

College football linemen face greater risk of heart problems

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College freshmen who play football linemen positions may face a greater risk of specific heart problems than other players, according to research presented at the American Heart Association's Scientific Session 2015.

Researchers analyzed the effect of playing American football on the heart in 87 college athletes from pre-season to post-season and found:

- an increase in [systolic blood pressure](#);
- an increase in heart muscle wall thickness with a relative decrease in subclinical left ventricular function; and
- that these functional and structural changes varied by player field position.

"The most dramatic change is the increase in the incidence of high blood pressure, particularly in the linemen who also have an increased mass of muscle wall and a relative decrease in [heart function](#) compared to non-linemen," said Jeffrey Lin, M.D., study lead author and former cardiology fellow at Massachusetts General Hospital in Boston.

No players in the study had high blood pressure at the beginning of the season. However, by season's end, nine of the 30 linemen developed it compared to only 4 of the 57 non-linemen.

"There are physiologic differences between football linemen and non-linemen," said Lin, who is now a cardiac imaging fellow at Columbia University in New York City. "Non-linemen tend to be quarterbacks and

running backs. Linemen tend to be heavier, making them at higher risk for increased [high blood pressure](#) and thickness of heart muscle, and potentially decreased heart function over time."

Since 2006, Lin and Massachusetts General Hospital colleagues have been studying the physiology of the heart and changes in its structure on freshman athletes.

"Other research has demonstrated football can have a negative impact on the brain, with increasing attention by the National Football League directed to concussions and how to prevent or treat them," Lin said. "Now, we are developing an understanding of football's impact on the structure and function of the [heart](#) as well."

According to Lin, there are similarities between high school football players, college players, and professional players. Previous data reported that the prevalence of resting hypertension in NFL and college players ranges from 14 percent to 19 percent.

Provided by American Heart Association

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