TACSM Abstract

Childhood Overweight is Associated with Increased Monocyte Concentration and Altered Subset Distribution

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ABSTRACT

Childhood obesity rates have nearly tripled in the last 30 years. Obesity increases risk for chronic disease. While monocytes, cells of the innate immune system that are altered with obesity, are purported to play an integral role in the development of these chronic diseases, no research has focused on early phenotypic changes in monocytes of overweight children. Two monocytes subsets exist, classic and pro-inflammatory; alterations in number and distribution may be implicated in disease development in obesity. The purpose of this study was to examine the concentration and relative distribution of monocytes among "normal weight" (N=66) and "at risk for being overweight/overweight" (N=56) Mexican American children. Blood samples were collected and analyzed for total monocyte concentration and monocyte subset concentration via flow cytometry. Total monocyte concentration, as well as the concentration of both classic and pro-inflammatory monocyte subsets was significantly greater in the "at risk for overweight/overweight" children (P>0.05). Understanding early alterations in monocyte populations will be the first step in the development of early diagnosis and treatment techniques.