

Diabetes Epidemic Is a Worldwide Threat

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Each triennium the International Diabetes Federation (IDF) hosts a worldwide Congress at which physicians, nurses, patients, and scientists share their knowledge, experience, and concerns regarding progress in the fight against diabetes. The most recent Congress was held in late August 2003, in Paris. More than 17,000 people participated. This included representatives of 180 national diabetes associations from around the world.

Sir George Alberti, the outgoing president of the IDF, opened the meeting with a plenary address. He highlighted some of the demographic issues that are creating a worldwide threat from diabetes. Certainly, here in the United States, we see dramatic increases in the prevalence rates of diabetes and obesity. These are particular issues in several ethnic communities including Hispanic, Native-American, and African-American populations. We know very well that changes in lifestyle, including decreasing physical activity and expanded dietary intake, are major contributors.

It should be no surprise that this same issue is occurring not only in other developed countries but increasingly within the developing world. There are epidemiological estimates that by 2025 there will be 250–300 million individuals worldwide with diabetes. This will be predominantly individuals with type 2 diabetes. Some of the populations experiencing an increased prevalence of diabetes in United States are being affected similarly in other countries. Thus, in Central and South America, in Africa, and in parts of Asia, the prevalence rates for diabetes are skyrocketing.

The migration of populations to more urban settings, as well as increasing affluence in some countries (especially China and the Indian subcontinent), are strongly contributing to the increased prevalence. What may be particularly alarming is that in several populations (China and India again serve as examples), relatively modest increases in weight (compared with Caucasian populations) seem to be sufficient to provoke deterioration in insulin sensitivity and glucose tolerance.

As a measure of how ill-equipped many countries are to deal with the diabetes epidemic, one Congress participant from the former Soviet republic of Azerbaijan told poignantly of her difficulty in obtaining insulin in adequate dosages for her daughter with diabetes. Many physicians are limited in the amounts of insulin they are allowed to prescribe. In some cases, they cannot give more than 20 units per day! At times, the insulin supply is unreliable with respect to either availability or quality. Blood glucose testing supplies are expensive and out of reach for many patients and families. Similarly, some of the medications used here to treat hyperglycemia (as well as hypertension and lipid disorders) are unavailable or too expensive for patients in developing countries.

As you are aware, we have been only very modestly successful in implementing lifestyle changes that delay or prevent the onset of diabetes in United States. This is even after demonstrating conclusively in the National Institutes of Health's Diabetes Prevention Program (DPP), and in studies in China

and Scandinavia, that these changes work. As you can imagine, it is only that much more difficult to implement effective interventions in circumstances where resources are considerably more scarce. Both developed and developing nations will have to share strategies to avoid a worldwide scourge of diabetes and obesity during the 21st century.

Certainly, any approach to this begins with education, both of our patients and of the public at large. The increasing recognition of diabetes as a serious disease and one of accelerating prevalence can only be helpful. We again have an advantage here in the United States with not only an informed physician community, but also a cadre of diabetes educators, nutritionists, and exercise physiologists. Indeed, in studies like the DPP, it was the efforts of these individuals that had major impact in decreasing the prevalence of transitioning from impaired glucose tolerance to frank diabetes. Developing countries frequently lack these important health care professionals.

Soon, the Department of Health and Human Services will begin a Diabetes Detection Initiative (DDI) as a pilot project in 10 locales throughout the United States. It will focus particularly on communities disproportionately affected by diabetes. This effort will initially serve as an informational, educational, and interventional effort in those communities. It will allow assessment of the effectiveness of various types of community efforts. As such, it will provide an important opportunity to test models in communities that will improve the detection of diabetes and

begin to drive the process of early intervention and prevention. Undoubtedly, it will also serve as a clarion call to the country to begin to face a burgeoning national health crisis. Hopefully, what we learn from programs like the DDI, as well as from a number of state and local intervention programs, will provide us and the world at large with improved strategies to detect and prevent diabetes.

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