

— OVERVIEW



Moving player health
and safety forward

PLAYER HEALTH AND SAFETY REMAINS THE NFL'S HIGHEST PRIORITY

Through innovations in technology, engineering and biomechanics, the league is leading the charge for a safer tomorrow.

[see what's new in 2019](#)

Advancing protective equipment with science

As part of the NFL's Play Smart, Play Safe, initiative, the NFL 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 and universities to develop and commercialize new and improved protective equipment, including helmets.



“We are beginning to see the benefits of providing the capital and driving innovation in protective equipment, and we look forward to the progress yet to come.”

-JEFF MILLER

NFL Executive Vice President of Player Health and Innovation



New impact-monitoring mouth guards

As part of the Engineering Roadmap, the league's engineers are utilizing a new sensor technology to gauge head impacts by severity and location, among other metrics. For the first time, players from four NFL teams are wearing mouth guards with sensors embedded in them in a pilot study. The sensors measure the magnitude of the impacts, the direction they come from and their frequency.

Over time, the data collected by these mouth guards will provide important information about player injuries and impacts on the field with the aim to improve protective equipment design and athlete safety.

The NFL's 2019 HeadHealthTECH challenge winners

The NFL's HeadHealthTECH Challenges are a series of grant competitions that attract proposals from innovators interested in creating the next generation of protective equipment. As part of the Engineering Roadmap, up to three HeadHealthTECH Challenges are offered annually. Last year's winners included:



CARDIFF
UNIVERSITY



 **windpact**



 **Audyne**

A new competition to inspire new helmet designs

This year, the NFL announced the next phase in the league's Engineering Roadmap the NFL Helmet Challenge - an innovation challenge that aims to stimulate the development by experts, innovators and helmet manufacturers of a new helmet for NFL players that outperforms, based on laboratory testing, all helmet models currently worn by NFL players. Up to \$3 million will be available in the Challenge, including \$2 million in grant funding to support the development of a helmet prototype and a \$1 million award for the winning design. The Challenge will culminate in July 2021 with the applicants submitting helmet prototypes for testing in laboratory conditions that represent potentially concussive impacts in the NFL.



Helping players make smart equipment choices

In April 2019, the NFL and the NFL Players Association announced the results of a study to assess the laboratory performance of football helmets worn by NFL players. The results were then shared with NFL players, club equipment managers and club medical, training and coaching staffs to help the players make educated equipment choices.



“Each year, our engineers from the Players Association and the NFL test helmets in the lab to see how they perform, and we think getting players into better-performing helmets is an important step.”

-DR. ALLEN SILLS

NFL Chief Medical Officer



By the end of the 2018 season, 74% of players wore top-performing helmets. In the 2019 season, 99% of players are wearing ‘green’ helmets – or the best-performing helmets. The remaining 1% – or 13 players – are in helmets in the ‘yellow’ category.



Helping players choose the best footwear for the field

After coordinating extensive research on athletic shoe safety and performance, the NFL Musculoskeletal Committee released the results of an annual laboratory test that assesses the performance of football cleats. This is one more tool provided to players and club medical, training, coaching and equipment staffs to help players make informed footwear decisions on the field.

1ST & FUTURE

Inspiring innovation through healthy competition

1st & Future is the NFL's annual Super Bowl competition designed to spur innovation in player health, safety and performance. The 4th annual NFL 1st & Future competition was presented by Arrow Electronics and hosted at Georgia Institute of Technology in Atlanta, Georgia on February 2, 2019, the day before Super Bowl LIII.



The event featured two categories of competition, including a groundbreaking new effort to ask the public to analyze NFL rules and make recommendations on ways to reduce high incidences of injury. Specifically, the NFL Punt Analytics Competition provided applicants with access to exclusive NFL data sets to inform creative submissions about rule changes designed to reduce player injury during punt plays.

Meet the 2019 1st & Future winners



Innovations to Advance
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NFL Punt Analytics

Alex Wainger (New York, New York) proposed removing the 45-year-old rule that holds the kicking team on the line of scrimmage until the punt. Halla Yang (Wilmette, Illinois) proposed awarding a five-yard bonus on a fair catch, changing the allowed coverage on receptions, and requiring helmet sensors that can directly monitor physical deceleration.



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“Leveraging available data to analyze the game is an increasingly essential way to improve our rules and look to make the game safer.”

-JEFF MILLER

NFL Executive Vice President of Player Health and Innovation