

# Neurotrauma research into high school football players examines how to improve helmet tech

September 14 2016, by Eric Nauman

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A group of researchers studying how impacts affect the brains of high school football players also are analyzing the deficiencies of conventional football helmets and coaching strategies to reduce injury.

The Purdue Neurotrauma Group is led by Eric Nauman, Thomas Talavage and Larry Leverenz. They can speak about the potential health effects of repeated head impacts and ways of improving safety for [high school football](#) players. Nauman is a professor of mechanical engineering, basic medical sciences and [biomedical engineering](#). Talavage is a professor of electrical and computer engineering and biomedical engineering and co-director of the Purdue MRI Facility. Leverenz is a clinical professor in the Department of Health and Kinesiology and an expert in athletic training.

The group, which had been focusing on [high school](#) juniors and seniors, this year expanded its work to underclassmen. The researchers also are emphasizing the importance of coaching techniques that reduce neurotrauma, most notably, keeping the number of hits below 90 per week.

"We know that once you go above 90 hits per week players start to accrue damage that doesn't repair itself easily," Nauman said.

The team is studying ways to overcome the limitations of conventional

football helmets, which are designed to prevent skull fractures but not to absorb energy to reduce shocks to the brain. Nauman likens today's [football helmets](#) to 1960s automobiles, which lacked the crumple zones of modern cars.

"What we want to do is create helmets that have a crumple zone that deform to take a lot of that energy out of the hit and protect the brain," Nauman said.

Provided by Purdue University

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