



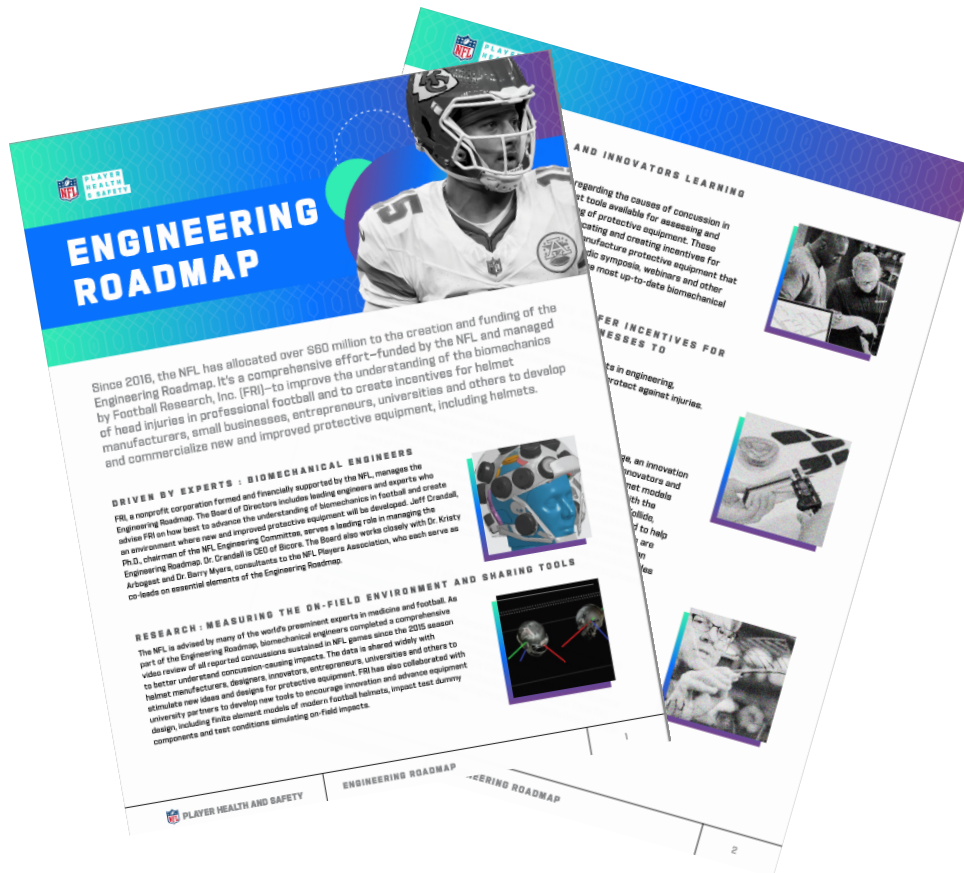
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NFL Engineering Roadmap

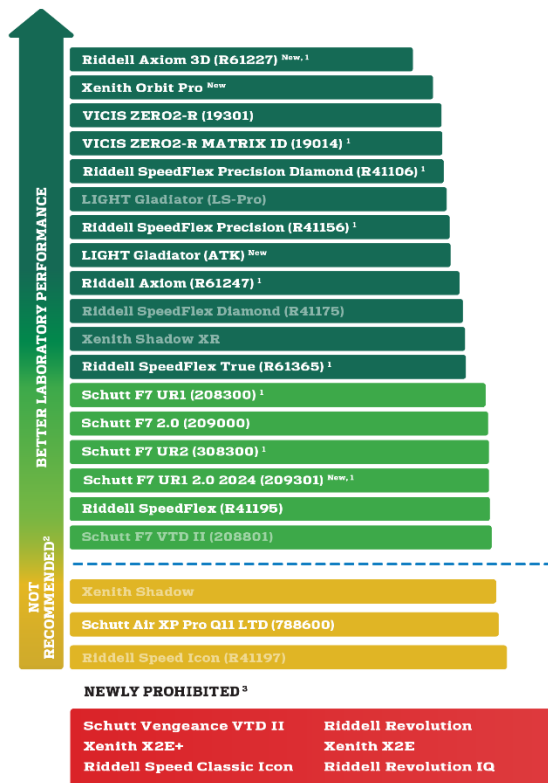
Using innovation to drive progress toward better protective equipment.



- **Driven by Experts** – Biomechanical Engineers
- **Research** – Measuring the On-Field Environment and Sharing Data & Tools
- **Education** – Experts and Innovators Learning From Each Other



2024 HELMET LABORATORY TESTING PERFORMANCE RESULTS



THE NFL, IN COLLABORATION WITH THE NFLPA, THROUGH THEIR RESPECTIVE APPOINTED BIOMECHANICAL EXPERTS, ANNUALLY COORDINATE EXTENSIVE LABORATORY RESEARCH TO EVALUATE WHICH HELMETS BEST REDUCE HEAD IMPACT SEVERITY. THE RESULTS OF THOSE TESTS, WHICH ARE GENERALLY SUPPORTED BY ON-FIELD PERFORMANCE, ARE SET FORTH ON THIS POSTER.

The helmet models are listed in order of their performance, with a shorter bar representing better performance. The rankings are based exclusively on the ability of the helmet to reduce head impact severity measures in laboratory testing. Performance variation related to helmet fit, retention, temperature-dependence, and long-term durability are not addressed in these rankings.

All helmets in green are recommended for use by NFL players. These top-performing helmets performed similarly to top-ranked helmets based on a statistical grouping analysis. Helmets with poorer laboratory performance were placed in the Not Recommended (yellow) or Prohibited (red) groups. Yellow helmets are not permitted for new players and players who did not wear them during the 2023 season. Red helmets are prohibited for all players.

The laboratory test conditions were intended to represent potentially concussive head impacts in the NFL. The results of this study should not be extrapolated to collegiate, high school, or youth football.

¹Actual performance and ranking may vary since these helmets are customized for each player's head shape.

²These helmets are not permitted for new players and players who did not wear them during the 2023 NFL season.

³Together with a list of previously-prohibited helmets, these helmets are prohibited for all players.

Note: Models worn by less than 1% of NFL players are greyed-out.

POSITION-SPECIFIC HELMET TESTING



This year, top-performing helmets were evaluated using position-specific test methodologies for quarterbacks, and offensive and defensive linemen. Position-specific helmet rankings are available at this link.





Working with Manufacturers

Forbes

NFL's Safest Helmets Absorb Impact
With 3D Printing Instead Of Foam

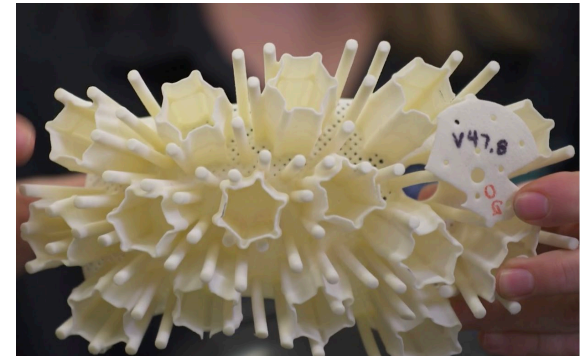
Riddell

LIGHTTM
H E L M E T S

X
XENITH

V
VICIS

Stimulating the Marketplace





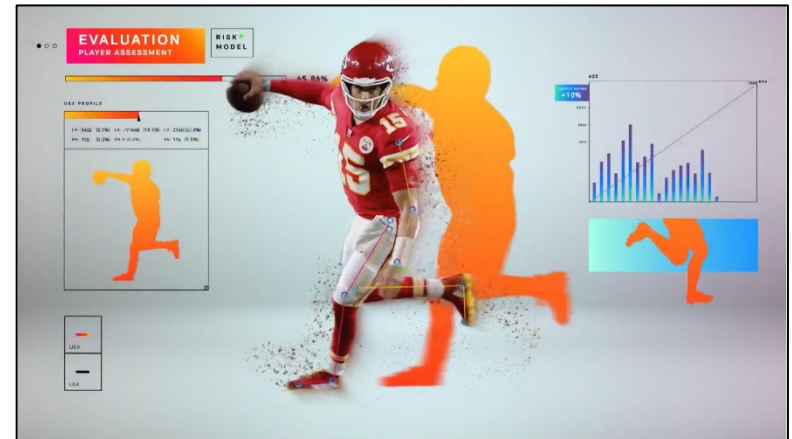
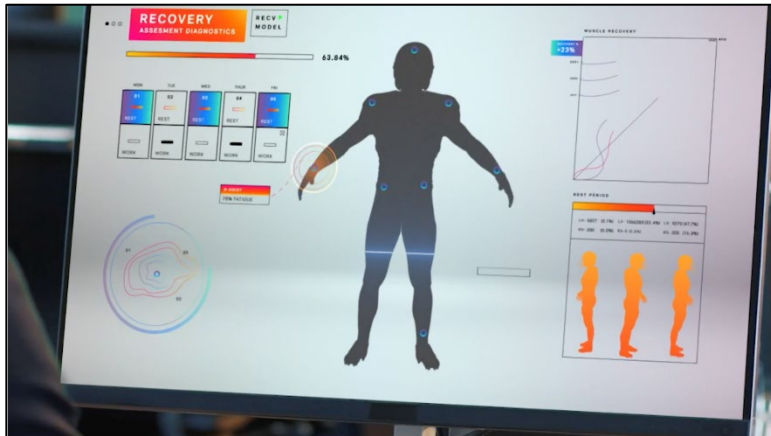
Benefits & Takeaways

- In 2023, improvement increased 9x since testing began in 2015
- Concussions have decreased and rates stabilized
- Twelve new helmet models; highest ever submitted for NFL testing
- 8 new models are position specific – QBs, OLs, DLs
- Education is a catalyst to player adoption of the new helmets



New Era of Injury Prevention

NFL radically revamps kickoff rules to improve safety, but also increase 'exciting, fun play'



NFL Estimates Kickoff Rule Change Will Lead to 50-60% Returns; Up from 22% in 2023





Looking Ahead

Sharing NFL-generated insights and collaborating with other organizations and industries to advance head injury detection, prevention and protection.

- Military organizations, auto safety, hospitals and physical therapy centers, employee safety.
- Other sports – Rugby, soccer, hockey, lacrosse.
- Football at all levels – Collegiate, high school, and youth football.