

The Presence of Risk Factors for Type 2 Diabetes Mellitus in Underserved Preschool Children



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KEYWORDS

- Preschool children • African Americans • Type 2 diabetes mellitus
- Health screening • Risk factors

KEY POINTS

- Obesity and increasing rates of type 2 diabetes mellitus in children is a public health concern.
- Medically underserved, minority children are at risk for the development of type 2 diabetes mellitus.
- The most common risk factors for the development of type 2 diabetes mellitus in this population of minority children are family history of diabetes mellitus, elevated body mass index, and elevated blood pressure.

INTRODUCTION

Type 2 diabetes mellitus (T2DM) is a public health priority in the United States because of its high prevalence and its negative long-term impact on health.¹ Once considered only a problem among adults, the prevalence of T2DM in children is rapidly increasing in the United States.^{2,3}

The prevalence of T2DM is expected to quadruple by the year 2050, with youths of minority race/ethnic groups being primarily affected.⁴

In the United States, high prevalence rates for T2DM ($\geq 10.6\%$) exist in a distinct geographic pattern, which is referred to as the *diabetes belt*. West Virginia, the

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Appalachian counties of Tennessee and Kentucky, much of the Mississippi Delta, and a southern belt extending across Louisiana, Mississippi, middle Alabama, south Georgia, and the coastal regions of the Carolinas⁵ are included in the diabetes belt area (Fig. 1). It is thought that higher rates of T2DM exist in this specific geographic pattern because of the prevailing social norms, community and environmental factors, socioeconomic status, and genetic risk factors.⁶

County Perspective

Tuscaloosa County, which is located in western Alabama, is included in the diabetes belt with a prevalence of T2DM of 11%.⁷ Several risk factors put residents of this county at risk for developing T2DM, including high rates of obesity and physical inactivity, race, socioeconomic status, and lack of access to healthy foods.⁷ Approximately 30% of residents are African American; 25.5% live in a rural area; 18% report food insecurity; 7% report limited access to healthy foods; 19% of adults and 4% of children are uninsured; 33% of adults are obese; and 28% report physical inactivity. Although national databases exist that characterize diabetes at the national and state levels,¹ studies are needed at the local level where health-promotion interventions will ultimately be designed and implemented. Studies conducted at the local level that focus on identifying individuals at risk for developing T2DM, particularly children, will enable more efficient prevention policies and programs to be implemented in an effort to reduce the prevalence of diabetes.

RISK FACTORS FOR TYPE 2 DIABETES MELLITUS IN CHILDREN

The primary risk factors for the development of T2DM in children include obesity, ethnicity, family history of diabetes, and the presence of insulin resistance.^{8,9} Obesity has been identified as the major risk factor for the development of T2DM in children,^{3,8}

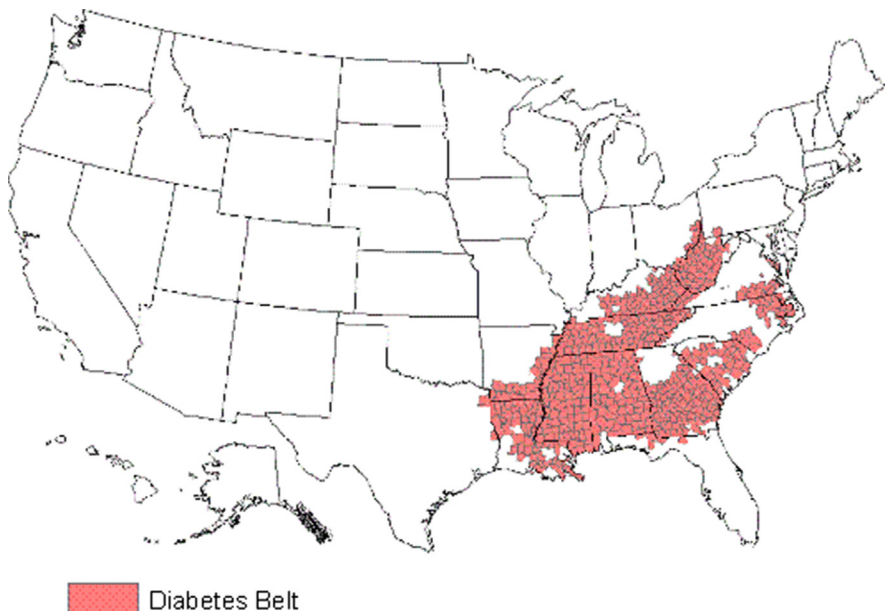


Fig. 1. Diabetes belt. (From Centers for Disease Control. CDC identifies diabetes belt. Available at: <http://www.cdc.gov/diabetes/pdfs/newsroom/diabetesbelt.pdf>. Accessed April 29, 2015.)

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