
An Investigation of Overbuilt Football Helmet Faceguards
FINAL REPORT
(6/10/2014)

**Conducted by The University of New Hampshire for
The National Football League**

Prepared by:

Erik E Swartz, PhD, ATC, FNATA
Member- NFL Head, Neck, and Spine's Safety Equipment and Rules Subcommittee
Professor, Chair-Elect Department of Kinesiology, University of New Hampshire

Executive Summary

Two styles of an overbuilt football helmet facemask were subjected to a mixed methods investigation to explore their effects on multiple factors related to their use during participation in football. The results of this research indicate that overbuilt facemasks should not be recommended for use during football due to four primary concerns. Specifically:

- 1) The added weight and more robust construction of the masks appears to negatively affect the structural integrity of the helmet during impact certification tests.
- 2) The added weight of the masks acts to shift the head's center of gravity forward. This could have a tendency to fatigue the neck extensors and result in a head-down posture during contact and tackling. The added weight increases the head's effective mass and may increase rotational acceleration following impact.
- 3) The additional, smaller spaces created in the mask increase the risk of another player's finger getting incidentally caught between the wires, potentially causing a serious hand injury of the opponent as well as a neck injury of the wearer.
- 4) The additional material may negatively affect a player's behavior during contact and tackling due to an added false sense of security.

In summary, while it might seem logical that adding additional bars to a football facemask would make it more protective, our research suggests that overbuilt facemasks could actually increase the risk of injury to both the player wearing it as well as to other players on the field.