

American Indians and Alaska Natives and Diabetes

Diabetes mellitus poses a significant public health challenge for the US. Some 800,000 cases are diagnosed each year, and changing demographic patterns in the US are expected to increase the number of people at risk for diabetes and who eventually develop the disease. Diabetes is a chronic disease that usually manifests as one of two major types. In type 1, which occurs mainly in children and adolescents, the body does not produce insulin, and insulin administration is required to sustain life. In type 2, which usually occurs in adults over 30 years of age, the body becomes unable to use its own limited supply of insulin effectively. (US DHHS, 2000).

Adult-onset diabetes also has **strong physiologic ties to cardiovascular disease (CVD)**. The majority of patients with diabetes mellitus die of complications of CVD rather than of causes associated directly with glucose control. (US DHHS, 2003).

Diabetes is a major clinical and public health challenge among certain racial and ethnic groups in which both the number of new cases of diabetes and the risk of associated complications are great. Vulnerable and high-risk populations include Asian Americans and Pacific Islanders, elderly persons, and economically disadvantaged persons. Factors that account for this chronic disease epidemic include behavioral elements (e.g., increased fat consumption, decreased physical activity, obesity), demographic changes (aging, increased growth of at-risk populations), genetics, cultural and community traditions, and socioeconomic status. The level of patient knowledge and empowerment has a great impact on the disease burden associated with diabetes. (US DHHS, 2000).

Overweight and Obesity

Overweight and obesity are major contributors to many preventable causes of death. On average, higher body weights are associated with higher death rates. Those who are overweight or obese have a substantially higher risk of developing high blood pressure, high cholesterol, type 2 diabetes, heart disease and stroke, gallbladder disease, arthritis, sleep disturbances and breathing problems, and certain types of cancer. (US DHHS, 2000).

- **Incidence and Mortality**
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- **Traditional Health Beliefs and Practices**
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Risk Factors and Challenges

Obesity

- Recent studies confirm **disproportionately high rates of obesity and overweight among American Indian women**, although rates in specific groups vary. A study of American Indian women in urban Phoenix found that 69.6% of those surveyed were overweight, with 41.6% considered obese. The Navajo Health and Nutrition Survey reported that 59% of Navajo women (on reservations) were overweight. A survey of Indian women in California found that 44.5% were overweight. (Glanz, 2003).
- **Central obesity is a major contributing factor.** Ongoing cooperative research by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) with volunteers from the Pima community, as well as data from other tribes, shows that the major factors contributing to type 2 diabetes in American Indians are obesity, especially central obesity (upper-body, or above-the-waist, obesity); genetics; and high levels of insulin in the blood, which results in insulin resistance, a forerunner of type 2 diabetes. (Indian Health Service, 2000).
- **Obesity** is a major risk factor for diabetes in Pima Indians and is **widespread in many tribes**, with increasing rates of obesity measured in several communities in the US and Canada. (Gohdes, 1995).
- **Central obesity** was characteristic of Canadian Indians studied in Manitoba and Ontario. In young Pimas, the waist-to-hip ratio, a measure of central obesity, was more strongly associated with diabetes than was body mass index. In Navajo women, a small study found that an increased waist-to-hip ratio was associated with a statistically significant increased risk of diabetes, but a similar association was not significant in Navajo men. (Gohdes, 1995).

Gestational Diabetes

- The **prevalence of gestational diabetes** in certain groups of American Indians and Alaska Natives is as follows: 14.5% of all pregnancies in Zuni Indians, 3.4% of all deliveries in Navajo Indians, 5.8% of deliveries in Yup'ik Eskimos. (NDIC, 2002).
- Follow-up studies of American Indian women with gestational diabetes found that they had a **high risk of developing subsequent diabetes**: 27.5% of Pima Indian women developed diabetes within four to eight years, and 30% of Zuni Indian women developed diabetes six months to nine years after pregnancy. (NDIC, 2002).
- A study of the prevalence of diabetes in American Indian children found that the **strongest single risk factor for diabetes in Pima Indian children was exposure to diabetes in utero**. (NDIC, 2002).

Hypertension

- Recent studies of American Indians in Arizona and Oklahoma showed that the **prevalence of hypertension was higher** than among non-Hispanic whites in a national survey. (NDIC, 2002).

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