Large Athletes Not at Elevated Cardiac Risk

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Body

The cardiovascular risk profile of professional football payers-and, by implication, other very large athletes-is similar to that of the general population, according to a cross-sectional study funded by the National Football League.

It appears that high levels of physical activity offset the harmful cardiovascular effects of a body size large enough to fit the criteria for obesity, said Dr. Andrew M. Tucker of Union Memorial Hospital, Baltimore, and his associates.

Body mass index has increased significantly among offensive and defensive linemen during the past 30 years. That, taken together with sporadic premature deaths among these athletes, has raised concern that football players and other large athletes may be at increased cardiovascular risk.

Dr. Tucker and his colleagues assessed 504 active, veteran players on 12 of the 32 NFL teams using a device that measured body composition rather than BMI.

"Reliance on BMI alone as a size indicator for CVD risk may not be appropriate in NFL players because BMI does not take into account lean muscle mass," they noted.

The findings from their investigation were compared with those of an age- and race-equivalent population sample from the ***Coronary Artery Risk Development in Young Adults*** (***CARDIA) study***. The 504 football players, who were an average of approximately 30 kg heavier than the control group, represented 26% of the total number of veteran players at the time of the study.

"Despite their large size, the NFL group had lower mean fasting glucose compared with the CARDIA group, and there were no significant differences in total cholesterol, LDL-C, HDL-C, or triglycerides between the groups," the investigators said (JAMA 2009;301:2111–9).

As has been reported previously, "high physical activity in the player group appears to have substantially mitigated the effect of large size."

Prevalence of above-normal blood pressure did not differ significantly between black (75%) and white (82%) players. No significant link was found between players' position on the team and hypertension or prehypertension.

The athletes differed from general population in one critical respect: they were much more likely to have hypertension or prehypertension.

The combined prevalence of hypertension and prehypertension was high in all player groups, ranging from 96 of 105 (91%) in the largest players to 15 of 19 (78%) in the smallest players compared with 581 of 1,957 (30%) in the CARDIA group.

This unexpected finding has prompted an NFL-wide investigation to determine the underlying cause of players' increased blood pressure, the researchers said.

There was an array of limitations to the study, the authors noted. The limitations ranged from speculation that players may have underreported use of anti-hypertension medicines, to potential seasonal differences on blood pressure to the fact that only one automated pressure measurement was taken from the NFL group.

Smoking was self reported in both the NFL group and the CARDIA group.

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