

CAN PLAYING FOOTBALL MAKE YOU SHORTER?

Study Indicates Creep and Compression Decrease Height During Games

INDIANAPOLIS– A series of well-executed blocks may help get the win in a football game, but repetitive blocking – plus the added weight of helmet and pads – may actually result in a temporary loss of height for players, according to a study presented at the 55th [American College of Sports Medicine](#) (ACSM) Annual Meeting in Indianapolis.

Previous studies have suggested that through compression of the spine, the height of an average individual may be reduced as much as one percent during the course of a normal day. This gravity-induced phenomenon is referred to as “creep.” In this study, researchers collectively studied whether the protective equipment worn by football players and the intermittent compressive forces they endure during a game would accelerate the creep response.

To execute the study, researchers examined 10 high school football players and selected the players according to their position and expected playing time. The positions chosen were most likely to experience repetitive longitudinal loading of the spine over the course of the game, due to blocking, tackling and other football maneuvers.

A practicing certified athletic trainer measured the height of each player before and after the game using a standard physician beam scale with a height rod. The research team performed tests to determine significance between height measures. They found average height of players before the game was 176.56 centimeters, while average height following the game was 175.81 centimeters.

“The results indicate that high school football players’ heights decrease during the course of a game by almost one full centimeter,” said Brian J. Campbell, Ph.D., lead author on the study. “The decrease is likely due to the intermittent high-impact compressive loading of the spinal column during a football game, as well as the low-impact continuous compressive forces from equipment weight. In a game such as football, one centimeter could mean the difference between a game winning catch or a blocked field goal.”

Campbell noted that the role of hydration should not be overlooked and may contribute to the release of fluid from the vertebrae via osmosis, which can also contribute to height loss. His team concluded that future research is needed to isolate the mechanism of decreased player height following a football game.

The [American College of Sports Medicine](#) is the largest sports medicine and exercise science organization in the world. More than 20,000 international, national, and regional members are dedicated to advancing and integrating scientific research to provide educational and practical applications of exercise science and sports medicine.