CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY

Name(s)
Divya Siddarth

Project Number
S1213

Project Title
Weighty Matters: Risk Factors for Obesity in Children and Adults

Abstract

Objectives/Goals
This project will determine the risk factors for obesity in children and adults. The risk factors I will examine are lifestyle factors such as eating habits, physical activity levels, and screen (TV/computer) viewing time, as well as ethnicity, gender, and family income level. In addition, I will investigate if the predictors of obesity differ across age groups. I will also examine, in the obese group, which of these factors predict medical problems such as diabetes and hypertension.

Methods/Materials
Data were obtained from the National Health and Nutrition Examination Survey 2009-2010, completed by 7431 participants. I used multivariable logistic regression models to determine which lifestyle factors were associated with obesity. I also performed stratified analyses within different age groups (children, adolescents, young adults, middle-aged adults, older adults and seniors). Frequency tables and chi-square tests were used to determine the association of obesity with medical problems such as diabetes and hypertension, and logistic regressions were used to determine which risk factors predicted these medical problems within the obese group.

Results
For children, screen viewing time was the most significant risk factor of obesity, while for adolescents, eating fast food was the most significant predictor. For the other age groups, activity levels - both lack of vigorous or moderate physical activity and engaging in sedentary activities - were significantly associated with obesity. Within the obese group, sedentary activity levels were a significant risk factor for both diabetes and hypertension.

Conclusions/Discussion
This is one of the first studies to examine the relationship of obesity to lifestyle factors, in addition to gender, ethnicity, and income levels, using a nationally representative sample. The major finding that obesity is independently associated with different lifestyle factors in different age groups can be used to develop evidence-based public health care policy and programs that target obese children, adolescents, young, middle-aged and older adults. These findings also reinforce the importance of educating children and adolescents, as well as adults, to take greater responsibility in preserving their health and mitigating future problems by practicing positive lifestyle behaviors.

Summary Statement
This study identified the most significant modifiable risk factors of obesity for different age groups, and demonstrated that a 'one size fits all' approach cannot be used when addressing the obesity epidemic.

Help Received
N/A