

Diabetes in the United Arab Emirates and Other Arab Countries: Need for Epidemiological and Genetic Studies

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Diabetes mellitus is a heterogeneous group of metabolic diseases, all of which are characterized by high blood glucose levels. If untreated, diabetes can lead to severe complications including blindness, kidney and heart disease, stroke, loss of limbs, and reduced life expectancy. Accordingly, it is a major public health problem, affecting hundreds of millions of people worldwide, and represents an enormous personal problem and has a substantive economic impact on society, with substantial direct and indirect costs. It is estimated that approximately 194 million people have diabetes in the adult population in the International Diabetes Federation (IDF) Regions. This is an increase from the 1995 global estimation of 135 million which was published in a World Health Organization study in 1998. According to the latest statistics, the world population will reach 8 billion by 2025, of which about 300 million will suffer from diabetes.

There are two types of diabetes: juvenile diabetes (or Type I or Insulin-dependent diabetes) and maturity-onset diabetes (or Type II or non-insulin dependent diabetes mellitus):

1. Type I diabetes usually begins in childhood and individuals suffering from this type need insulin treatments because their bodies produce very little insulin by themselves.
2. Type II diabetes (non-insulin dependent diabetes mellitus or NIDDM) is commonly associated with obesity. Insulin treatment is usually unnecessary as dietary measures and sometimes oral medications are sufficient. NIDDM does not usually occur until after the age of 40 although 2 to 5% of those people affected do get diabetes before they are 25 years old.

Both types of diabetes tend to run in families and genetic factors do contribute to the disease. But it must be recognized that environmental factors play a significant role. Interactions between genetic and environmental factors are clearly important. A complex com-

ination of many genes may increase a person's risk for developing diabetes as an adult. In the past few years, several groups of scientists provided evidence of genetic connections to NIDDM and a breakthrough was published very recently (Bento *et al.*, 2004; Palmer *et al.*, 2004).

In the UAE as well as other Arab countries, satisfactory epidemiological studies on the prevalence of diabetes are lacking. There are two recent unpublished studies that show the prevalence of diabetes among citizens of the UAE as the second highest in the entire world. Only the native population of the Pacific island of Narau has a higher prevalence rate. The two unpublished studies were recently reviewed by Reed (2005) as follows. The unpublished study by Dun and colleagues was conducted between 1997 and 1999 on a random sample of UAE citizens above the age of 30 living in Al-Ain and showed that the prevalence rate was about 20% and was higher in urban areas (25.4%) and lowest in rural communities (14.1%). However, the methodology used may have resulted in an underestimation of the prevalence by as much as 20%. The second study was a national survey conducted jointly by the World Health Organization and the UAE Ministry of Health between years 1998 and 2000. The study was conducted on 6,609 men and women, including 2,363 nationals and 4,246 expatriates. It reported that the overall percentage of people with diabetes was 19.6 per cent. In the UAE citizen group, the percentage was 24% while in the expatriates it amounted to 17.4%, highlighting the higher prevalence in the native UAE population. Furthermore, recent studies in the UAE estimate that the percentage of people suffering from diabetes in the UAE rises with increasing age reaching as high as 40 per cent in the age group 60 and above. These observations emphasize the necessity of considering diabetes as one of the main priorities of the Ministry of Health in the UAE. In fact, the Ministry of Health has formulated an independent body of local scientists and experts to draw up strategies and national programmes to increase public awareness as a first step to control the disease.