

Prevalence of diagnosed and undiagnosed type 2 diabetes mellitus among US adolescents : results from the continuous NHANES, 1999-2010

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Abstrak

Although prevalence and incidence of type 2 diabetes mellitus (T2DM) are reportedly increasing among adolescents, national data are lacking, particularly in regard to undiagnosed T2DM. To estimate the prevalence of diagnosed and undiagnosed T2DM among US adolescents, we analyzed a nationally representative cross-section of 11,888 adolescents aged 12-19 years who received a diabetes interview in the Continuous National Health and Nutrition Examination Survey during 1999-2010. Among them, a random subsample of 4,661 adolescents also had fasting blood samples collected. Persons who reported a previous diabetes diagnosis and were either taking no medication or taking an oral hypoglycemic agent (with or without insulin) were classified as having T2DM; persons who reported using insulin alone were classified as having type 1 diabetes. Undiagnosed diabetes was defined as a fasting plasma glucose concentration of ≥ 126 mg/dL and was assumed to be type 2. In the fasting subsample, 31 diabetes cases (types 1 and 2) were identified, representing a prevalence of 0.84% (weighted 95% confidence interval (CI): 0.51, 1.40) (276,638 cases; 95% CI: 134,255, 419,020). Estimates of the prevalences of type 1 and type 2 diabetes were 0.48% (95% CI: 0.23, 1.02) and 0.36% (95% CI: 0.20, 0.67), respectively, indicating that T2DM accounted for 43% of all cases. Further, undiagnosed T2DM prevalence was 0.12% (95% CI: 0.05, 0.31), representing 34% of T2DM cases (40,611 cases; 95% CI: 2,850, 78,373). T2DM accounts for approximately half of adolescent diabetes in the United States, and one-third of these cases are undiagnosed.