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When it comes to nutrition, it's easy to spend a lot of time worrying about what to eat. But how much you eat puts an even greater stamp on your long-term health than picking the right kind of fats or choosing exactly the right mix of vitamins.

How much you weigh (in relation to your height), your waist size, and how much weight you've gained since your mid-20s strongly influence your chances of:

- **dying early**
- **having, or dying from, a heart attack, stroke, or other type of cardiovascular disease**
- **developing diabetes**
- **developing cancer of the colon, kidney, breast, or endometrium**
- **having arthritis**
- **developing gallstones**
- **being infertile**
- **developing asthma as an adult**
- **snoring or suffering from sleep apnea, or**
- **developing cataracts.**

Despite the substantial impact of weight on individual health, and the soaring rates of obesity in the United States, relatively few Americans see excess weight as a problem. In a [survey](#) conducted by researchers at Harvard's Kennedy School of Government, almost 1,000 Americans ranked obesity low on the list of serious health problems. Equally alarming, only 9 percent said their weight was a problem, even though more than half were overweight.⁽¹⁾ That's a shocking finding, given that excess weight leads to at least 300,000 deaths per year ⁽²⁾ and costs more than \$70 billion each year in direct costs alone.⁽³⁾ Obesity now accounts for more deaths and chronic disorders, and poorer health-related quality of life, than either smoking or problem drinking.⁽⁴⁾



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[Healthy Weight](#)

[HSPH and NECON Partnership](#)

[Strategic Plan for the Prevention and Control of Overweight and Obesity in New England](#)

[Healthy Weight Control Guidelines - NECON Strategic Plan](#)

[Live Well New England - Poster](#)

[HSPH's Sebastian's Cafe Healthy Eating](#)

[Guidelines for Healthy Eating - brochure](#)

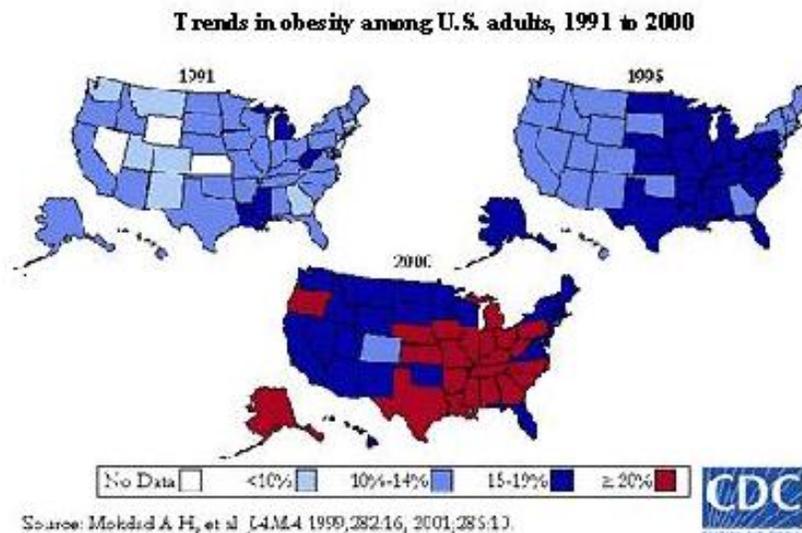
[Can You Be Too Thin?](#)

It's certainly possible to be dangerously thin. Individuals with eating disorders

If your weight is in the healthy range and isn't more than 10 pounds over what you weighed when you turned 21, great. Keeping it there--and keeping it steady--by watching what you eat and exercising will limit your risk of developing one or more of these chronic conditions noted above. If you are overweight, doing whatever you can to prevent gaining more weight is a critical first step. Then, when you're ready, shedding some pounds and keeping them off will be important steps to better health.

An Epidemic of Obesity

If every picture tells a story, then the one below tells a chilling tale about an epidemic of obesity that poses a major public health problem. In 1991, obese adults made up less than 15 percent of the population in most U.S. states. Ten years later, only one state could claim that distinction. During this span, the Centers for Disease Control and Prevention's annual Behavioral Risk Factor Surveillance System recorded a 61 percent increase in obesity.⁽⁵⁻⁷⁾ Today, an estimated 108 million adult Americans weigh more than is healthy.



Even more alarming, the prevalence of overweight and obesity in children and adolescents is on the rise, and children are becoming overweight and obese at earlier ages. An estimated 13-14 percent of children aged 6 to 19 years are considered overweight or obese.⁽⁸⁾ Early obesity not only increases the likelihood of adult obesity,⁽⁹⁾ and it also increases the prevalence of weight-related risk factors for cardiovascular disease such as hypertension, elevated serum cholesterol, and insulin resistance.⁽¹⁰⁻¹²⁾ Overweight is at least partly

such as anorexia nervosa and bulimia--and those with wasting diseases such as cancer, AIDS, and heart failure--can lose so much weight that they don't have enough energy or basic building blocks to keep themselves alive. What about people who are thin but don't have an eating disorder?

Some studies suggest that the connection between body mass index and premature death follows a U-shaped curve. This would mean that weighing too much--or too little-- isn't as healthy as some middle weight.

The main problem with this idea is that most of these studies included smokers and individuals with early but as-yet undetected chronic and fatal diseases. Cigarette smokers as a group weigh less than nonsmokers, in part because smoking deadens the appetite.

responsible for the dramatic increase in diagnoses of type 2 diabetes mellitus (formerly called adult-onset diabetes) among children. In some parts of the United States., more than 30 percent of new cases of type 2 diabetes mellitus are in children, and most of these are attributable to obesity.([13](#), [14](#))

What's a Healthy Weight?

Although nutrition experts still debate the precise limits of what constitutes a healthy weight, there's a good working definition based on the ratio of weight to height. This ratio, called the body mass index (or BMI for short), takes into account the fact that taller people have more tissue than shorter people, and so tend to weigh more.

Dozens of studies that have included more than a million adults have shown that a body mass index above 25 increases the chan

ces of dying early, mainly from heart disease or cancer, and that a body mass index above 30 dramatically increases the chances. Based on this consistent body of research,

a healthy weight is one that equates with a body mass index less than 25. By convention, overweight is defined as a body mass index of 25 to 29.9, and obesity is defined as a body mass index of 30 or higher.

Nothing magical happens when you cross from 24.9 to 25 or from 29.9 to 30. These are just convenient reference points. Instead, the chances of developing a weight-related health problems increases across the range of weights

Muscle and bone are more dense than fat, so an athlete or muscular person may have a high body mass index, but not be fat. It's this very thing that makes weight gain during

Calculate your BMI

With a calculator handy (or pencil and paper if you like multiplication and long division), you can determine your body-mass index like this: Divide your weight in pounds by your height in inches. Divide the answer by your height in inches. Multiply the answer by 703.

For a person who is 5'8" (68 inches) and weighs 172 pounds, that would be $172 \div 68 \div 68 \times 703$, or a shade over 26.

For an easier way, [click here](#) and fill in your weight and height.

Or [click here](#) and use a simple chart.

Potentially deadly chronic diseases such as cancer, emphysema, kidney failure, and heart failure can cause weight loss even before they cause symptoms and have been diagnosed

So low weights don't necessarily cause early death. Instead, low weight is often the result of illnesses or habits that may be fatal.

One way to untangle this chicken-and-egg problem in epidemiologic studies is to look only at nonsmokers and to ignore deaths in the first few years of follow-up. The most recent such efforts come from two large, long-term studies established by the American Cancer Society. Its first and second Cancer Prevention Studies included more than 1 million adults who were followed for at least 12 years.([34](#), [35](#))

They excluded

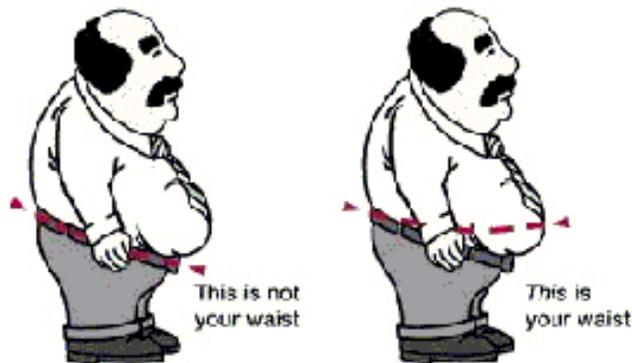
adulthood such an important determinant of weight-related health--few adults add muscle and bone after their early twenties, so nearly all that added weight is fat.

Waist Size Matters, Too

Some research suggests that not all fat is created equal. Fat that accumulates around the waist and chest (what's called abdominal adiposity) may be more dangerous for long-term health than fat that accumulates elsewhere.⁽¹⁵⁾ Some studies suggest

that abdominal fat plays a role in the development of high blood pressure, high cholesterol,

high blood sugar, and heart disease. It's also possible, of course, that abdominal fat isn't worse than fat around the hips or thighs, but instead is a signal of overall body-fat accumulation that weight alone just doesn't capture.



Measuring your waist is easy, if you know exactly where your waist really is. Wrap a flexible measuring tape around your midsection where the sides of your waist are the narrowest. This is usually even with your navel. Make sure you keep the tape parallel to the floor.

An expert panel convened by the National Institutes of Health concluded that a waist larger than 40 inches for men and 35 inches for women increases the chances of developing heart disease, cancer, or other chronic diseases.⁽¹⁶⁾ Although these are a bit generous ⁽¹⁷⁾ they are useful benchmarks.

Waist size is a simple, useful measurement because abdominal muscle can be replaced by fat with age, even though weight may remain the same. So increasing waist size can serve as a warning that you ought to take a look at how much you are eating and exercising.

Keeping Things Level

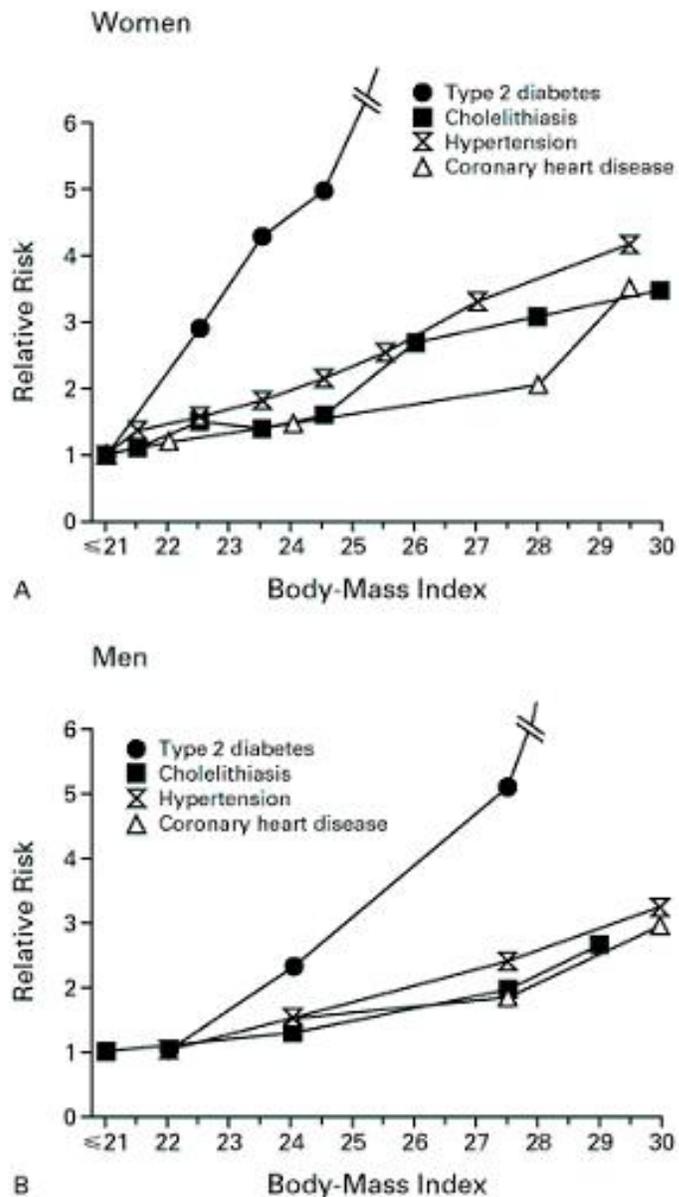
Middle-aged spread is the source of millions of New Year's resolutions. Gaining weight as you age increases the chances of

smokers excluding smokers and those with a history of cancer or cardiovascular disease at baseline, or who developed a chronic disease in the first few years of follow-up. Both studies showed a clear pattern of increasing mortality with increasing weight. These data confirm similar observations from a 27-year follow-up of more than 19,000 middle aged men in the Harvard Alumni Study ⁽³⁶⁾, a 16-year follow-up of 115,000 middle-aged women in the Nurses' Health Study,⁽³⁷⁾ and a 12-year follow-up of nonsmoking Seventh-day Adventists.⁽³⁸⁾

According to the current [Dietary Guidelines](#) for Americans a body mass index below 18.5 falls outside the healthy range. But some people manage to live long, healthy lives with a low body mass index. Here's a good rule of thumb: If you've

developing one or more chronic diseases. In the Nurses' Health Study and the Health Professionals Follow-up Study, middle-aged women and men who gained 11 - 22 pounds after age 20 were up to three times more likely to develop heart disease, high blood pressure, type 2 diabetes, and gallstones than those who gained five pounds or fewer. Those who gained more than 22 pounds had even larger risks of developing these diseases. (18-22)

always had a low body mass index and your weight doesn't change, don't worry. But if you start losing weight and aren't dieting or trying to lose weight, schedule a visit with your doctor to figure out why this is happening.



Relation between body-mass index up to 30 and the relative risk of type 2 diabetes, hypertension, coronary heart disease, and cholelithiasis in the Nurses' Health Study among women initially aged 30 to 55 years followed for up to 18 years and in the Health Professionals Follow-up Study among men initially aged 40 to 65 years followed for up to 10 years. (Figure from

Willett WC, Dietz WH, Colditz GC. Guidelines for healthy weight. N Engl J Med 1999; 341:427-434.)

What Causes Weight Gain

Whether or not your weight changes depends on a simple rule:

$$\text{Weight change} = \text{calories in} - \text{calories out}$$

If you burn as many calories as you take in each day, there's nothing left over for storage in fat cells and weight remains the same. Eat more than you burn, though, and you end up adding fat and pounds.

Many things influence what and when you eat and how many calories you burn. These turn what seems to be a straightforward pathway to excess weight into a complex journey that may start very early in life.

- **Genes:** Some people are genetically predisposed to gain weight more easily than others or to store fat around the abdomen and chest. It's also possible that humans have a genetic drive to eat more than they need for the present in order to store energy for future. This is called the thrifty gene hypothesis.⁽²³⁾ It suggests that eating extra food whenever possible helped early humans survive feast-or-famine conditions. If such thrifty genes still exist, they aren't doing us much good in an environment in which food is constantly available.
- **Diet:** At the risk of stating the obvious, the quantity of food in your diet has a strong impact on weight. The composition of your diet, though, seems to play little role in weight—a calorie is a calorie, regardless of its source.
- **Physical activity:** The "calories burned" part of the weight-change equation often get short shrift. The more active you are, the more calories you burn, which means that less energy will be available for storage as fat. Exercising more also reduces the chances of developing heart disease, some types of cancer, and other chronic diseases.^(16, 24) In other words, physical activity is a key element of weight control and health.

Low-Fat Weight Loss Strategies Don't Work For Most People

Low-fat diets are routinely promoted as a path to good health. But they haven't fulfilled their promise. One reason is that many

people have interpreted the term "low-fat" to mean "it's OK to eat as much low-fat food as you want." For most people, eating less fat has meant eating more carbohydrates. To the body, calories from carbohydrates are just as effective for increasing weight as calories from fat.

In the United States, obesity has become increasingly common even as the percentage of fat in the American diet has declined from 45 percent in the 1960s to about 33 percent today.[\(25, 26\)](#) In South Africa, nearly 60 percent of people are overweight even though the average diet contains about 22 percent of calories from fat.[\(27\)](#) Finally, experimental studies lasting one year or longer have not shown a link between dietary fat and weight.[\(27, 28\)](#)

Low-Carbohydrate, High-Protein Strategies Look Promising

Another increasingly common approach to weight loss is eating more protein and less carbohydrates. One widely publicized [high-protein diet](#) entails loading up on meat, cheese, fish, and eggs while dramatically cutting down or even eliminating carbohydrates. This may help you drop some pounds. But the long-term effects of this eating strategy--on weight as well as overall health--aren't yet clear.

Limiting carbohydrates can help avoid sharp spikes in blood sugar and insulin levels, and equally sharp declines in blood sugar. (see [Glycemic Index](#) information) Keeping blood sugar at a relatively steady level may dampen the appetite. However, many high-protein, low carbohydrate diets are full of saturated and trans fats. These could significantly increase the risk of heart disease regardless of any actual weight loss. A restrictive high-protein, low-carbohydrate diet may also limit the consumption of important vitamins, minerals, and other nutrients found in banned carbohydrates such as fruits, vegetables, and whole grains.

Emerging evidence suggests that a more balanced approach that includes [protein](#), [carbohydrates](#), and [fats](#) has value as a weight-loss strategy. In a study conducted at Duke University, 51 healthy but overweight or obese volunteers were placed on a diet that included no more than 25 grams of carbohydrate a day, but that put no daily limit on calories. They also received counseling and support on nutrition and exercise. After six months, 41 of the volunteers were still following the program. This is a higher percentage than usually seen with people on low-fat diets. Mean

body weight decreased 10.3 percent (or approximately 20 pounds) and the mean percentage of body weight that was fat decreased 3 percent. Cholesterol levels improved across the board, with decreases in LDL and triglycerides and increases in HDL.(29)

In such high-protein, low-carbohydrate diets, the *types* of carbohydrates and fats is probably of critical importance for long-term health. A high-protein diet that emphasizes monounsaturated and polyunsaturated fats while limiting saturated and trans fats will invariably be better than one that includes saturated and trans fats.

Lessons from Losers

Since 1993, nearly 3,000 women and men have joined the National Weight Control Registry. This select "club" includes only people who lost more than 30 pounds and kept them off for at least a year. What was their secret? (30)

- ***They exercised.*** Registry participants burn an average of 400 calories per day in physical activity. That's the equivalent of about an hour of brisk walking.
- ***They ate fewer calories.*** On average, registry volunteers consume about 1,400 calories a day. That's significantly less than the calories consumed by the average American. This doesn't mean, however, that you should aim for 1,400 calories a day. What's right for you is based on your weight, height, and activity level.
- ***They switched to lower-fat diets, cut back on sugars and sweets, and ate more fruits and vegetables.***

Keep in mind that these are commonly used strategies, not hard and fast rules. In fact, one of the main take-home messages is that successful weight loss is very much a "do it your way" endeavor.

These findings are echoed in a survey of more than 32,000 dieters reported in the June 2002 issue of Consumer Reports.(31) Nearly one-quarter had lost at least 10 percent of their starting body weight and kept it off for at least a year. Most chalked up their success to eating less and exercising more. The vast majority did it on their own, without utilizing commercial weight-loss programs or resorting to weight-loss drugs. Interestingly, the successful losers in the Consumer Reports survey tended to adopt low-carbohydrate/high-protein diets

rather than low-fat diets.

What these two groups have in common is a focus on exercise and daily calories. In other words, they've learned to balance energy in and energy out in a way that leads to weight loss or weight maintenance.

So despite all the pessimistic prognostications about the impossibility of sticking with a weight-loss plan, these two surveys show that it's possible to lose weight and keep it off. Unfortunately, only a minority of people who try to lose weight follow the simple, tried-and-true strategy of eating fewer calories and exercising daily.⁽³²⁾ For weight control, an hour of exercise a day may be needed.⁽³³⁾

General Strategies for Regaining or Maintaining a Healthy Weight

It's easy to gain weight in what Yale psychologist Kelly Brownell calls our "toxic food environment." How, then, can you lose weight if you need to? Here are some suggestions that work:

Set a realistic goal. Many people pick weight goals they'll have a hard time achieving, like fitting into a size 8 dress or a wedding tuxedo from 20 years ago. A better initial goal is 5-10 percent of your current weight. This may not put you in league with the "beautiful people" profiled in popular magazines, but it can lead to important improvements in weight-related conditions such as high blood pressure and diabetes.⁽¹⁶⁾ You don't have to stop there, of course. You can keep aiming for another 5-10 percent until you're happy with your weight. By breaking weight loss into more manageable chunks, you'll be more likely to reach your goal.

Slow and steady wins the race. Dieting implies privation and hunger. You don't need either to lose weight if you're willing to take the time to do it right. If you cut out just 100 calories a day, the equivalent of a single can of soda or a bedtime snack, you would weigh 10 pounds less after a year. If, at the same time, you added a brisk 30-minute walk 5 days a week, you could be at least 20 pounds lighter.

Exercise more. The amount of energy the body uses to breathe, pump blood, keep muscles ready for action, and other mundane but vital tasks is called resting metabolism. It accounts for two-thirds of your daily energy expenditure. The more you

work your muscles--especially with strength training exercises--the more blood sugar they sponge from the blood and the more calories they burn *even when you aren't active*. If you don't exercise, try a walking program. Start out with something simple--get off your bus a stop early and walk the rest of the way to work, park your car at the far end of the company or mall parking lot, or take a brisk walk at lunch or when you come home. Gradually increase the amount of time you walk each day until you do 30 or more minutes a day. A pedometer can help you keep track of your daily activity. These watch-like devices hang from a belt and record how many steps you take. A good goal is 10,000 steps a day. If you already exercise, try to increase its intensity or duration.

Keep track. It's easy to eat more than you plan to. A daily food diary can make you more aware of exactly how much you are eating. Include everything, no matter how small or insignificant it seems. Small noshes and drinks of juice add up to real calories.

Tame your blood sugar. Eating foods that make your blood sugar and insulin levels shoot up and then crash may contribute to weight gain. Such foods include white bread, white rice, and other highly processed grain products. As an alternative, choose foods that have a gentler effect on blood sugar (what's called a lower [glycemic index](#)). These include whole grains such as wheat berries, steel-cut oats, and whole-grain breads and pasta, as well as beans, nuts, fruits, and vegetables.

Don't be afraid of good fats. Fat in a meal or in snacks such as nuts or corn chips helps you feel full. [Good fats](#) such as olive or canola oil can also help improve your cholesterol levels when you eat them in place of saturated or trans fats or highly processed carbohydrates.

Bring on the water. When you are thirsty, reach for water. Drinking juice or sugared soda can give you several hundred calories a day without even realizing it.

The longest journey starts with a single step. Most people don't suddenly decide to lose weight and head straight for their goal. It's a trial and error process. The more you learn and the more support you can get, the more likely you'll be to reach your target.

Defensive Eating

In our society, food is everywhere--the mall and gas station, the ballpark and drug store. Super size meals in fast food restaurants are almost too good a bargain to pass up, and servings in all but the most trendy restaurants are often enough to feed two. In the face of such plenty, it's important to learn how to avoid overeating. Here are some strategies that help defend against eating too much:

- **Stop before you are stuffed.** Learn your body's signals and practice stopping before you feel full.
- **Be selective.** It's easy to eat food just because it's put in front of you. Be mindful of what you are eating, and make sure that *you* are choosing what to eat
- **Select small portions.** Portions in most restaurants are over-sized. If you are eating with someone else, try sharing an entrée, or order two appetizers instead of an entree. If you're eating alone, eat half and take the rest home for another meal.
- **Beware of desserts.** A single slice of The Cheesecake Factory's Original Cheesecake packs almost 800 calories and an incredible 49 grams of fat (28 of them saturated, or 50 percent more than is recommended maximum per day). Either share such a rich dessert several ways or skip it altogether and finish your meal with a piece of fruit or other lower-calorie option.
- **Slow down.** Eating fast short-circuits the signals that your digestive system generates to signal that it's getting full. Slowing down gives your stomach and intestines time to send these messages to your brain.
- **Spoil your appetite.** Having a snack or appetizer before a meal can dull your hunger and help you eat less at the meal.
- **Be aware of why you are eating.** Sometime we eat when we're bored, anxious, or angry. Try not to soothe your negative feelings with food. Dealing with them in other ways --talking to friends, listening to music, taking a walk, meditating, or working--can help you relieve stress without gaining weight.

Summary

What's sometimes lost in the dire predictions about overweight and obesity in America are the enormous benefits of staying lean or working toward a healthier weight. Maintaining a healthy weight throughout life is associated with lower rates of premature death and heart disease, some cancers, and other chronic conditions. What if you're past that point? Losing 5-10 percent of your weight can substantially improve your

immediate health and will decrease your risk of developing such problems. The best time to start losing weight is with the first signs that your weight is straying upward. The more overweight you are, the more difficult it can be to lose weight. But as participants of the National Weight Control Registry have proven, anyone can lose weight.

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