Deaths associated with obesity may be declining in the United States

Susan Mayor *London*

Being obese or underweight is associated with increased mortality, but the number of deaths associated with obesity appears to be decreasing over time, possibly due to improved management of other cardiovascular risk factors, according to survey data from the United States published this week (*JAMA* 2005;293:1861-7).

The researchers looked at the relative risks of mortality associated with different levels of body mass index (BMI) from the nationally representative National Health and Nutrition Examination Survey (NHANES 1971-5) and NHANES II (1976-80), with follow-up to 1992, and from NHANES III (1988-94), with follow-up to 2000.

The results showed that obesity (BMI $\geq$ 30) was associat-

ed with 111 909 (95% confidence interval 53 754 to 170 064) excess deaths in the year 2000 and underweight (BMI $<$ 18.5) with 33 746 (15 726 to 51 766) excess deaths compared with people of normal weight (18.5 $\leq$ BMI $<$ 25). Overweight (25 $\leq$ BMI $<$ 30) was not associated with excess mortality.

Looking at trends over time, the relative risks of mortality associated with obesity were lower in more recent data from NHANES II and NHANES III than in NHANES I. Katherine Flegal, senior research scientist at the National Center for Health Statistics, Centers for Disease Control and Prevention, Hyattsville, Maryland, and lead author of the study, said, "The differences between NHANES I

and the later surveys suggest that the association of obesity with total mortality may have decreased over time, perhaps because of improvements in public health or medical care for obesity related conditions."

A second analysis of the NHANES data looking at 40 year trends in cardiovascular disease risk factors by BMI categories, showed that the prevalence of high cholesterol levels ($>$ 240 mg/dl), hypertension ($>$ 140/90 mm Hg), and current smoking had declined, particularly in people who were overweight or obese. Diabetes was the only risk factor that had remained stable in prevalence over the 40 years (*JAMA* 2005;293:1868-74).

Compared with obese people in the first NHANES data from 1960-2, the obese group in 1999-2000 had a 21% lower prevalence of high cholesterol level (39% in 1960-2 *v* 18% in 1999-2000), an 18% lower prevalence of high blood pressure (42% *v* 24%), and a 12% lower rate of smoking (32%

v 20%). The prevalence of high cholesterol had fallen more in people who were obese and overweight than in those who were normal weight or below ($P<$ 0.05). Changes in risk factors were accompanied by increases in lipid lowering and antihypertensive drug use, particularly in obese people.

Total diabetes prevalence was stable within different BMI groups over time, with a non-significant 1%-2% increase between 1976-80 and 1999-2000. However, this was accompanied by a 55% increase in total diabetes among the overall population (all BMI groups combined).

The researchers said, "In this unique series of nationally representative surveys of the US adult population, we documented a substantial decline in the prevalence of key [cardiovascular disease] risk factors over the last three to four decades, affecting obese, overweight, and lean segments of the population." □

Bariatric surgery recommended for morbidly obese people

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New guidelines issued by the American College of Physicians recommend surgery as a "treatment option" for severely obese patients.

The guidelines, published in the *Annals of Internal Medicine* (2005;142:525-31), say that bariatric surgery, in which the stomach is reduced to a small pouch and, in some cases, joined to the small intestine to reduce food absorption, should be considered for patients with a body mass index of 40 and above who have obesity related illnesses, such as diabetes or high blood pressure. The patients should also have failed diet and exercise, with or without the use of adjunctive drug therapy.

The recommendations are based on a report by the US Department of Health's Agency for Healthcare Research and Quality that reviewed numerous studies of medical and surgical therapies for obesity.

Opera singer Deborah Voight, who is renowned for her interpretation of the music of Wagner and Strauss, lost 45 kg after undergoing bariatric surgery in March

The report's authors, citing the Swedish obese subjects study, stated, "We consider this study as providing conclusive evidence of the superiority of surgical treatment." The Swedish study compared 251 surgically treated patients with 232 medically treated patients and found that surgically treated patients had greater weight loss and greater reductions in hypertension, diabetes, and lipid abnormalities.

But critics say that the reductions in surrogate markers, such as cholesterol concentrations, do not necessarily translate into better health and mortality outcomes. In addition, the primary endpoint of the Swedish study, mortality, has not been reported despite a decade of accumulated data.

Paul Ernsberger, associate professor of medicine, pharmacology, and neuroscience at Case Western Reserve School

of Medicine, told the *BMJ* that bariatric surgery is causing a resurgence of "diseases that were completely unheard of in the West" in recent times. He said that cases of beriberi, pernicious anaemia, and Wernicke-Korsakoff's psychosis are now being seen in the United States, problems that were not readily treated with vitamins since malabsorption because of surgery often caused patients to pass the intact pills in their stools. These patients, said Dr Ernsberger, "have very nutritious stools."

The mortality risks of obesity have also been overplayed, according to Dr Ernsberger, who said that a widely quoted study showing a 12 times higher mortality in obese patients was flawed because the patients were rapidly regaining weight after being on a "zero calorie diet" for rapid weight loss.

The guidelines included the finding that one in every 50 patients (1.9%) dies within 30 days of surgery.

The number of patients having bariatric surgery has increased from 16 000 patients in 1992 to 141 000 in 2004. □

The report, *Pharmacological and Surgical Treatment of Obesity*, is available at www.ncbi.nlm.nih.gov/books/.