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Anarina L Murillo* (amurillo@uab.edu), **Muntaser Safan**, **Devina Wadhera** and **Carlos Castillo-Chavez**. *Modeling the Diet Dynamics of Children: the Roles of Socialization and the School Environment*.

Childhood obesity is a health emergency in the U.S. and, consequently, identifying intervention models capable, of altering the dynamics of obesity at scales that make a difference remains a challenge. The fact that consumption of healthful foods among most youth has yet to meet recommended nutritional standards highlights a lack of effective policies aimed at addressing the epidemic of obesity. Mathematical models are used to evaluate the roles of socialization and school environment on the diet dynamics of children. Data suggest that standard nutrition education programs may have, at best, minimal impact in altering diet dynamics at the population-level. Inclusion of peer influence (model as contagion) reinforced by the use of culturally-sensitive school menus (environmental disruption) may prove capable of modifying obesity enhancing diet dynamics; altering the diets of a significant (critical) proportion of youngsters. A framework is introduced to explore the value of behavior-based interventions and policies that account for the sociocultural environments of at risk communities. These models account for the fact that when dealing with diet-dynamics systems, thinking additively is not enough as it cannot account for the power of nonlinear effects. (Received September 04, 2018)