

# Retired national football league linemen have high incidence of sleep apnea

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Sleep disordered breathing, also known as sleep apnea, is highly prevalent among retired National Football League (NFL) players, and particularly in linemen, according to Mayo Clinic research. This study, involving 167 players, adds to the growing body of research examining the relationship between sleep apnea and heart disease, the investigators say.

The study will be presented Tuesday, March 31, 2009 at the American College of Cardiology Annual Scientific Session in Orlando. The research was conducted in collaboration with the Living Heart Foundation.

The Mayo data showed that 60 percent of [linemen](#), average age of 54, had [sleep disordered breathing](#) (SDB), as defined by having at least 10 sleep-related breathing disorder episodes, such as pauses in breathing, per hour. Linemen had an average of 18.1 episodes per hour. The monitoring of breathing at night was conducted while the retired players slept at home. In addition, researchers discovered that age and obesity (measured by the body mass index, which corrects the weight for a person's height) were significantly associated with sleep disordered breathing. Linemen had an average BMI of 34.2; a BMI of 30 or more is considered obese.

Dr. Virend Somers, a Mayo Clinic [cardiologist](#) who helped guide the study, noted that the prevalence of [sleep apnea](#) and obesity was higher than expected, and serves as a warning that athletes need to monitor their

weight and health carefully when they retire, a time when physical activity levels may begin to decline abruptly. While more research is needed to uncover the link between sleep disorders and [heart disease](#), there is evidence that sleep apnea may be a cause of high [blood pressure](#), which is a risk factor for heart disease, he says.

For all other study participants (average age of 53), who played other positions, 46 percent had sleep apnea with an average of 13.4 sleep-related disorder episodes per hour. The average BMI was 30.5.

In addition, 45 percent of the linemen and 32 percent of nonlinemen reported having high blood pressure. "High blood pressure is another risk factor for cardiac disease, and may be linked to both obesity and sleep apnea," Dr. Somers says.

Retired football players, and particularly linemen, need to be aware of sleep disordered breathing and its connection to cardiac risk factors, says lead author Felipe Albuquerque, M.D. "Many people do not realize that they have a sleep disorder," he says. "They may have no symptoms that they are aware of, but perhaps they know they are tired during the day and they're told they snore very loudly. These can be clues to the presence of sleep apnea. Our results show that retired linemen need to realize that they are a very high risk population and may need evaluation and treatment."

Previous research by various institutions and investigators in recent years, much of which has been assisted by the Living Heart Foundation, showed concerning health trends for retired NFL players:

- Retired NFL players are more prone to obesity and obstructive sleep apnea than the general population.
- Retired NFL players have an increased rate of metabolic syndrome, a condition increasingly linked to excess weight and lack of activity, which

can lead to type 2 diabetes.

- Higher mortality is reported in linemen, as compared to people in the general population of the same age who are not professional football players. Research is needed to determine the causes.

Source: Mayo Clinic ([news](#) : [web](#))

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