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Newer-style football helmet may cut concussion risk

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By Amy Norton

NEW YORK (Reuters Health) - A newer type of football helmet that gives more coverage to the side of the head appears to lower players' risk of concussion, according to researchers.

Their 3-year study of high school football players found that those who wore the newer helmet design were nearly one-third less likely to suffer a concussion as those who donned traditional helmets.

The helmet, sold under the name Revolution by Riddell Inc., is designed specifically to help protect against concussion. But the new study is the first to evaluate it in real-world conditions.

The findings suggest that the helmet can reduce, though certainly not eliminate, players' risk of concussion, Dr. Michael Collins, the study's lead author, told Reuters Health.

"We'll never come up with a helmet that completely prevents concussions," said Collins, who is assistant director of the University of Pittsburgh Medical Center's Sports Medicine Concussion Program.

In addition, players who did suffer a concussion while wearing the Revolution helmet took as long to recover from their injuries as their peers who wore older helmet designs.

Still, Collins said that the study findings are "encouraging," and with more studies into the mechanisms behind concussion, researchers should be able to design even more effective helmets in the future.

He and his colleagues report their findings in the medical journal *Neurosurgery*.

A concussion occurs when a jolt to the head jostles the brain within the skull, sometimes tearing nerve fibers. Headache, dizziness, disorientation and nausea are some of the symptoms that may emerge within minutes or hours. Longer-term problems, which may crop up days or weeks after the brain injury, include chronic headache, poor concentration, memory loss and sleep disturbances.

For their study, which received funding from Revolution manufacturer Riddell, Collins and his colleagues followed concussion rates and recovery times among more than 2,100 high school football players in Pennsylvania. Just over half used the newer helmet, while the rest used standard helmets.

Overall, just over 5 percent of players with Revolution helmets suffered a concussion, versus nearly 8 percent of those who wore traditional helmets.

Recovery time, however, was similar in the two groups. Across the groups, half needed more than one week to fully recover, with roughly 15 percent requiring three weeks or longer.

Collins stressed the importance of allowing concussions to fully heal before allowing a player back on the field. Athletes who are still recovering from a concussion are vulnerable to suffering a second, potentially catastrophic, injury.

Because of this, players must be carefully assessed by a doctor before they get back in the game, Collins said. In this study, recovery was judged via a computerized battery of tests called ImPACT, which was developed by the Pittsburgh researchers and is used in many schools across the country.

The tests, which measure mental functions such as memory, attention and concentration, are given to athletes during pre-season. If they suffer a concussion, their test performance during recovery can then be compared with that benchmark.

SOURCE: Neurosurgery, February 2006.

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