

SOCIAL DETERMINANTS, PRO-INFLAMMATORY AND OBESITY-RELATED METABOLIC BIOMARKERS IN DEVELOPING YOUTH

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Abstract (limited to 350 words)

PURPOSE: To determine the relationship between social determinants and pro-inflammatory cytokines to obesity and related metabolic biomarkers in exclusively pre-pubertal, otherwise healthy, obese and non-obese Black and White children, seven to nine years of age.

SUMMARY OF PRESENTATION: This presentation will explore the contribution of social determinants, and pro-inflammatory and metabolic bio-markers, to the development of obesity and related co-morbidities during the pre-pubertal stage of development in healthy Black and White youth. Pre-and-post-natal nutrition and physical activity, behavioral and environmental factors, which contribute to the metabolic health of offspring, will also be discussed. Social determinants considered in the analysis include neighborhood concentrated disadvantage characterized by each child's census tract of residence.

Serum levels of Interleukin (IL)-1, IL-6, IL-8, Tumor Necrosis Factor alpha (TNF- α), and monocyte chemoattractant protein 1 (MCP-1), and state of the art measures of visceral and subcutaneous adipose tissues (VAT and SAT [MRI]); and ectopic fat (intrahepatic [IHL] and intramyocellular [IMCL] fat [¹H-MRS]) and total body fat (DXA) were used to determine relationships between pro-inflammatory, obesity and related metabolic biomarkers.

CONCLUSION: Relationships between social determinants and pro-inflammatory biomarkers, and obesity-related metabolic biomarkers commonly observed in adolescents and adults are reversed in healthy, obese and non-obese, Black and White children prior to puberty. Prospective studies are warranted to determine how these inverse relationships modify chronic disease risk later in life.