Deaths among U.S. Adults with and without Diabetes

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The full report is titled "Mortality Trends in Men and Women with Diabetes, 1971 to 2000." It is in the 7 August 2007 issue of *Annals of Internal Medicine* (volume 147, pages 149-155). The authors are E.W. Gregg, Q. Gu, Y.J. Cheng, K.M.V. Narayan, and C.C. Cowie.

What is the problem and what is known about it so far?

The pancreas makes insulin, a substance that helps the body store energy from food. Diabetes mellitus interferes with the body's ability to store energy from food. Type 1 diabetes mellitus (also called *juvenile diabetes*) occurs when the pancreas stops making insulin. Type 2 diabetes mellitus (also called *adult-onset diabetes*) occurs when the body makes plenty of insulin but cannot use it normally. In both types, the result is high blood sugar levels. Over time, high blood sugar levels can lead to blindness, kidney failure, nerve damage, and heart disease. Fortunately, good care with diet, exercise, and medications to control blood sugar level, blood pressure, and cholesterol levels can prevent complications. However, people with diabetes generally do not live as long as people without diabetes.

Since the 1970s, death rates have decreased in the United States, which means that people are living longer than they used to. Whether death rates have decreased by the same amount in people with and people without diabetes, however, is not known.

Why did the researchers do this particular study?

To compare changes in death rates since the 1970s in people with and without diabetes.

Who was studied?

Almost 20,000 people who participated in 1 of 3 national surveys about health that took place in 1971–1974, 1976–1980, and 1988–1994.

How was the study done?

The survey asked people whether they had diabetes. The researchers then followed the people for up to 12 years to see who was still living and who had died. Next, they compared the numbers of deaths in people with and without diabetes from the 1990s with those from the 1980 and 1970s. They also compared deaths in men and women.

What did the researchers find?

When the researchers looked at the entire group without separating people with from people without diabetes, they found that death rates decreased from 1971 to 2000. When they looked only at the people with diabetes, they found that death rates declined in parallel in diabetic and nondiabetic men. However, the death rates in diabetic women did not decrease. In fact, the differences in death rate between nondiabetic and diabetic women doubled over the time of the study.

What were the limitations of the study?

The researchers used patient self-report to determine whether the patient had diabetes instead of checking blood sugar levels. Many people who have diabetes are not aware that they have it, and some people might think they have diabetes when they really don't.

What are the implications of the study?

Despite U.S. trends that show reduced death rates since 1971, people with diabetes continue to have a higher risk for dying earlier than do people without the disease. The problem is greatest among women with diabetes. Research to understand these differences should be a priority.