Type 2 diabetes (T2D) prevalence in the United States is significantly higher in African Americans vs Whites. Yet, the physiological mechanisms contributing to this health disparity have been poorly described. To design effective strategies to reduce this disparity, there is a need to determine whether racial differences in diabetes prevalence are attributable to modifiable or non-modifiable factors. This review synthesizes and critically evaluates the potential physiological and genetic mechanisms that may contribute to the higher susceptibility of African Americans to T2D. These mechanisms include: 1) obesity and fat distribution; 2) metabolic flexibility; 3) muscle physiology; 4) energy expenditure and fitness; and 5) genetics. We focus on the clinical significance of findings and limitations of the recent literature. (Ethn Dis. 2015;25[1]:31–37)

Key Words: Cardiorespiratory Fitness, Energy Expenditure, Genetics, Glucose Homeostasis, Muscle Physiology, Obesity, Race Differences

INTRODUCTION

African Americans (AAs) have a 1.9-fold higher incidence of type 2 diabetes (T2D) compared to Whites, a disparity observed throughout the lifespan. The etiologies and mechanisms explaining the race differences in T2D prevalence are largely unknown. T2D is a complex disease affected by multiple genetic and physiological factors, which may interact with environmental and behavioral triggers to create disparities. In order to design targeted prevention and treatment strategies, there is a need to determine whether observed race differences in diabetes prevalence are attributable to modifiable or non-modifiable factors.

Our review article is a preliminary step to encourage further research into the physiological and genetic drivers of health disparities in type 2 diabetes...