Obesity and Chronic Disease

Impact of Weight Reduction

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KEY POINTS

- Obesity continues to rise and is most acute, as a public health issue, in pediatric and adolescent populations.
- Life expectancy, employing years-of-life-lost estimates, is drastically decreased.
- Based on NHANES III, approx 1 million overweight/obese teenagers suffer from metabolic syndrome.
- Weight reduction coupled with increases in physical activity remains the safest and most effective means to reduce insulin resistance.
- Obesity continues to be a major public health issue that must be addressed.

1. INTRODUCTION

“Opinion is a flitting thing but truth outlasts the sun.”

—Emily Dickinson

It is impossible to pick up a newspaper or current magazine without being bombarded with the latest legal or scientific findings linking diet to obesity and disease. Diet, poor eating habits, and a sedentary lifestyle play a significant role in the health of individuals. Improvements in public health and efficiencies in the processed food delivery complex have eliminated most nutrient deficiencies in the United States and replaced them with diseases involving excess calories. The Surgeon General’s Report on Nutrition and Health (1988) ranked the leading causes of death in the United States (1), with several strongly related to diet (i.e., coronary heart disease [CHD], cancer, stroke, diabetes mellitus, and atherosclerosis). The relatively meek report, Surgeon General’s Call to Action To Prevent Overweight and Obesity 2001 (2), addresses the social and community aspects of this epidemic and is countered by the more strongly worded World Health Organization Technical Report (3), which identifies specific food components that are directly related to obesity and disease. Despite the recommendations of the Surgeon General’s Report (1) to maintain a desirable weight and a
caloric intake keeping with energy expenditure, Americans continue to experience increases in body weight- and obesity-related morbidity and mortality. The prevalence of weight problems and obesity continues to climb and is currently estimated to include 65% of the adult population (4). The greatest increase was seen in those classified as obese, represented by the heaviest individuals (now estimated at 23%) with a body mass index (BMI) of greater than 30 (Fig. 1) (5). The recently reported age-adjusted prevalence of 30.5% from the National Health and Nutrition Examination Survey (NHANES) of 1999–2000 demonstrates that this trend is continuing (4). Of greatest concern is the increased incidence of obesity in children and adolescents. Evidence suggests that they will be the next generation of obese adults and will experience the accompanying disease risks. In a 1995 report, the incidence was estimated at 14%, using the 95th percentile of weight (Fig. 2) (6). Newer estimates, based on examination data from the 1999–2000 NHANES estimated the prevalence at 15.5% for children ages 12 through 19 yr, 15.3% for children ages 6 through 11 yr, and 10.4% for children ages 2 through 5 yr (7).

In 1995, the estimated annual direct cost of obesity and its related comorbidities was US$52 billion (8). This accounted for 5.7% of the US national health expenditure. The authors again echoed the recommendations of the Surgeon General’s Report to improve the diet and avoid weight problems and obesity as the most important step in the containment of rising health care costs.

The purpose of the earlier chapter, which appeared in the second edition, was to review the association between excess body weight and its major comorbid conditions, as well as to review the impact of weight reduction on improvement in obesity-related diseases. Five major comorbidities were discussed: type 2 diabetes mellitus (DM),