



# **HEALTH AND SAFETY REPORT**



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## MESSAGE FROM COMMISSIONER ROGER GOODELL

*“The health of NFL players continues to be our highest priority.”*



Each NFL season brings with it new opportunities. An opportunity to improve—to make each season better than the last, which includes an opportunity to continue to strive to make the game safer for our players.

Last season, we launched *Play Smart. Play Safe.*—our League-wide health and safety initiative—to drive progress in the prevention, diagnosis and treatment of head injuries, enhance medical protocols and procedures, and further improve the way the game is taught and played at all levels.

This work is gaining momentum. At the heart of the initiative is a pledge of \$100 million in support of independent medical research and engineering advancements and a commitment to look at new and exciting ways to protect our players and make the game safer.

Of the \$100 million, the League is investing \$60 million into the Engineering Roadmap—a project to better understand concussion-causing impacts and provide innovators and manufacturers with both novel research and incentives to develop advanced protective equipment. \$40 million will be allocated for new medical research, primarily dedicated to neuroscience. This work is led by an independent Scientific Advisory Board that is charged with reviewing and evaluating research proposals, and recommending projects for investment.

This season, we continue to make changes and enhancements on the field. We've implemented five additional rules changes intended to reduce the risk of injuries, especially to the head and neck—totaling 47 since 2002. Each year, the NFL Competition Committee studies film and reviews injury data with physicians, experts, the NFL medical committees and the NFL Players Association to develop these recommendations.

We continue to transform our game day sidelines to ensure they are equipped with the best tools, technology and experts to care for our players. This season, we have added medical examination tents, which will provide medical personnel and our players a private, distraction-free environment to allow for improved examinations.

And finally, we continue to expand our roster of experts. This spring, we welcomed Dr. Allen Sills as the NFL's first Chief Medical Officer to guide the NFL's health and research initiatives. Dr. Sills' experience as a highly credentialed neurosurgeon from Vanderbilt University Medical Center, who has specialized in the treatment of athletes, will only serve to strengthen the NFL's ongoing efforts to advance the health and safety of the sport.

Outlined in this year's report is a demonstration of our ongoing efforts to both learn and do more. We will continue to seek solutions to ensure our entire football family and all those who love to play the game are provided with the best available information, tools and support to protect their health and well-being.

I'm proud of what we—the League, our clubs, our players, our coaches, medical and scientific experts and advocates—have done to advance efforts around this critical issue, but there is more we will do.

There is no higher priority than the health and safety of our players and we are working every day to achieve our goal of making the game safer for all those who play. The NFL will continue to lead,

A handwritten signature in blue ink that reads "Roger Goodell". The signature is fluid and stylized, with the first name being more prominent.

**Roger Goodell**  
NFL Commissioner



## MESSAGE FROM DR. JOHN YORK

Co-Chairman, San Francisco 49ers

Chairman, NFL Owners' Health and Safety Advisory Committee

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The NFL's work to advance player health and safety is guided by preeminent experts in the fields of medicine, science and engineering. As the chairman of the NFL Owners' Health and Safety Advisory Committee, I work closely year-round with each of the NFL's medical and scientific committees, as well as the club owners, to try to make the game safer and improve the health of NFL players. This year, we were proud to add to our capability when we announced the hiring of Dr. Allen Sills as the NFL's Chief Medical Officer. He brings substantial expertise to this position as a neurosurgeon with extensive sports medicine experience both at the amateur and professional levels, both domestically and internationally.

At the end of each season, the NFL medical committees meet during the NFL Scouting Combine to begin the intensive and critical work of evaluating everything the NFL does to advance player safety. This begins with reviewing and analyzing injury data collected through the NFL's Injury Surveillance System. This system is designed and administered by QuintilesIMS, an independent company that provides epidemiological analysis of NFL injury data to both the NFL and the NFL Players Association.

It is this data, combined with the expertise of the physicians, scientists, engineers and other experts who comprise the NFL's advisory committees, that drives discussion and changes to the NFL's policies and protocols, as well as many playing rules.

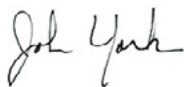
This year saw several important developments. The Competition Committee recommended and the League adopted five new rules changes aimed at reducing injury risk. The Head, Neck and Spine Committee in conjunction with the NFL Players Association drove an important evolution of the Game Day Concussion Diagnosis and Management Protocol, ensuring that it aligns with the latest medical consensus on concussion in sport. This consensus was developed at the 5th International Conference on Concussion in Sport held in Berlin last year and published just a few months before the start of the NFL season. I was honored to represent the NFL at the Conference along with a number of the members of the Head, Neck and Spine Committee. Dr. Sills was a member of the organizing group and writing team that published the consensus statement.

The NFL's health and safety work includes a growing international component. The NFL is an active participant and organizer of conferences with sports leagues around the world to discuss injury surveillance, injury protocols and to invest in joint research to advance sports medicine. And, as the NFL plays more games in England and in Mexico, our health and safety initiatives entail working with some of the finest medical providers in other countries to ensure that the health and safety of our players always comes first.

The NFL's continued investment in research and innovation resulted in notable advances as well. The GE-NFL Head Health Initiative, launched four years ago, has supported a number of innovations to improve concussion diagnosis and prevention. The VICIS Zero1 helmet was one of the winners of the innovation challenges run with GE. This new helmet led the top performing group in laboratory testing of all helmets worn on field and has been adopted by some players this season. In fact, four of the five top performers in the laboratory testing were new helmet models introduced this year.

We look forward to continued innovation in equipment design through new initiatives that are well underway, including the Engineering Roadmap—a groundbreaking effort to understand the biomechanics of football and spur development in injury prevention design. Similarly, foot and ankle injuries continue to be an emphasis for the Musculoskeletal Committee as they design tests to evaluate cleat performance and share those results with the players. This year, the clubs are adopting state-of-the-art foot-scanning technology to make fit recommendations and assist players in making informed choices on their cleats. Footwear must be thought of as protective equipment that drives safety.

Much has been accomplished this year but our work is never finished—this season and beyond. The NFL's medical, engineering and research teams will continue to work to advance the health and safety of football.



**John York, M.D.**

Co-Chairman, San Francisco 49ers  
Chairman of the NFL Owners' Health  
and Safety Advisory Committee



# MESSAGE FROM DR. ALLEN SILLS

NFL Chief Medical Officer

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It is an honor for me to serve as the first full-time Chief Medical Officer for the NFL. From the very first meeting I had to consider the job, all the way to today, I have been pleased to hear from everyone in the League an unwavering commitment towards the well-being of our players and to making the game safer.

My mandate is to lead the League's work on health and safety matters and to strive to provide the best possible care to our players. Through my clinical practice and ongoing research work, I will continue to be actively engaged with experts in the medical, research and scientific communities and seek to identify new opportunities to improve the health and safety of players—in the NFL, and at all levels of play.

As the NFL's new Chief Medical Officer, I am focused on three things: excellence in player-patient care, medical research and innovation, and education and advocacy.

As physicians, the players are our patients—we must always act in their best interest, guided by science and evidence-based methods, from concussions to musculoskeletal injuries to mental health to pain management. I'm a neurosurgeon and sports physician—and this is the player-patient approach I've taken throughout my career in medicine.

To build on our body of knowledge and identify new opportunities to improve the health and safety of our players, we must be dogged in our efforts to advance medical research and novel innovations in diagnosis and injury prevention. That covers a very wide range, from equipment issues to detection and treatment methods to injury profiles.

Finally, health and safety issues cut across all different levels of football, as well as many other sports. I have been a youth sports coach for more than 20 years, and each fall I provide sideline coverage to high school and college football on Fridays and Saturdays, and on Sundays, I have worked as an Unaffiliated Neurotrauma Consultant for the NFL.

The NFL has the unique opportunity to be a leader in health and safety. And as we make advances, they will be shared with our players, the broader sports community, the medical world and the public at large. We have a unique platform for progress—and more can be accomplished when the work is performed collaboratively.

The League has made great strides in this effort so far, and it is my job to explore where and how we can continue to improve. I look forward to the progress that's to come.

A handwritten signature in black ink, appearing to read 'Allen Sills'.

**Allen Sills, M.D.**  
NFL Chief Medical Officer

# Advanced Technology

The NFL is championing new developments in engineering, biomechanics and material science designed to better protect against injuries in sports and recreation, as well as for the military.

AP | Ben Liebenberg

## OVERVIEW

Four years ago, GE and the NFL launched the Head Health Initiative, a multi-year research and development program and series of open innovation challenges. This dynamic collaboration spurred breakthroughs in concussion research, prevention, diagnosis and treatment, such as next-generation brain imaging technologies, groundbreaking diagnostic tools and impact-absorbing materials.



Leveraging this model, the NFL continues to stimulate the marketplace to support novel developments in sports safety. The NFL's latest research and development program, the Engineering Roadmap, is a comprehensive plan that engages the best minds in biomechanics and engineering to understand more about how head injuries happen on the football field, and use what is learned to catalyze the design of better protective equipment in the future.

1st and Future, the League's annual Super Bowl start-up competition, attracted some of the smartest minds in sports safety technology and engineering. This year, in Houston, TX, they competed for \$50,000 from the NFL to be used to continue their innovative work, and a spot in the Texas Medical Center Accelerator.

## THE NFL'S ENGINEERING ROADMAP

### Using Science to Drive Progress Toward Better Protective Equipment

As part of the NFL's *Play Smart. Play Safe.* initiative, the League pledged \$60 million toward the creation and funding of a five-year project called the Engineering Roadmap. It's a comprehensive effort to improve the understanding of the biomechanics of head injuries in professional football and to create incentives for helmet manufacturers, small businesses, entrepreneurs, universities and others to develop and commercialize new and improved protective equipment, including helmets.

#### Learn more about the Engineering Roadmap

<http://annualreport.playsmartplaysafe.com/#advanced-technology>



AP | Kevin Duo



## Driven by Experts

Football Research, Incorporated (FRI), a nonprofit corporation formed and financially supported by the NFL, manages the Engineering Roadmap. The Board of Directors includes leading engineers and experts who advise FRI on how best to achieve the goal of advancing the understanding of biomechanics in football and creating an environment where new and improved protective equipment will be developed.

Jeffrey Crandall, Ph.D., chairman of the NFL's Engineering Committee, serves a leading role in managing the Engineering Roadmap. Dr. Crandall is the Nancy and Neal Wade Professor of Engineering and Applied Sciences at the University of Virginia and Principal Scientist and Consultant at Biocore, LLC. The Board also works closely with Dr. Kristy Arbogast and Dr. Barry Myers, consultants to the NFL Players Association, who are co-leads on essential elements of the Engineering Roadmap.



Geoff Ling, MD,  
Ph.D., Col. (Ret.)



Barclay  
Morrison III, Ph.D.



Alton (Al)  
Romig, Jr., Ph.D.



Jeffrey W. Runge,  
M.D.

*"The goal is that in three years or so, we'll have seen advances in current helmets. And in five years, we'll be very sophisticated in understanding exactly the sorts of hits that particular players take, particular positions take, what the head feels when it's hit in a particular way on a football field."*

**Jeff Miller**, NFL Executive Vice President of Player Health and Safety Initiatives

AP | Aaron M. Sprecher

## Research: Measuring the On-Field Environment

Three dozen experts gathered on the field at Lucas Oil Stadium in Indianapolis, IN, during the fall of 2016 for a collaborative research effort focused on the future design of protective equipment.

With specialties that included forensic engineering, impact sensor technology, data acquisition, biomechanics and crash reconstruction, they put sensor-enabled crash test dummies through football-like hits. The action was filmed with eighteen 3D motion capture cameras and eleven high-definition game day cameras to capture impacts from dozens of angles around the field with the goal to better understand the forces and motions that occur when a player receives an impact.

These videos and reconstructions of injury-causing plays will be used to strengthen the understanding of the physics underlying concussion-causing impacts, and the resulting data will be shared with manufacturers, designers, innovators, entrepreneurs and universities to help inform improved future equipment design.

*"Once we have a model that can represent motion of the head and brain under the most common concussion scenarios, what we can do is take those models and incentivize manufacturers to design a helmet model computationally that would better protect against those injuries... then they can design it physically and get that helmet on the field."*

**Jeff Crandall**, Director of The Center for Applied Biometrics at The University of Virginia  
Chairman of the NFL Engineering Committee



AP | Greg Trott



# Education: Experts and Innovators Learning from Each Other

In November 2016, the NFL and FRI hosted a first-of-its-kind educational conference. Hundreds of world-class biomechanics and biomedical engineering experts gathered with innovators—from inventors to equipment manufacturers to engineering students—in Washington, DC, for “The HeadHealthTECH Symposium: Fundamental Biomechanics of Concussion in the NFL.”

The conference was the first in a series of educational efforts aimed at sharing the latest biomechanical and biomedical information and encouraging collaboration. Experts shared the latest knowledge regarding the causes of concussion in professional football, including the best tools available for assessing and optimizing the design and manufacturing of protective equipment.

These discussions are a key part of the NFL’s Engineering Roadmap and an important step to educating and creating incentives for those in the marketplace to design and manufacture protective equipment that performs better than current models. Periodic symposia, webinars or other educational efforts will allow experts to share the most up-to-date biomechanical and biomedical information.

*“The more we learn, the more we want to continue to push the envelope on materials and design.”*

**Sarah Gholston**, Vice President of Merchandising at Russell Athletic

## Crowdsourcing: HeadHealthTECH Challenges Offer Incentives for Innovators and Entrepreneurs

The NFL’s HeadHealthTECH Challenges are attracting innovative grant proposals from institutions, individuals and corporations that are interested in designing the next generation of protective equipment. These proposals range from concepts to commercially ready products for use by athletes.

The TECH Challenges are operated and managed by Duke University’s Clinical and Translational Science Institute (Duke CTSI). Duke CTSI accepts and evaluates proposals, and assists some of these promising concepts to accelerate their development.

The TECH Challenges are structured to stimulate research and innovation, as well as to encourage connections with mentors and venture capitalists, with the goal of spurring developments in engineering, biomechanics, advanced sensors and material science. It’s a “high-touch” program where experts in the field work closely with grant recipients to improve their products, and those recipients retain ownership over their ideas at all times.

### HeadHealthTECH Challenge I Winners

#### **GUARDIAN INNOVATORS**

This family business in Georgia received a \$20,000 grant to continue development of their Guardian Cap Technology, a soft-shell helmet cover that fits on the outside of any helmet. It’s designed to reduce the severity of impacts and is primarily used during practice.

#### **VYATEK SPORTS**

An Arizona-based materials science company, Vyatek Sports received a \$190,000 grant to support development and testing of its Zorbz technology, energy-absorbing modules on the outside of a helmet that are designed to perform more like a bicycle helmet upon impact.

### HeadHealthTECH Challenge II Winners

#### **2ND SKULL**

Based in Pittsburgh, PA, this company received a grant of \$100,000 to support gathering efficiency data on its 2ND SKULL<sup>®</sup> CAP—a thin, soft, flexible and breathable protective skull cap that fits under football helmets, designed to provide added protection against linear and rotational impacts.

#### **BAYTECH PRODUCTS**

This company out of Asheville, NC, received a grant of \$178,000 to support the development of its youth helmet prototype—Hitguard—that is 30 percent lighter than most commercially available youth helmets and is specifically designed to address rotational acceleration.

#### **WINDPACT**

Located in Leesburg, VA, Windpact received \$148,000 to support development and testing of a patented padding system designed to use air and foam to absorb and disperse impact energy to improve the performance of helmets and protective gear.



# THE GE-NFL HEAD HEALTH INITIATIVE



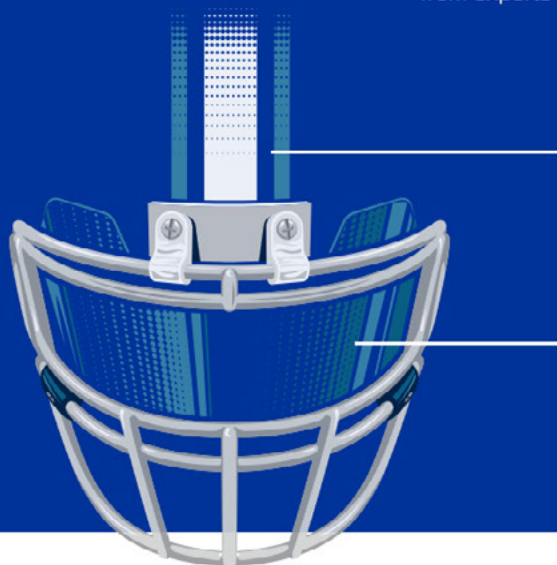
The NFL and GE launched the GE-NFL Head Health Initiative in 2013. This four-year, \$60 million collaboration has accelerated innovations for improved prevention, diagnosis and treatment for traumatic brain injury.

One component of this initiative was a four-year, \$40 million research and development program to develop next-generation brain imaging technologies. This includes substantial clinical trials at seven leading research centers across the country where individuals with head injuries participate in a rigorous test methodology to learn more about imaging and brain injury.

The second component of the initiative is the Head Health Challenge series, which has provided grants to scientists, academics, experts and entrepreneurs worldwide to help spur advancements to better understand, diagnose and protect against traumatic brain injury.

This four-year, \$60 million collaboration **has accelerated innovations for improved prevention, diagnosis and treatment for traumatic brain injury**

The Head Health Challenge open innovation program is supported by the NFL, GE, Under Armour and the National Institute of Standards and Technology (NIST). This three-part challenge program has crowdsourced innovative ideas from experts around the world, ultimately generating more than 1,000 concepts submitted from experts in 30 countries.



Innovative ideas from **experts in 30 countries**



**More than 1,000** concepts submitted

## Head Health Challenges

### Head Health Challenge III: Advancing Materials Science

In August 2017, the NFL, the U.S. Commerce Department's National Institute of Standards and Technology (NIST), GE and Under Armour, announced the grand prize winner of the third and final challenge in the Head Health Challenge series.

The \$500,000 grand prize winner, Dynamic Research Incorporated, led a research team that created a new material system for protective gear for athletes, first responders, military personnel and others who face potential impact injuries. The team is a collaboration between two companies that specialize in protection: **Dynamic Research, Inc. and 6D Helmets, LLC.**

Head Health Challenge III was designed to spur the discovery, design and development of advanced materials to better absorb or mitigate force within helmets, pads and other sports equipment, and consumer products that protect against traumatic brain injury.

"I congratulate the winning team and the Head Health Challenge III partners for looking for technological solutions to this important national problem. The new materials developed through this competition will have broad applications, protecting everyone from students to athletes to soldiers."

**Wilbur Ross**  
U.S. Secretary of Commerce



## DYNAMIC RESEARCH, INC. AND 6D HELMETS, LLC.

Terry Smith (left) and Scott Kebschull (right) of Dynamic Research.

This year also saw significant developments from winners from Head Health Challenges I and II:

### Head Health Challenge I: Accelerating Diagnosis - BrainScope



#### BrainScope

AP | David J. Phillip

A Head Health Challenge I grand prize winner, BrainScope, developed a hand-held device designed to provide "a rapid, objective assessment of the likelihood of the presence of traumatic brain injury in patients who present with mild symptoms at the point of care." In 2016, the Food and Drug Administration cleared the company to market the device called Ahead 300.

### Head Health Challenge II: Improving Prevention - VICIS



#### VICIS

AP | Mark Lennihan

VICIS, a Head Health Challenge II grand prize winner, developed a helmet designed with both a soft shell that acts like a car bumper and vertical struts inside the helmet that bend and buckle. The Zero1 helmet, developed by VICIS and its academic partner, the University of Washington, is designed to mitigate the forces that may lead to concussions. The Zero1 helmet received certification from the National Operating Committee on Standards for Athletic Equipment (NOCSAE) and is being worn by NFL and collegiate players this season.

#### View full list of challenge winners:

<https://www.playsmartplaysafe.com/focus-on-safety/advanced-technology/head-health-initiative/>

## Imaging the Future

This year, GE received approval from the U.S. Food and Drug Administration to make the SIGNA™ Premier available for sale. SIGNA™ Premier is a new magnetic resonance imaging (MRI) system developed through the GE-NFL Head Health Initiative, which aimed to develop new imaging tools, particularly to aid in the detection of biomarkers for the potential diagnosis of mild traumatic brain injury.

The GE-NFL Head Health Initiative has fostered the development of several novel magnetic resonance hardware and software imaging technologies aimed at acquiring high-resolution images of the brain to better understand physiology, function and structure.





# SPURRING INNOVATION THROUGH COMPETITION

## The NFL's Annual Start-Up Competition Heats Up During Super Bowl Week

Some of the smartest minds in technology and engineering gathered in Houston, TX, this year for "1st and Future," the NFL's annual start-up competition.

The NFL teamed with the Texas Medical Center (TMC) for a competition focused on advancing sports technology and athlete safety. More than 200 companies submitted applications in three categories: Communicating with the Athlete, Materials to Protect the Athlete and Training the Athlete.

Participating entrepreneurs and innovators appeared in front of competition judges and an exclusive audience, including NFL team owners and executives and representatives from the Houston Super Bowl Host Committee and Texas Medical Center.

Winners were awarded tickets to Super Bowl LI, \$50,000 from the NFL to be used to continue their innovative work and a spot in the Texas Medical Center Accelerator (TMCx).



## Winners of the 2016 1st and Future Competition



**GoRout** in Rochester, MN, created a piece of on-field wearable technology designed to streamline the communication between football coaches and players. With it, players receive digital play diagrams and data from coaches on the sideline.



**Mobile Virtual Player** in Lebanon, NH, developed a self-righting, remote-controlled mobile tackling dummy designed to allow coaches to teach and train players effectively while reducing player-to-player contact on the practice field.



**Windpact** in Leesburg, VA, developed the Crash Cloud padding system that uses air and foam designed to absorb and disperse impact energy inside the helmet. It's an innovation designed to improve the performance of helmets and protective gear.

**Watch a highlight video of the event:**  
<https://youtu.be/-fqzPPRuLs>

# Medical Research

The NFL is investing in and supporting preeminent experts and institutions to advance progress in the prevention, diagnosis and treatment of head injuries.



## OVERVIEW

The NFL continues to support research endeavors that build upon the growing body of knowledge that informs how to keep players safer on and off the field. The NFL's commitment to supporting research aims to have an impact far beyond football—benefiting athletes, the military and society, overall.



Through the *Play Smart. Play Safe.* initiative, more than \$40 million in funding has been allotted for additional scientific and medical research over the next five years, primarily dedicated to neuroscience. A new Scientific Advisory Board, comprising leading independent experts, doctors, scientists and clinicians, has been assembled to work with the NFL's medical committees to identify and develop research priorities.

## THE NFL'S SCIENTIFIC ADVISORY BOARD

### Renowned Leadership to Guide Medical and Neuroscience Research Funding

The NFL has assembled a Scientific Advisory Board of leading independent experts, doctors, scientists and clinicians to develop and lead a clear process to identify and support compelling proposals for scientific research.

In September 2017, the NFL opened a funding opportunity for innovative translational research on concussion and comorbid conditions, including chronic traumatic encephalopathy (CTE), as well as the natural history of concussion and associated comorbid conditions. This funding opportunity is the result of the Scientific Advisory Board's work to develop a process for soliciting, reviewing and evaluating research proposals and directing funding.

The Scientific Advisory Board is accepting proposals from leading research teams in concussion and comorbid conditions to receive up to \$20 million in grant funding over the next three to five years to support their work. The funding opportunity is intended to facilitate the translation of original, ongoing and existing research into clear clinical end points, such as progressing diagnostics, drugs, devices and treatments that advantage the patient, as well as advance understanding of the potential short- and long-term effects of concussion and associated comorbid conditions.

The intent of the initiative is to demonstrate the potential for translational breakthroughs by leveraging emerging science, current data sets and archival material on concussion and comorbid conditions.

Funding awards will be announced in early 2018.



## Members of the NFL's Scientific Advisory Board



### Peter Chiarelli, Gen. (Ret.) Chairman

General Chiarelli, U.S. Army General (Retired), is Chief Executive Officer of One Mind, a brain illness related non-profit organization that works with members in the governmental, corporate, scientific and philanthropic communities to greatly accelerate large-scale research through "Open Science" data sharing and collaboration.



### Sidney Hinds, M.D., M.C., Col.

Colonel Hinds is a Brain Health Research Program Coordinator at the Department of Defense, where he coordinates neurological and psychological protection, prevention, evaluation, diagnosis, treatment and rehabilitation research as it pertains to blast injury. He previously served as the National Director of the Defense and Veterans Brain Injury Center (DVBIC), which serves active duty military and veterans with traumatic brain injury through state-of-the-art medical care and care coordination, and innovative clinical research and educational programs.



### David Hovda, Ph.D.

Dr. Hovda is the Director of the UCLA Brain Injury Research Center. He is Past President of the National Neurotrauma and International Neurotrauma Societies. He has served as chair of study sections for the National Institute for Neurological Disease and Stroke (NINDS). He has received a number of awards for his research on brain injury and recovery of function, including the 1991 National Head Injury Foundation Award, the Giannini Foundation Award, the Benjamin Franklin Haight Memorial Award, the 2008 Deborah L. Warden Lectureship Award and was named the Lind Lawrence Eminent Scholar for his work on the topic of Traumatic Brain Injury.



### David J. Shulkin, M.D.

The Honorable Dr. David J. Shulkin is Secretary of the United States Department of Veterans Affairs. Prior to his confirmation as Secretary, Dr. Shulkin served as the VA's Under Secretary for Health, leading the nation's largest integrated healthcare system with over 1,700 sites of care, serving 8.76 million veterans each year.



### Douglas H. Smith, M.D.

Dr. Smith serves as Director of the Center for Brain Injury and Repair and is the Robert A. Groff Endowed Professor and Vice Chairman for Research and Education in Neurosurgery at the Perelman School of Medicine, University of Pennsylvania. Dr. Smith is also the Scientific Director for the Big 10/Ivy League consortium on concussion. For research awards, he is director of several multi-center National Institutes of Health (NIH) and Department of Defense grants on concussion and TBI-induced neurodegeneration, as well as for an NIH training grant on brain injury. Recent scientific awards for these contributions include the Dorothy Russell Medal, the highest honor conveyed by the British Neuropathological Society.



### Shelly D. Timmons, M.D., Ph.D.

Dr. Timmons serves as Director of Neurotrauma, Vice Chair for the Administration Department of Neurosurgery, and Professor of Neurosurgery at Penn State Health Milton S. Hershey Medical Center. She has been a clinical researcher for a number of years, and has participated as principal investigator in numerous clinical trials related to traumatic brain injury. She has published and lectured on a variety of topics related to traumatic brain injury, neurocritical care, spinal cord injury, blunt vascular injury and healthcare delivery throughout her career.

"These are all individuals who have dedicated their lives to understanding concussion, traumatic brain injury and the brain."

**Peter Chiarelli**  
U.S. Army General (Retired)  
Chief Executive Officer of One Mind  
Chairman of the NFL's Scientific Advisory Board



# INTERNATIONAL COLLABORATIONS

## Global Reach, Global Impact

In both 2014 and 2015, the NFL brought together leaders from international sports leagues to identify promising areas for collaborative research.

The NFL held the first International Professional Sports Concussion Research Think Tank in New York in 2014. The organizations came together for a second time in 2015 to continue this work. These meetings have identified research priorities that are being addressed through several joint research initiatives.

**Most recently, scientists at the University of North Carolina at Chapel Hill and the Medical College of Wisconsin received a \$2.6 million grant from the NFL for a study, one of the first of its kind, that will examine the efficacy of two clinically supervised management strategies, including both the international concussion return-to-play protocol and early therapeutic interventions on concussions.**

This research will look at rehabilitation in a range of sports, including football, rugby, soccer, lacrosse, basketball and ice hockey. Professional athletes from the Canadian Football League (CFL) and New Zealand Rugby, college athletes and U.S. high school athletes are participating in the study.

**Other collaborative research initiatives are well underway including:**



A collaboration between the NFL and CFL to jointly examine how an eye-movement test—the King-Devick test—may improve concussion diagnosis on the sideline.



A partnership between the NFL and the International Concussion and Head Injury Research Foundation (ICHIRF) to fund research into the potential long-term effects and risk factors associated with high-impact sports, including horse racing.



# Protecting Players

The NFL is making changes on and off the field in an effort to protect the health and safety of every player in the NFL.



AP | Damian Strohmeyer

## OVERVIEW

The NFL continues its work with the NFL Players Association, NFL Physicians Society and Professional Football Athletic Trainers Society, as well as the numerous experts on the NFL's medical committees, to identify and implement changes on and off the field to help protect the health and safety of every player.



AP | Tom Hauck

"I used to be a part of a great game day medical team for the Tennessee Titans as an Unaffiliated Neurotrauma Consultant. Now I'm working with great medical teams in place for all 32 clubs. Players are our patients and the medical professionals in the NFL are committed to giving them the best care possible."

**Dr. Allen Sills**, NFL Chief Medical Officer

## COLLECTING AND ANALYZING A SEASON'S WORTH OF INJURY DATA

Leveraging data to better understand trends in injuries and guide ongoing health and safety efforts

Throughout the year, comprehensive NFL player injury data is compiled and analyzed by QuintilesIMS, an independent, third-party company. Results are then shared with the NFL, the NFL Players Association and the NFL medical and football committees.

Guided by the experts at QuintilesIMS, NFL medical committee members examine the data for trends in how, where and when injuries happen. Their analysis covers all injuries impacting players, including concussions and ACL/MCL tears, and considers how protocols and rules changes are making an impact on player safety.



AP | James D. Smith

### Incidence of Reported Concussion 2012–2016

Year	Pre-season			Regular Season			Pre-Season + Regular Season		
	Practice	Game	Total	Practice	Game	Total	Practice	Game	Total
2012	42	43	85	3	173	176	45	216	261
2013	39	38	77	4	148	152	43	186	229
2014	42	41	83	8	115	123	50	156	206
2015	29	54	83	9	183	192	38	237	275
2016	26	45	71	6	167	173	32	212	244

### Incidence of ACL Tears 2012–2016

Year	Pre-season			Regular Season			Pre-Season + Regular Season		
	Practice	Game	Total	Practice	Game	Total	Practice	Game	Total
2012	13	16	29	5	28	33	18	44	62
2013	15	10	25	3	33	36	18	43	61
2014	12	10	22	0	27	27	12	37	49
2015	13	16	29	5	25	30	18	41	59
2016	9	11	20	6	30	36	15	41	56

### Incidence of MCL Tears 2012–2016

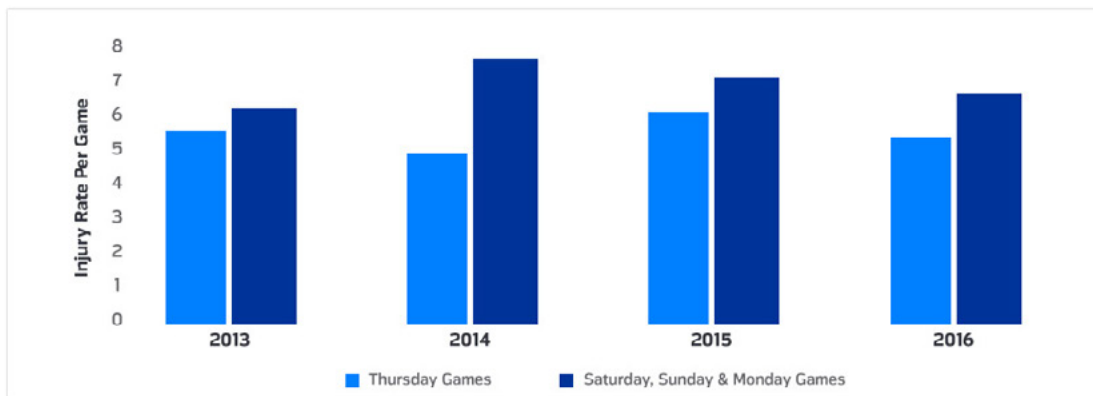
Year	Pre-season			Regular Season			Pre-Season + Regular Season		
	Practice	Game	Total	Practice	Game	Total	Practice	Game	Total
2012	19	26	45	9	77	86	28	103	131
2013	20	25	45	4	85	89	24	110	134
2014	16	22	38	3	98	101	19	120	139
2015	12	41	53	6	111	117	18	152	170
2016	16	21	37	3	103	106	19	124	143

### Injuries on Kickoff Returns 2013–2016

Injury Category	Kickoff Returns			
	2013	2014	2015	2016
Concussion	19	10	20	17
Hamstring Strain	27	37	11	13
ACL Tear	1	3	1	4
MCL Tear	3	4	3	5



#### Injury Rate by Day of Game 2013–2016



*"I was encouraged that the numbers are down, but I'm still far from satisfied. As a healthcare provider, I think one of our absolute highest priorities is to get these numbers further down."*

**Dr. Mitch Berger**, Professor and Chairman of the Department of Neurological Surgery at University of California, San Francisco  
Member of the NFL's Head, Neck and Spine Committee

## INTENSIVE MEDICAL COMMITTEE MEETINGS DURING THE NFL SCOUTING COMBINE

As college prospects are evaluated, leading experts examine the latest research to prevent and detect injuries



Specialists in a wide variety of disciplines relevant to player health and safety volunteer their time to explore groundbreaking research and make recommendations for how the League can continually improve the prevention, diagnosis and treatment of injuries as well as invest in scientific research to promote player health and safety.

The NFL medical committees meet throughout the year to review player health and injury data and determine what policies, programs and protocols should be adopted by the League and encourage areas of scientific research.

Each year during the NFL Scouting Combine in Indianapolis, the NFL medical committees meet to review the previous season and begin their work to prepare for the next year. These experts analyze injury data, discuss statistical trends and identify issues that need further examination or research. Representatives from the NFL Players Association participate on each medical committee and collaborate on these initiatives.

Based on their analysis, these committees offer recommendations to try to advance player safety by continually seeking to improve the prevention, diagnosis and treatment of injuries.

*"I've been a team physician for 22 years, and during the past three years I think I've seen a cultural change concerning concussions. Players are more likely to speak up if they believe they have a concussion."*

**Dr. Robert Heyer**, President of the NFL Physicians Society  
Team Internist for the Carolina Panthers

# NFL Medical Committee Structure

NFL Chief Medical Officer

Dr. Allen Sills

Health and Safety Committee

Dr. Elliott Hershman  
(Chairman)

Dr. Andrew Tucker  
(General Medical  
Committee)

Dr. Robert Anderson  
(Musculoskeletal  
Committee)

Dr. Ed Wojtys  
(Musculoskeletal  
Committee)

Dr. Allen Sills  
(NFL CMO; Head, Neck  
and Spine Committee)

Dr. John York  
(Owners' Health and  
Safety Advisory  
Committee)

Dr. Rob Heyer  
(NFL Physicians  
Society President)

James Collins  
(Professional Football  
Athletic Trainers  
Society President)

Dr. Thom Mayer  
(NFL Players Association)

## CONSULTANTS TO THE HEALTH AND SAFETY COMMITTEE

Dr. Jeff Crandall  
(Engineering  
Consultant)

Dr. Richard Kent  
(Engineering  
Consultant)

Dr. Nancy Dreyer  
(Epidemiologist,  
QuintilesIMS)

Dr. Christina Mack  
(Epidemiologist,  
QuintilesIMS)

Dr. Lawrence Brown  
(Drug Policy  
Advisor)

Dr. John Lombardo  
(Drug Policy  
Advisor)

General Medical Committee

Dr. Andrew Tucker  
(Chairman)

Dr. Deverick Anderson  
(Infectious Disease)

Dr. Doug Casa  
(Environmental Medicine)

Dr. Rob Heyer  
(NFL Physicians Society President)

Dwight Hollier  
(Mental Health)

Dr. Patrick Strollo  
(Sleep Medicine)

Dr. Robert Vogel  
(Cardiovascular)

Jim Whalen  
(Athletic Trainer)

Dr. Thom Mayer  
(NFL Players Association)

Head, Neck and Spine Committee

Dr. Allen Sills  
(NFL CMO, Interim Chairman)

Dr. Julian Bailes

Ronnie Barnes

Dr. Mitch Berger

Dr. Javier Cardenas

James Collins  
(Professional Football Athletic  
Trainers Society President)

Dr. Rob Heyer  
(NFL Physicians Society President)

Dr. Wellington Hsu

Dr. Russell Lonser

Dr. Elizabeth Pieroth

Dr. Margot Putukian

Dr. Nicholas Theodore

Dr. Thom Mayer  
(NFL Players Association)

## CONSULTANTS TO THE HEAD, NECK AND SPINE COMMITTEE:

Dr. Robert Cantu  
(Consultant)

Dr. Joseph Maroon  
(Consultant)

Musculoskeletal Committee

Dr. Robert Anderson  
(Co-Chairman)

Dr. Ed Wojtys  
(Co-Chairman)

Dr. Asheesh Bedi  
(Hip)

Dr. Robert Brophy  
(Knee)

James Collins  
(Professional Football Athletic  
Trainers Society President)

Dr. Mike Coughlin  
(Foot and Ankle)

Dr. Rob Heyer  
(NFL Physicians Society President)

Dr. Thomas Hunt  
(Hand and Wrist)

Dr. William Levine  
(Shoulder)

Joe Skiba  
(Equipment Manager)

Dr. Kurt Spindler  
(Research Methodology)

Dr. Thom Mayer  
(NFL Players Association)



# GAME DAY RULES

## The latest rules changes intended to reduce the risk of injuries

At the 2017 Annual League Meeting in March, NFL clubs voted to make additional rules changes intended to protect the health and safety of players. These recommendations were proposed by NFL clubs and players, and analyzed in detail by the NFL Competition Committee, a group that met intensively after the Super Bowl to analyze film, review injury statistics and discuss player safety with physicians, safety experts and advocates, including the NFL medical committees and the NFL Players Association.

**The League has made 47 health and safety-related rules changes since 2002.**

**Rules changes for the 2017 season include:**



Prohibiting the "leaper" block attempt on field goal and extra point plays.



Extending the rule moving the touchback to the 25-yard line for another year.



Giving a receiver running a pass route defenseless player protection.

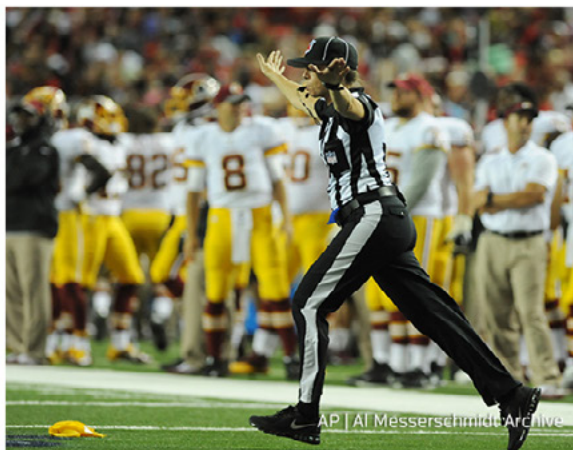


Prohibiting crackback blocks by a backfield player who is in motion, even if he is not more than two yards outside the tackle when the ball is snapped.

### Other Changes Seeking to Better Protect Players:



For the 2017 season, the clubs also agreed on certain officiating changes. This includes a point of emphasis on forcible hits to the quarterback—a defensive player cannot "wrap" a quarterback at the knee area or below to bring him down.



On flagrant hits, a player not only may be ejected immediately for a flagrant hit, but now may be suspended by the League office, even in the case of a first-time offender.



# GAME DAY CONCUSSION PROTOCOL

The NFL's concussion protocol is a step-by-step guide for all medical professionals when they are identifying, diagnosing and managing player concussions.

The first version was developed in 2011 by the NFL Head, Neck and Spine Committee, a board of independent and NFL-affiliated physicians and scientists, including advisors for the NFL Players Association (NFLPA). The concussion protocol is reviewed each year to ensure players are receiving care that reflects the most up-to-date medical consensus on the identification, diagnosis and treatment of concussions.

The 2017 NFL Concussion Diagnosis and Management Protocol and the corresponding "Concussion Game Day Checklist" have been adapted from the 2017 Berlin Conference on Concussion in Sport.

To ensure consistent implementation of the protocol, the NFL and NFLPA have developed an enforcement policy. The NFL and NFLPA follow a strict and fair process to investigate incidents and determine appropriate discipline, including club fines and possible forfeiture of draft picks, for clubs that fail to follow the NFL Game Day Concussion Protocol.

## A Guide to the: NFL's Concussion Protocol



### View the Game Day Concussion Protocol Checklist & Video:

<https://www.playsmartplaysafe.com/newsroom/videos/nfl-head-neck-spine-committees-concussion-protocol-overview/>

## GAME DAY HEALTHCARE: PROVIDER TRAINING SESSIONS

### Strengthening coordination and care on NFL sidelines

Sideline medical professionals—including members of club medical staffs responsible for the diagnosis and treatment of concussion and the UNCs and Booth ATC Spotters—along with NFL Players Association representatives and League officials met together in New York prior to the season for training sessions.



James Collins, Head Athletic Trainer for the Los Angeles Chargers and President of the Professional Football Athletic Trainers Society (PFATS).

The program included remarks from Commissioner Goodell, team physicians, ATCs, game officials, the NFL Players Association and League executives, and covered a variety of topics including changes to the concussion protocol, the new medical sideline tent, and communications systems and reporting tools.

Dr. Allen Sills, the NFL's Chief Medical Officer, led the sessions to review the latest protocols and train for the upcoming season.

*"It's all about being on the same page. That's how we provide the best care for our players."*

**James Collins**, Head Athletic Trainer for the Los Angeles Chargers  
President of the Professional Football Athletic Trainers Society



## The Team Behind the Team

An accomplished group of healthcare professionals are on hand at every NFL game

There is a specialized squad of medical professionals, including team physicians and athletic trainers, and unaffiliated medical personnel that watches the field for potential injuries and is available to provide immediate care to players at every NFL game. In conjunction with the NFL Players Association, the League has updated the sideline medical technology, which now includes tablets with specially designed applications for injury diagnosis. Every club's medical staff has instant access to their players' complete medical records via the Electronic Medical Record (EMR) system.

### ON AVERAGE, EACH TEAM HAS



**4 ATHLETIC TRAINERS**  
Assess and treat player injuries in conjunction with team doctors



**2 PRIMARY CARE PHYSICIANS**  
Evaluate players for general medical conditions and concussions



**2 ORTHOPEDISTS**  
Evaluate and treat players for injuries to the bones and joints



**1 UNAFFILIATED NEUROTRAUMA CONSULTANT**  
Evaluates players for possible head injuries and concussions



**1 CHIROPRACTOR**  
Provides back/spinal adjustments for players and treats muscular injuries

### STADIUM MEDICAL TEAM



**1 OPHTHALMOLOGIST**  
Treats eye injuries



**1 RADIOLOGY TECHNICIAN**  
Takes x-rays of injured players at the stadium



**1 DENTIST**  
Treats dental issues



**2 EMTS/PARAMEDIC CREW**  
Transport players to hospital in the event of serious injuries



**2 INDEPENDENT ATHLETIC TRAINERS**  
Notify on-field medical staff of possible injuries from press box. The independent AT spotters can call a medical timeout to stop the game to have a player receive medical attention



**1 AIRWAY MANAGEMENT PHYSICIAN**  
Provides emergency intubation to severely injured, non-breathing players



**1 VISITING TEAM MEDICAL LIAISON**  
Local emergency physician certified to practice medicine in the state where the game is being played. The VTML works with the team to provide access to care, medication and first-rate medical facilities

## GAME DAY EQUIPMENT: SIDELINE EXAMINATION TENTS

The debut of an important tool for doctors and trainers to evaluate players after an injury



The NFL continues to transform its sidelines to help better protect players. New this season, NFL sidelines now feature medical examination tents. The mobile tents can help doctors and trainers immediately evaluate players in private following an injury.

Each unit takes just a few minutes to assemble and requires no special tools. NFL teams are required to position tents either inside a team's bench area or adjacent to the bench area.

These SidelineER tents have been added in collaboration with the NFL Players Association and approved by both the NFL Physicians Society and the Professional Football Athletic Trainers Society.

The University of Alabama first used medical examination tents in 2015. Today, SidelineER tents are used by more than 70 college, high school, and professional football teams. They have also been used for other sports, including gymnastics, basketball, golf, lacrosse, rugby, soccer and track.

*"The medical tent is not meant to replace the locker room evaluation, but rather to provide a more private and structured place to do examinations of a variety of injuries that are currently done on the sideline."*

**Dr. Allen Sills**, NFL Chief Medical Officer

## EXPERT-DRIVEN REVIEWS HELP NFL PLAYERS MAKE INFORMED DECISIONS

### Player Equipment: Helmets

The NFL and NFL Players Association, through their respective biomechanical experts, coordinated laboratory testing on helmets available to be worn by NFL players in advance of the 2017 season. The results are displayed on the NFL/NFLPA 2017 Helmet Laboratory Testing Performance Results Poster and are shared with players, club equipment managers, medical and coaching staffs. This is just one component of an NFL player's comprehensive assessment when selecting a helmet; other factors include discussions with the team equipment manager and medical staff, as well as helmet fit, player position and the player's medical history.

The goal of the testing is to determine which helmets best reduced head impact severity under conditions simulating certain potential concussion-causing impacts sustained by NFL players during games, so the conclusions on helmet performance cannot be extrapolated to collegiate, high school or youth football.

This year's testing involved 33 helmet models available as of March 2017. A survey of helmets used by NFL teams was also conducted to ensure that the helmet models most commonly used by players were included in the testing, including models that have been discontinued but can be reconditioned and worn up to 10 years after the manufacture date. Seven of the 14 helmets in the top-performing group are new this year, including the VICIS Zero1, which was one of three winners in Head Health Challenge II—part of the Head Health Initiative, a four-year, \$60 million collaboration between the NFL, GE and Under Armour. Since these helmets have not previously been worn by NFL players, there is no field experience with these designs.



<https://www.playsmartplaysafe.com/resource/helmet-laboratory-testing-performance-results/>



# A COMMITMENT TO FORMER PLAYERS

The League is committed to supporting its players—whether rookies, veterans or retired greats—through a lifetime of health and opportunity beyond football.

**Healthcare, education and career benefits are offered to players and their loved ones by both the NFL and the NFL Players Association. Eligible former players receive support throughout their lives from a range of resources tailored to promote their long-term well-being. These include:**



## Neurological Care Benefit

The NFL has contracted with top medical centers around the country that have special expertise to provide access, evaluation and possible treatment for all eligible retired players.



## Long-Term Care Insurance

Players 50 or older are eligible to receive long-term care coverage at no cost to them if they meet the underwriting requirements of the insurance provider and are approved. This coverage provides financial support for eligible players if they require long-term medical assistance at home, in the community, in assisted living or in nursing homes.



## Joint Replacement Benefit

The NFL provides as much as \$5,250 per player to cover healthcare items or services directly related to knee, hip or shoulder replacement surgery. In addition, the NFL Player Care Foundation provides grants to assist eligible players in need, up to and including the cost of the replacement surgery.



## NFL Life Line

This 24/7 service is a free, independent and confidential phone consultation hotline available to former players, their wives and other family members who may need assistance with matters such as spousal and child safety, mental and physical health, lifestyle and transition in post-NFL life.

Information on additional resources can be found here: <https://www.playsmartplaysafe.com/resource/nfl-benefits>



## The NFL Player Care Foundation

Established in 2007, the NFL Player Care Foundation (PCF) is an independent organization dedicated to helping retired players improve their quality of life. PCF addresses all aspects of life by providing programs and assistance with medical, emotional, financial, social and community issues. <http://www.nflplayercare.com>



*"We are eager to continue our ongoing commitment to support former players through a variety of programs, from pension and other post-retirement financial benefits to life insurance and savings plans to health benefits and counseling services."*

**NFL Commissioner Roger Goodell**

AP | Aaron M. Sprecher



# Sharing Progress

The NFL shares its learnings across all levels of football—and to other sports and society at large.



## OVERVIEW

The NFL's commitment to player health and safety spans all levels and all sports. The knowledge that is gained at the professional level to improve safety must, when applicable, be applied at all levels and beyond football. Across the country, the NFL and its various partners, including USA Football, the National Athletic Trainers' Association, the Korey Stringer Institute and the Professional Football Athletic Trainers Society, are sharing best practices and recommendations with coaches, parents and players about contact restrictions, safety protocols and the importance of athletic trainers on the

**"The NFL is committed to enhancing the safety of football at all levels."**

**NFL Commissioner Roger Goodell**



AP | Larry French

## COMMUNITY TOUCHPOINTS: MORE ATHLETIC TRAINERS

### Expanding student athletes' access to an important resource

Financial realities mean many schools do not have access to an athletic trainer. Nearly two-thirds of high schools lack a full-time athletic trainer, and nearly 30 percent have no athletic trainer at all, according to the AT Benchmark Study released by the National Athletic Trainers' Association (NATA) and the Korey Stringer Institute (KSI).

The NFL Foundation is addressing this need. In 2014, the NFL Foundation established a grant program designed to work with NFL clubs to increase access to athletic trainers in their communities. To date, 22 NFL clubs have utilized this grant to support local schools and leagues. Last year, the NFL Foundation—joined by the National Athletic Trainers' Association and Gatorade—expanded this effort through a contest open to high schools nationwide. 15 high schools received funding to hire an athletic trainer.



Most recently, the NFL Foundation, in collaboration with Gatorade, the National Athletic Trainers' Association, the Korey Stringer Institute and the Professional Football Athletic Trainers Society, announced a pilot program to award grants to public high schools in four states—Arizona, Illinois, Oklahoma and Oregon. Each grant is in the amount of \$35,000, awarded over a three-year period to fund an athletic training program. 75 schools received this grant to enhance sports health and safety for student athletes this year.



## 4 STATES PARTICIPATING

Arizona, Illinois, Oklahoma and Oregon



## 75 GRANTS

for public high schools



## \$35,000 IN GRANT FUNDING

awarded over a three-year period

# COMMUNITY TOUCHPOINTS: USA FOOTBALL

Four years ago, USA Football—supported by a \$45 million grant from the NFL Foundation—launched Heads Up Football, an educational outreach program that aims to improve player safety for youth and high school players.

Heads Up Football strives to improve player safety for youth and high school players by training and certifying coaches on safety fundamentals; teaching proper tackling and blocking techniques; appointing Player Safety Coaches for every youth league to enforce safety protocols; ensuring proper equipment fitting; and teaching coaches, parents and players how to recognize and respond to injuries, including concussions.

USA Football's Heads Up Football program eclipsed **10,000 youth league and high school enrollments for the first time in 2017**, marking an important milestone in the sport's commitment to player safety.

## Heads up Football (HUF)



**Coaching Certification:** HUF maintains the sport's only nationally accredited courses with content created by football experts and health professionals.



**Concussion Awareness:** HUF has partnered with organizations such as the CDC to develop resources to help coaches and parents become educated on what to look for on the field and to encourage attention to concussion symptoms.



**Equipment Fitting:** HUF teaches coaches, players and parents how to properly fit helmets and shoulder pads for higher levels of safety. Improperly fitted equipment can place an athlete at greater risk of injury.



**Heads Up Tackling and Blocking:** HUF employs two five-step series that teach the fundamentals to address proper tackling and blocking techniques with a focus on reducing helmet contact.



**Player Safety Coach:** HUF trains Player Safety Coaches to ensure compliance with core HUF health and safety protocols, including coaching certification and conducting safety clinics for coaches, parents and players.



**Heat and Hydration:** HUF deploys targeted education for coaches and parents to increase prevention, recognition and basic treatment of athletes for heat-related illnesses.



**Sudden Cardiac Arrest:** HUF has recently included sudden cardiac arrest protocols as part of the program. Sudden cardiac arrest is the leading cause of young athlete fatalities during exercise across all sports.



## Preeminent leadership for the governing body of amateur football

Retired Army General and Former Army Chief of Staff Ray Odierno was named the new chairman of USA Football this year.

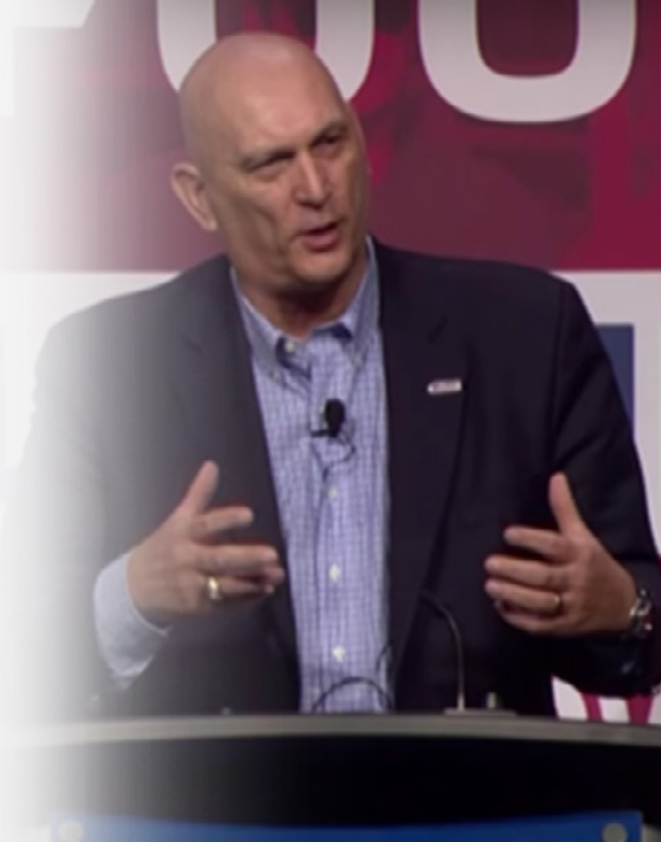
At the organization's 2017 national conference, he challenged attendees to "be part of a new wave of encouraging and talking about football, and what it brings to the local community and what it means to our nation—a smarter, safer game with the same competitive spirit, which we have come to love about this game."

The USA Football National Conference was held during Pro Bowl week in Orlando, FL, for the first time. This year, beyond in-game strategies, the conference aimed to empower coaches and other youth football leaders as they implement top safety recommendations for their teams and programs.

"I owe a lot to this game. Football developed in me the characteristics and the fortitude that I needed. But just as important, it gave me an opportunity I never would have had, to attend the United States Military Academy."

**Ray Odierno**

Retired Army General and Former Army Chief of Staff



## THE NATIONAL FOOTBALL LEAGUE FOUNDATION

The NFL Foundation is a nonprofit organization dedicated to improving the lives of those touched by the game of football—from its players at all levels to communities across the country. The NFL Foundation represents the 32 NFL clubs. It makes grants directed at supporting the health, safety and wellness of athletes, youth football and the communities that support the game.



### Improved fields in underserved areas

In 2016, the NFL Foundation Grassroots Program, a partnership between the NFL Foundation and the Local Initiatives Support Corporation, provided grants to 17 cities to improve the quality, safety and accessibility of football fields in underserved areas.

**GRANTS TOTALED  
\$3,050,000  
TO BUILD  
OR REFURBISH  
NEIGHBORHOOD  
FOOTBALL FIELDS.**

**SINCE 1998, THE  
NFL FOUNDATION  
HAS PROVIDED  
\$55 MILLION  
TO REVITALIZE  
482 FIELDS  
FOR YOUTH  
ATHLETICS.**



# USA Football



## GRANT PROGRAMS

The NFL Foundation supports USA Football and its efforts in providing youth and scholastic programs with financial help through a variety of grant programs for equipment, fields and Automated External Defibrillators (AEDs).



## NFL FLAG

NFL FLAG Kits were distributed to an additional 4,700 schools nationwide, reaching approximately 2.6 million new students this year. The NFL FLAG-In-Schools Program aims to increase physical activity of youth by providing flag football resources to underserved communities.



## HEADS UP FOOTBALL

USA Football's Heads Up Football program eclipsed 10,000 youth league and high school enrollments for the first time in 2017, marking an important milestone in the sport's commitment to player safety.



*"There is no higher priority for the NFL than player health and safety. We continually seek to raise our standards and then surpass them."*

NFL Commissioner Roger Goodell

