

Why Exercise Won't Make You Thin

By JOHN CLOUD

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As I write this, tomorrow is Tuesday, which is a cardio day. I'll spend five minutes warming up on the Versa-Climber, a towering machine that requires you to move your arms and legs simultaneously. Then I'll do 30 minutes on a stair mill. On Wednesday a personal trainer will work me like a farm animal for an hour, sometimes to the point that I am dizzy — an abuse for which I pay as much as I spend on groceries in a week. Thursday is "body wedge" class, which involves another exercise contraption, this one a large foam wedge from which I will push myself up in various hateful ways for an hour. Friday will bring a 5.5-mile run, the extra half-mile my grueling expiation of any gastronomical indulgences during the week.

I have exercised like this — obsessively, a bit grimly — for years, but recently I began to wonder: Why am I doing this? Except for a two-year period at the end of an unhappy relationship — a period when I self-medicated with lots of Italian desserts — I have never been overweight. One of the most widely accepted, commonly repeated assumptions in our culture is that if you exercise, you will lose weight. But I exercise all the time, and since I ended that relationship and cut most of those desserts, my weight has returned to the same 163 lb. it has been most of my adult life. I still have gut fat that hangs over my belt when I sit. Why isn't all the exercise wiping it out?

It's a question many of us could ask. More than 45 million Americans now belong to a health club, up from 23 million in 1993. We spend some \$19 billion a year on gym memberships. Of course, some people join and never go. Still, as one major study — the Minnesota Heart Survey — found, more of us at least *say* we exercise regularly. The survey ran from 1980, when only 47% of respondents said they engaged in regular exercise, to 2000, when the figure had grown to 57%.



Sight

Research using MRIs shows that brain patterns of people viewing photos of foods they like and foods they don't like are "very different," Seeley says. "The body anticipates when food is about to enter the system." And that's why your mouth starts watering when you see Mom's pie.

And yet obesity figures have risen dramatically in the same period: a third of Americans are obese, and another third count as overweight by the Federal Government's definition. Yes, it's entirely possible that those of us who regularly go to the gym would weigh even more if we exercised less. But like many other people, I get hungry after I exercise, so I often eat more on the days I work out than on the days I don't. Could exercise actually be *keeping* me from losing weight?

The conventional wisdom that exercise is essential for shedding pounds is actually fairly new. As recently as the 1960s, doctors routinely advised against rigorous exercise, particularly for older adults who could injure themselves. Today doctors encourage even their oldest patients to exercise, which is sound advice for many reasons: People who regularly exercise are at significantly lower risk for all manner of diseases — those of the heart in particular. They less

often develop cancer, diabetes and many other illnesses. But the past few years of obesity research show that the role of exercise in weight loss has been wildly overstated.

"In general, for weight loss, exercise is pretty useless," says Eric Ravussin, chair in diabetes and metabolism at Louisiana State University and a prominent exercise researcher. Many recent studies have found that exercise isn't as important in helping people lose weight as you hear so regularly in gym advertisements or on shows like *The Biggest Loser* — or, for that matter, from magazines like this one.

The basic problem is that while it's true that exercise burns calories and that you must burn calories to lose weight, exercise has another effect: it can stimulate hunger. That causes us to eat more, which in turn can negate the weight-loss benefits we just accrued. Exercise, in other words, isn't necessarily helping us lose weight. It may even be making it harder.

The Compensation Problem

Earlier this year, the peer-reviewed journal *PLoS ONE* — PLoS is the nonprofit Public Library of Science — published a remarkable study supervised by a colleague of Ravussin's, Dr. Timothy Church, who holds the rather grand title of chair in health wisdom at LSU. Church's team randomly assigned into four groups 464 overweight women who didn't regularly exercise. Women in three of the groups were asked to work out with a personal trainer for 72 min., 136 min., and 194 min. per week, respectively, for six months. Women in the fourth cluster, the control group, were told to maintain their usual physical-activity routines. All the women were asked not to change their dietary habits and to fill out monthly medical-symptom questionnaires.

The findings were surprising. On average, the women in all the groups, even the control group, lost weight, but the women who exercised — sweating it out with a trainer several days a week for six months — did not lose significantly more weight than the control subjects did. (The control-group women may have lost weight because they were filling out those regular health forms, which may have prompted them to consume fewer doughnuts.) Some of the women in each of the four groups actually gained weight, some more than 10 lb. each.

What's going on here? Church calls it compensation, but you and I might know it as the lip-licking anticipation of perfectly salted, golden-brown French fries after a hard trip to the gym. Whether because exercise made them hungry or because they wanted to reward themselves (or

both), most of the women who exercised ate more than they did before they started the experiment. Or they compensated in another way, by moving around a lot less than usual after they got home.



Alcohol

Drinking has not been scientifically proved to stimulate appetite, but too much beer, wine or liquor can impair judgment, causing us to eat more. "Most people who are on a diet will say it's a lot harder to push themselves away from the table if they've been drinking," observes Seeley.

College of Sports Medicine and the American Heart Association issued new guidelines stating that "to lose weight ... 60 to 90 minutes of physical activity may be necessary." That's 60 to 90 minutes on *most* days of the week, a level that not only is unrealistic for those of us trying to keep or find a job but also could easily produce, on the basis of Church's data, ravenous compensatory eating.

It's true that after six months of working out, most of the exercisers in Church's study were able to trim their waistlines slightly — by about an inch. Even so, they lost no more overall body fat than the control group did. Why not?



Temperature

The colder the temperature, the more people tend to eat, which is why restaurants often keep thermostats low. "Your metabolism drops when it's time to eat, and eating warms you up," says David Ludwig, professor of pediatrics at Harvard. "Heat is a satiety signal."

Church, who is 41 and has lived in Baton Rouge for nearly three years, has a theory. "I see this anecdotally amongst, like, my wife's friends," he says. "They're like, 'Ah, I'm running an hour a day, and I'm not losing any weight.'" He asks them, "What are you doing after you run?" It turns out one group of friends was stopping at Starbucks for muffins afterward. Says Church: "I don't think most people would appreciate that, wow, you only burned 200 or 300 calories, which you're going to neutralize with just half that muffin."

You might think half a muffin over an entire day wouldn't matter much, particularly if you exercise regularly. After all, doesn't exercise turn fat to muscle, and doesn't muscle process excess calories more efficiently than fat does?

Yes, although the muscle-fat relationship is often misunderstood. According to calculations published in the journal *Obesity Research* by a Columbia University team in 2001, a pound of muscle burns approximately six calories a day in a resting body, compared with the two calories that a pound of fat burns. Which means that after you work out hard enough to convert, say, 10 lb. of fat to muscle — a major achievement — you would be able to eat only an extra 40 calories per day, about the amount in a teaspoon of butter, before beginning to gain weight. Good luck with that.

Fundamentally, humans are not a species that evolved to dispose of many extra calories beyond what we need to live. Rats, among other species, have a far greater capacity to cope with excess calories than we do because they have more of a dark-colored tissue called brown fat. Brown fat helps produce a protein that switches off little cellular units called mitochondria, which are the cells' power plants: they help turn nutrients into energy. When they're switched off, animals don't get an energy boost. Instead, the animals literally get warmer. And as their temperature rises, calories burn effortlessly.

Because rodents have a lot of brown fat, it's very difficult to make them obese, even when you force-feed them in labs. But humans — we're pathetic. We have so little brown fat that researchers didn't even report its existence in adults until earlier this year. That's one reason humans can gain weight with just an extra half-muffin a day: we almost instantly store most of the calories we don't need in our regular ("white") fat cells.



Refined Carbs

After a meal heavy in refined carbohydrates, like white pasta, the body may crave food again within only a few hours. These foods cause blood sugar to drop, and "when our blood sugar is crashing, we're going to be a lot more interested in food in general," Ludwig says.

All this helps explain why our herculean exercise over the past 30 years — all the personal trainers, StairMasters and VersaClimbers; all the Pilates classes and yoga retreats and fat camps — hasn't made us thinner. After we exercise, we often crave sugary calories like those in muffins or in "sports" drinks like Gatorade. A standard 20-oz. bottle of Gatorade contains 130 calories. If you're hot and thirsty after a 20-minute run in summer heat, it's easy to guzzle that bottle in 20 seconds, in which case the caloric expenditure and the caloric intake are probably a wash. From a weight-loss perspective, you would have been better off sitting on the sofa knitting.

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