
Title: The Metabolic Syndrome and Childhood Obesity: A Critical Public Health Issue



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Proposal

The prevalence and magnitude of childhood obesity are increasing dramatically. By any Metabolic Syndrome definition, abdominal obesity, insulin resistance, and hyperinsulinemia are the common characteristics of childhood with the metabolic syndrome. Indeed, although the majority of children with metabolic syndrome tend to be overweight or obese, not all overweight or obese children develop metabolic syndrome, T2DM, or cardiovascular disease. In view of the increasing prevalence of and adverse trends in obesity and its comorbidities in children, the question is whether tools can be developed to identify children who are most at risk metabolically. We emphasize the importance of identifying the pediatric cardiometabolic risk factors, only some of which are associated with the current proposed definitions of metabolic syndrome, and the need for studying the following and interactions of these risk factors in longitudinal studies from childhood to later life to define the specific components that should be included in a future description of the metabolic syndrome in children.

We invite authors to submit original research as well as review articles to this special issue in Journal of child health and nutrition.

Key recommendations for future research include the following but are not limited to:

1. Improved understanding of the relation between body fat and its distribution in children .
 2. The stability of metabolic syndrome phenotypes over time in childhood in large-scale observational/outcome studies.
 3. The molecular basis of the syndrome.
 4. The possibility of environmental exposures or toxins and their role in promoting the metabolic syndrome.
 5. The role of medical management of insulin resistance, prehypertension, early vascular changes, elevated triglycerides, and low HDL-C.
 6. Studies of adiponectin, leptin, etc in children as predictors of metabolic syndrome in adulthood.
 7. Studies of the pathways linking insulin resistance and obesity with other components of metabolic syndrome beginning early in life.
 8. Studies of leptin biology and mechanisms of weight regulation.
 9. The role of genetic predisposition and the prenatal and neonatal milieu in promoting future insulin resistance and metabolic syndrome.
 10. The use of telemedicine and tele-care for prevention of metabolic syndrome in children.
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