

Take It Off, Keep It Off

Diet specialists say the body actually fights attempts to lose weight. The key may be tricking your body out of its natural desire to hold on to those excess pounds.

Another day, another diet. Like most overweight people, I have tried them all—and lost weight on almost all. But no sooner had I congratulated myself on a diet well done, and rewarded myself with a cookie, than my weight started to creep up again.

My closet tells the tale. The clothes range from size eight to “one size fits all” and from form-fitting to “one tent hides all.” Americans like me have made weight loss a \$33-billion industry and turned diet gurus into millionaires. We aren’t the only ones paying the price for our extra pounds: According to a study published online by *Health Affairs*, US medical costs related to excess weight and obesity come to \$93 billion a year.

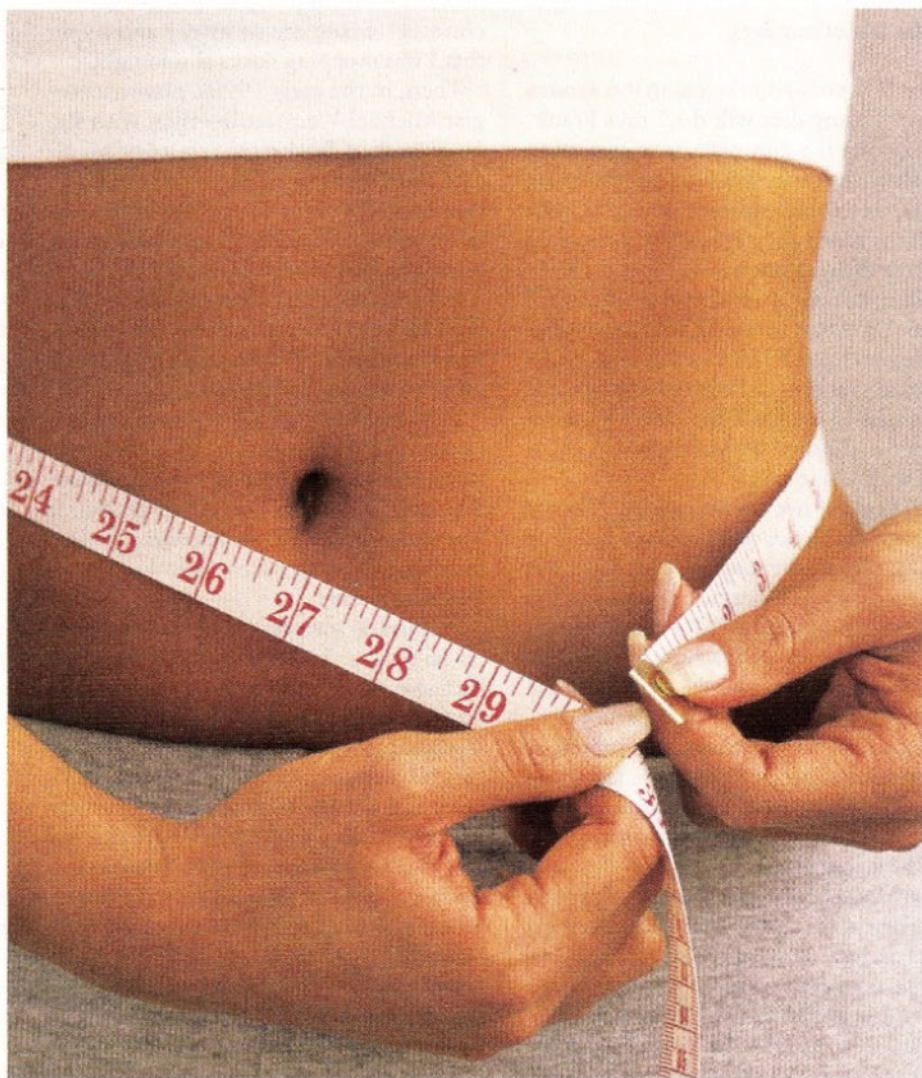
Why is this happening?

Anyone over the age of ten knows that to lose weight and keep it off, you have to eat less and move more. Expansion of our waistlines and the risk of health problems should be motivation enough to lose the weight once and for all.

But it isn’t that simple. “Obesity is the one disease where your body fights the cure,” says Dr. Michael Rosenbaum, a Columbia University researcher working on an NIH-funded study on weight control.

Researchers are focusing more on the neurocircuitry that governs body weight. Arthur Frank, medical director of the George Washington University Weight Management Program, says people mistakenly think dieting is “a matter of choice.” But he says losing weight requires one to overcome powerful brain signals.

Overweight people get more hunger signals and fewer cues that their stomachs are full. What makes the battle even tough-



Trimming inches off your waistline is not always as simple as eating less and exercising more.

er is that the human body has redundant systems to encourage us to eat; that’s how our species survived. When appetite suppressants foil one set of receptors, another mechanism kicks in, and hunger returns.

Biology doesn’t reward the conscientious dieter. As soon as you start to lose substantial weight, your body goes into starvation mode. Metabolism slows, and the body expends fewer calories. It isn’t your imagination that after four or six months of a successful weight-loss effort, the going gets tougher. Medications enable dieters to lose only about 10 per-

cent of their weight, Frank says. Patients tell him the drugs have stopped working. Not so, he says; the body has just adapted to them.

When people start to lose weight, levels of leptin begin to fall, Frank explains. Leptin triggers the mechanisms in the hypothalamus that control hunger and metabolism. Doctors say small doses of leptin, added at the point where weight loss stops, might be a way to combat the starvation response.

In fact, much of the current research is aimed at tricking the body out of its natural desire to hold onto its fat stores and replenish those that are lost. The results may help more of us maintain a healthy weight for the rest of our lives.

The first challenge is losing the excess weight. “Any diet will do,” says Frank. “Every diet is a gimmicky way of cutting calories.” Because a diet changes eating habits, dieters become more aware of what and how much they are eating, a big step in controlling calories.

“There is no one-size-fits-all diet,” agrees Dr. Susan Yanovski, who heads obesity research for NIH. The key is to find a diet that you can stay with to lose pounds and adapt to maintain the loss. The more restrictive the diet, the less likely you are to stick with it, she says.

All diets are not created equal. There is increasing evidence that protein is better at staving off hunger than are carbohydrates or fats—even if the calorie counts are the same. According to an NIH-funded study at the University of Washington, people who increased their intake of protein ate less and lost weight even though they continued to eat carbohydrates. The success of popular low-carb diets may have less to do with skipping bread and pasta and more to do with the satiating power of protein, researchers concluded.

Frank believes that it is the ratio of protein to carbs that makes the difference. Even patients on his 700-calorie-a-day formula are not particularly hungry, he says, because most of their calories come from protein.

Frank also disputes the theory that complex carbohydrates like whole-grain breads and cereals are better for weight loss than the white bread and white rice we've been warned against. Carb calories are carb calories, he says.

Do Diet Drugs Work?

Every time I started a new weight-loss campaign, I used to warn my family: Beware of the cranky dieter. Even the most nutritionally sound diet often left me unsatisfied and craving treats. Appetite sup-

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pressants—both prescribed and over the counter—made me so jittery and hyper that I was mopping floors at midnight.

Then, in the early 1990s, pharmacologist Michael Weintraub—then with the University of Rochester School of Medicine and Dentistry—discovered that combining two weight-loss drugs, phentermine and fenfluramine, canceled out the unpleasant side effects of each.

In fact, combining phentermine and fenfluramine did more than offset side effects, Frank notes; the two drugs reinforced each other to increase weight loss.

Fen-phen seemed like a dieter's dream come true until some users developed heart disease and pulmonary hypertension. The culprit was not the combination; it was fenfluramine and its big sister dexfenfluramine. Both fens have been withdrawn from the market.

Weintraub's work did have some beneficial results. Today it is widely accepted that obesity is a chronic disease rather than acute illness—a disease requiring ongoing medical care—and that weight-loss medications are an appropriate adjunct to dietary and behavioral change. In an article in the *New England Journal of Medicine*, NIH's Yanovski wrote that “pharmacotherapy should be initiated with the expectation that long-term use will most likely be needed.”

Even so, the Food and Drug Administration, cautious after the problems with fenfluramine, approves weight-loss medications only for short-term use.

One weight-loss drug, previously available only by prescription, is about to be approved for over-the-counter sale. Orlistat (marketed as Xenical) prevents absorption of about one-third of the dietary fat consumed. There can be gastrointestinal side effects, however.

The other weight-loss drugs are appetite suppressants that affect the neurotransmitters—serotonin, norepinephrine, and dopamine. When more of these chemicals are

released or when their absorption inhibited, users experience less hunger. However, the drugs can raise blood pressure and are not recommended for people with hypertension.

There are also drugs in clinical trials that have been approved for other conditions but seem to aid in weight loss. Bupropion (Wellbutrin) is an antidepressant, but users sometimes experience small weight loss. Topamax, used to treat migraines and seizure disorders, also seems to help people cut down on eating. Metformin (Glucophage), prescribed for people with Type 2 diabetes, seems to prevent weight gain and even induce small weight loss.

The most promising new drug in clinical testing is rimonabant (Acomplia). First used to help smokers quit, the drug affects receptors in the brain and in fat cells that tell the body to overeat. Patients in studies not only lost weight but reduced waist circumference and improved their blood lipids, blood glucose, and insulin levels. The FDA is expected to consider rimonabant for approval this year.

Frank believes that as research continues to unravel the complex systems affecting appetite and fat, researchers will develop “cocktails” of drugs to work more effectively.

Scientists caution that drugs alone won't cause weight loss or prevent regain—but they can help. A study in the *New England Journal of Medicine* found that the combination of medication and lifestyle changes—eating less and exercising more—resulted in more weight loss than either medication or lifestyle modification alone.

How About Diet Devices?

Medications aren't the only weapons being tested for the battle of the bulge. Researchers have developed a gastric electrical stimulator that transmits a small electric current to contract stomach muscles when its user begins to eat. As a result, users feel full and eat less.

The device's battery pack, about the size of a book of matches, is implanted under the skin. It is connected to two electrodes embedded in the stomach wall. It operates like a cardiac pacemaker—only the signals are sent to the stomach, not the heart. The device is still being tested.

In Europe, reversible procedures that prevent overeating are popular. For example, physicians are using silicone balloons inserted through the mouth and into the stomach and then filled with liquid. Afterward, the patient feels full and eats less.

This is a temporary measure; balloons can be left in place only six months before

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they corrode from stomach acid, according to Inamed Health, a company that produces the balloons.

Many US doctors are skeptical, claiming the benefit is lost once the stomach learns to compensate for the balloon or the balloon is removed. There are also risks: A balloon can perforate the stomach, and a few of the early models broke down and passed through the intestines, causing bowel obstruction.

Gastric bands are also popular overseas. The band constricts the stomach so it can hold only a small amount of food. Like the balloon, it can be removed once the patient loses the desired weight.

Neither the balloons nor the bands offers the rapid weight loss of gastric bypass surgery, which is popular here. And testing of these devices in this country has not produced the successes it has in Europe. Some doctors believe that because Americans eat differently than Europeans—many here eat continuously throughout the day rather than consume three large meals—we foil the effects of balloons and bands.

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Keeping It Off

Up to 95 percent of the people who lose weight gain it back. As soon as the diet is officially over, many people resume their old habits. Or they fall off the wagon and don't know how to get back on. "It's lapse, relapse, collapse," Yanovski says.

The same biological barriers to substantial weight loss also encourage weight regain.

Those who successfully keep the extra pounds off have at least four habits in common, according to the National Weight Control Registry, which has been tracking

these people since 1994:

- They eat a lowfat, low-calorie diet.
- They eat breakfast almost every day.
- They get about an hour of physical activity most days, often from walking.
- They monitor their weight regularly and keep track of their food intake.

"People trying to maintain weight loss weigh themselves every day," Yanovski notes. As soon as the scale goes up a pound or two or the jeans don't button, they go back to strict monitoring—often writing down every bite they eat.

Yanovski keeps a pedometer clipped to her belt and tries to get in 10,000 steps a day.

Arthur Frank believes that a decade from now, new drugs aimed at the body's different systems that regulate hunger and fat storage will make medical management of obesity similar to the treatment of diabetes—a condition that can be controlled even though it cannot be cured.

But right now dieters have to keep counting their calories. "Ain't no miracles in this business," Frank says.

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