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Obesity and Cardiovascular Health Differences Between Urban and Suburban Philadelphia High School Athletes

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Introduction: The strongest risk factor for primary hypertension in children is obesity, and concern for pediatric hypertension rises with the rising prevalence of obesity in American children. Specifically, in urban Philadelphia schools from 2009 to 2012, preparticipation physical evaluations (PPEs) demonstrated a positive correlation between blood pressure measurements demonstrating stage 1 or 2 hypertension and elevated body mass index ($P < 0.00001$).

Objective: The purpose was to identify potential differences in cardiovascular health and prevalence of obesity between adolescents in the urban and suburban Philadelphia areas.

Methods: Data from PPEs administered to urban Philadelphia high school athletes in 2018 by the Athlete Health Organization (AHO) was analyzed and compared to data from the Simon's Heart Foundation's HeartBytes registry, which provided data regarding suburban Philadelphia students. Demographic information and basic physical examination data were collected. Each participant's body mass index (BMI) was categorized by percentile for age, and blood pressures were classified according to American Heart Association pediatric guidelines.

Results: Analysis of the AHO data shows that 44.9% of urban students who completed PPEs in 2018 were overweight or obese, and that 43.1% of these students had blood pressures that would

qualify as either stage 1 or 2 hypertension. Further comparison to the HeartBytes data is forthcoming.

Conclusion: Given results to date, it is expected that upon conclusion of the study, the data will support the hypothesis that rates of hypertension and obesity will be higher in the urban underserved population than in the suburban population.