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## Analyzing the role of high pro-inflammatory diets and childhood obesity in the risk of adult carcinogenesis in South Carolinian children

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In the United States, childhood obesity has been a growing epidemic with, 1/3 of US children considered overweight or obese. The increased number of overweight and obese children can be linked to several factors including nutrition and social economic status. Households that do not have access to healthy, nutritious foods are significantly more likely to be obese earlier in life than other children. Obesity in children can lead to numerous health complications such as diabetes, high blood pressure, chronic inflammation and carcinogenesis. African American minorities are more likely to be diagnosed and die from one of the various forms of cancer. Therefore, eliminating or reducing preventable risk factors such as unhealthy nutrition and childhood obesity could have important implications for reducing clinical manifestations of adult cancer outcomes. Areas of South Carolina, such as the I-95 Corridor, have a long history of being under-developed which contribute to numerous problems such as obesity, poverty and sub-par health care. We have enrolled South Carolinian children from varying degrees of rurality to determine if obesity and/or high-fat pro-inflammatory diets contribute to increased levels of pro-inflammatory markers and obesity related genes to include: Adiponectin, leptin, SAA1/2, Interleukin 1 and 6. Subjects will be randomized into obese and non-obese groups based on BMI guidelines. The transcriptional levels of pro-inflammatory genes will be measured by quantitative Real-time polymerase chain reaction. Reducing childhood obesity and pro-inflammatory diets, while increasing physical activity and access to healthy foods are beneficial in the reduction of cancer risk and will serve as preventive measures for early-stage onset of adult cancers. Data analysis on the limited sample set is ongoing. Results will be presented during the conference.

### Biography

Ashley Knowell is investigating the role of childhood obesity as a risk factor for adult cancers. The ultimate goal of the project is to provide families with the necessary tools and information to establish healthy nutritional habits, reduce childhood obesity and ultimately reduce adult cancer risk among South Carolinian children. Her research interests also include tumor suppressors, cell death and the development, progression, and treatment of cancer in African-Americans and South Carolinians.

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