Weight loss in the elderly: cause or effect of poor health?1,2

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In 1990 the US weight guidelines were increased substantially for persons > 35 y of age, from weights corresponding to a range in body mass index (BMI; in kg/m²) of ~18-25 to a range of 21-27 (1). The rationale appears to have been based largely on data showing a U-shaped relation between BMI and total mortality and a nadir that increased with age. The article by Harris et al (2) appearing in this issue illustrates the complexity of studies of optimal weight in older persons, and why simplistic analyses of weight and mortality in an elderly population can be completely misleading.

A central problem in analyses of body weight is that persons with a low body weight comprise a mix of those who have always been active and lean, those who are lean because they smoke tobacco, and those who have lost weight as a result of poor health. Conditions that cause weight loss and are associated with higher mortality include various cancers, chronic lung and cardiovascular diseases, alcoholism, and depression; for some of these diseases weight loss can precede death by many years. Also, a downward spiral characterized by loss of lean body mass, inactivity, and eventually death, commonly known as “the dwindles,” is familiar to anyone caring for the elderly. The underlying causes of this vicious circle are often unclear, but may be related to accelerated declines in endogenous hormones such as insulin-like growth factor and testosterone. Rumpel et al (3) specifically examined the issue of excess mortality among lean women in the first National Health and Nutrition Examination Survey (NHANES I) population and found that the increased risk among lean persons was limited to those who had lost weight; no excess risk of death was seen among women who had always been lean. Similar findings were observed by Losonczy et al (4) in another elderly population. The problem of adverse health conditions causing weight loss is likely to increase with age and to be severe in older groups because of the high prevalence of chronic illness and loss of lean mass at these ages. This phenomenon probably accounts for the apparently increasing ideal weight with age in simplistic analyses relating body weight to mortality.

The cross-sectional findings of Harris et al are consistent with the prospective data of Rumpel et al and Losonczy et al. In the present study, weight loss and weight gain after age 50 y were both associated with overall poor health and mobility problems, but weight loss tended to be associated with reduced cardiovascular risk factors. Metabolic cardiovascular risk factor status reflects current weight, even if weight loss was caused by serious underlying disease. Indeed, many persons who die of wasting conditions develop a low risk profile for coronary artery disease. In the elderly, the stronger relation between prevalence of cardiovascular disease and weight at age 50 y than with current weight is not surprising. Because current weight is influenced by weight loss due to poor health or ill health, current weight does not reflect the lifetime accumulation of atherosclerosis due to excess body fat. Also, as shown by Harris et al (2) this weight loss is associated with mobility problems, which further increase the risk of cardiovascular disease due to loss of the protective influence of physical activity.

Various strategies have been used in epidemiologic studies to minimize the confounding effects of reverse causation. These include excluding persons with diagnoses that could cause weight loss, allowing a lag between the assessment of weight and beginning of follow-up for death, and excluding those with a history of weight loss. In principle, one might simply exclude those with intentional weight loss. However, because largely unsuccessful dieting is so common, apparently intentional weight loss may still represent occult disease. Thus, there is no easy way in epidemiologic studies to separate intentional from unintentional weight loss. It would be useful to distinguish between losses of lean and fat mass, but the necessary measurements have not been available in most epidemiologic studies. One would hypothesize that weight loss due primarily to loss of lean mass would be associated with poor health, whereas loss of fat mass would not be associated with increased risk, and could be associated with improved health.

The present study adds support for the conclusion that maintenance of a lean body weight throughout life is optimal for general well-being and lowest mortality. This conclusion is reflected in the 1995 weight guidelines (5), in which the implication that weight should increase at age 35 y has been removed. Whether intentional weight loss through physical activity and dietary restraint among overweight elderly persons improves overall health and reduces mortality is extremely difficult to study directly. Randomized trials for clinical outcomes will probably never be done because of

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the large numbers required and difficulties in maintaining long-term compliance. As seen in the present study, observational analyses of this relation may be misleading. However, improvements in cardiovascular risk factors among the elderly are desirable (6, 7) and can be achieved by even modest weight loss (8). Exercise can enhance mobility and thus quality of life (9). Thus, there is good reason, if not direct proof, to encourage regular exercise and modest weight loss among overweight older persons who are interested in their longevity and quality of life.

REFERENCES