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Prologue

Where Did All the Fat Go?

E-mail flagged urgent:

Dear Dr. Huizenga,

I just weighed myself. . . and that scale was undoubtedly at 177!!! I mean, it may be 178 later as it fluctuates throughout the day, but this morning, there was no ambiguity. . . . The scale told me plain as day that I've lost 100 pounds!!!!!!!!!!!!!!

I absolutely got tears in my eyes. . . . I just cannot believe it! When I went to the open *Biggest Loser* audition in Boston, I wrote on the application that I wanted to lose 100 pounds. . . but at the time that seemed impossible, especially for a nonathletic woman! I just chose an arbitrary number that I thought sounded big enough to get me on the show! And then of course when I wasn't selected for the show, I figured it was absolutely impossible!!!!!!!!!!!!!!

Now two more pounds and I will be at my weight from when I was fifteen. I have not weighed what I weigh this minute in twelve years! I cannot believe this!!! Where did all the fat go??????

Congratulations! We're early in the fifth month, and already—totally on your own at home—you're a triple-digit fat loser!!! (P.S. I'm thinking the last pound of fat loss was you hitting that exclamation key!!) I love your “where-did-all-the-fat-go” question! You probably intended it as a rhetorical figure of speech, but as you can well imagine, I'm all worked up over the scientific and health implications. . . .

Dr. H.

Introduction

Lose Fat, Not “Weight” with The WOW! Rx to Get Back into Your “Thin” Clothes. . . and Your Life

Are you overweight or obese? Do you have visible fat rolls? Are you greater than 15 to 20 pounds heavier than your weight at age 21? Have you gone on “health” kicks and tried to lose weight with Atkins, Ornish, Weight Watchers, the Zone, or any other trendy diet program? Have you—like the subjects in two just-published medical studies—lost only 5 to 10 pounds after months, or even a year, of dieting? Worse yet, has the weight boomeranged back within a few years? Contemplating throwing out all your “thin” clothes? Or have you been “chubby” since childhood, and never owned “thin” clothes at all? Convinced you’ll be fat your whole life because there’s something wrong with your metabolism? Or are you now so determined to get “healthy” that you’re considering drastic measures. . . miracle wraps. . . never-tested Internet-touted weight-loss potions. . . off-label prescription drugs. . . or even stomach bypass surgery?

STOP! Stop trying to lose weight to get healthy. You’ve got it inside out and backward—you need to lose fat, not “weight,” and you’ve got to get healthy in order to lose fat.

The WOW! Rx is a scientific fat-loss prescription for overweight, obese, and morbidly obese people who are truly serious about losing toxic excess fat without sacrificing water, muscle, and bone. The WOW! Rx gets you fit, thereby enabling you to sensibly lose “big” amounts of fat—and keep it off.

Why is The WOW! Rx program different from every other available diet program?

- The WOW! Rx works with—not counter to—your innate survival instincts.

These eye-opening day one front and side view iDEXA scans reveal a “normal body” (muscles and organs gray) buried beneath the layers of fat (black).



After 100 pounds of fat loss (and slight muscle gain) on the WOW! Rx, the “normal body” is liberated!



- The WOW! R₂ can result in dramatic fat loss over six months—averaging two to 10 times more than other home-based programs—based on medical studies of 172 *The Biggest Loser* contestants (including contestants who participated on their own at home, without the help of trainers).
- The WOW! R₂ can result in fat loss equal to the most aggressive gastric bypass weight-loss surgery. In a number of cases, morbidly obese individuals were able to get down to their ideal **With-Out-Waist** fat weight (**WOW!** weight) in just six months!
- The rapid visible weight loss associated with The WOW! R₂ serves as an important motivator; similarly, the closer you get to your WOW! weight—a truly life-altering event—the greater your incentive to keep it all off.
- By following The WOW! R₂, you lose, essentially, all fat! By preserving calorie-hungry lean tissue, The WOW! R₂ sets you up for long-term success; maintaining or in many cases gaining muscle through exercise helps keep your metabolic rate as high as possible which is critical for preventing weight regain. I have followed the weight-loss maintenance of all participants, and the results after one to two years are substantially better than any other available diet.
- The WOW! R₂ reliably reduces heartburn, asthma, snoring, high cholesterol, high blood pressure, and diabetes. Astonishingly, a high percentage of smokers have quit while simultaneously losing significant amounts of fat.
- The WOW! R₂ addresses psychological impediments to weight loss. It improves energy, happiness, and overall quality of life. In fact, most successful participants had no idea just how lethargic and depressed they were feeling until after their WOW! R₂ “transformations.”
- The WOW! R₂ corrects difficult-to-detect but damaging inflammation and pre-diabetes conditions that can signal a shortened life span of up to 20 years in seriously obese young persons.

- All weight-loss diets have risks. When candidates are properly screened and monitored by their physicians, The WOW! R₂ has been proven to be safe and tolerable, even for morbidly obese individuals.
- The WOW! R₂ is the road map to a total body transformation, but does require a commitment. You must set aside the appropriate time—for some people as much as two hours a day to exercise—an extra hour to shop, plan, and prepare meals, and you must be motivated. You must embrace vitality and quality of life over lethargy and early death.

Three years ago, before I witnessed doctors, lawyers, working and stay-at-home moms (with no help!), cops, firefighters, pilots, businessmen and women, teachers, drivers, realtors. . . you name it. . . finding the time to work out twice a day, and getting hooked on the exercise “high,” I would have dismissed The WOW! R₂ as laughingly impractical. But over the last four years, I’ve seen it work time and time again with my own eyes. It is absolutely do-able. Every contestant that returned for the finale of *The Biggest Loser* television show lost significant amounts of fat; the majority lost massive amounts of fat. Best of all, early indications after one to two years of follow-up are that they’re also keeping the fat off!

— — — — —
Are you overweight, obese, or morbidly obese? Are you seriously out of shape? Give your body the attention it deserves; embrace The WOW! R₂—then get back into your “thin” clothes. . . and your life!

Chapter One

The Biggest Loser: The Bumpy Road to Malibu

August 10, 2004. It was the first week of the very first The Biggest Loser television show. The contestants' weight was dropping off in 10-, 15-, even 20-plus pound chunks. It was like a scene out of Honey, I Shrunk the Kids! They were growing thinner, literally, on a day-to-day basis, in front of my eyes. Their joints were achy, their muscles sore, a few had cramps, but at 8 o'clock in the morning, every one of these former couch potatoes was ready to exercise again. No one was hungry; you could have boarded them in a gingerbread house or made it rain fresh-baked donuts, and no one would have taken a bite.

I was scared. During my 25-year medical career, I'd never seen, heard, or read about anything quite like this.

I didn't start out as a weight-loss doctor, as such; I specialize in internal medicine and sports medicine. I never dreamed that one day I'd find myself documenting a natural weight-loss treatment plan that was as potent as gastric bypass surgery—with far fewer complications—but, in retrospect, I realize that I've been in training for this discovery my entire life.

Practically my first recollection is of my chubby mom, God rest her soul, rummaging through family albums, proudly pointing to a bathing-suit photo of her taken on a Lake Michigan sand dune—"After four kids, mind you," she'd shamelessly assert—where she had Hollywood legs and nary a drop of waist fat. But while I grew up thin—playing round-the-clock sports—she yo-yoed from overweight to obese, despite an annoying array of deprivation diets. After our so-called "health-conscious" double-dinner servings of bread, meat, potatoes, and vegetables— topped with volumes of butter, gravy, sour cream, and dessert fruit with thick

cream (Mom was a nurse and made a point of insisting we get all the food groups)—the family banter would eventually drift to her next empty diet vow or the latest worthless waist-reduction remedy.

Then, at the age of 13, it was suddenly my turn to cut weight. I was a skinny 115-pound freshman, so why on earth would I need to lose weight? Well, a double disaster hit, leaving me no other choice. One, I stopped growing at 5' 4" (5' 5" with the folded newspaper I inserted in my penny loafers) and two, we moved to a district with 5,000-plus kids in my high school (i.e., the sports teams were tough to make). My parents said I was too small for football and refused to sign the medical release, so I practiced non-stop for basketball, my best sport. Unfortunately, at the last cut for the freshman basketball team, a bunch of us were standing outside the boys' gym at 2:30 in the afternoon when the coach tacked up the handwritten list of those who made the team. I can still see it: My name was not there. I plummeted through embarrassment to depression, then utter humiliation. I'd always been the star player. I couldn't go home, much less face my friends. Then, noticing the wrestling room, I flashed on the solution. How hard could wrestling be? How many athletic kids of my height could there be? Too hard and too many, it turned out. The freshman team had 12 members in the 112-pound weight class, and one of them, Cory (I found out later that he was the coach's son), kicked the living crap out of me in practice. It was obvious that my only hope would be the 103-pound weight class with only eight members on the challenge board.

I came home, told my mom to buy a case of diet cola, and basically stopped eating. As I watched my puny arm muscles fade to nothing, I knew starvation was stupid, but when I beat the other boys for the 103-pound roster spot—and had my first drink of water in a day—it suddenly seemed very worthwhile.

To stay weight competitive on the squad, I lost, then gained, 10 to 20 pounds a week—week after week. A few years into my high school sports career, I'd already lost (and gained) more pounds than any contestant on *The Biggest Loser*. I'd become a world-class yo-yo dieter. When I went on to college, the pressure to cut weight to remain competitive as a

wrestler was even more extreme. A few days before a weigh-in, the real fight would begin, with willpower-battling, raging appetite. I was non-stop hungry. While doing homework in the kitchen, I'd open the fridge door maybe a hundred times a day, staring blankly at the vegetables and diet cola bottles I was rationing. Each night I tossed and turned to food-themed dreams. Pre-weigh-in days were a disaster. Walking to class with muscles stripped of glycogen, I felt like Superman carrying Kryptonite books. Standing up after class? Forget it! A dehydration faint was inevitable unless I got up in slow motion.

But I learned a lot! I was cutting less weight than many of my teammates, so just hanging out in the training room was like a fellowship at an unlicensed weight-loss clinic. I witnessed every ugly corner-cutting trick: no-carb, no-fat, or no-calorie diets; dehydration; diuretics; stimulants; laxatives; enemas and even helium enemas (teaching wrestlers the weight of inert gases in sophomore chemistry can be hazardous to their health); nonstop exercise; exercising in plastic sweats; exercising in plastic sweats in saunas; spitting; induced vomiting; scale tampering—you name it. Before long—even before I discovered that my mom's perfect swimsuit picture had been courtesy of prescription amphetamines—I learned all about "rebound," with wrestling buddies withdrawing from stimulants, persistently vomiting immediately after meals, and bingeing like there was no tomorrow—oh, yes, losing weight the wrong way can develop into anorexia and/or uncontrollable bingeing—some blimping up as much as 50 pounds in just a few weeks!

I knew weight loss was stupid, but when I returned to Ann Arbor from the national tournament, having just finished my college-wrestling career as an NCAA All-American, it all seemed very worthwhile. Then, later that night, the sinister side of messing with Mother Nature's appetite controls hit home. I realized I had a problem that I could not control. I couldn't stop eating. Despite having eaten dinner earlier, the minute I got to my cramped attic apartment, I cooked a chicken and mixed up a whole box of the tapioca pudding I'd dreamed about the week before. I multiplied the ingredients by 16, bringing a gallon of milk

to a slow boil, and then devoured it all in a single sitting—despite the onset of searing pains halfway through. The incessant dieting had scrambled the hunger wiring in my brain, but I naively assumed that the brain-stomach disconnect was as short-term and reversible as my college parka. Again, I was dead wrong.

During my first weekend at medical school, a parallel concern surfaced, preposterous as it now sounds: Were the one to two hours of exercise I was doing daily actually bad for me? I know, it sounds crazy, but 25 years ago it was widely believed by the medical community (and general public) that exercise was actually bad for you! So now, not only was I struggling with binge eating, I was also about to be told that exercise was detrimental to my health. After getting caught in a scrum (that's a clutch of rugby guys fighting for a leather ball) and separating my right shoulder, I stiffly sat, with my shoulder braced to my waist, in the regal quadrangle office of my academic advisor, a world-renowned pathologist, as he lectured me: "You shouldn't have been playing rugby on Harvard Medical School's time. You'll soon learn that extreme exertion is bad for the heart, and furthermore, sports detract from the single-minded focus a Harvard doctor must possess."

While I eyed the exit door, he conveyed his own workout philosophy with a sly grin, "When I go to the track, it's to bet on horses."

I immediately dismissed my advisor's "academic-focus" warning because I'd gotten my best grades while playing intercollegiate sports. If I weren't actively training, my concentration ebbed, I'd fade out in class and spend more of my free time drinking cheap pink Chablis, crashing sorority mixers, and patronizing—you guessed it—all-you-can-eat-buffets. When I wasn't fit, I simply didn't feel right. But maybe exercise was a bad addiction? As I furiously pedaled along the Charles River (biking was the only exercise my aching shoulder could handle), I began to worry. Was exercise shortening my life? Common sense told me no, and at 22 years of age, I was skeptical of anyone over 30, no matter the size of their office or number of framed Ivy League diplomas on their walls.

Four years later, the worry returned with a vengeance. I'd barely un-

packed my bags for an internship at Cedars-Sinai Medical Center in Los Angeles—one of the country's top heart hospitals—when I admitted a man who'd suffered a heart attack after his morning jog. The chief of cardiology dissected the case on ward rounds, reiterating the folly of vigorous activity and his belief that, at best, even mild exercise was of no benefit. And then, like the cavalry riding to the rescue, a landmark study appeared in 1984, proving these doctors dead wrong (whew!). The *Cliffs-Notes* version: In well-conditioned individuals, the risk of death subtly increased during vigorous exercise; however, the risk of death was tremendously lower for the remaining 23 hours of the day. Net effect? Exercise is a lifesaver—the more, the better. My mentors failed to recognize the single most powerful feel-good, look-good, be-healthy, and live-long potion known to man (and woman). Everybody makes mistakes, but before this, I never thought a renowned cardiology department chief (who, incidentally, had a pot belly, was sedentary, and suffered a stroke in his 60s) or an Ivy League M.D.–Ph.D. type (also had a pot belly, was sedentary, and died in his 60s) could be so dead wrong.

Oddly enough, one of my first jobs as a full-fledged doctor was to prevent weight loss. NFL players need equal parts bulk and quickness to dominate an opponent, but as the Los Angeles Raiders' team physician, I saw the weight of our big linemen essentially evaporate during intense two-a-day pre-season practices. I struggled to keep their weight on with team buffets supplemented with round-the-clock room service pizzas and Häagen-Dazs shakes, anything to prevent them from resorting to the shadowy world of anabolic steroids and growth hormones for a bigger body.

In my other life as a private-practice internist, I treated tons of overweight patients engaged in a battle to prevent weight gain or an all-out war to permanently lose weight. Before long I recognized—in between the jumble of low-fat, low-carb, low-calorie food versus liquid-only diets—that the patients who were successful at losing fat and keeping it off were exercisers! Many ate large quantities of food (like me), but regularly worked it off (like me). I preached from my soapbox, telling

anyone within earshot that “dumbed-down” exercise (a 30-minute walk three to four times a week) slightly improves health, but is worthless for weight loss. I tried my hardest to refute my patients’ “I don’t have time” lie and their “I can’t eat healthy” hoax, begging them to step up their exercise routines. But I could see my patients’ eyes glazing over—by the time I ticked off the amazingly low obesity rates in the Amish community, where they eat lots of high-fat foods but do six or more hours of daily manual labor. . . by the time I mentioned “portion control” . . . loud snoring echoed throughout my office. Something was missing from my spiel!

So when a team of young TV turks from Universal—not the theme park, but the real studio, they assured me—asked for my help on an as-yet-untitled weight-loss reality show, I was intrigued. In contrast to the nip-tuck reality shows—*Extreme Makeover*, *The Swan*, and *Dr. 90210*—the idea for this show was low tech and deceptively simple: follow a group of obese contestants as they exercise and diet, and hopefully end up changing their appearances and their lives. Considering the plethora of plastic surgery-themed shows on prime time, this all-natural transformation concept was a breath of fresh air. NBC loved the idea; the timing was right; the spin-off possibilities were unlimited. Just one pesky detail remained.

“Doc, what’s the most weight someone could safely lose in 10 weeks?”

They had already told me that giving the contestants more time to lose weight was not an option. The network would be paying top dollar to house their 12 weight-losing contestants and shoot the show in just 10 weeks, translating into a series of eight televised shows. Furthermore, most previous reality shows were filmed over shorter periods of time and were considerably cheaper to produce.

“Through aggressive dieting alone, you can expect at most a fraction over 1 percent weight loss per week during the first month or two—30 pounds over 10 weeks for a 300-pounder—a bit less with a low-fat plan because there’s less water loss,” I answered. “But no one has ever tacked on two-a-day exercise,” I said as I flashed back to professional football summer camp. “Mix in vigorous exercise with intense interval training and

you might see something special. Maybe double the standard weight loss!”

“If it’s never been studied, how can you be sure?” they asked.

I had a quick answer: “When I was with the Raiders, I was supposed to keep the 300-pound nose tackles at 300 pounds. But when they were exerting strenuously four hours a day, despite practically holding their heads in a feeding trough the rest of the day, they dropped weight. When you work out that hard, fat just disappears.”

“Well, how much weight loss? This is TV, Doc. For this show to sail, we’ve got to actually see a difference.”

For the first time I saw what was at stake. The brash TV producers, Mark Koops and JD Roth, under the gleaming 30-year-old eyes of wunderkind Ben Silverman, were investing millions of dollars in an experiment, variations of which the medical community had tried countless times before, with uniformly underwhelming results.

I mumbled through a 10-second guesstimate: A 300-pounder could safely lower food intake by 1,000 calories a day (that’s 7,000 calories per week), 3,500 calories equal 1 pound of fat, so 7,000 calories amount to a loss of 2 pounds of fat per week. Adding two-a-day workouts could theoretically triple that fat loss: 2,000 calories burned every day during three snappy exercise hours equal 14,000 calories burned, or up to 4 extra pounds of fat lost per week. I threw out a number, “Your winners could show 60 pounds of fat loss in 10 weeks. Now, if they stick to a low-carb diet—which will hurt their ability to exercise, and would be counterproductive in the long term—then tack on another 10 to 20 pounds of water and muscle loss. The TV cameras might spot facial changes at 10 pounds of fat loss. At 60 pounds—half a normal-sized adult—the difference will jump off the airwaves and slap the home audience in the face.”

During a subsequent conversation, I was conferenced in with skeptical network execs. Again I blithely tossed out my optimistic 10-week best-case estimate for a flabby 300- or 400-pound contestant, “60 to 70 pounds lost.”

“Our doctors here in New York quoted from medical journals citing that 3 pounds per week is the most they’ll lose; 25 to 30 pounds max

over 10 weeks!” one insistent female exec retorted.

Imagine you’re an established doctor, Clinical Associate Professor of Medicine at UCLA, a past president of the NFL Physicians Society—could anything be more embarrassing than getting sandbagged by a 20-something reality TV vice president spouting medical lingo and posturing like an Ivy League medical subspecialist? Especially when she’s correct! No outpatient food-based diet study had ever documented more than a 30-pound weight loss over this short of a time span. However, I was aware of in-hospital starvation studies (zero-caloric intakes) with 300-plus-pound patients dropping up to 18 pounds per week—of course only a third of that initial weight drop was fat (the rest was water and lean tissue/muscle loss)—and after several weeks, the starvation weight loss stabilized to 7 pounds per week, with fat accounting for about 60 to 70 percent of that loss.

The network brass felt this show, now tentatively called *The Biggest Loser*, could be a hit if my calculations were correct. Then reality really hit me. My diet plan differed radically from all prior obesity studies because none had ever followed participants who achieved weight loss by combining vigorous exercise with a moderate-calorie diet of healthful food. If I was wrong, and the contestants on this new reality show were unable to drop dramatic amounts of fat, “I told you so” would be splashed across millions of TV screens. Scarier still, as I ran the numbers through my head for the umpteenth time, I realized I was recommending fewer calories than starvation! Sure, a 300-pound *Biggest Loser* contestant would eat five meals equaling up to 1,800 calories per day, but compared to someone sitting in a hospital ward in a starvation study, he or she would burn 2,000 or even 3,000 calories per day during the twice-daily exercise sessions. So, net, they’d “take in” less than zero calories!

“Six pounds is a lot to lose in one week,” the TV exec repeated, rousing me from my worst-case scenario thoughts.

“I used to lose 12 pounds in a single wrestling workout!” I quickly interjected. “I’ve seen a 300-pound lineman lose 26 pounds in one game!”

I tried to distract her with meaningless water-loss stories until I could better research the advisability of my less-than-zero approach.

FAST FORWARD: MALIBU, CALIFORNIA INTERIOR: THE BIGGEST LOSER RANCH

I was too nervous to sleep the night before I met the contestants on the inaugural *The Biggest Loser* television show. No one had ever before dared to try an approach like this, and I was scared that it would fail. Would a weight-loss method conceived from observations on elite professional athletes and brought to fruition through the out-of-the-box thinking of a bunch of television executives actually work with morbidly obese desk jockeys? Would it work with sedentary individuals who’d collectively lost and regained hundreds of pounds on every conceivable commercial diet plan? Would it work with contestants who had serious diseases—asthma, hypertension, diabetes, acid reflux, and sleep apnea—lurking under every belly roll?

Could couch potatoes survive three to four hours of exercise per day? No matter how motivated the mind, would the body respond? Would injuries sideline the entire lot? Even more importantly, could they be re-programmed to exercise and eat with discipline, even after the show ended?

The weight-loss program worked. The obese and morbidly obese couch-potato contestants quickly ramped up their exercise and mastered new eating patterns. They did get overuse injuries, but like pro athletes, they willingly “played through” aches and pains. Their weight came off fast and furious—actually, too fast in some cases—I had to temporarily pull some of the contestants off the program because, in an attempt to lose even more weight than I recommended, they were eating too little, avoiding carbs, exercising excessively, and lifting weights improperly. My approach was already aggressive enough, so when contestants went

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overboard, it occasionally resulted in some blood test abnormalities. Luckily, no permanent damage occurred and they got better with rest and a few hundred more calories consumed.

Chapter Two

Fat-Loss Myths and New Scientific Discoveries

Scientific discoveries from reality TV? Is that an oxymoron? Can intelligence seep from unscripted television chatter? If you squeeze coal dust hard enough, will diamonds form?

Well, stuff happened! The television show, birthed by a clutch of brilliant show-biz types with nary a biology major between them, did indeed advance science. The show proved that if you motivate very overweight couch potatoes of both sexes and multiple ethnicities, they can lose gobs and gobs of fat safely over a short time span. The first 64 contestants averaged a staggering 60-plus-pound fat loss over five months—three times more than anticipated from the most rigorous medical diet plans (which average 20 pounds after one year)—while 21 alternates who didn't get cast on the show and were sent home without a road map didn't drop a single pound on average.

Far-greater-than-expected fat loss might not be a 10 on the Nobel Richter scale, but data from the initial *Biggest Loser* seasons did advance science by discrediting many weight-loss notions promulgated by stodgy, ivory-tower obesity researchers.

BELIEFS VERSUS FACTS

Belief # 1: Unfit overweight people are incapable of prolonged vigorous exercise.

New Scientific Fact: Shockingly, overweight, even morbidly obese couch

potatoes are capable of exercising as long and as intensely as professional athletes!

True, at first they're slow as molasses, can't lift much weight, or slam dunk a basketball, but the 64 initial *Biggest Loser* contestants—ordinary working folks from every walk of life—did something previously thought impossible. They grunted through up to four hours of exercise a day, six days a week! And they came back for more. Sure, they were sore, mostly achy knees, calves, and feet, but they kept exercising. On a relative basis, they worked out every bit as hard as NFL players submitting to grueling two-a-day preseason practices.

Some exercise was vigorous, even on the edge of exhaustion. One contestant swore before the show that he worked out hard six hours a week, but I knew that was unlikely when his initial treadmill test showed no conditioning response. After the show, he leveled with me, saying he had spent a few nights dancing at clubs, but he now saw that the dancing was nothing compared to the intensity of his current workouts. Several morbidly obese male and female contestants—with well over 100 extra pounds of fat each—sometimes worked out six hours a day despite my pleas that this was overkill.

This capability is huge! It's massive! It opens a double door of opportunity, a brand-new option for fat reduction that simultaneously prevents or treats reams of obesity-related illnesses. It also directly contradicts the United States Surgeon General's recommendation for what I call "dumbed-down activity" for overweight Americans looking to attain a healthy weight: "Start with a 10-minute walk three times a week and work your way up to 30 minutes of brisk walking or other form of moderate activity five times a week." Unfortunately, this level of physical activity does not result in weight loss. Adherence to this exercise recommendation can't even prevent fat gain—or put a dent in their hypertension, hypercholesterol, or diabetic tendencies.

Belief # 2: Busy two-career overweight couples with kids have no time to exercise.

New Scientific Fact: When overweight families were committed to regular, at-home exercise, they universally adjusted to the extra two-plus hours of exercise by watching two-plus hours less of TV!

Talk about a paradox! A television show resulting in less TV viewing! But that's exactly what happened. The first 64 contestants watched zero television at the initial exercise boot camp, and when they settled into their weight-loss exercise routines when they got home—averaging a tad over two hours a day, six days a week—their TV viewing time dropped by almost two hours—from their preshow viewing habits of 2.75 hours a day to only one hour a day! An interesting comparison: The obese individuals selected as alternates for the first several seasons of the show (they never made it on the actual show) made no major changes in their TV viewing habits and didn't increase exercise or lose weight. (The relationship between the amount of TV viewing and obesity is nearly as strong as that between smoking and lung cancer!)

Other interesting changes occurred within the ranks of the initial 64 on-the-air contestants. These exercise converts learned to prioritize better. One 40-year-old neat freak working mom told me she'd learned to keep the kids' bedroom doors closed and drive the family car with a little dirt on the hood because after an hour of exercise before work and an hour after work, there was no longer time for picking up after her kids or weekend car washes. (There is, of course, another possible explanation: Exercise is a powerful treatment for those with obsessive-compulsive/clean-freak traits!)

Belief # 3: Introducing exercise to a weight-loss diet adds little to the eventual weight loss. The standard nutritionist's lecture line is that while an aggressive six-month diet can drop 5 to 10 percent of your weight, exercise adds little or, at most, a few extra percentage points.

New Scientific Facts:

- Two-a-day exercise together with moderate caloric restriction in motivated dieters yields three- to tenfold more fat loss than other documented diets.
- Exercising two times a day triggers fat-for-muscle exchanges and fluid shifts that complicate the interpretation of “scale weights.”

If you lose 15 pounds on a diet, you naturally assume you lost all fat, and you naturally assume you're now healthier. Sorry, not true. You really haven't the foggiest idea how much of that 15 pounds was water, muscle, bone, or fat. Suffice it to say that with a standard fad or low-carb diet, lean tissue loss may be comparable to fat loss!

Low amounts of exercise don't increase the absolute number of pounds lost, but it may bump up the proportion of weight loss that is fat. Higher levels of exercise—as advocated in The WOW! R—together with moderate caloric restriction, not only melt away fat more quickly than diets alone, they ensure that muscle is gained or at least maintained.

After the initial exercise boot camp in Los Angeles, the average contestant continued to lose large amounts of fat by exercising at home six days a week for 2 to 2.5 hours each day. The oft-quoted articles claiming that exercise did not induce weight loss used puny exercise amounts, often in the range of walking half an hour a day. There's nothing wrong with a brief walk. I encourage it. If everyone in the world took those extra steps, it might be sufficient to slow weight gain and encourage people to progress to do more exerting activity; then in a generation or so, there'd be no obesity. But make no mistake, for an obese adult, a daily half-hour walk is not sufficient for weight loss. Nor is it sufficient to maintain weight after dropping 30 pounds of fat.

Belief # 4: Gastric bypass surgery is appropriate for morbidly obese adults and children (those with a body mass index [BMI] over 40) or just plain fat folks (BMI over 35) with worrisome diseases like diabetes, high blood pressure, arthritic hips or knees, or heart disease.

New Scientific Fact: Motivated massively obese and just plain obese individuals now have a new choice, a nonsurgical option they can do at home. The six-month and preliminary 18-month fat-loss numbers of The WOW! R are equivalent to the results that patients get after gastric bypass! Approximately 175,000 gastric bypass surgeries are performed each year in the United States. It's life-prolonging intervention in expert hands, although after paying \$25,000, there's still a 40 percent chance of major postoperative complications. In a less-experienced surgeon's hands, there's a whopping 3 percent chance of instant skin and bones—otherwise known as death! An alarming 11 percent of Medicare patients die after gastric bypass surgery! The reality is, gastric bypass is major, risky surgery requiring the utmost surgical skills for a group of patients who almost always have medical conditions that interfere with routine healing.

One of *The Biggest Loser* show's “beyond-morbidly-obese” contestants—who'd been urged by a reputable surgeon to have gastric bypass—was initially hesitant to sign on for the program. I helped convince him that even in his condition the exercise program was do-able. The most gratifying aspect of my association with *The Biggest Loser* was watching this individual shrink from an artery-clogging, lymph-blocking, vein-popping 51-percent body fat to an absolutely normal 22 percent. Sensational! And that wasn't all. I also got to see his energy level return to normal and the disappearance of his hypertension, sleep apnea, and crippling weight-related ankle and foot problems—for which another highly respected surgeon had recommended a complete joint fusion.

Belief # 5: High blood pressure warrants treatment with blood pressure meds, elevated glucoses require diabetic medication, gastroesophageal reflux merits treatment with acid-suppressing drugs, asthma should be treated with asthma inhalers, low energy and depression should be treated with antidepressants, and so forth.

New Scientific Fact: In overweight individuals, aggressive exercise and moderate caloric restriction is the first and best do-no-harm prescription for high blood pressure, adult onset diabetes, high cholesterol, depression, low energy, reflux, snoring, asthma, joint pains, or just plain feeling blah.

Improvements in the contestants' health were nothing short of miraculous. At the show's beginning, 48 percent of contestants had systolic hypertension (the top number of your blood pressure) and 58 percent had elevations in the diastolic (bottom number) that, if left untreated, would pose a significant risk for stroke or heart disease. They all met the criteria for taking medications to regulate their blood pressure. (As an aside, many had no idea they had high blood pressure and only a few were on treatment.) Fast forward to the show's completion: A mere 11 percent needed blood pressure medication! Even more gratifying, of the 19 percent who smoked at the onset of the program, over half remained off cigarettes at the two-year mark. . . and still managed to lose just as much fat as their peers!

Similarly, 25 percent started with prediabetic fasting sugar or insulin levels, but the diabetic-leaning levels resolved in all but 5 percent after their weight loss. There were also gratifying resolutions of gastroesophageal reflux (33 percent affected before, only 3 percent afterward), snoring (47 percent with greatly annoyed partners before, down to only 18 percent after), and asthma (27 percent affected before, only 9 percent afterward). All contestants reported dramatic energy and mood enhancements; overall quality-of-life improvements; and more modest, but nonetheless significant, sparks on the sexual front—not to mention gratifying changes in sexual organ sizes of men; but more on that later.

Belief # 6: The recommended rate for losing weight safely is 1 to 2 pounds per week.

New Scientific Fact: Over the first several months, the recommended rate for losing fat safely is 1 to 2 percent of body weight per week.

A 2006 *Time* magazine health survey opined that safe levels of weight loss are 1 to 2 pounds a week. I've also seen this same false "wisdom" in several newspaper articles (some critical of *The Biggest Loser*). First off, how crazy is it to lump 5'-tall fat preteens in with 6' 4," 400-pound adult men? When discussing a safe rate for losing weight, you must talk in terms of percent of an individual's body weight, and you don't need to be a rocket scientist to know that you must separate water, bone, and muscle loss (all bad) from fat loss (the goal).

A 450-pounder can lose 4 to 5 pounds of fat a week merely by cutting back calories from 3,500 to 3,000 and adding an hour of intense exercise. And when it comes to "fake" weight loss, the sky's the limit: If he works out hard for 90 minutes in a hot environment (i.e., loses water and water heavy glycogen), he could easily drop 15 pounds (about 14.5 pounds of it water). Is that unsafe? No, not if he promptly rehydrates and adds back carbs.

In truth, many contestants registered huge weight loss numbers on the scale some weeks, little during others, often as a direct result of fluid shifts. Contestants on each of the first three *Biggest Loser* shows consistently lost over 4 to 8 pounds of fat per week over the initial several months, then settled in to lose on average just over 2.5 to 5 pounds of fat per week (a little over 1 percent of body weight) over the entire five-to-eight-month weight-loss period. Was that unsafe? When done under a doctor's supervision, no. To be on the super-safe side, however, it makes sense to err on the side of caution when recommending a home plan for the general public.

Belief # 7: When you lose weight, expect 25 to 40 percent of the lost mass to be lean tissue; expect only 60 to 75 percent of the lost mass to be fat.

New Scientific Fact: *The Biggest Loser* experience proved—for the first time—that you can lose large amounts of weight in a relatively short period of time and essentially all of the weight lost can be fat!

An optimal fat-loss plan can get you as close to your WOW! weight in as short a time span as is safely possible while preserving and even building more muscle. This is, in fact, what The WOW! R delivers. And by preserving or even augmenting calorie-guzzling, metabolism-escalating muscle—something one-note diets can't address—The WOW! R puts you up front in the pole position for keeping the fat off.

Belief # 8: All weight loss is good; the method of weight loss is irrelevant.

New Scientific Fact: Weight loss is a double-edged sword.

True, the loss of stored (excess) fat has universal health benefits. However, the loss of essential fat (dropping below 3 to 5 percent body fat in men, or 12 to 15 percent in women), or the loss of muscle, bone, or fluid (remember that about 80 percent of a piece of muscle and 20 percent of a glob of fat tissue is salty water) is detrimental to our health. As a doctor, I've been taught to search for the visual cues of this type of detrimental weight loss as an early sign of cancer, chronic infections like HIV, or even depression. Hollowed eye sockets, sucked-in cheeks, sticky oral mucous, dry underarms, and atrophied arm, leg and facial muscles are flashing warning signs of disease. It's no wonder that "starvation" fad diets and aggressive low-carb or low-fat weight-loss diets without proper exercise make the dieter appear "sick." Why? Because they are sick! They've lost essential water, muscle, and bone!

Belief # 9: Overweight dieters should follow their progress by compulsively weighing themselves every day.

New Scientific Fact: Daily scale weights are misleading.

Scale weights are not particularly accurate. Comparison of two expertly calibrated doctor scales were found to occasionally vary by as many as 2 pounds; home scales, not infrequently, were off by 5 pounds, and in some instances, even 10.

Your weight may vary (up or down) by 5 to 15 pounds, depending on the time of day (or for women, the particular day of your period) the weight is taken, or your level of hydration, ankle swelling, and salt intake, or the amount of your liver and muscle glycogen supplies (vigorous exercise and carb depletion can acutely lower glycogen stores).

Scale weights do not reflect whether lower weight results from excess fat loss or from water, muscle, critical organ proteins, or bone loss. With regard to the typical low-carb diet: Initial lean tissue and water weight loss often delude dieters into thinking their goals are being met, but when eventual (necessary) water and glycogen replenishment results in weight gain of as many as 5 to 10 pounds, it's often depressing, sending dieters back into the arms of junk food.

Body weight can vary (up) when acclimating to vigorous exercise—a phenomena called hyperhydration. Four weeks into the initial *Biggest Loser* show, accurate body-fat analysis showed that the men and women alike had gained fluid weight! And their kidneys were still sending strong signals indicating the body was fluid depleted! What happened? First, the body makes a clever adjustment the instant someone begins vigorous exercise: It holds onto extra fluid inside the blood vessels to maximize heart contraction and the body's ability to thermoregulate (get rid of excess heat). The previously sedentary *Biggest Loser* contestants—who started strenuous workouts in the middle of a stifling California summer—exhibited this phenomenon in spades. However, several things happened that have never before been reported in the annals of weight-loss medicine. Number one, the extra fluid amounts were huge, over 10, and sometimes approaching 15 pounds, perhaps due to the large size

of the contestants. Secondly, they gained this fluid in the blood while remaining “relatively” dehydrated! Obviously, these countercurrents make the interpretation of scale weights tough, if not impossible.

On episodes of *The Biggest Loser*, the contestants’ scale-weight measurements were used for entertainment purposes, but their ongoing weight results in no way indicated what was really going on inside their bodies and with their health. For health monitoring, body-fat percentages and then eventually water, bone, and muscle levels were religiously recorded. Unfortunately, confirming the accuracy of these state-of-the-art technologies, then fairly adjusting for age, gender, and ethnicity and next explaining it all to the TV audience would be a daunting task. The behind-the-scenes bickering about the best “health measurement” was itself high drama—almost worthy of its own show. Bottom line—I found once-a-week weights were as “motivating” as daily weights. And contestants learned to gauge their fat loss in belt-notch increments and to take their fluctuating weights with a grain of salt.

Belief # 10: Ninety-nine percent of people who lose large amounts of weight will gain it all (or more) back.

Early Indications Are This Could Eventually Be a New Scientific Fact: Individuals who lose fat and maintain muscle by regular exercise (together with moderate caloric restriction) can maintain weight loss forever.

Let’s be honest, losing weight is really tough; maintaining it can be even tougher. But 99 percent recidivism (or weight regain)—which a hospital’s head gastric bypass surgeon quoted to me—is not accurate for people who continue to exercise and stay conscious about healthy food choices.

A review of the world’s medical literature reveals that successfully keeping weight off is literally impossible with diet alone. Worse yet, four to five years after the completion of every studied diet, not only was the weight gained back, but a third to two-thirds of the dieters gained even

more weight compared to their starting point. The number-one predictor of success at weight maintenance is exercise and an active, physical lifestyle! So it came as no real surprise that *The Biggest Loser* contestants—with exercise becoming an integral part of their lives—maintained 80 percent of their weight loss, and fully half did not regain any weight two years after the start of the diet (10 of the first 64 members were unable to be reached).

Belief # 11: There is no magic pill for rapid weight loss. There is no magic pill for weight maintenance after significant weight loss.

New Scientific Fact: There is a magic pill for rapid fat loss: Two hours of daily exercise (plus moderate caloric restriction).

There is also a magic pill for weight maintenance after significant weight loss: one hour or more of vigorous daily exercise.

ONE MORE HURDLE

One vexing scientific hurdle remained: I could not logically conclude that the dramatic fat loss seen in virtually every *Biggest Loser* contestant was fully applicable to the average obese American. During the initial two months of the five- to eight-month shows (the original 10- to 12-week plan was drastically elongated once the network saw firsthand the drama involved in weight loss!), *Biggest Loser* contestants had a lot of help with their weight loss. Every bite of food was monitored 24/7 by TV cameras. They had exercise equipment available around the clock. They had fitness trainers organizing daily sessions and providing motivation. They had big-time money dangling in front of their noses—a chance for a quarter-of-a-million-dollar prize, to be exact. The financial incentives and handholding were substantially less for the 48 contestants on the spring 2006 *Biggest Loser Special Edition* shows (the family-versus-family shows).

Both their potential prize money and their filmed, personalized boot-camp instruction were far less than what *Biggest Loser-1* and *Biggest Loser-2* contestants received. But to my surprise, at the five-month mark, when the *Biggest Loser Special Edition* finale was filmed, despite lower prize money and less trainer face time, the contestants lost nearly as much weight as their *Biggest Loser-1* and *Biggest Loser-2* brethren!

Still, American medical journal editors were dubious, refusing to publish studies documenting the contestants' dramatic fat loss, averaging 35 percent of their original weights over eight months. They claimed this "fantasy weight-loss environment"—financial inducements with round-the-clock exercise with motivating trainers—was prohibitively expensive and, therefore, not applicable in the real world of weight loss; they also claimed the financial incentives made the research "unscientific" (despite the fact that many medical studies offer subjects payments of thousands of dollars just to participate). Although I disagreed, I had no proof that they were wrong either.

I racked my brain. I fought off Ghirardelli dark chocolate cravings. Where in the world could I get the millions of dollars needed to study a nationwide sampling of obese Americans who were following the road map of this dramatic fat-loss program, but with no TV cameras, no boot camp, no handholding trainers, and no financial incentives and compare them to our *Biggest Loser* TV contestants—not to mention a control group of people who would have no instructions of any kind?

The answer came the very next day.