

Protecting and Promoting the **Health of NFL Players:**

Legal and Ethical Analysis and Recommendations

Chapter 16

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Equipment Manufacturers

One major strategy for protecting and promoting player health is to offer them the appropriate type and amount of injury-reducing equipment. For this reason, equipment manufacturers play an important role in player health.

In order to ensure that this chapter was as accurate and valuable as possible, we invited two leading equipment manufacturers, Riddell and Schutt, as well as the National Operating Committee on Standards for Athletic Equipment (NOCSAE), described below, to review a draft version of this chapter prior to publication. All three reviewed the chapter and provided comments.



(A) Background

The football equipment market is dominated by Riddell and Schutt, each of which hold at least a 45 percent share of the football equipment market,¹ across all levels of football. Riddell and Schutt offer all pads necessary for the game of football, including but not limited to helmets, faceguards, chin straps, mouth guards, shoulder pads, hip pads, thigh pads, knee pads, and rib pads.² Adams, another manufacturer of football equipment, was sold to Schutt's parent company, in 2014.³ Additionally, Rawlings, also once a manufacturer of football equipment, announced in 2015 that it was leaving the market.⁴ Xenith is seemingly one of the lone competitors left to Riddell and Schutt, though it only manufactures helmets and shoulder pads.⁵

The equipment manufacturers have not surprisingly had important interactions with the NFL. In 1988, the NFL and Riddell entered into an agreement without duration whereby Riddell provided free helmets, pads, and jerseys to all NFL clubs in exchange for Riddell receiving the exclusive right to display its logo on NFL helmets.⁶ Players were still nonetheless free to wear a helmet from any manufacturer, provided it met NFL standards.⁷ Schutt unsuccessfully challenged the NFL-Riddell agreement as a violation of antitrust laws.8 After litigation was initiated against both the NFL and Riddell concerning concussions (see Chapter 7: The NFL and NFLPA), the NFL renegotiated the agreement to conclude with the 2013 season.9 Following the expiration of NFL's deal with Riddell, the NFL said it would no longer have an official helmet sponsor.¹⁰ Similarly, the NFL does not have an official equipment sponsor. Players are permitted to wear whatever equipment they like, provided it meets NOCSAE standards, as will be discussed below.

For many years, the helmet manufacturers have attempted to develop helmets that reduced the risks of concussions and market them accordingly—even though it is questionable to what extent helmets can actually reduce the risk of concussions.¹¹ In comments provided after reviewing a draft of this chapter, Schutt CEO Robert Erb described the challenges of reducing the incidence of concussion as follows:

[W]hat is happening inside the skull, with the brain suspended in cerebrospinal fluid, is an extraordinarily complex event. There is an infinite array of possible trajectories and circumstances at the point of impact in a game of football, including field conditions, position played, girth and length of neck, medical history, whether one saw the hit coming, temperature, altitude, genetic make-up, area struck, type of turf, helmet implements and accessories, mass, speed, velocity of impact, fit of the helmet, etc., etc.

Indeed, the competition in the equipment manufacturer industry and the concerns about concussions have made the equipment manufacturing industry a challenging landscape. Riddell's development and marketing of the Revolution football helmet is a helpful example.

In 2002, Riddell provided a grant to be used to partially fund a study at the University of Pittsburgh Medical Center (UPMC) of Riddell's recently released Revolution helmet.¹² The study was designed to compare the concussion rates and recovery times for athletes wearing Riddell's Revolution helmet compared to athletes wearing older model helmets manufactured by both Riddell and its competitors.¹³ The study was conducted by Micky Collins and Mark R. Lovell, co-owners of ImPACT, the leading concussion diagnostic tool which was used to measure recovery time from concussion during the study.¹⁴

The study took three years and examined 2,141 high school football players: 1,173 using Revolution helmets and 968 using other helmets.¹⁵ The authors found 5.3 percent of players using Revolution helmets suffered concussions as compared to 7.6 percent of players using other helmets.¹⁶ The authors described the difference as "statistically significant" and said the results "demonstrated a trend toward a lowered incidence of concussion" but that the "limited sample size precludes a more conclusive statement of findings at this time."¹⁷ The study also highlighted that there was a 31 percent decreased relative risk for athletes wearing the Revolution helmet, comparing the 5.3 percent and 7.6 percent concussion rates.^{18,a}

Riddell seized on that last statistic and began to advertise that the Revolution helmet reduced the risk of concussion by 31 percent.¹⁹ Although this percentage improvement is technically accurate, the more relevant number in practice (or to players) is likely the absolute reduction in concussion rates, which was only 2.3 percent. Riddell also expanded the claim to all of its helmets even though they had not been a part of the study.²⁰

As part of a patent lawsuit brought by Riddell against Schutt, Schutt counterclaimed, alleging Riddell had violated state and federal false advertising laws by claiming that

a When providing comments for this Report, Riddell highlighted the fact that the UPMC study authors extrapolated that, if 1.5 million high school students participate in football each year, the risk reduction found with the Revolution helmet could theoretically mean 18,600–46,500 less concussions per year. Letter from Brian P. Roche, General Counsel, Riddell, Inc., to authors (Apr. 28, 2016) (on file with authors).

Revolution helmets decreased the risk of concussion by 31 percent.²¹ The United States District Court for the Western District of Wisconsin ultimately granted Riddell summary judgment,^b finding that Riddell's claim that "technology" used in its helmets had been "shown to reduce the incidence of concussion" was not "literally false" as required to state a claim.²²

The 31 percent statistic has also been the subject of other litigation. In at least three cases brought by consumers (none of whom were NFL players), the plaintiffs alleged that Riddell's use of the 31 percent figure was misleading.²³ All three cases are ongoing as of the date of publication.²⁴ In two court decisions thus far, courts found that the 31 percent statistic could be considered misleading if it was used in advertising helmets that were not involved in the UPMC study.²⁵

However, Riddell's claims also caught the attention of the Federal Trade Commission (FTC). The FTC investigated Riddell and concluded that the UPMC study "did not prove that Revolution varsity football helmets reduce concussions or the risk of concussions by 31%."²⁶ The FTC nevertheless did not sanction Riddell since the company had already discontinued using the 31 percent statistic in marketing.²⁷ According to Riddell, it ceased using the statistic because it was no longer relevant—the helmets that the Revolution helmet had been compared to in the UPMC study "had largely been phased out of the market."²⁸

Notwithstanding the FTC's conclusion about Riddell's characterization of the UPMC study, the Revolution helmet has in other research been shown to reduce the risk of concussions as compared to older model helmets. A 2014 study determined that 2.82 percent of a population of college football players wearing a Revolution helmet suffered a concussion, as compared to 4.47 percent of players using an older Riddell model.²⁹ The study, like the UPMC study, found this difference to be statistically significant.³⁰

Perhaps counterintuitively, there has been an ongoing debate about whether the best way to improve player health is for players to wear *less* equipment. Coaches, commentators and others have long lamented that the helmet and shoulder pads are often used as a weapon by would-be-tacklers, offering the first and hardest blow to ball carriers.³¹ Although the NFL has recently increased the penalties for plays on which a player delivers a forcible blow with the top or crown of the helmet,³² the helmet arguably still

provides players with a level of protection that enables them to play the game with a degree of reckless abandon.³³

A recent rule changes provides a relevant example. In 2013 the NFL reinstated a rule requiring players to wear thigh and knee pads.³⁴ One might then have expected a reduction in contusions to the hips, thighs and knees that season. However, no such reduction occurred. During the 2013 season, there were 61 reported contusions to these areas.³⁵ In the four prior seasons, there was a mean of 55.75 contusions to these areas.³⁶ To be fair, this change was taking place simultaneously with other changes, confounding any strong causal inference, but it does give a reason to resist the assumption that more equipment necessarily equals fewer injuries.

Also of note, the NFL does not mandate the use of mouth guards,³⁷ despite some but still disputed evidence that mouth guards can help prevent concussions.³⁸

Attached as Appendix J is a timeline of equipment-related events and policies in the NFL.

B) Current Legal Obligations^c

The principal source of equipment manufacturers' legal obligations is products liability law.³⁹ Products liability is an area of tort law, which can vary from state to state. The American Law Institute publishes "Restatements of the Law," which are useful summaries of general principles about various areas of law. According to the Restatement of the Law Third, Torts: Products Liability, a manufacturer of consumer products, such as sports equipment, has a duty not to cause personal injury as a result of:

- selling or distributing products which contain manufacturing defects;⁴⁰
- selling or distributing products which are defective in design;⁴¹
- selling or distributing products without adequate instructions or warnings;⁴²
- 4. misrepresenting a material fact concerning the product;⁴³
- 5. failing "to provide a warning after the time of sale or distribution of a product if a reasonable person in the seller's position would provide such a warning";⁴⁴ and
- 6. failing to recall harmful products.45

b Summary judgment is "[a] judgment granted on a claim or defense about which there is no genuine issue of material fact and on which the movant is entitled to prevail as a matter of law." Black's Law Dictionary (9th ed. 2009).

c The legal obligations described herein are not an exhaustive list but are those we believe are most relevant to player health.

While the above list addresses an equipment manufacturers' principal legal obligations concerning player health, it is not an exhaustive list. For example, equipment manufacturers could potentially be subject to liability for common law fraud claims, for violating consumer protection statutes, or for misrepresenting their products.

Although every state legislature has passed a law concerning the treatment of concussions in youth athletes (*see* Part 7: Interested Parties, Section 3: Governments), there are no federal or state laws directly governing athletic equipment standards.⁴⁶

The safety standards for athletic equipment that currently exist are almost exclusively determined by the National Operating Committee on Standards for Athletic Equipment (NOCSAE). NOCSAE is a non-profit organization with the stated purpose of improving athletic equipment and reducing injuries through equipment standards.⁴⁷ NOCSAE was formed in 1969 in response to more than 100 high school and college football players killed by skull fractures and acute brain bleeding during the 1960s.48 NOCSAE's Board of Directors consists of representatives from the American Academy of Pediatrics, American College Health Association, American College of Sports Medicine, American Football Coaches Association, American Medical Society for Sports Medicine, American Orthopaedic Society for Sports Medicine, Athletic Equipment Managers Association, National Athletic Equipment Reconditioners Association, National Athletic Trainers Association, and the Sports & Fitness Industry Association.49

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Today, NOCSAE sets general safety standards for equipment in all sports while also providing specific guidance for baseball, softball, football, hockey, lacrosse, polo, and soccer.⁵⁰ Equipment manufacturers themselves and not NOSCAE are responsible for testing their equipment and evaluating compliance with the NOSCAE standards.⁵¹ Compliance with NOCSAE standards must then be confirmed by the Safety Equipment Institute, an independent organization that specializes in testing and certifying personal protective equipment.⁵² If the equipment complies, the equipment manufacturer may place a NOCSAE trademarked logo on the equipment indicating that it meets NOCSAE standards.⁵³

NOCSAE's funding is derived from manufacturers' use of the NOCSAE logo as a symbol of certification.⁵⁴ NOCSAE enters into licensing agreements with sports equipment manufacturers whereby the manufacturers are permitted to place the NOCSAE logo on its equipment provided the equipment meets NOCSAE's standards.⁵⁵ The licensing agreements also impose ongoing quality control and assurance requirements on the manufacturers.⁵⁶ If the equipment does not meet NOCSAE standards, then the manufacturer cannot use the NOCSAE logo, and presumably, NOCSAE does not receive any licensing money from the manufacturer.^d

Certainly a significant portion of NOCSAE's work has been related to football helmets and concerns about concussions. In reviewing a draft of this chapter, NOCSAE made three points it identified as framing its approach to these matters:

- 1. There is no concussion specific helmet standard in the world, in ANY activity, sport or otherwise.
- There is no scientific consensus as to what a concussion performance standard should incorporate as a pass/fail injury threshold.
- 3. Ethical standards for personal protective equipment must be based on consensus science, must be feasible and effective, and must not create a new risk of injury or increase the risk of injury in other areas.⁵⁷

NOCSAE has two standards relevant to football helmets. First, NOCSAE has a standard that governs helmets in sports generally, known as the ND001 standard.⁵⁸ Second, NOCSAE has a standard governing football helmets specifically, known as the ND002 standard.⁵⁹ The ND002 standard is subject to any changes made to the broader ND001 standard.⁶⁰ While some have suggested that NOCSAE's standards have not meaningfully changed over time,⁶¹ in reviewing this chapter, NOCSAE strongly disagreed.⁶²

d According to NOCSAE, since 1996 it has funded more than \$8 million of independent research at universities concerning equipment safety. Letter from Mike Oliver, Executive Director/General Counsel, NOCSAE, to authors (Apr. 28, 2016) (on file with authors).

Indeed, a review of the relevant standards demonstrates that the ND001 standard has been substantively revised 16 times since it was first published in 1973, and the ND002 standard has been revised 3 times since it split from the ND001 standard in 1998.⁶³ Nevertheless, we are not engineers or scientists and thus we cannot opine on the significance of these revisions. Finally, it is important to understand that NOCSAE's standards are performance standards—they measure the helmet's ability to withstand certain physical forces—they do not specify materials or design.⁶⁴

Under NOCSAE's standard, the football helmet is placed on a synthetic head model that is filled with glycerin and fitted with various measuring instruments. The head model fitted with the helmet is then dropped sixteen times onto a polymer anvil with two of the drops from a height of sixty inches onto six different locations of the helmet at varying temperatures determined by NOCSAE to simulate different potential game temperatures. After each drop a "Severity Index," which measures the severity of the impact absorbed by the head model at the moment of impact, is determined. Helmets are graded on a pass-fail basis, and the helmets that pass are those meeting an acceptable Severity Index.⁶⁵

In June 2014, NOCSAE proposed a new standard that would include rotational forces into the analysis for football helmets.⁶⁶ The proposed standard was open for comment through June 2015 with NOCSAE scheduled to vote on its adoption in 2016.⁶⁷ Again, we lack the scientific expertise to opine on the appropriateness of NOCSAE's standards.^e Nevertheless, a report by the National Academy of Sciences on youth concussions, citing NOCSAE's research into rotational forces, suggested that NOCSAE's standards are at the forefront of the science in evaluating the efficacy of helmets.⁶⁸

The Consumer Product Safety Commission (CPSC), the federal agency responsible for regulating the safety of thousands of consumer products,⁶⁹ does not have any standards for football helmets.⁷⁰ Indeed, in 1980 the CPSC denied a petition requesting it set standards for football helmets "to reduce the risks of head, neck, and spinal injuries," citing voluntary standards and purported decreasing injury

e In reviewing a draft of this chapter, NOCSAE stated that its standards for football helmets, including third-party certification, exceed those set by the Consumer Product Safety Commission for bicycle helmets and by the Department of Transportation for motorcycle helmets. Letter from Mike Oliver, Executive Director/General Counsel, NOCSAE, to authors (Apr. 28, 2016) (on file with authors). We lack the scientific expertise to evaluate NOCSAE's statement.

rates.⁷¹ In 2011, New Mexico Senator Tom Udall proposed the Children's Sports Athletic Equipment Safety Action that would have required the CPSC to develop standards for football helmets, mandate third-party testing of youth football helmets, and instruct the Federal Trade Commission to regulate the manner in which helmet manufacturers advertise the safety specifications of their products.⁷² However, the bill was never enacted.^{73,f}

C) Current Ethical Codes

There are no known codes of ethics for sports equipment manufacturers.

D) Current Practices

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Equipment manufacturers have seemingly altered their behavior due to the increased litigation and scrutiny, as discussed above in the background to this chapter. For example, in touting its new SpeedFlex helmet in 2014, Riddell's senior vice president for research and product development was careful not to claim that the helmet could help reduce concussions:

We'll let the medical researchers weigh in on the medical data around concussions, because that's kind of a moving target right now because of all the things that are being learned[.] But what we can do is try to reduce the forces of impact to the player's head. I think reducing those forces is unequivocally a good thing.^{74,g}

There is also the possibility (albeit unlikely) that football equipment, helmets in particular, could be regulated by the Food and Drug Administration (FDA). The FDA regulates "medical devices," which includes, among many other things, "an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent, or other similar or related article, including a component part, or accessory which is ... intended for use . . . in the cure, mitigation, treatment, or prevention of disease, in man[.]" What is a Medical Device?, U.S. Food and Drug Admin., http://www.fda.gov/ aboutfda/transparency/basics/ucm211822.htm (last visited Aug. 7, 2015), archived at http://perma.cc/VJ9Q-GCUH, quoting Federal Food Drug & Cosmetic Act (FDCA) § 201(h), 21 USC 321(h). To the extent that football equipment and helmets are intended to prevent injuries and diseases, they appear to fit within the definition of a medical device. If the FDA chose to regulate football equipment, the manufacturers would be subject to a variety of regulatory requirements, likely including registering the product with the FDA, providing information to the FDA before the product can be sold publicly, and providing accurate and descriptive labeling and literature concerning the product. Overview of Device Regulation, U.S. Food and Drug Admin., http:// www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/Overview/#labeling (last visited Aug. 7, 2015), archived at http://perma.cc/6A6M-SU55. Nevertheless, there is no indication that the FDA is considering regulating football equipment and, as will be discussed below, it appears that football equipment manufacturers are providing the types of warnings that the FDA would likely require.

g Former Player 2 complained that equipment manufacturers were often misleading about their products: "This helmet is supposed to be safer for your head, but then you go hit somebody and you have a concussion. You're saying 'What the hell is going on?'"

Riddell's website also now contains a wealth of information, articles, and links concerning concussions,^{75,h} all of which would militate against claims that Riddell failed to warn consumers about the risks of concussions. Similarly, Schutt's homepage contains a lengthy warning about the risks of concussions that a visitor to the website must check off as having "read and underst[ood]" before visiting any other Schutt webpage.¹

At the current time, NOCSAE appears to be taking a proactive approach in assessing whether equipment actually meets its standards. In December 2014, NOCSAE announced that the two most popular lacrosse helmets on the market did not meet NOCSAE standards.⁷⁶ The helmet manufacturer quickly offered to increase the padding in the helmets at no cost to the consumer, a modification NOCSAE accepted.⁷⁷ Had it not made changes to the helmets, the manufacturer would not have been able to continue using the NOCSAE logo as evidence of its compliance with NOCSAE standards.⁷⁸

In addition to NOCSAE, Virginia Tech has also provided valuable information concerning football helmets. Since 2011, The Virginia Tech Department of Biomedical Engineering and Mechanics has been evaluating helmets using a series of biomechanical tests and assigning them a rating from zero stars up to five stars based on the helmet's perceived ability to minimize the risk of concussions.⁷⁹ The Virginia Tech ratings have become incredibly important in the industry, as consumers are reluctant to

h In reviewing this chapter, Riddell indicated that since 1981 its helmets have included a warning that "NO HELMET CAN PREVENT ALL HEAD OR NECK INJURIES A PLAYER MIGHT RECEIVE WHILE PARTICIPATING IN FOOTBALL" and that improper use of the helmet "can result in severe head or neck injuries, paralysis or death." In addition, Riddell indicated that beginning in 2002, its helmets have included warnings that contact in football can result in "CONCUSSION-BRAIN INJURY" and advised players not to "return to a game until all symptoms are gone and you have received MEDICAL CLEARANCE." Letter from Brian P. Roche, General Counsel, Riddell, Inc., to authors (Apr. 28, 2016) (on file with authors).

i The entire message reads:

WARNING

Scientists have not reached agreement on how the results of impact absorption tests relate to concussions. No conclusions about a reduction of risk or severity of concussive injury should be drawn from impact absorption tests. NO HELMET SYSTEM CAN PREVENT CONCUSSIONS OR ELIMINATE THE RISK OF SERIOUS HEAD OR NECK INJURIES WHILE PLAYING FOOTBALL.

Keep your head up. Do not butt, ram, spear or strike an opponent with any part of the helmet or faceguard. This is a violation of football rules and may cause you to suffer severe brain or neck injury, including paralysis or death and possible injury to your opponent. Contact in football may result in Concussion/Brain Injury which no helmet can prevent. Symptons (sic) include loss of consciousness or memory, dizziness, headache, nausea or confusion. If you have symptoms, immediately stop and report them to your coach, trainer and parents. Do not return to a game or contact until all symptoms are gone and you receive medial (sic) clearance. Ignoring this warning may lead to another and more serious or fatal brain injury.

See http://www.schuttsports.com/, archived at http://perma.cc/6K6F-PEU9.

buy anything that has not received five stars from Virginia Tech.⁸⁰ According to Virginia Tech, the research "is done as part of Virginia Tech's service mission and is 100% independent of any funding or influence from helmet manufacturers."⁸¹

E) Enforcement of Legal and Ethical Obligations^j

Players' only recourse against equipment manufacturers is a civil lawsuit.

Riddell, along with the NFL, is a defendant in the Concussion Litigation, discussed at length in Chapter 7: The NFL and NFLPA. The plaintiffs' claims against Riddell are summarized by the header to the section of the plaintiffs' Complaint concerning Riddell: "The Riddell Defendants Duty to Protect Against the Long-Term Risk of Concussions."⁸² The plaintiffs alleged a variety of intentional and negligent acts on the part of Riddell concerning the design, manufacture, inspection, testing and warnings related to Riddell helmets which allegedly caused plaintiffs to suffer injuries. The plaintiffs further alleged that Riddell has never "acknowledge[d] a link between repeat concussions and later life cognitive problems" and that Riddell has "never warned any Plaintiff or retired player of the long-term health effects of concussions."⁸³

In August 2012, Riddell sought to dismiss the plaintiffs' claims arguing, like the NFL, that the claims were preempted by the Labor Management Relations Act (LMRA).⁸⁴ Common law claims such as negligence are generally preempted by the LMRA.⁸⁵ The LMRA bars or "preempts" state common law claims^k where the claim is "substantially dependent upon analysis of the terms" of a CBA, *i.e.*, where the claim is "inextricably intertwined with consideration of the terms of the" CBA."⁸⁶

Riddell argued that claims against it are subject to preemption "even though the Riddell Defendants were not parties to the CBAs, because, as the Supreme Court has explained, the doctrine of complete preemption barring state-law claims 'is more aptly expressed not in terms of parties but in terms of the purpose of the lawsuit."⁸⁷

NO HELMET SYSTEM CAN PROTECT YOU FROM SERIOUS BRAIN AND/OR NECK Injuries including paralysis or death. To avoid these risks, do not engage in the sport of football.

j Appendix K is a summary of players' options to enforce legal and ethical obligations against the stakeholders discussed in this Report.

k Common law refers to "[t]he body of law derived from judicial decisions, rather than from statutes or constitutions." Black's Law Dictionary (9th ed. 2009). The concept of "preemption" is "[t]he principle (derived from the Supremacy Clause [of the Constitution] that a federal law can supersede or supplant any inconsistent state law or regulation." *Id.*

The NFL settled the Concussion Litigation in August 2013, approved by the United States District Court for the Eastern District of Pennsylvania in April 2015,⁸⁸ and by the United States Court of Appeals for the Third Circuit in April 2016.⁸⁹ Riddell was not a party to the settlement and has not reached any settlement of its own. Thus, the Concussion Litigation continues as against Riddell.

Riddell's argument that the LMRA preempts the claims against it seems unlikely to succeed, if for no other reason than it would leave players with no ability to enforce equipment manufacturers' obligations. Players cannot pursue grievances against equipment manufacturers under the CBA because the manufacturers are not parties to the CBA and thus did not agree to arbitrate any such claims.

In addition, as mentioned above, Riddell is currently the subject of several ongoing lawsuits brought by non-NFL player consumers who, like the plaintiffs in the Concussion Litigation, allege a variety of intentional and negligent acts on the part of Riddell concerning the design, manufacture, inspection, testing, warnings, and marketing related to Riddell helmets that allegedly caused plaintiffs to suffer injuries.⁹⁰ Schutt is also a defendant in at least one of the lawsuits.⁹¹

There is, however, one case against Schutt brought by an NFL player that bears mentioning. In 2016, Ryan Mundy, who played in the NFL from 2009 to 2014, sued Schutt alleging that a defect in the helmet caused a laceration on his forehead when he impacted another player.⁹² Mundy alleged that the laceration required 17 stitches and left him with permanent scarring.⁹³ The lawsuit is ongoing as of the date of publication.

Lastly, NOCSAE has minimal enforcement authority against equipment manufacturers. As mentioned above, NOCSAE can only prevent non-conforming equipment from using the NOCSAE logo, substantially precluding the product from being sold. Since all NFL equipment meets NOCSAE standards, there is nothing more that NOCSAE can do in offering players recourse.



(F) Recommendations Concerning Equipment Manufacturers

It appears that equipment manufacturers are generally working to create the safest equipment possible. Equipment manufacturers for a variety of reasons (including both liability and brand image) have generally sought to make equipment safer and the recent increased emphasis on player health and safety can only have accelerated that interest. We thus expect and recommend that equipment manufacturers continue to invest in the research and development of safer equipment. Similarly, at present time it appears equipment manufacturers have been more careful in ensuring they accurately convey the benefits and limitations of their equipment. In this regard, equipment manufacturers should continue to do what they have been doing and there is no need for formal recommendations.

NOCSAE has minimal enforcement authority against equipment manufacturers. As mentioned above, NOCSAE can only prevent non-conforming equipment from using the NOCSAE logo, substantially precluding the product from being sold. Since all NFL equipment meets NOCSAE standards, there is nothing further NOCSAE can offer in terms of player health, other than continued research.

Considering the public interest at hand, football equipment might be an area where additional regulation would be appropriate. Nevertheless, it is unclear who might fill this role of regulating equipment manufacturers. One possibility is for the Government, including the CPSC, to play a greater role in establishing and enforcing equipment standards. For this and other reasons we have included the Government as an Interested Party in Part 7.

Endnotes

- See Lisa Brown, Rawlings Chases Growth in Football Equipment, St. Louis Post-Dispatch, Oct. 27, 2013, http://www.stltoday.com/business/ local/rawlings-chases-growth-in-football-equipment/article_06babb3c -9483-5115-b42b-8e818693901c.html (last visited Aug. 7, 2015), archived at http://perma.cc/MDR4-YFFN (describing each company's market share as exceeding 40%); Lisa Brown, Rawlings Gaining Ground in the Football Equipment Market, St. Louis Post-Dispatch, Sept. 18, 2011, http://www.stltoday.com/business/local/rawlings-gaining-ground -in-the-football-equipment-market/article_69329d3b-dd8d-5079-a9a9 -9cf8b473b832.html (last visited Aug. 7, 2015), archived at http://perma .cc/924L-C74G (describing Riddell and Schutt's combined market share as over 90%).
- 2 See Shop, RIDDELL, http://www.riddell.com/ (last visited Aug. 7, 2015); Football, Schutt Sports, http://www.schuttsports.com/aspx/sport/ ProductLanding.aspx?sp=3 (last visited Aug. 7, 2015), archived at http://perma.cc/HL4K-2EJE.
- 3 E-mail from Robert Erb, Chief Executive Officer, Kranos Corporation to authors (Mar. 16, 2016) (on file with authors).
- 4 Lisa Brown, End of the line for Rawlings' football helmets, St. Louis Post-Dispatch, June 21, 2015, http://www.stltoday.com/business/local/end -of-the-line-for-rawlings-football-helmets/article_c2a1a349-104c-504e -80d7-ea37c7ddd951.html, archived at https://perma.cc/F98N-XUV5.
- 5 *See Xenith Products*, Xenith, www.xenith.com/products/ (last visited Aug. 7, 2015).
- 6 See Jenny Vrentas, The First Line of Defense, MMQB (Oct. 22, 2013), http://mmqb.si.com/2013/10/22/nfl-helmets-head-injury-concussion/, archived at http://perma.cc/WL9Q-7PXT (describing Riddell agreement as "indefinite"); see also Schutt Athletic Sales Co. v. Riddell, Inc., 727 F.Supp. 1220 (N.D.III. 1989) (dismissing Schutt's claim that the NFL-Riddell agreement violated antitrust law).
- 7 Letter from Brian P. Roche, General Counsel, Riddell, Inc., to authors (Apr. 28, 2016) (on file with authors).
- See Schutt Athletic Sales Co. v. Riddell, Inc., 727 F.Supp. 1220 (N.D.III. 1989)

- 9 Darren Rovell, NFL, Riddell Ending Helmet Deal, ESPN, (Oct. 25, 2013, 2:44 PM), http://espn.go.com/nfl/story/_/id/9875758/nfl-end-official -helmet-deal-riddell-2013–14-season, archived at http://perma.cc /8LRU-CJHT.
- 10 Vrentas, *supra* note 6.
- 11 Steven Rowson et al., Can Helmet Design Reduce the Risk of Concussion in Football? 120 J Neurosurgery 919 (2014) ("Although helmet design may never prevent all concussions from occurring in football, evidence illustrates that it can reduce the incidence of this injury."); Don Comrie et al., Letters to the editor: football helmet design and concussion, 121 J. Neurosurgery 491 (2014) (criticizing the findings of the Rowson paper); Timothy A. McGuine, et. al., Protective equipment and player characteristics associated with the incidence of sport-related concussion in high school football players: a multifactorial prospective study, 42 Am. J. Sports Med. 2470 (2014) ("Incidence of SRC [sport-related concussion] was similar regardless of the helmet brand (manufacturer) worn by high school football players. Players who had sustained an SRC within the previous 12 months were more likely to sustain an SRC than were players without a history of SRC.").
- 12 Letter from Brian P. Roche, General Counsel, Riddell, Inc., to authors (Apr. 28, 2016) (on file with authors); Micky Collins et al., *Examining Concussion Rates and Return to Play in High School Football Players Wearing Newer Helmet Technology: A Three-Year Prospective Cohort Study*, 58 Neurosurgery 275 (2006).
- 13 Id.; Riddell, Inc. v. Schutt Sports, Inc., 724 F. Supp. 2d 963, 967 (W.D.Wis. 2010).
- 14 Collins et al., *supra* n. 12.
- 15 Riddell, Inc. v. Schutt Sports, Inc., 724 F. Supp. 2d 963, 968 (W.D.Wis. 2010).
- 16 *ld.*
- 17 *ld.*
- 18 *Id.* 7.6% less 31% of 7.6% = approximately 5.3%.
- 19 *ld.*
- 20 Id. at 969.
- 21 See id. at 966.

- 22 Id. at 965.
- 23 See In re Riddell Concussion Reduction Litigation, 121 F. Supp.3d 402 (D.N.J. 2015); DuRocher v. Riddell, Inc., 97 F. Supp.3d 1006 (S.D. Ind. 2015); Midwestern Midget Football Club Inc. v. Riddell Inc., 15-cv-244, 2015 WL 4727438 (S.D. W. Va. Aug. 10, 2015).
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- 38 See Daniel H. Daneshvar et al., Helmets and Mouth Guards: The Role of Personal Equipment in Preventing Sport-Related Concussions, 30 Clinical Sports Med. 145 (2011), http://www.bu.edu/cte/files/2011/07 /Daneshvar-et-al.-Helmets-and-Mouth-Guards.-2011.pdf, archived at https://perma.cc/Y3DR-UZU5?type=pdf (discussing conflicting evidence as to whether mouthguards help prevent concussions); Paul McCrory, Do Mouthguards Prevent Concussions?, 35 Br. J. Sports Med. 81 (2001) (same).
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- 40 A product "contains a manufacturing defect when the product departs from its intended design even though all possible care was exercised in the preparation and marketing of the product." Restatement (Third) of Torts: Products Liability § 2 (1998).
- 41 A product "is defective in design when the foreseeable risks of harm posed by the product could have been reduced or avoided by the adoption of a reasonable alternative design by the seller or other distributor, or a predecessor in the commercial chain of distribution, and the

omission of the alternative design renders the product not reasonably safe." Restatement (Third) of Torts: Products Liability § 2 (1998). This definition has proven controversial and some states have adopted alternative definitions. *See* Larry S. Stewart, Strict Liability for Defective Product Design: The Quest for a Well-Ordered Regime, 74 Brook. L. Rev. 1039 (2009); Patrick Lavelle, *Crashing Into Proof of a Reasonable Alternative Design: The Fallacy of the Restatement (Third) of Torts: Products Liability*, 38 Duq. L. Rev. 1059 (2000).

- 42 A product "is defective because of inadequate instructions or warnings... when the foreseeable risks of harm posed by the product could have been reduced or avoided by the provision of reasonable instructions or warnings by the seller or other distributor, or a predecessor in the commercial chain of distribution, and the omission of the instructions or warnings renders the product not reasonably safe. Restatement (Third) of Torts: Products Liability § 2 (1998).
- 43 "One engaged in the business of selling or otherwise distributing products who, in connection with the sale of a product, makes a fraudulent, negligent, or innocent misrepresentation of material fact concerning the product is subject to liability for harm to persons or property caused by the misrepresentation." Restatement (Third) of Torts: Products Liability § 9 (1998).
- 44 "A reasonable person in the seller's position would provide a warning after the time of sale if: (1) the seller knows or reasonably should know that the product poses a substantial risk of harm to persons or property; and (2) those to whom a warning might be provided can be identified and can reasonably be assumed to be unaware of the risk of harm; and (3) a warning can be effectively communicated to and acted on by those to whom a warning might be provided; and (4) the risk of harm is sufficiently great to justify the burden of providing a warning." Restatement (Third) of Torts: Products Liability § 10 (1998).
- 45 "One engaged in the business of selling or otherwise distributing products is subject to liability for harm to persons or property caused by the seller's failure to recall a product after the time of sale or distribution if: (a)(1) a governmental directive issued pursuant to a statute or administrative regulation specifically requires the seller or distributor to recall the product; or (2) the seller or distributor, in the absence of a recall requirement under Subsection (a)(1), undertakes to recall the product; and (b) the seller or distributor fails to act as a reasonable person in recalling the product." Restatement (Third) of Torts: Products Liability § 11 (1998).
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- 47 About NOSCAE, Nat'l Operating Comm. Standards for Athletic Equipment, http://nocsae.org/about-nocsae/ (last visited Aug. 7, 2015), archived at http://perma.cc/J5DG-43JE.
- 48 Alan Schwarz, As Concussions Rise, Scant Oversight for Football Helmet Safety, N.Y. Times, Oct. 21, 2010, http://www.nytimes.com/2010/10 /21/sports/football/21helmets.html?pagewanted=all, available at http://perma.cc/2LJV-K2RQ.
- 49 NOCSAE Board of Diretors, Nat'l Operating Comm. Standards for Athletic Equipment, http://nocsae.org/board-of-directors/ (last visited May 2, 2016), archived at https://perma.cc/5V87-GJAN.
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Executive Director/General Counsel, NOCSAE, to authors (Apr. 28, 2016) (on file with authors).

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- 57 Letter from Mike Oliver, Executive Director/General Counsel, NOCSAE, to authors (Apr. 28, 2016) (on file with authors).
- 58 See NOCSAE, Standard Test Method and Equipment Used in Evaluating the Performance Characteristics of Headgear/Equipment (Modified June 2015), available at http://nocsae.org/standards/general (last visited Apr. 29, 2016).
- 59 See NOCSAE, Standard Performance Specification for Newly Manufactured Helmets (Modified June 2015), available at http://nocsae.org/ standards/general (last visited Apr. 29, 2016).
- 60 See id. at ¶ 1.2.
- 61 See Alan Schwarz, As Concussions Rise, Scant Oversight for Football Helmet Safety, N.Y. Times, Oct. 21, 2010, http://www.nytimes.com/2010 /10/21/sports/football/21helmets.html?pagewanted=all, available at http://perma.cc/2LJV-K2RQ ("The standard has not changed meaningfully since it was written in 1973"); Jason Navia, Sitting on the Bench: The Failure of Youth Football Helmet Regulation and the Necessity of Government Intervention, 64 Admin. L. Rev. 265, 269 (2012) ("NOCSAE's testing standards for football helmets have not changed since 1973").
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- 63 Id.
- 64 R. Graham et al., Sports-Related Concussions in Youth: Improving the Science, Changing the Culture (2013), available at http://www .nationalacademies.org/hmd/Reports/2013/Sports-Related-Concussions -in-Youth-Improving-the-Science-Changing-the-Culture.aspx (last visited Apr. 29, 2016).
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 F.3d 410 (3d Cir. Apr. 18, 2016).
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- 91 DuRocher v. Nat'l Collegiate Athletic Ass'n, 13-cv-1570 (S.D. Ind.).
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