



# The Fat Fracas

## Researchers weigh in on body size

By KATHLEEN FACKELMANN

**W**hen the prestigious NEW ENGLAND JOURNAL OF MEDICINE published an editorial on body weight and health on Jan. 1, the public and press seemed ready to embrace its message: "Losing weight—an ill-fated New Year's resolution."

"Given the enormous social pressure to lose weight," the editorial read, "one might suppose there is clear and overwhelming evidence of the risks of obesity and the benefits of weight loss. Unfortunately, the data linking overweight and death, as well as the data showing the beneficial effects of weight loss, are limited, fragmentary, and often ambiguous."

Press reports followed the editorial's lead, giving the impression that being too fat doesn't really matter much.

The editorial ignited a firestorm of debate among public health authorities. In a letter to the editors of the journal, former U.S. Surgeon General C. Everett Koop called the message "a disappointing one that trivializes the second leading cause of preventable death in the United States."

Even the authors of the research report that triggered the editorial are at odds with its message. "We showed that body weight does affect survival up to age 75," June Stevens of the University of North Carolina at Chapel Hill told SCIENCE NEWS. Stevens says the data indicate that obesity is a moderate risk factor, one

that may lead to an untimely death.

"Thirty percent of Americans are overweight, so the effect on the public health is huge, absolutely huge," Stevens says.

Who's right? Although some questions about body weight and health have yet to be answered, most experts agree that the insidious process of gaining a few pounds each year can add up to a health risk that includes diabetes and heart disease.

**B**efore delving into the imbroglia over obesity, one should consider the research report itself, which also appeared in the Jan. 1 NEW ENGLAND JOURNAL OF MEDICINE (NEJM).

Stevens, Michael J. Thun of the American Cancer Society in Atlanta, and their colleagues studied more than 62,000 men and 262,000 women who had participated in a study on cancer prevention. The volunteers had never smoked cigarettes and had no history of heart disease or cancer when they entered the study in 1959 or 1960. All of them completed a questionnaire that asked their weight and height. The researchers then calculated each person's body mass index by dividing weight in kilograms by height in meters squared. Researchers believe this index is a better predictor of health risks than body weight alone.

For 30 years, the researchers kept track of volunteers who died and noted

the causes of death. They sought to answer a simple question. Were the overweight people at risk of dying earlier than the others in the study? The researchers found that until age 75, a higher body mass index was associated with a greater risk of premature death from all causes, including heart disease.

Although this observation supports the majority view, the researchers also calculated the relative risk of increased body weight at different ages—a move that triggered the controversy. Relative risk is a statistical method that compares a particular risk factor to other causes of death.

The researchers found that the relative risk associated with obesity declined with age in people between 30 and 74. "For both death from all causes and death from cardiovascular disease, the increase in risk associated with a higher body mass index tended to be greater among younger subjects," the researchers reported.

Numerous age-related disorders can increase an older person's risk of death; such conditions usually prove more important in causing death than obesity does. Younger people have fewer disorders, so the relative risk of obesity is higher. "The association is highly age-dependent," Jerome P. Kassirer and Marcia Angell, the editors of NEJM, wrote about the work of Stevens' team. "It declines steadily with age until about 74 years."

Relative risk is important for epidemi-

ologists trying to gauge the importance of various diseases and conditions, but is it the best measure of a common public health risk? Probably not, Thun says.

Absolute risk, the actual number of deaths linked to obesity, is probably a more telling figure. The absolute risk associated with obesity goes up after age 30.

Simply put, carrying too much weight becomes more hazardous as a person ages. "Obesity is associated with early mortality," Thun says, "and in absolute terms that continues throughout life [until age 75]."

**T**he debate over relative versus absolute risk may seem arcane to many people who find that no matter what they do, the scale keeps inching up. The question for many Americans is, How bad is it to gain weight year after year?

To gain perspective on that question, one can consider the weight guidelines provided by the U.S. Department of Agriculture. In 1990, for the first time, those guidelines allowed for an expanding waistline as a person ages. One could almost hear the collective sigh of relief—but the reprieve was temporary.

JoAnn E. Manson, Charles H. Hennekens, both of Harvard Medical School in Boston, and other researchers published a report in the Sept. 14, 1995 NEJM showing that women who had gained 22 pounds or more since age 18 ran an increased risk of dying. Not surprisingly, U.S. weight guidelines in 1995 went back

to a single weight for each height and sex category.

Although the 1998 NEJM report has been used to support the position that it's not so bad to gain weight as you get older, Stevens says the study shows that the optimal body mass index ranges from 19 to 25, a range that does not change as one ages.

What happens to people who dip below the optimal range? Some researchers have noticed that the risk of mortality goes up for very thin people, but critics contend that the risk of death attributed to being skinny may actually be caused by smoking or cancer.

The 1998 study didn't have enough participants in the very lean category to offer any advice on the health risks or benefits to people with a body mass index below 19, Thun says.

**S**hould people who find themselves above the optimal index go on a diet? The study didn't address the question of whether weight loss reduces risk, but the editorial did.

The cure for obesity may be worse than the condition itself, the editors note. "Countless numbers of our daughters and increasingly many of our sons are suffering immeasurable torment in fruitless weight-loss schemes and scams, and some are losing their lives."

There's no question that certain weight-loss attempts can be detrimental. Olestra, the fake fat now appearing in some snack

food products, has been shown to deplete the body's supply of healthful nutrients (SN: 2/3/96, p. 68). Last year, the diet drug known as fen-phen was linked to a serious heart valve disease (SN: 10/18/97, p. 252). In addition, the editorial points out that the desire to be as thin as a fashion model has triggered an epidemic of life-threatening eating disorders.

"Doctors should be cautious about exhorting patients to lose weight, especially when they are only mildly obese," say Kassirer and Angell.

The researchers agree with the concern about some weight-loss schemes, but they argue that the editorial made light of tried-and-true methods of losing or maintaining weight (see sidebar).

"I was very surprised," Stevens says about the tone of the editorial. "There was a bottom-line message to physicians that said, Don't make body weight a priority in your practice." She adds, "I think that's too bad, especially since the prevalence of obesity is skyrocketing in this country."

The editorial unfairly presented a "fatalistic view of dieting and weight loss," says Tim Byers, an obesity researcher at the University of Colorado School of Medicine in Denver. A letter submitted to NEJM by Koop and two prominent obesity researchers seconds that view. "The irresponsible use of editorial privilege to withdraw people's hope [of losing weight] is a disservice to clinical medicine and to the American public," it said.

Readers of the journal will not see that

### Watching Weight for Health

The prescription for a healthful weight doesn't come in pill form. It has no deleterious side effects and requires no expensive trips to the pharmacy. In its simplest form, the most common remedy for overweight consists of just two steps.

The first is to build at least 30 minutes of continuous physical activity, such as a brisk walk, into daily life.

The second is to eat a healthful diet. That means five or more fruits and vegetables per day, whole grain foods, and low-fat dairy products. Pay close attention to serving sizes, which have gone up dramatically in U.S. restaurants.

The regimen, which can also be used to avoid gaining weight, doesn't call for ultra-low-calorie diets or marathon workouts, points out David F. Williamson of the National Center for Chronic Disease Prevention and Health Promotion in Atlanta. "People have to be patient and expect change to take place over several years, not several weeks," he says.

Indeed, those who follow this regimen faithfully will improve their health and increase the odds of again fitting into their college blue jeans.

Most people gain weight as they age. Therefore, the goal of maintaining one's current weight is a significant one, notes Tim Byers of the University of Colorado School of Medicine in Denver.

Williamson says that regular physical activity is the cornerstone of any plan to reap the health benefits of a better body. "That doesn't just apply to people who are obese," he says. "It applies to all of us." Even someone with a body mass index of 28 or 29 who exercises can be in much better health than a sedentary person who has an index of 21, he notes.

One should aim for a body mass index of 19 to 25. That translates as 110 to 145 pounds for a person 5 feet 4 inches tall or 140 to 180 pounds for someone 6 feet tall.

—K.F.



letter. The editors say they won't publish it because it has already appeared in a newsletter put out by Shape Up America!, a nonprofit fitness group founded by Koop and based in Bethesda, Md.

Koop, Byers, and others say that even a modest reduction in weight can lower blood pressure, reduce concentrations of fat in the bloodstream, and improve sugar metabolism. "There's a lot of benefit to just 5 or 10 pounds of weight loss," Byers says.

Glenn A. Gaesser of the University of Virginia in Charlottesville is not convinced that those benefits come directly from weight loss. People who exercise regularly gain such benefits—even if they don't take off pounds, he says.

"Health problems frequently blamed on excess body weight are more likely caused by an unhealthy lifestyle rather than obesity itself," he argues in a letter to the April 16 NEJM. "If so, then a singular focus on weight loss for medicinal reasons is entirely off target."

**T**he controversy over weight loss is likely to continue, even though experts agree that most people would benefit from a strategy of prevention when it comes to body weight. "We believe that [health care providers] should counsel all patients who are overweight (who have a body mass index of 25 or above) to avoid further weight gain," says a letter published in the April 16 NEJM by William H. Dietz and his colleagues at the Centers for Disease Control and Prevention in Atlanta. "Controlling our calories and figuring out how to build physical activity into our lives is a very important public health goal," Thun adds.

Hennekens agrees with that assessment. "We've made remarkable gains in



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diagnosing and treating high blood pressure and high blood cholesterol. But we're faltering on the body weight issue."

That misstep may prove a serious one. Although heart disease rates have come down in the last 25 years, Hennekens believes they will start to climb again

because U.S. teenagers weigh more, smoke more, and exercise less than their parents did.

"I think obesity remains a major public health problem, probably second only to cigarettes as an avoidable cause of death," he says. □

| WEIGHT | 100 | 105 | 110 | 115 | 120 | 125 | 130 | 135 | 140 | 145 | 150 | 155 | 160 | 165 | 170 | 175 | 180 | 185 | 190 | 195 | 200 | 205 | 210 | 215 | 220 | 225 | 230 | 235 | 240 | 245 | 250 |  |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| HEIGHT |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 5'0"   | 20  | 21  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35  | 36  | 37  | 38  | 39  | 40  | 41  | 42  | 43  | 44  | 45  | 46  | 47  | 48  | 49  |  |
| 5'1"   | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 26  | 27  | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35  | 36  | 37  | 38  | 39  | 40  | 41  | 42  | 43  | 43  | 44  | 45  | 46  | 47  |  |
| 5'2"   | 18  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 27  | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35  | 36  | 37  | 37  | 38  | 39  | 40  | 41  | 42  | 43  | 44  | 45  | 46  |  |
| 5'3"   | 18  | 19  | 19  | 20  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 27  | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35  | 35  | 36  | 37  | 38  | 39  | 40  | 41  | 42  | 43  | 43  | 44  |  |
| 5'4"   | 17  | 18  | 19  | 20  | 21  | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 27  | 28  | 29  | 30  | 31  | 32  | 33  | 33  | 34  | 35  | 36  | 37  | 38  | 39  | 39  | 40  | 41  | 42  | 43  |  |
| 5'5"   | 17  | 17  | 18  | 19  | 20  | 21  | 22  | 22  | 23  | 24  | 25  | 26  | 27  | 27  | 28  | 29  | 30  | 31  | 32  | 32  | 33  | 34  | 35  | 36  | 37  | 37  | 38  | 39  | 40  | 41  | 42  |  |
| 5'6"   | 16  | 17  | 18  | 19  | 19  | 20  | 21  | 22  | 23  | 23  | 24  | 25  | 26  | 27  | 27  | 28  | 29  | 30  | 31  | 31  | 32  | 33  | 34  | 35  | 36  | 36  | 37  | 38  | 39  | 40  | 40  |  |
| 5'7"   | 16  | 16  | 17  | 18  | 19  | 20  | 20  | 21  | 22  | 23  | 23  | 24  | 25  | 26  | 27  | 27  | 28  | 29  | 30  | 31  | 31  | 32  | 33  | 34  | 34  | 35  | 36  | 37  | 38  | 38  | 39  |  |
| 5'8"   | 15  | 16  | 17  | 17  | 18  | 19  | 20  | 21  | 21  | 22  | 23  | 24  | 24  | 25  | 26  | 27  | 27  | 28  | 29  | 30  | 30  | 31  | 32  | 33  | 33  | 34  | 35  | 36  | 36  | 37  | 38  |  |
| 5'9"   | 15  | 16  | 16  | 17  | 18  | 18  | 19  | 20  | 21  | 21  | 22  | 23  | 24  | 24  | 25  | 26  | 27  | 27  | 28  | 29  | 30  | 30  | 31  | 32  | 32  | 33  | 34  | 35  | 35  | 36  | 37  |  |
| 5'10"  | 14  | 15  | 16  | 17  | 17  | 18  | 19  | 20  | 21  | 22  | 22  | 23  | 24  | 24  | 25  | 26  | 27  | 27  | 28  | 29  | 29  | 30  | 31  | 32  | 32  | 33  | 34  | 34  | 35  | 36  |     |  |
| 5'11"  | 14  | 15  | 15  | 16  | 17  | 17  | 18  | 19  | 20  | 20  | 21  | 22  | 22  | 23  | 24  | 24  | 25  | 26  | 26  | 27  | 28  | 29  | 29  | 30  | 31  | 31  | 32  | 33  | 33  | 34  | 35  |  |
| 6'0"   | 14  | 14  | 15  | 16  | 16  | 17  | 18  | 18  | 19  | 20  | 20  | 21  | 22  | 22  | 23  | 24  | 24  | 25  | 26  | 26  | 27  | 28  | 28  | 29  | 30  | 31  | 31  | 32  | 33  | 33  | 34  |  |
| 6'1"   | 13  | 14  | 15  | 15  | 16  | 16  | 17  | 18  | 18  | 19  | 20  | 20  | 21  | 22  | 22  | 23  | 24  | 24  | 25  | 26  | 26  | 27  | 28  | 28  | 29  | 30  | 30  | 31  | 32  | 32  | 33  |  |
| 6'2"   | 13  | 13  | 14  | 15  | 15  | 16  | 17  | 17  | 18  | 19  | 19  | 20  | 21  | 21  | 22  | 22  | 23  | 24  | 24  | 25  | 26  | 26  | 27  | 28  | 28  | 29  | 30  | 30  | 31  | 31  | 32  |  |
| 6'3"   | 12  | 13  | 14  | 14  | 15  | 16  | 16  | 17  | 17  | 18  | 19  | 19  | 20  | 21  | 21  | 22  | 22  | 23  | 24  | 24  | 25  | 26  | 26  | 27  | 27  | 28  | 29  | 29  | 30  | 31  | 31  |  |
| 6'4"   | 12  | 13  | 13  | 14  | 15  | 15  | 16  | 16  | 17  | 18  | 18  | 19  | 19  | 20  | 21  | 21  | 22  | 23  | 23  | 24  | 24  | 25  | 26  | 26  | 27  | 27  | 28  | 29  | 29  | 30  | 30  |  |

The easy way to check your weight is to look it up on this body mass index chart. For more information about body mass index, visit the Web site run by Shape Up America!, a nonprofit fitness group at <http://www.shapeup.org>. Chart courtesy of Shape Up America!