

Obesity—A Killer Disease?

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Although obesity remains a disease without effective long-term treatment, family physicians must become more aware of the significant morbidity and mortality of obesity as underscored by a recent National Institutes of Health (NIH) Consensus Conference on the Health Implications of Obesity. Terming obesity a *killer disease*, conference chairman, Dr. Jules Hirsch of Rockefeller University may have overstated the case against obesity. He did, however, succeed in bringing media attention to the important findings of the conference.

The definition of obesity as "an excess storage of energy in the form of fat"¹ unfortunately does not help the practicing physician in identifying those patients with a significant health problem from excess adipose tissue. Because the direct measurement of body fat is impractical in the office, and such methods of estimating body fat as skin-fold measurements are not standardized, physicians must rely on height-weight charts to quantify obesity. The 1959 and 1983 Metropolitan Life Insurance Height-Weight Tables are well-recognized and readily available standards of height and weight associated with the lowest mortality using actuarial data. The consensus panel could not agree on which of the two tables should be recommended.

Since body fat is a continuous variable within the population, all quantitative definitions of obesity must be arbitrary. The NIH panelists agreed that an increase in body weight of 20 percent or more above desirable body weight (Table 1) constitutes an established health risk. For an estimated 34 million American adults who are at least 20 percent overweight, treatment of obesity is strongly advised. Weight reduction may be important for many people with even lesser degrees of obesity in the presence of diabetes, hypertension, heart disease, or other associated risk factors.

The NIH consensus panel concluded: "The evidence is now overwhelming that obesity, defined as excessive storage of energy in the form of fat, has adverse effect on health and longevity."¹ The health risks of obesity fall into three general categories: (1) cardiovascular disease risk factors, (2) coronary artery disease, and (3) cancer.

The two National Health and Nutrition Examination Surveys (NHANES I and II)^{2,3} found a strong association between the prevalence of excess weight and cardiovascular disease risk factors:

1. Hypertension was 2.9 times higher for the overweight than for the nonoverweight population.
2. Hypercholesterolemia in the young overweight population was 2.1 times that of the nonoverweight population.
3. Diabetes was 2.9 times greater in those who are overweight.

Although some individual cohort studies do not link obesity to the incidence of coronary artery disease, the eight cohort studies of the US Pooling Project found a positive relationship between obesity and the risk of coronary artery disease.⁴ The Framingham study, a large general population-based study, recently disclosed an increasing risk of coronary artery disease with increasing levels of obesity, independent of the other standard risk factors (age, cholesterol, systolic blood pressure, cigarettes, left ventricular hypertrophy, and glucose intolerance).⁵

The American Cancer Society study of over 1 million men and women clearly demonstrated the association of obesity with some forms of cancer.⁶ Obese men, regardless of smoking habits, had a higher mortality from cancer of the colon, rectum, and prostate. Obese women had a higher mortality from cancer of the gallbladder, biliary passages, breast (postmenopausal), uterus, and ovaries.

Convincing evidence that obesity adversely affects longevity has been demonstrated in four large insurance studies, the Framingham 30-year follow-up study, the American Cancer Society study, and other smaller cohort studies. The greater the degree of obesity, the higher the mortality ratio. Because obesity is associated with a greater increase in mortality ratio in

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**TABLE 1. HEALTH IMPLICATIONS OF OBESITY
NATIONAL INSTITUTES OF HEALTH CONSENSUS
CONFERENCE FEBRUARY 11-13, 1985**

Height	Significant Obesity*	
	Women (lb)	Men (lb)
4 ft 10 in	138	
4 ft 11 in	140	
5 ft 0 in	143	
5 ft 1 in	146	
5 ft 2 in	150	163
5 ft 3 in	154	166
5 ft 4 in	157	168
5 ft 5 in	161	171
5 ft 6 in	164	174
5 ft 7 in	168	178
5 ft 8 in	172	181
5 ft 9 in	175	185
5 ft 10 in	179	192
5 ft 11 in	182	192
6 ft 0 in	186	196
6 ft 1 in		200
6 ft 2 in		205
6 ft 3 in		209
6 ft 4 in		215

*Defined as 120 percent of the midpoint of desirable weight range for medium frame from 1983 Metropolitan Life Insurance tables

people aged under 50 years, particular attention should be directed to younger people. Some experts, such as Andres et al,⁷ feel that weight standards should be age dependent with lower standards for young adults and higher recommended weights for older adults.

Physicians, especially those in primary care, must become aware that obesity is not a cosmetically unappealing state of being, but rather a disease with significant health implications. The tendency of family physicians to ignore obesity as a significant health problem was demonstrated in a 1982 survey of four states.⁸ In this outpatient tally of over 110,000 patient encounters, physicians were asked to code all diag-

noses (primary and secondary) made for each encounter. Obesity ranked at a surprisingly low (43rd) place behind such diagnoses as earwax (10), warts (21), pneumonia (25), and congestive heart failure (29). Clearly the family physician must take a more active role in the prevention of obesity, the education of patients in the health risks of obesity, the motivation of patients in making permanent changes in eating behavior and exercise patterns, and the development of effective treatment for this important and largely untreatable disease.

References

1. Health Implications of Obesity—National Institutes of Health Consensus Development Conference Statement. *Ann Intern Med* 1985; 103:147-151
2. Abraham S, Johnson CL, Najjar MF: Weight and height of adults 18-74 years of age, United States, 1971-74. In National Center for Health Statistics (Hyattsville, Md): *Vital and Health Statistics*, series 11, No. 211. Government Printing Office, 1979
3. Abraham A, Carroll M, Najjar MF: Trends in obesity and overweight among adults ages 20-74 years: United States 1960-1962, 1971-1974, 1976-1980. In National Center for Health Statistics (Hyattsville, Md): *Vital and Health Statistics*, series 11. Government Printing Office, in press
4. The Pooling Project Research Group: Relationship of blood pressure, serum cholesterol, smoking habit, relative weight, and ECG abnormalities to incidences of major coronary events: Final report of the Pooling Project. *J Chronic Dis* 1978; 31:201-301
5. Hubert HB, Feinleib M, McNamara PM, Castelli WP: Obesity as an independent risk factor for cardiovascular disease: 26-year followup of participants in the Framingham Heart Study. *Circulation* 1983; 67:968-977
6. Lew EA, Garfinkle L: Variations in mortality by weight among 750,000 men and women. *J Chronic Dis* 1979; 32:563-576
7. Andres R, Elahi D, Tobin JD, et al: Impact of age on weight goals. *Ann Intern Med* 1985; 103:1030-1033
8. Kirkwood CR, Clure HR, Brodsky R, et al: The diagnostic content of family practice: 50 most common diagnoses recorded in the WAMI community practices. *J Fam Pract* 1982; 15:485-492