

Study shows helmetless-tackling drills significantly reduce head impact

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UNH Football players perform intervention drills consisting of helmetless-tackling repetitions into an upright pad, tackling dummy, or a teammate holding a padded shield Credit: University of New Hampshire

The national debate around football-related head impacts, and their relationship to concussions and spinal injuries, continues to raise concern in the United States. Sparked by efforts to help make the sport safer for players, research at the University of New Hampshire has found that a novel set of helmetless-tackling drills are effective in reducing head impacts by 28 percent in one season.

The study, conducted by Erik Swartz, professor and chair of the department of kinesiology at UNH, was released early online and will be published in an upcoming issue of the *Journal of Athletic Training*. The study can be reviewed at: <http://natajournals.org/doi/pdf/10.4085/1062-6050-51.1.06>.

Research findings are for the first year of a two-year study that tested helmetless-tackling drills and their effectiveness in reducing head impact in 50 [football players](#) at the University of New Hampshire, a NCAA Division I team. The purpose

was to see if this innovative technique, called the HuTTTM intervention program, could alter tackling behavior and ultimately reduce head injury exposure.

"The idea of taking off the football helmet during practice to reduce head impact may seem counterintuitive to the sport," said Swartz. "But the findings show that preventing head impacts, which can contribute to spine and head injuries like concussions, may be found in behavior modification like these drills."

The [randomized controlled trial](#) divided the athletes into two groups; an [intervention group](#) (25 players) and a [control group](#) (25 players). Before each workout session, an xPatch head-impact sensor was placed on the skin just behind the right ear (over the right mastoid) of each athlete. The xPatch monitored the frequency, location, and acceleration of all the head impacts.

Football players in the intervention group performed five-minute tackling drills without their helmets and shoulder pads twice a week in preseason and once a week during football season. The intervention drills consisted of repetitions of proper tackling into an upright pad, tackling dummy, or a teammate holding a padded shield, at a 50 to 75 percent effort. The control group performed non-contact football skills at the same time, rate and duration. Both groups were supervised by the UNH football coaching staff. At the end of one football season, the intervention group that had performed the helmetless-tackling training program had experienced 30 percent fewer head impacts per exposure than the control group.

"This behavior modification is not only about alleviating head impacts that can cause injuries now, but reducing the risk of concussive impacts that can lead to long-term complications later in life," said Swartz. "These helmetless drills could help to make it safer to play football."

According to the study, high school and college [football players](#) can each sustain more than 1,000 impacts in a season, while youth players may sustain 100 during that same timeframe. "The extent to which this intervention may yield similar outcomes in younger players with less experience and physical maturity is still unknown. We are currently in the first year of a high school study focused on four high schools in New Hampshire," adds Swartz.

If future investigators replicate the current findings, Swartz says the eventual adoption of helmetless-tackling training may improve public health and decrease associated economic burden by reducing the risks of football-related head and neck injuries.

Provided by University of New Hampshire

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