The Weight Debate

Is That Spare Tire a Lifesaver?

By Bonnie Liebman

“Some extra heft may be helpful,” declared The New York Times. “Pleasantly plump may be okay,” announced ABC News.

Last April, a flurry of news reports shook the conventional wisdom that putting on extra pounds is a health risk. “The headlines generated tremendous controversy and confusion,” notes Walter Willett, chair of the nutrition department at Harvard University’s School of Public Health.

Researchers at Harvard, the American Cancer Society, and elsewhere argue that the study behind those headlines—from the Centers for Disease Control and Prevention—was flawed.

“The CDC seriously underestimated the risk of dying in the overweight by not adequately dealing with the bias due to smoking and disease,” explains Michael Thun, vice president for epidemiology and research at the Cancer Society.

Here’s the scoop on which weight is the healthiest and why.

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IS THAT SPARE TIRE A LIFESAVER?

"It seems like déjà vu," noted Harvard’s Walter Willett as he opened a symposium on “Overweight, Obesity and Mortality” last May (www.hsph.harvard.edu/weighing_the_evidence).

“It was just about 15 years ago when a scientist at the National Institute on Aging concluded that it was good to be a little overweight rather than normal weight,” explained Willett. “And it was pure rubbish.”

The latest skirmish began in April, when Katherine Flegal, David Williamson, and others from the Centers for Disease Control and Prevention (CDC) and elsewhere analyzed the link between weight and the risk of dying in a nationally representative survey of roughly 37,000 Americans. Their study led The New York Times to declare: “People who are overweight but not obese have a lower risk of death than those of normal weight, federal researchers are reporting today.”

Where does that leave a nation where two out of three adults are overweight or obese?

Confused.

“I was appalled by what I read in the newspapers when this study came out,” Scott Grundy told the Harvard symposium. Grundy is director of the Center for Human Nutrition at the University of Texas Southwestern Medical Center in Dallas.

“The average person who is not familiar with the details of multivariable analysis will not be in a good position to make judgments about this study.”

Here’s what to consider before you reach for another slice of cheesecake.

1. Smoking makes people leaner.

“It seems like it would be simple to figure out how weight is related to health,” says Meir Stampfer, chair of the epidemiology department at the Harvard School of Public Health. “But you can’t just measure height and weight and count the bodies.”

The first problem is cigarette smoking. Smokers are more likely to be lean than overweight, and smoking raises the risk of dying of heart disease, cancer, emphysema, and other illnesses. Since smokers make up a sizeable proportion of lean Americans—roughly 30 percent of women in the Nurses Health Study, for example—their higher death rate makes it look like you’re better off being overweight.

“If you don’t eliminate the bias caused by smoking, it will artificially inflate the risk of dying among the lean and underestimate the risk of dying in the overweight,” explains JoAnn Manson, chief of the Division of Preventive Medicine at Brigham and Women’s Hospital in Boston and professor of epidemiology at the Harvard School of Public Health.

The controversial CDC analysis “controlled” for smoking—that is, the researchers compared overweight to lean smokers and overweight to lean nonsmokers.1 “Excluding smokers doesn’t reduce bias; it creates bias,” argues the CDC’s David Williamson.

Manson disagrees. When she controlled for smoking—using detailed cigarettes-per-day data, not just the CDC’s smoking-or-not data—she found that the leanest women still had a slightly higher risk of dying (see “Factoring Out Smokers & the Sick,” p.4).

In contrast, when she looked at women who had never smoked, the leanest women had the lowest risk of dying.2 “The effect of cigarettes on the risk of disease is so powerful and it’s so difficult to control for factors like the intensity and duration of smoking that the only way to eliminate the bias is to look at people who have never smoked,” says Manson.

To fend off criticism, the CDC researchers also looked at people who had never smoked. Surprisingly, they found that overweight people still had the lowest risk of dying.3 Perhaps that’s because when the CDC eliminated smokers, that left too few nonsmokers in the part of the study that followed people the longest.4

The CDC data “may not be large enough to restrict an analysis to healthy nonsmokers,” says the American Cancer Society’s Michael Thun.

2. Illness makes people leaner.

Sad to say, the leanest Americans aren’t just a bunch of Lance Armstongs. In addition to healthy lean people and smokers, the lean include people with cancer, emphysema, congestive heart failure, liver disease, dementia, and other illnesses that lead to weight loss and, eventually, death.

“It’s not that being underweight causes disease, but that these chronic diseases can cause weight loss,” explains Manson. “It’s called reverse causation.”

Most researchers exclude people who know they are sick before they enter a study on the risk of dying. To eliminate people who don’t know that they have cancer or other diseases, most scientists exclude from the results anyone who dies within several years after the study begins.

“To completely eliminate the biases, you have to simultaneously eliminate cur...
Factoring Out Smokers & the Sick

Who is least likely to die? The top graph—from a study that followed 115,000 U.S. women in the Nurses Health Study for 16 years—looks like recent findings from a controversial CDC study.

In the graph, it looks as though women who are normal or slightly overweight have the lowest risk of dying.

All Women

Without smokers and sick people, lean women have the lowest risk of dying, and the risk climbs as weight rises.


*The “obese” range shown here is approximate. Obesity is defined as a BMI of 30 or higher.

However, many lean women are either smokers or sick.

So Harvard researchers excluded smokers, ex-smokers, women who knew they were sick (with cancer, heart disease, etc.), women who died within several years after the study began (they might not have known they were sick), and women who had recently lost weight (a sign of illness).

Women Who Never Smoked and Had Stable Weight

rent and past smokers, exclude baseline illness, and exclude deaths within the first ten years of follow-up,” says Frank Hu, an associate professor of nutrition and epidemiology at the Harvard School of Public Health. When he did that in the Nurses Health Study of more than 115,000 women, the risk of dying was lowest in the normal and (healthy) underweight women, and rose progressively as women got fatter.

The new CDC study, says Willett, “took only half-hearted measures to exclude people with chronic disease.” It didn’t eliminate people who knew they were ill. And it “excluded people who died in the first three or five years, but that’s not adequate.”

The CDC researchers couldn’t exclude people who died in the first ten years because some of the participants were only followed for nine years.

“If you have a short follow-up, you still have a problem with people who don’t know they’re sick,” explains the American Cancer Society’s Michael Thun. “As the follow-up lengthens, that’s less of a problem because the people who don’t know that they’re sick die.”

The CDC’s David Williamson is skeptical that a longer follow-up would matter. “I’m not convinced that following people for another decade will make a difference,” he says. But, he adds, “as more data becomes available, we’ll certainly analyze it to see if some bias occurred because we didn’t follow up long enough.”

His concern is that if researchers exclude everyone who smokes or is sick, so few deaths are left that the results don’t apply to all Americans.

“Other studies end up excluding 80 to 90 percent of the deaths,” he explains. “Is the small, rarefied cohort that remains representative of the population?”

But others counter that it’s not just legitimate, but essential, to exclude smokers and chronically ill people to figure out what weight is healthiest.

“It really comes down to whether a study is representative or valid,” says Thun. “You can’t get a valid answer from smokers or sick people because anyone who’s ever practiced medicine knows that being sick affects weight. We want to know about weight before, not after, people get sick.”

Even eliminating people who die within the first ten years may not be enough, explains Willett.
“Think of a common scenario,” he suggests. “A man who is overweight at age 45 develops diabetes at age 50. At age 60 he has a heart attack, and by 65 he has congestive heart failure, which causes him to lose weight, and he dies at age 70.

“If you start looking at age 65, it looks like a lean person died, but the death is really due to being overweight at age 45.”

Emphysema and other respiratory diseases also cloud the picture. “Chronic respiratory insufficiency makes you very skinny,” says Thun. “But people can survive a long time.” And that could make it appear that being lean raises the risk of dying.

“It’s always possible that being thin can raise the risk of illness,” he acknowledges. “In fact, there’s a whole literature on leanness causing lung cancer. But I believe those studies are mistaken cause and effect.”

When researchers exclude the sick and smokers, he adds, “almost all the relationship between leanness and lung cancer goes away.”

3. Age often makes people leaner.

Finding a link between weight and death in older people—the group with the highest risk of dying—is especially tricky. In part, that’s because so many older people are ill.

“People often lose weight as they get into their 70s and 80s, and it’s often due to chronic disease,” says Harvard’s JoAnn Manson. “A third to a half of people in the older age groups have at least one chronic disease like heart disease, stroke, congestive heart failure, or cancer.”

Furthermore, researchers use body mass index—weight for a given height—to rate body fat, and BMI doesn’t work so well in older people.

“BMI is a less reliable marker for fatness in the elderly because you lose about half a pound of muscle per year as you get older,” explains Manson. In other words, a lean 55-year-old may be muscular, while a lean 85-year-old may be frail.

A large waist (compared to one’s hips) is a better indicator of body fat than BMI in older people, notes Manson, but people don’t always measure it accurately. “BMI is a good predictor of mortality in your 40s, 50s, and 60s, but it may not be good in your 70s and 80s.”

What’s more, adds Manson, “depletion of the susceptibles” may hide the harm caused by obesity. “People who are susceptible to heart disease and diabetes tend to die earlier, so if you’re still obese in your 80s, you’re probably relatively immune to the adverse effects of obesity.”

Unfortunately, the “chubby is good” message was music to the ears of all ages, not just the over-80 set.

Finally, what researchers call “compression of mortality” kicks in among older people. As you age, the risk of dying is so high that not much influences it. “Even cigarette smoking doesn’t look like a strong predictor of mortality in your 80s and 90s,” says Manson.

That doesn’t mean that health experts should advise people to gain weight any...
more than they should urge people to smoke. And if the risk of dying is already high in older people, why do anything that raises their risk even slightly?

4. Is it plausible that obesity prevents death?

Hundreds of studies show that people who've put on extra pounds have a higher risk of cancer, diabetes, and cardiovascular disease (heart attacks and strokes). "Those Cancer Society's Michael Thun. "The risk of dying of colon cancer increases in the overweight as well as the obese."

What's more, being overweight makes a person more likely to develop risk factors for cardiovascular disease and diabetes, like high blood pressure and high LDL ("bad") cholesterol. "Fat tissue secretes hormones and chemical messengers that cause insulin resistance, diabetes, and hypertension," says Manson. "And we know that even modest weight

"Results like the CDC's should make researchers ask if there is some methodological flaw or bias in their data."

5. Healthy or merely alive?

If obesity could somehow raise the risk of disease but lower the risk of dying, it might be a sort of bargain with the devil. "The overweight have a significantly higher risk of diabetes, gallstones, hypertension, and heart disease," notes Graham Colditz, professor of epidemiology at the Harvard School of Public Health. "All have costs and an impact on the quality of life that get ignored if we focus only on mortality."

The risk of diabetes, for example, is roughly eight times higher in overweight women—and six times higher in overweight men—than in their lean counterparts. Obese men and women have 18 times the risk, and the most obese have 30 to 40 times the risk.

"For nearly 20 years, we have documented the huge impact that diabetes has on the health care system, from kidney failure to dialysis and so on," says Colditz.

Women who are overweight (but not obese) have a 34 percent higher risk of dying of breast cancer than lean women. That's a fairly modest increase—not even double—but with breast cancer striking one in eight women over a lifetime, who needs any boost in the odds?

Two years ago, researchers at the American Cancer Society added up the impact of both overweight and obesity on more than a dozen cancers, including those of the colon, esophagus, kidney, and uterus. "We estimate that 90,000 deaths due to cancer could be prevented each year in the United States if men and women could maintain normal weight," concluded the Society's Michael Thun and others.

Obesity costs the nation an estimated $70 billion a year, says Colditz, half of it borne by Medicare and Medicaid. "And that doesn't include the indirect costs due to lost productivity."

Even the CDC's David Williamson agrees. The impact of overweight is "murky when you focus on mortality," he says. "It gets stronger when you focus on disease incidence."

diseases kill most people in the U.S., and we know that obesity contributes to all of them," says the University of Texas's Scott Grundy.

Being even slightly overweight raises the risk of dying of several cancers, according to a huge American Cancer Society study that has tracked more than 1.2 million people since 1982. "The risk of dying of breast cancer increases as BMI increases," notes the


[Image 260x293 to 295x305]
[Image 260x276 to 295x287]
[Image 260x311 to 295x322]
[Image 260x328 to 295x339]
[Image 260x258 to 295x269]
America’s Obesity

“Epidemic”

“Plague”

“Terror”

“Hype”?

The truth is out there.

ConsumerFreedom.com

Industry in disguise. The Center for Consumer Freedom, funded largely by the restaurant and food industry, used this ad to imply that the obesity epidemic doesn’t exist. Despite the small print at the top of the ad, a recent study from the Centers for Disease Control and Prevention may have underestimated the deaths caused by obesity because it failed to adequately account for smoking and weight loss caused by illness.

**6. Is it now safer to be overweight?**

Extra pounds may have less impact on dying than in the past, suggested the CDC’s study, because Americans are less likely to have high cholesterol or high blood pressure or to smoke than in the past.

“The may well be a secular trend between the CDC’s study and other people,” she argues.

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A full-page newspaper ad referring to the obesity epidemic as “hype.”

“Like tobacco, obesity is intertwined with the economic and social fabric of our culture,” says the American Cancer Society’s Michael Thun, “so it’s bound to be an inflammatory and controversial topic. But it’s irresponsible for commercial interests to trivialize what has become a major public health problem in the U.S. and globally.”

**The Bottom Line**

- As your weight increases, so does your risk of heart disease, cancer, diabetes, and death.
- In older people, a large waist may reflect body fat better than weight does. A large waist (at least 35 inches in women or 40 inches in men) is a risk factor at any age.
- If you’re overweight, avoid weight gain and shoot for modest weight loss, which is usually enough to lower blood pressure and blood sugar.
- No matter what you weigh, eat a healthy diet built around vegetables, fruit, beans, whole grains, seafood, poultry, low-fat dairy, and modest amounts of oils, nuts, and other unsaturated fats.
- Shoot for 30 to 60 minutes of exercise each day.

**1.** Journal of the American Medical Association 293: 1861, 1918, 2005.


