

How Many People in the U.S. Have IDDM?

A question that often arises in research, policy, and clinical care settings is "How many people in the U.S. have insulin-dependent diabetes mellitus?" Estimates concerning the number of persons with IDDM have been provided by the American Diabetes Association, the Juvenile Diabetes Foundation, and other agencies. Yet, it is not clear as to how these reported figures were derived.

Currently, considerable data within the U.S. and across the world have been generated by the WHO Diamond Project concerning the incidence of childhood diabetes (1,2). Excellent, although somewhat older, data also exist on the prevalence of the disease in children (3). The major difficulty in estimating the prevalence of IDDM, though, arises in the older population—those >20 yr of age. Many individuals are treated with insulin but do not have insulin-dependent diabetes. Therefore, prevalence estimates in adults are considerably more limited than those in younger children. However, even crude estimates are better than no estimates.

How many children in the U.S. develop IDDM each year? For 1990, there were 72,372,000 individuals aged 0–19 yr in the U.S. (4). The incidence rate of IDDM in Allegheny County during the 1985–89 period was 18.2/100,000 (95% CI 16.11–20.29) (5). Therefore, assuming that the development of IDDM in the U.S. mirrors that in Allegheny County, we would expect that each year 13,171 individuals will develop IDDM.

It is important to place this estimate in context. This figure suggests that diabetes is one of the leading, if not the leading, chronic disease in childhood. In contrast to 13,171 children who develop diabetes, 796 children develop muscular

Table 1—IDDM incidence data for persons >20 yr of age

AGE-GROUP	ANNUAL INCIDENCE (100,000)
20–24	5.2
30–39	4.0
40–49	10.7
50–59	10.5
60–69	9.4
≥70	15.2
MEAN	9.2

dystrophy per year, 8829 children develop childhood cancers, and 2822 children develop leukemia (2). Much is written about pediatric AIDS, a truly serious problem, but in the U.S. from September 1990 to August 1991, only 903 cases occurred (6); so for each child that develops AIDS, there are ~15 children that develop IDDM.

Estimates on the prevalence rate of youth-onset IDDM are reasonably consistent, with a range of 0.6 to 2.5/1000 (3). Most estimates have clustered around 1.7/1000. Using this figure as our best estimate, we calculate that there are 123,032 individuals aged 0–19 yr in the U.S. who currently have IDDM. Childhood diabetes thus is one of the largest and costliest chronic diseases of children.

Data on the frequency of IDDM in adults are much more difficult to come by. Incidence data from the Mayo Clinic (7) are shown in Table 1 for persons >20 yr of age. Applying the overall rate of 9.2/100,000 to the adult U.S. population, we estimate that 16,542 cases of IDDM would arise each year in persons >20 yr in the U.S. Therefore, ~29,713

people in the U.S. develop IDDM each year (Table 2).

Few reliable data are available on the prevalence of IDDM in adults. However, in another paper from the Mayo Clinic (8), it was reported that of all the individuals who had the diagnosis of diabetes, 7.9% could be classified as IDDM. Thus, of 810 cases identified, 64 had IDDM. Based on this data, the crude prevalence rates for IDDM in the population was 1.2/1000. Applying this figure to the U.S. total population of 252,177,200, we estimate that the total number of people who have IDDM is 302,613 (Table 3).

With 29,713 new cases each year, and 302,613 existing cases, most certainly, IDDM is a major burden upon both the youth and the adults of our nation. Additionally, the concern remains that we are undergoing an epidemic of IDDM—with the rapid increase in the number of cases seen recently (5,9).

As in all projections, some uncertainty may surround these estimates. Clearly, little information is available on the prevalence of IDDM. As policy makers, clinicians, and public health officials require meaningful data to develop actions to reduce the impact of IDDM, we must stress that there is a continual need for accurate information on the prevalence of IDDM. Regular monitoring of the frequency at which IDDM occurs is the best means to achieving this data. This capability, though, has yet to be developed.

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Table 2—Number of new cases of IDDM in U.S. each year

AGE (YR)	U.S. POPULATION	INCIDENCE	NUMBER OF CASES
0–19	72,372,000	18.2/100,000	13,171
≥20	179,805,200	9.2/100,000	16,542
TOTAL	252,177,200	—	29,713

Table 3—Number in U.S. population who have IDDM

AGE (YR)	U.S. POPULATION	PREVALENCE	NUMBER OF CASES
0-19	72,372,000	1.7/1000	123,032
≥20	179,805,200	—	—
TOTAL	252,177,200	1.2/1000	302,613

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IDDM, INSULIN-DEPENDENT DIABETES MELLITUS; WHO, WORLD HEALTH ORGANIZATION; CI, CONFIDENCE INTERVAL; AIDS, ACQUIRED IMMUNE-DEFICIENCY SYNDROME.



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