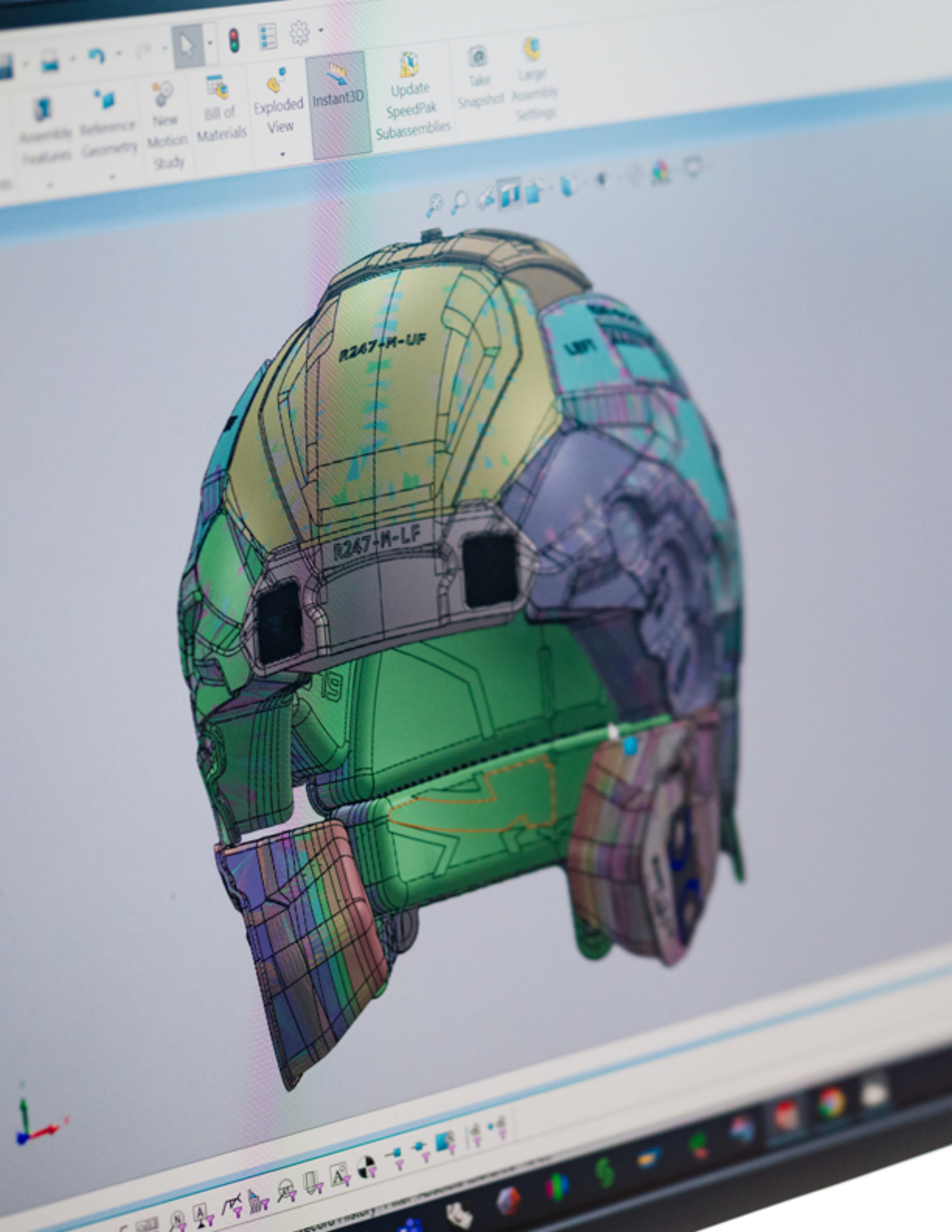
- Scientists and the U.S. Army Research Laboratory have developed elastic microlattice pads that can withstand both single hits and a series of impacts better than existing state-of-the-art foams used in football helmets. Their research suggests that the material may pave the way for helmets that better protect football players and other athletes from brain injuries caused by repeated head hits.<sup>12</sup>
- The National Operating Committee on Standards for Athletic Equipment (NOCSAE) is an independent and nonprofit standards development body with the sole mission to enhance athletic safety through scientific research and the creation of performance standards for athletic equipment. While NOCSAE sets performance and test standards for athletic equipment, it does not certify or approve athletic equipment. Safety Equipment Institute (SEI) oversees the certification of athletic equipment to NOCSAE standards.<sup>13</sup> A list of NOCSAE certified equipment is available online.

### **New tracking technology has improved the benefits of “smart” mouthguards.**

- Data from mouthguards can track the force of impact on a player and assist in evaluating the risk of a concussion after a hit. Force Impact Technologies (FITGuard), Akervall Technologies (SISU Sense) and Catapult are three companies that have created mouthguards that use sensors placed in a mouthguard to measure accurate acceleration readings upon impact.<sup>14-16</sup>
- The NFL in 2022 expanded its partnership with eight total research universities now to collect data from on-field impacts through mouthguard sensors.<sup>17</sup>

### **Organizations are testing and/or being rewarded for advancing the game through technology.**

- In 2020 and 2021 the NFL awarded \$2.9 million in grant funding through the HeadHealthTECH Challenge to support teams of innovators in the creation of their helmet prototypes.<sup>18</sup>
- In 2022, the NFL launched the Contact Detection Challenge, offering prize grants for innovations to predict player injuries through machine learning and computer vision.<sup>19</sup>
- The NFL and Amazon Web Services (AWS) partnered to transform player health and safety using cloud computing, machine learning and artificial intelligence (AI). In 2022, they announced the results of its artificial intelligence competition, which challenged data scientists to teach computers to automatically detect players involved in head impacts from NFL game footage. The new computer vision models further strengthen the data and insights at the heart of the NFL’s effort to understand and reduce head injuries. More than 1,000 data analysts from 65 countries competed in the challenge and five winning models were awarded a total of \$100,000.<sup>20</sup>



Assembly Features  
Reference Geometry  
New Motion Study

Bill of Materials

Exploded View

Instant3D

Update SpeedPak Subassemblies

Take Snapshot

Large Assembly Settings

R267-K-UF

R267-K-LF

LF1





## ABOUT THE NATIONAL FOOTBALL FOUNDATION

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The National Football Foundation was founded in 1947 with leadership from Colonel Earl “Red” Blaik, General Douglas MacArthur, and Grantland Rice with a mission to mobilize the constructive forces of amateur football to strengthen America’s young people. All felt strongly that the sport built leaders like no other activity. The hallmarks taught through the game, courage, dedication, discipline, teamwork and tenacity, uniquely positioned football’s impact on the country.

The National Football Foundation is a multifaceted, 501(c)(3) nonprofit organization dedicated to promoting and representing everything right with the sport. Through the NFF’s programs and initiatives that encompass a broad spectrum of amateur football, the organization preserves the past, promotes the present, prepares for the future and protects the game and the opportunities it provides. These national programs and initiatives include, but are not limited to: Annual Awards Dinner, College Football Hall of Fame, Future For Football campaign, National Scholar-Athlete awards (including the William V. Campbell Trophy presented to college football’s top scholar-athlete), nationwide Chapter System, and research.





# ADDENDUM

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# ADDENDUM

## GOOD OF THE GAME

1. NFHS. (2023, August 30). High school sports participation continues rebound toward pre-pandemic levels. NFHS. <https://www.nfhs.org/articles/high-school-sports-participation-continues-rebound-toward-pre-pandemic-levels/>
2. The Football Development Model: USA Football. (n.d.). <https://fdm.usafootball.com/>
3. Division I Graduation Rates Database. NCAA.org. (n.d.). <https://www.ncaa.org/sports/2017/12/12/division-i-graduation-rates-database.aspx>
4. Scholarships. NCAA.org. (n.d.). <https://www.ncaa.org/sports/2014/10/6/scholarships.aspx>
5. Gallup Study: Interactive Dashboard. NCAA.org. (n.d.-a). <https://www.ncaa.org/sports/2020/9/23/gallup-study-interactive-dashboard.aspx>
6. Lapchick, R. (2022). The 2022 Racial and Gender Report Card: National Football League. [https://www.tidesport.org/\\_files/ugd/ac4087d74e4aa674334087b6c4506f6d353a48.pdf](https://www.tidesport.org/_files/ugd/ac4087d74e4aa674334087b6c4506f6d353a48.pdf)
7. Porterfield, C. (2021, February 08). These Three Women Are Making Super Bowl History as The First Female Referee and Coaches. <https://www.forbes.com/sites/carlieporterfield/2021/02/07/these-three-women-are-making-super-bowl-history-as-the-first-female-referee-and-coaches/?sh=e1090b478a>
8. Frandson, M. (2021, July 23). Boston Renegades, Minnesota Vixen to Face Off in Women's Football Alliance Championship Game. ESPN. <https://www.espn.com/espnw/article/31865478/boston-renegades-minnesota-vixen-face-womens-football-alliance-championship-game>
9. Women's Football Alliance Teams. Women's Football Alliance. (2021, February 15). <https://wfaprofootball.com/teams/>
10. WFA PR. (2023, June 16). 2023 All-American Teams Announced. Women's Football Alliance. <https://wfaprofootball.com/2023-all-american-teams-announced/>
11. WFA PR. (2023, June 11). 2023 Playoff Teams Announced. Women's Football Alliance. <https://wfaprofootball.com/2023-playoff-teams-announced/>
12. WFA PR. (2022, March 10). WFA International Partners with the European Women's Football Organization. Women's Football Alliance. <https://wfaprofootball.com/wfa-international-partners-with-the-european-womens-football-organization/>
13. Frequently Asked Questions: Women's National Football Conference. WNFC. (n.d.). <https://www.wnfcfootball.com/faq>
14. Wnfc. (2023, June 15). IX CUP 2023: How to Watch WNFC All-Pro, IX Cup Championship Game, and more... WNFC. <https://www.wnfcfootball.com/news/ix-cup-2023-how-to-watch-wnfc-all-pro-ix-cup-championship-game-and-more>
15. Pontbriand, A. (2023, June 3). Chance to do Something Special: Florida Gateway College Leads Flag Football Charge. News4JAX. <https://www.news4jax.com/sports/2023/06/03/chance-to-do-something-special-florida-gateway-college-leads-flag-football-charge/>
16. Lovelace, E. (2023, May 22). William Woods University Expands With Men's Football and Women's Flag Football Program. KOMU 8. [https://www.komu.com/news/midmissourinews/william-woods-university-expands-with-mens-football-and-womens-flag-football-programs/article\\_7d5fa0be-f8ef-11ed-a201-b3563fe28ec7.htm](https://www.komu.com/news/midmissourinews/william-woods-university-expands-with-mens-football-and-womens-flag-football-programs/article_7d5fa0be-f8ef-11ed-a201-b3563fe28ec7.htm)
17. Ottawa University. (2023, May 20). Women's Flag Captures 3rd NAAI Championship, defeats Thomas 18-13. Ottawa University. <https://ottawabraves.com/news/2023/5/20/womens-flag-football-womens-flag-captures-3rd-naai-championship-defeats-thomas-18-13.aspx>
18. DiAmore, I. (2023, June 5). Atlantic East Conference Announces Plans to Offer NCAA Division III Varsity Women's Flag Football in 2025. <https://www.inquirer.com>. <https://www.inquirer.com/college-sports/varsity-female-flag-football-college-20230605.html>
19. Llano, F. (2022, November 1). Meet Mexico's First Female College Football Kicker, Andrea Martinez. NBCNews.com. <https://www.nbcnews.com/news/latino/meet-mexicos-first-female-college-football-kicker-andrea-martinez-rcna55085>
20. Fox, S. (2021, September 29). She's Got Game: Haley Van Voorhis Making History as Defensive Back at Shenandoah University. FOX 5 DC. <https://www.fox5dc.com/news/shes-got-game-haley-van-voorhis-making-history-as-defensive-back-at-shenandoah-university>
21. Florio, J., & Shapiro, O. (2019, August 29). Toni Harris Made History by Getting a Football Scholarship. Now She Needs to Make Tackles. <https://theundefeated.com/features/antoinette-harris-made-history-by-getting-a-football-scholarship-central-methodist-university/>
22. Brown's Marini Becomes First Female Position Coach in NCAA Division I Football. (2020, March 16). <https://ivyleague.com/news/2020/3/16/football-browns-marini-becomes-first-female-position-coach-in-ncaa-division-i.aspx>
23. Meet Callie Brownson, Division I College Football's First Full-Time Female Coach. (2018, October 11). <https://www.cnbcm.com/2018/10/04/callie-brownson-is-d-i-college-footballs-1st-full-time-female-coach.html>
24. NFHS. (2022, October 10). NFHS Releases First High School Sports Participation Survey in Three Years. NFHS. <https://www.nfhs.org/articles/nfhs-releases-first-high-school-sports-participation-survey-in-three-years/>
25. McDonald, B. (2023, February 8). 49ers Support Initiative to Make Girls Flag Football a High School Varsity Sport. 49ers Home. <https://www.49ers.com/news/49ers-support-initiative-to-make-girls-flag-football-a-high-school-varsity-sport>
26. Phillips, N. (2022, October 9). Colorado High Schools Launch Inaugural Season of Girls Flag Football: "it's not just a man's sport." The Denver Post. <https://www.denverpost.com/2022/10/09/chsaa-girls-flag-football-high-school-sport/>
27. Vincent, T. (2023, June 5). Supply and Demand: Women Driving Momentum Toward Widespread Flag Football Adoption. Sports Business Journal. <https://www.sportsbusinessjournal.com/Journal/Issues/2023/06/05/Opinion/vincent.aspx>
28. Stump, S. (2022, October 20). High school Senior Makes History as 1st Female Player to Score 2 TDs in a Game. TODAY.com. <https://www.today.com/news/sports/high-school-senior-makes-history-1st-female-score-2-tds-one-game-rcna53114>
29. Scianna, D. (2022, November 14). Not Just Another Football Game As Chicago Public League Female Coaches "Break A Glass Ceiling" In Historic Matchup. Chicago Public League (IL). <https://cpsathletics.com/not-just-another-football-game-as-chicago-public-league-female-coaches-break-a-glass-ceiling-in-historic-matchup/>
30. Alamosa's Halle Phares Is First Female Athlete to Make CHSAA Football All-State Team. Colorado High School Activities Association. (2021, December 30). <https://chsaa.com/news/2021/12/30/alamosas-halle-phares-is-first-female-athlete-to-make-chsaa-all-state-team-for-football.aspx>
31. D'Addona, D. (2021, December 11). Paige Westra Earns Historical All-State Football Selection. The Holland Sentinel. <https://www.hollandsentinel.com/story/sports/2021/12/11/paige-westra-earns-historical-all-state-football-selection-bonnema-grigg-diaz-make-all-state/6475832001/>
32. Admin, A. (2022, May 16). Girls High School Football To Play Historic Games At Rice Eccles Stadium. Utah Girls Tackle Football. <https://utahgirlstacklefootball.com/2022/05/16/girls-high-school-football-to-play-historic-games-at-rice-eccles-stadium/>
33. Broughton, D., & Fischer, B. (2023, January 16). NFL Per-Game Attendance Makes Big Jump. Sports Business Journal. <https://www.sportsbusinessjournal.com>

[sportsbusinessjournal.com/Journal/Issues/2023/01/16/Upfront/nfl-attendance.aspx](https://sportsbusinessjournal.com/Journal/Issues/2023/01/16/Upfront/nfl-attendance.aspx)

34. Dodd, D. (2023, March 8). College Football Attendance Rose in 2022 with Largest Year-Over-Year Increase since 1982. CBSSports.com. <https://www.cbssports.com/college-football/news/college-football-attendance-rose-in-2022-with-largest-year-over-year-increase-since-1982/>
35. Karp, A. (2023, January 9). Games Rule: Sports Events Account For All but Six of the Top 100 Telecasts of 2022. Sports Business Journal. <https://www.sportsbusinessjournal.com/Journal/Issues/2023/01/09/Upfront/top-100-telecasts.aspx>
36. Campione, K. (2023, January 10). NFL Regular Season Games Draw Record Viewership Across Broadcast & Streaming. Deadline. <https://deadline.com/2023/01/nfl-regular-season-games-record-viewership-nbc-abc-cbs-fox-ratings-1235216109/>
37. FOX Sports. (2023, May 2). Super Bowl LVII on FOX Sets Viewership Record with 115.1 Million. FOX Sports. <https://www.foxsports.com/stories/nfl/super-bowl-lvii-on-fox-sets-viewership-record-with-115-1-million>
38. Miller, Z. (2021, December 1). Which College Football Programs Were The Most-Watched in 2021?. Medium. <https://medium.com/run-it-back-with-zach/which-college-football-programs-were-the-most-watched-in-2021-49ef4f315858>
39. Brooks, A. (2022, December 2). ESPN Platforms Score Most-Watched College Football Regular Season in Five Years. ESPN Press Room U.S. <https://espnpressroom.com/us/press-releases/2022/12/espn-platforms-score-most-watched-college-football-regular-season-in-five-years/>
40. The World Games Flag Football Championships Presented By The NFL Scheduled To Air Thursday On NFL Network. The World Games 2022 | Birmingham, USA. (2022, July 19). <https://twg2022.com/2022/nfl-network/>
41. Finland To Host 2024 IFAF Flag Football World Championships. Finland to Host 2024 IFAF Flag Football World Championships | NFL Football Operations. (2022, August 11). <https://operations.nfl.com/updates/the-game/finland-to-host-2024-ifaf-flag-football-world-championships/>
42. Diana Flores Becomes First Flag Football Player with Artifacts in Pro Football Hall of Fame. ProFootballHOF. (n.d.). <https://www.profootballhof.com/news/2023/diana-flores-becomes-first-flag-football-player-with-artifacts-in-pro-football-hall-of-fame/>
43. Schad, T. (2023, March 27). XFL Owners Dany Garcia, Dwayne “The Rock” Johnson Take Stock At Season’s Midway Point. USA Today. <https://www.usatoday.com/story/sports/xfl/2023/03/27/dwayne-johnson-dany-garcia-xfl-midway-point/11541516002/>
44. Hennessy, R. (2023, June 29). “We Are Coming Back”: USFL Announces 3rd Season. WVTM13. <https://www.wvwm13.com/article/we-are-coming-back-usfl-announces-3rd-season/44362160#>
45. Rothstein, M. (2022, November 22). EA Sports To Release College Football Game in Summer 2024. ESPN. [http://www.espn.com/college-football/story/\\_/id/35082744/ea-sports-release-college-football-game-summer-2024](http://www.espn.com/college-football/story/_/id/35082744/ea-sports-release-college-football-game-summer-2024)
46. Dinsdale, R. (2022, March 23). NFL Announces Partnership to Make an Official, Annual VR Football Game. IGN. <https://www.ign.com/articles/nfl-announces-official-annual-vr-football-game>
47. Thompson, J. (2023, February 1). Arena Football League Announces It’s Returning For 2024 Season With 16 Teams. USA Today. <https://www.usatoday.com/story/sports/2023/02/01/arena-football-league-announces-2024-return-af1/11163528002/>

## PARTICIPATION

1. NFHS. (2023, August 30). High school sports participation continues rebound toward pre-pandemic levels. NFHS. <https://www.nfhs.org/articles/high-school-sports-participation-continues-rebound-toward-pre-pandemic-levels/>
2. 2023 Sports, Fitness, and Leisure Activities Topline Participation Report. Member portal. (2023). <https://sfa.users.membersuite.com/shop/store/f147b189-00ce-c703-0f83-0b450aa46a95/detail>

## INJURIES

1. Facts + Statistics: Sports Injuries. III. (2021). <https://www.iii.org/fact-statistic/facts-statistics-sports-injuries#Sports%20Injuries%20By%20Number%20Of%20Injuries.%202021>
2. VinZant, N. (2023, January 23). Most Dangerous Sports For Students. QuoteWizard. <https://quotewizard.com/news/dangerous-sports-for-high-school-and-college-students>
3. Injury Risk Lowest in History of High School Football. (2019, February 6). <http://www.nfhs.org/articles/injury-risk-lowest-in-history-of-high-school-football>
4. Bohr, A., Boardman, J., & McQueen, M. (2019, September 26). Association Of Adolescent Sport Participation with Cognition and Depressive Symptoms in Early Adulthood. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6764154/>
5. Sports Injury Statistics. (n.d.). <https://www.stanfordchildrens.org/en/topic/default?id=sports-injury-statistics-90-P02787>

## RULE CHANGES, GUIDANCE & COACHING ADVANCEMENTS

1. Pop Warner Bans Three-Point Stance and Some Kickoffs. (2019, February 28). [https://apnews.com/7de4de4ecf2b4917a298a23324f818de?utm\\_source=Twitter&utm\\_campaign=SocialFlow&utm\\_medium=AP\\_Sports](https://apnews.com/7de4de4ecf2b4917a298a23324f818de?utm_source=Twitter&utm_campaign=SocialFlow&utm_medium=AP_Sports)
2. NFHS Rules Changes Affecting Risk (1982-2022). (n.d.). <https://www.nfhs.org/media/5989239/1982-2022-nfhs-risk-minimization-rules-final.pdf>
3. Health & Safety Rules Changes. NFL Football Operations. (n.d.). <https://operations.nfl.com/the-rules/rules-changes/health-safety-rules-changes/>
4. 2021 Rules Changes and Points of Emphasis. NFL Football Operations. (n.d.). <https://operations.nfl.com/the-rules/rules-changes/2021-rules-changes-and-points-of-emphasis/>
5. NCAA Football Rules Committee Proposes Rules to Enhance Student-Athlete Safety and Encourage Consistent Pace of Play. (n.d.). <https://football.refs.org/rules/NCAA2008pr.html>
6. NCAA Football Rules Committee Strengthens Rules to Protect Student-Athletes and Confirms Sportsmanship Enforcement. (n.d.). <https://football.refs.org/rules/NCAA2009pr.html>
7. Adelson, A. (2010, August 17). NCAA rules changes for 2010. [https://www.espn.com/blog/nfnation/post/\\_/id/24738/ncaa-rule-changes-for-2010](https://www.espn.com/blog/nfnation/post/_/id/24738/ncaa-rule-changes-for-2010)
8. 2011 NCAA FOOTBALL RULES COMMITTEE ACTION REPORT. (n.d.). [http://fs.ncaa.org/Docs/rules/football/2011/2011rulescommitteeactionreport\\_links.pdf](http://fs.ncaa.org/Docs/rules/football/2011/2011rulescommitteeactionreport_links.pdf)
9. Johnson, G. (n.d.). Playing Rules Oversight Panel Approves Rules

- Changes in Football, Other Sports. <https://www.ncaa.org/about/resources/media-center/news/playing-rules-oversight-panel-approves-rules-changes-football>
10. Myerberg, P. (2013, March 07). NCAA Approves Rule Automatically Ejecting Players for Targeting. <https://www.usatoday.com/story/sports/ncaaf/2013/03/07/ncaa-football-approves-rule-ejecting-for-targeting/1970725/>
  11. Johnson, G. (n.d.). Football Rules Committee Slightly Adjusts Targeting Rule, Defensive Substitutions. <https://www.ncaa.org/about/resources/media-center/news/football-rules-committee-slightly-adjusts-targeting-rule-defensive>
  12. NFF. (2015, August 25). Rule Changes. <https://www.ncaa.com/news/football/article/2015-08-25/ncaa-football-need-know-rules-changes-2015-season>
  13. NFF. (2016, August 03). College Football: Need-To-Know Rule Changes For 2016 Season. <https://www.ncaa.com/news/football/article/2016-08-03/college-football-need-know-rule-changes-2016-season>
  14. Kercheval Aug 23, B. (2017, August 23). College Football Rule Changes 2017: Area for Horse-Collar Tackle Penalties Explained. <https://www.cbssports.com/college-football/news/college-football-rule-changes-2017-area-for-horse-collar-tackle-penalties-expanded/>
  15. New Kickoff Rule Approved For 2018. (2018, April 13). <https://www.ncaa.com/news/football/article/2018-04-13/alteration-football-kickoff-rule-approved>
  16. Important Rule Changes for the 2019 College Football Season. (2019, August 22). <https://insider.afca.com/important-rule-changes-for-the-2019-college-football-season/>
  17. Rittenberg, A. (2021, April 22). College Football Rule Changed to Require 2-Point Conversions After TDs in 2ND OT Rather Than 3rd. [https://www.espn.com/college-football/story/\\_/id/31310857/rule-changed-require-2-point-conversions-touchdowns-2nd-ot-rather-3rd-ot](https://www.espn.com/college-football/story/_/id/31310857/rule-changed-require-2-point-conversions-touchdowns-2nd-ot-rather-3rd-ot)
  18. National Football Foundation. (2023, July 20). Important Rule Changes for The 2023 College Football Season. National Football Foundation. <https://footballfoundation.org/news/2023/7/20/important-rule-changes-for-the-2023-college-football-season.aspx>
  19. Traumatic Brain Injury Legislation. (2018, October 11). <http://www.ncsl.org/research/health/traumatic-brain-injury-legislation.aspx>
  20. Siders, D. (2014, October 08). Jerry Brown Signs Bill Limiting Full Contact Football Practice in California. <https://www.sacbee.com/news/politics-government/capitol-alert/article2604439.html>
  21. WIAA Football Player on Player Contact. (2014). <https://www.wiaawi.org/Sports/Fall/Football/Rules-Regulations>
  22. New Football Practice Policies Promote Safety as 14-15 Sports Year Begins. (2014, August 7). <https://www.mhsaa.com/News/Press-Releases/articleType/ArticleView/articleId/3093/New-Football-Practice-Policies-Promote-Safety-as-14-15-Sports-Year-Begins>
  23. FHSAA Limits Live Contact for High School Football. (2016, June 7). <https://nfhs.org/articles/fhsaa-limits-live-contact-for-high-school-football/>
  24. White, M. (2016, May 25). PIAA Further Limits Contact in High School Football Practices. <https://www.post-gazette.com/sports/highschool/2016/05/26/PIAA-further-limits-contact-in-high-school-football-practices/stories/201605260113>
  25. Waldstein, D. (2019, February 14). New Jersey Unveils New Limits on High School Football Practices. <https://www.nytimes.com/2019/02/13/sports/new-jersey-football-rules.html>
  26. Purcell, J. (2019, May 10). New Contact Rules for High School Football Practice Get Mixed Reactions. <https://www.mlive.com/highschoolsports/2019/05/new-contact-rules-for-high-school-football-practice-gets-mixed-reactions.html>
  27. Tang, E. (2019, May 21). These Parents Are Tackling a Common Football Injury That Took Their Son's Life. <https://www.goodmorningamerica.com/news/story/parents-tackling-common-football-injury-sons-life-continue-63152724>
  28. Seifert, K. (2019, May 22). NFL Asks Teams to Stop Oklahoma Drill, Others. [https://www.espn.com/nfl/story/\\_/id/26800703/nfl-asks-teams-stop-oklahoma-drill-others](https://www.espn.com/nfl/story/_/id/26800703/nfl-asks-teams-stop-oklahoma-drill-others)
  29. Hosick, M. (n.d.). DI Council Adjusts Transfer Waiver Guidelines. <https://www.ncaa.org/about/resources/media-center/news/di-council-adjusts-transfer-waiver-guidelines>
  30. Public Institutions of Higher Education – Student Athletes (Jordan McNair Safe and Fair Play Act). (n.d.). <https://mgaleg.maryland.gov/mgaweb/Legislation/Details/sb0439?ys=2021RS>
  31. Man, A. (2023, April 1). After Cardiac Arrest, NFL's Damar Hamlin Backs Bill to Put Defibrillators in U.S. schools. EMS1. <https://www.ems1.com/ems-products/aeds/articles/after-cardiac-arrest-nfls-damar-hamlin-backs-bill-to-put-defibrillators-in-us-schools-QGGil66QOjaEjNqW/>
  32. Congress.gov. (2023). S.1024 - Access to AEDs Act. Congress.gov. <https://www.congress.gov/bills/118th/congress/senate-bill/1024>
  33. Wisconsin Rule Limiting Full-Contact Practice in High School Football Cuts Concussion Rate by More Than Half. (n.d.). <https://www.med.wisc.edu/news-and-events/2019/july/rule-cuts-concussion-rates-in-half/>
  34. Broglio, S., Williams, R., O'Connor, K., & Goldstick, J. (2016, July). Football Players' Head-Impact Exposure After Limiting of Full-Contact Practices. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5317186/>
  35. Mandatory Pre-Season Guidelines Reduce Heat Illness Among High School Football Players. (2019, April 10). <https://www.sciencedaily.com/releases/2019/04/190410105652.htm>
  36. NCAA-DOD Care Consortium. (2018, November 16). <http://www.ncaa.org/sport-science-institute/topics/ncaa-dod-care-consortium>
  37. Burnsed, B. (2019, May 15). CARE Consortium: Return to Play and Risk of Repeat Concussion in Football. <http://www.ncaa.org/sport-science-institute/care-consortium-return-play-and-risk-repeat-concussion-football>
  38. CARE Consortium: Estimated Age at First Exposure to Contact Sports and Neurocognitive Performance in Service Academy Athletes. (n.d.). <https://www.ncaa.org/sport-science-institute/care-consortium-estimated-age-first-exposure-contact-sports-and-neurocognitive-performance-service>
  39. Master, C., Katz, B., Arbogast, K., McCrear, M., McAllister, T., Pasquina, P., Broglio, S. (2020, December 20). Differences In Sport-Related CONCUSSION For Female and Male Athletes in Comparable COLLEGIATE Sports: A Study from the NCAA-DOD Concussion Assessment, Research and EDUCATION (CARE) Consortium. <https://bjsm.bmj.com/content/early/2020/12/20/bjsports-2020-103316.long>
  40. Athletics Health Care Administration Best Practices. (2017, November 16). <https://www.ncaa.org/sport-science-institute/athletics-health-care-administration-best-practices-0>
  41. Preventing Catastrophic Injury and Death in Collegiate Athletics. (2019, July). [https://ncaaorg.s3.amazonaws.com/ssi/injury\\_prev/SSI\\_PreventingCatastrophicInjuryBooklet.pdf](https://ncaaorg.s3.amazonaws.com/ssi/injury_prev/SSI_PreventingCatastrophicInjuryBooklet.pdf)
  42. NFF Distributes Coach Guidelines for Informing Parents on Football Safety. (2016, August 10). [https://footballfoundation.org/news/2016/8/9/\\_55653.aspx?path=football](https://footballfoundation.org/news/2016/8/9/_55653.aspx?path=football)

# ADDENDUM

43. Traumatic Brain Injuries Among Youth Athletes. (2015, November 18). <http://www.ncsl.org/research/health/traumatic-brain-injuries-among-youth-athletes.aspx>
44. CARE-Based Policy Changes and Resources. (2018, May 29). <http://www.ncaa.org/sport-science-institute/topics/care-based-policy-changes-and-resources>
45. Year-Round Football Practice Contact Recommendations. (2017, July 11). <http://www.ncaa.org/sport-science-institute/year-round-football-practice-contact-recommendations>
46. Recommendations and Guidelines for Minimizing Head Impact Exposure and Concussion Risk in Football. (2014, October). [https://www.nfhs.org/media/1014885/2014\\_nfhs\\_recommendations\\_and\\_guidelines\\_for\\_minimizing\\_head\\_impact\\_october\\_2014.pdf](https://www.nfhs.org/media/1014885/2014_nfhs_recommendations_and_guidelines_for_minimizing_head_impact_october_2014.pdf)
47. NFL way to play. (n.d.). <https://operations.nfl.com/inside-football-ops/nfl-way-to-play/>
48. Fisher, J. (2022, February 14). NFL And NFHS Launch Free Online Course to Help Teach Proper Tackling Techniques. High School Football America. <https://highschoolfootballamerica.com/nfl-and-nfhs-launch-free-online-course-to-help-teach-proper-tackling-techniques/>
49. American Youth Football to Require All Coaches to Take NFHS Football Tackling Course. NFHS. (2022, March 17). <https://www.nfhs.org/articles/american-youth-football-to-require-all-coaches-to-take-nfhs-football-tackling-course/>
50. HEADS up to Youth Sports: Online training. (2020, February 27). <https://www.cdc.gov/headsup/youthsports/training/index.html>
51. Football Safety. (n.d.). <https://www.popwarner.com/football/footballsafety>
52. Kerr, Z. Y., Yeargin, S., Valovich McLeod, T. C., Nittoli, V. C., Mensch, J., Dodge, T., Dompier, T. P. (2015, July 15). Comprehensive Coach Education and Practice Contact Restriction Guidelines Result in Lower Injury Rates in Youth American Football. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4622331/>
53. Pop Warner Becomes First National Football Organization to Eliminate 3-Point Stance. (n.d.). [popwarner.com/Default.aspx?tabid=1403205&mid=1475016&newskeyid=HN1&newsid=279263&ctl=newsdetail](http://popwarner.com/Default.aspx?tabid=1403205&mid=1475016&newskeyid=HN1&newsid=279263&ctl=newsdetail)
54. Lawrence, L. (2018, March 20). Texas High School Football Mandates Tackling Certification for All High School Coaches - University Interscholastic League (UIL). <https://www.uil-texas.org/press-releases/detail/texas-high-school-football-mandates-tackling-certification-for-all-high-sch>
55. Helmet; Guardian Caps Required in Regular Season, Postseason. NFL.com. <https://www.nfl.com/news/nfl-expands-rule-against-misuse-of-helmet-guardian-caps-required-in-regular-seas>
56. Spencer, D. (2023, June 9). “Guardian Cap” to Prevent Head Injuries Mandated for Practices, CFL says. Global News. <https://globalnews.ca/news/9757312/guardian-cap-prevent-head-injuries-mandated-practices-cfl/>
57. VT.edu. (2023). Virginia Tech Helmet Ratings. <https://helmet.beam.vt.edu/>
58. Varsity Football Helmet Ratings. (2023). <https://www.helmet.beam.vt.edu/varsity-football-helmet-ratings.html>
59. Youth Football Helmet Ratings. (2023). <https://helmet.beam.vt.edu/youth-football-helmet-ratings.html>
60. Flag Football/ 7v7 Headgear Ratings. Flag Football / 7v7 Headgear Ratings. (2023). <https://helmet.beam.vt.edu/flag-football-helmet-ratings.html>
61. Doney, P. (2019, May 27). New Helmet Concept May Save the Game of Football. <https://www.nbcdfw.com/news/sports/Neurologist-Believes-New-Helmet-Concept-May-Save-High-School-Football-510184231.html>
62. <https://www.newswise.com/articles/advanced-helmets-aim-to-prevent-football-concussions>
63. Material for Safer Football Helmets May Reduce Head Injuries. (2019, November 27). <https://www.sciencedaily.com/releases/2019/11/191127121223.htm>
64. Certified Products: Safety Equipment Institute. (n.d.). [https://www.seinet.org/search.htm#sections=NOCSAE\\_collapse3.NOCSAE\\_Football\\_collapse31](https://www.seinet.org/search.htm#sections=NOCSAE_collapse3.NOCSAE_Football_collapse31)
65. FITGuard by Force Impact Technologies. (n.d.). <https://www.fitguard.me/>
66. SISU Sense | Smart Mouthguard with Impact Sensors. (n.d.). <https://www.sisuguard.com/sisusense/>
67. Lemire, J. (2019, May 30). Catapult, Prevent Biometrics Partner to Sync Safety, Performance Data. <https://www.sporttechie.com/catapult-prevent-biometrics-safety-performance-data/>
68. Nfl. (2022, November 10). NFL Expands Partnership to Eight Research Universities to Measure On-Field Head Impacts Using Novel Mouthguard Sensors. NFL.com. <https://www.nfl.com/playerhealthandsafety/equipment-and-innovation/equipment-testing/nfl-expands-partnership-to-eight-research-universities-to-measure-on-field-head->
69. NFL. (2021, October 25). NFL Helmet Challenge Raises the Bar for Helmet Technology and Performance, Awards \$1.55 Million in Grant Funding to Help New Models Get on Field Faster. NFL.com. <https://www.nfl.com/playerhealthandsafety/equipment-and-innovation/innovation-challenges/nfl-helmet-challenge-raises-the-bar-for-helmet-technology-and-performance-awards>
70. NFL. (2022, December 1). NFL Enters Next Frontier of Predicting Injury with NFL Contact Detection Challenge. NFL.com. <https://www.nfl.com/playerhealthandsafety/resources/press-releases/nfl-enters-next-frontier-of-predicting-injury-with-contact-detection-challenge>
71. NFL. (2022, January 14). NFL and AWS AI Challenge Awards \$100,000 for New Ways to Detect Players’ Helmet Impacts. NFL Operations . <https://operations.nfl.com/updates/the-game/nfl-and-aws-ai-challenge-awards-100-000-for-new-ways-to-detect-players-helmet-impacts/>

## TECHNOLOGY ADVANCEMENTS

1. NFL. (2022, September 16). Helmet Innovation: More and Better Choices, Fewer Concussions. NFL.com. <https://www.nfl.com/playerhealthandsafety/equipment-and-innovation/engineering-technology/helmet-innovation-more-and-better-choices-fewer-concussions>
2. NFL. (2020, April 20). NFL, NFLPA Release 2020 Helmet Laboratory Testing Performance Results. NFL.com. NFL. (2020, April 20). NFL, NFLPA Release 2020 Helmet Laboratory Testing Performance Results. NFL.com. <https://www.nfl.com/playerhealthandsafety/equipment-and-innovation/equipment-testing/nfl-nflpa-release-2020-helmet-laboratory-testing-performance-results>
3. 2023 Helmet Laboratory Testing Performance Results. NFL. (2023). <https://static.www.nfl.com/image/upload/v1681310780/league/kolarozeolaw53tmq37z.pdf>
4. Battista, J. (2023, March 28). NFL Expands Rule Against Misuse of



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