

Body Size, Health Outcomes and Elite Athletes

Active and retired professional football players are thought of as role models when it comes to physical fitness. However, some evidence indicates that even in elite athletes, very large body size may be associated with the subsequent development of serious cardiovascular abnormalities.

A common way to measure body size is by determining the body mass index (BMI). The BMI may be calculated by taking the weight in kilograms divided by height in meters squared. This assessment can also be measured directly by various techniques, including bioimpedence. The BMI has been used wisely to indicate relationships between body size and health co-morbidities, such as hypertension, diabetes, cholesterol abnormalities, smoking and drinking.

There is a classification of levels of BMI that apply to the extent of being overweight in the general population. A BMI of 30 is considered obese, 35 is severely obese and 40 or more is morbidly obese. However the necessarily significance of BMI in a relatively oversized group of elite athletes may not be equated to BMI findings in non-athletes.

General medical wisdom suggests that obesity is associated with increased morbidity and mortality in the general population. However, a recent government report (2005) suggests that a relatively mild increase in body size may even be advantageous! Body habitus remains a somewhat speculative and relatively unstudied part of wellness.

In the world of professional football, BMI is frequently large and increasing at a rapid rate over the past 20 years. However, BMI does not necessarily provide information about body composition. In particular, measurement of percent body fat, fat mass, and/or other metabolic markers are necessary to provide insight about the proportions of body components. Some health care providers also believe that elite athletes in training are well conditioned, heavily

muscled and not likely to have substantial body fat. These conditions in youth are sometimes used to suggest that retired athletes may not have such as onerous predisposition to adverse health outcomes later in life.

In 1992 the National Football League Players Association (NFLPA) had the National Institute for Occupational Safety and Health (NIOSH) conduct a study related to players life expectancy. They found that in some 6,848 NFL players not stratified by position played, there was no evidence that NFL players have a lower life expectancy, in comparison to the general population. However, when players were stratified according to level of BMI, those in the highest BMI category had a 50% increase in mortality , versus middle and lowest BMI category players. Also, players in the highest BMI group had a six fold increased risk of CV death compared to lowest BMI player groups, which most closely resemble the general population. In this study, no controlled health testing were performed and CV risk analysis was not obtained.

In 2003, stimulated by the pioneering NIOSH report, the Living Heart Foundation (LHF) undertook a service/study to actually measure and track CV risk factors in NFL players prospectively. The NFLPA has subsequently partnered with the LHF in this mission to support players health. While attempting to clarify the presence and significance of CV risk in NFL players, the LHF is concomitantly educating and advising players on proper pathways to reduce their CV health risk factors and improve their future health outcomes. The LHF, places emphasis on the importance of lifestyle changes including regular medical visits, improved diets and innovative exercise plans despite the common presence of musculoskeletal, joint and bone disabilities in retired players.