

Scientific American Frontiers
Show #1401, "Losing It"
premiered January 20, 2004.

Counting Down
Debunking the Low Fat-No Fat Myth
Losing Weight the Surgical Way
Heavy Hormones?
Weighing In

ALAN ALDA Eating -- it's a problem, isn't it? Everyone's gaining weight, and everybody wants to lose weight. On this edition of Scientific American Frontiers, we're following the fortunes of a dozen volunteers who're trying to shed those pounds.

ALAN ALDA (NARRATION) Our people are taking a wide variety of approaches, from just counting calories...

ERIC I guess I should start by reading the book.

ALAN ALDA (NARRATION) ... to gastric bypass surgery.

RODNEY So in the middle of summer I'll be in my Speedo bathing suit.

ALAN ALDA (NARRATION) Along the way we're keeping personal video diaries of how we do.

WENDY What is wrong with me?

MARCY I've got this muscle.

ALAN ALDA I had reached the point where I was just putting it away.

JOHN Had a little relapse. TOM I'm stuck here. KATHY There they are -- size 10 pants.

ALAN ALDA I'm Alan Alda. Join me now as we try Losing It. LOSING IT

ALAN ALDA (NARRATION) As 2003 came in, the Frontiers production staff was busy delivering new year's gifts to a select few.

JULIE Hi, Amy.

AMY Hi.

JULIE How are ya?

AMY Good.

JULIE Here to set up the camera.

AMY OK.

ALAN ALDA (NARRATION) Our plan is to follow the fortunes of 10 people as they try to lose weight. To help document their ups and downs, everybody's being asked to keep a video diary.

AMY Today is the first day of the video diary...

ALAN ALDA (NARRATION) Amy was heading for heart disease, diabetes and many other problems. And, overweight since childhood, she's had enough of literally not fitting in.

AMY Being overweight is a trauma because it's not accepted in the society. You know, when dealing with people's reactions to you and feeling like, Oh, I can't go to that place because, you know, they'll look at me funny or...unfortunately, people do look at you funny.

JULIE Hi, Eric, how are ya?

ERIC Come on in.

ALAN ALDA (NARRATION) Eric will be a new dad in a couple of months. He's worried his weight's reducing his energy -- maybe he won't be able to keep up.

ERIC ...first day of the rest of my life... I haven't even opened the book yet, so I really don't even know where to begin. But I know I need to drink a lot more water. I don't drink nearly enough water. But, I guess I should start by reading the book.

ALAN ALDA (NARRATION) We've got a whole weight loss family living here.

KATHY Oh, hi...

ALAN ALDA (NARRATION) Kathy wants to lose weight, but her daughter Kimberly doesn't -- she's thin as a rake anyway. Kathy's husband Tom also wants to lose, while Patrick would rather not be involved. This is not going to be

easy. KATHY We're not obese, but we're about twenty pounds overweight. Um, certainly if, you know all the statistics tell you even that little bit will make a difference according to your health in the end.

ALAN ALDA (NARRATION) Tom and Kathy have lost and gained many times before. They're concerned about Patrick, and Kathy, who works in healthcare, knows very well that just 10 or 20 pounds extra increase your risks of a wide range of health problems -- from hypertension to cancer. TOM A few of my friends are rather obese and they've said, You're not obese, what's your problem? You're not overweight. And I nodded to myself, Yes I am. I know I am. I can grab a good handful of fat off my belly anytime I feel like it.

ALAN ALDA (NARRATION) Wanting to look better -- to get into that bathing suit next summer -- and concerns about health were the twin motivators for all our weight loss subjects. Some, like Tom and Kathy, have struggled with weight for years, while others, like John here, are just waking up to the challenge.

JOHN I thought 230 was heavy. I thought 240 was very heavy. Now here I am 250, so... It's time to do something.

ALAN ALDA (NARRATION) Marcy's one of our most experienced dieters.

MARCY It's my office ...

ALAN ALDA (NARRATION) She's lost and gained weight -- but mainly gained -- many times since she was a skinny 20-something. Now she's determined -- for the first time -- to try exercise as well as diet, and like most of our subjects she hopes being on TV will be a motivator.

MARCY I think it will be easy in the beginning. I think there will be hard spots. I think there will be times when I'm gonna gain weight. There will be times when I plateau and just stay the same, week after week after week. And there will be times when I lose.

ALAN ALDA (NARRATION) Unlike Marcy, Robin has always enjoyed exercise and sports, although she also loves to eat, as she says. She's dieted on and off since college, but always stayed active too. She's in a classic bind -- too heavy to play sports, with her inactivity making it harder to lose weight.

ROBIN Hey, good morning.

JOE AND

JULIE Good morning.

ROBIN Hi, Julie ...

ALAN ALDA (NARRATION) Now she's determined to lose weight and get back to softball this summer.

ROBIN There's a part of you that doesn't know how you let yourself go this far. Then there's another part of you that goes, Damn, I'm gonna do this, you know, and you have to wait for that part to kick in.

ALAN ALDA (NARRATION) Rodney is our second gastric bypass surgery subject.

RODNEY Nice to see you.

ALAN ALDA (NARRATION) When he was working hard on the deck of a fishing boat, he stayed in shape. Then he bought his own boat, got to sit in the skipper's chair all day, and the weight began to accumulate. Now his doctor's said he's heading for trouble.

RODNEY In the last few years I've been diagnosed as a diabetic. I have high blood pressure. I have sleep apnea. And that's all due to overweight, being overweight. My knees have been, in the last year, year and a half, my knees have been killing me. So if I don't do this I'm looking at knee surgery, replacement. And I just want a better quality of life in my later years. I worked hard all my years. I want to enjoy my later years with my grandchildren.

JULIE Hi, Wendy, how are you?

ALAN ALDA (NARRATION) Wendy's very active, but she loves food and eats a lot after her frequent workouts. She's going to try switching to Mediterranean-style foods like fish, olive oil and vegetables, which she hopes will be satisfying and healthy. And being on TV's important, too.

WENDY You know this was like exactly what I needed to get going. And, I can't wait. We'll see what happens in six months. I'd better be like this, right?

ALAN ALDA (NARRATION) Today, everyone's brought food that matches their different approaches.

WENDY Fresh basil, fresh tomatoes, roma tomatoes.

ALAN ALDA What kind of cheese is that?

WENDY Mozzarella.

ALAN ALDA Mozzarella.

JOHN Basic hamburger.

ALAN ALDA Now I thought you weren't suppose to have bread.

JOHN Well, I wasn't in the first phase, but I'm sort of cheating a little bit.

ROBIN This would be probably two carb blocks. So between that and this, and this is the proper amount of protein, and the fats from the dressing...

ALAN ALDA And what's this?

ROBIN Just soda water.

ALAN ALDA Oh, just seltzer. KATHY This is what they give me on the web. They give me the recipes and what to eat everyday. So I follow that, so... It's peppers and tomatoes, then there's a dressing made of olive oil. It's got three ounces of chicken breast for each one of us in there. And then all the different vegetables and cous cous.

AMY I'm having Lean Cuisine.

ALAN ALDA Oh, Lean Cuisine.

AMY Yeah, but what I do is I take half of the rice out because there's way too much rice and carbohydrates. So I just have the protein and the vegetables.

ERIC Turkey on pita with mustard.

ALAN ALDA What are you drinking? A Diet Dr. Pepper.

ERIC No calories.

ALAN ALDA Did you bring something?

RODNEY I just brought my friend.

ALAN ALDA You just brought your friend.

RODNEY We've bonded.

MARCY Chips, and an orange. You can eat anything on this diet.

ALAN ALDA I know...

MARCY But I did weight them out. This is an ounce of baked chips.

ALAN ALDA And how many points are an ounce?

MARCY Two points.

ALAN ALDA Two points. One...

ALAN ALDA (NARRATION) And by the way, I'm going to try losing it, too. Like Marcy, I'm doing Weight Watchers, but the online version. You still have to count your points.

ALAN ALDA ... I forget, how many points are five shrimp, anybody know?

ALAN ALDA (NARRATION) We've asked everyone to stick with their programs for at least six months. Amy and Rodney will have their surgeries in March, so we'll follow them for about four months. Of course this is a small group, and researchers prefer weight loss studies to run for a year or more. So we can't claim this is a scientific study. Most dieters gain their weight back after a few years, so if anything our time frame may exaggerate success. But we hope to get some insight into the personal challenges, the successes and failures.

ALAN'S DIARY For a couple of years now I've been watching this fat guy come on to the screen and stumble around the rocks. He looked like if he fell down he would never get up again. And this was me. And the other thing is that I noticed that all the scientists I was talking to who had anything at all to say about longevity and nutrition, they were all telling me that if I wanted to be healthy and live a long time, I had to get my weight under control. I started to eat properly and exercise, and I lost six pounds like that. And it was really easy. In fact, it was so easy that I lost the same six pounds three times in the next two months. I just kept losing it and gaining it back again.

ALAN ALDA (NARRATION) After my "losing and gaining it" experience, I wondered what level of confidence we all felt.

ALAN ALDA I feel that it's at least ninety percent.

ERIC Eighty percent, sure.

MARCY I can't give you a number. I've got to take it one day at a time.

RODNEY Eighty to ninety percent.

AMY I think it has to be ninety percent going into something so big. KATHY I think probably like seventy five percent.

TOM Closer to eighty percent for me.

ROBIN I think for me it's ninety. I like the way it's working and I like the way I feel on this diet.

WENDY Just scary. I don't have a number. It's just scary.

JOHN I'm at about seventy-five percent. Maybe approaching seventy-six.

ALAN ALDA That's really fine-tuned.

ALAN ALDA (NARRATION) A school cafeteria might not be your first choice for an imaginative, tasty and healthy lunch. But Walter Willett -- one of the country's top nutrition experts -- works upstairs, so this cafeteria's different. With Dr. Willett's guidance, over the last two years the menu's been transformed.

PATTY GREGORY Today we have grilled turkey cutlets with a papaya mint salsa.

ALAN ALDA (NARRATION) Brown rice, steamed vegetables, and olive oil used on the grill.

JOHN MURPHY Glazed salmon. It's marinated in fresh ginger and garlic.

ALAN ALDA (NARRATION) Same rice and vegetables. And again, olive oil on the grill.

PATTY GREGORY Wild mushroom burger. It has three different types of wild mushrooms. Pureed tofu binds it. Fresh thyme, parsley, little salt, little pepper.

WALTER WILLETT We really tried to make sure that everybody had a healthy option, no matter what kind of meal that they wanted to choose. There are a wide range of selections here. For example, some people really do want a pizza.

ALAN ALDA Pizza smells good, too.

WALTER WILLETT It does smell pretty good.

ALAN ALDA (NARRATION) Here you can get a regular pizza, or Dr. Willett's version. He wants whole grain crust -- it hasn't lost its nutrients, and it's digested slowly so it's satisfying.

PATTY GREGORY We follow Dr. Willett's guidelines, nutrition guidelines. Whole wheat grains, brown rice as opposed to white rice, whole grain pasta, whole wheat rolls. We don't use margarine. Canola oil, olive oil. It's a new way of thinking and it's pretty exciting.

ALAN ALDA (NARRATION) Dr. Willett's thinking on fat is a surprise. He wants us to eat it, so long as it's the right kind. Fat in food makes it taste good and be satisfying.

ALAN ALDA It is kind of startling after a decade or two of hearing about the importance of low fat, to hear from you that's the wrong track to go down.

WALTER WILLETT We've known for a long time that any type of calories can make you fat. But the public was really led to believe, and some dieticians just repeated it so often enough that they believed it themselves, that it was only fat calories that made you fat. And of course that led to dramatic over-consumption of high sugar products and things that were low-fat but high...

ALAN ALDA And foods that were low-fat, the fats were replaced by sugars to make them more palatable?

WALTER WILLETT Right. People were given the idea that you could load up on all these fat-free products, and because they didn't contain fat, you wouldn't get fat, but of course that was a terrible mistake.

ALAN ALDA (NARRATION) Dr. Willett uses salad dressing to drive home an important point. Don't eat saturated fats like butter and hydrogenated "trans" fats like margarine, but do eat vegetable fats like olive oil. They're satisfying and have a health bonus.

WALTER WILLETT All too often there's been recommendations to go for fat-free salad dressings. That's really a big mistake, because the fat in salad dressings is one of the healthiest types of fat. It's virtually always made from non-hydrogenated vegetable oils, which will help bring down your blood-cholesterol levels. And we have evidence that people who consume full-fat salad dressing regularly have a lower risk of dying from a heart attack.

ALAN ALDA (NARRATION) Widespread refined-carbohydrate, low-fat, high-sugar foods have helped America become fatter, says Dr. Willett. We should

reintroduce fat -- the right kind -- and eat whole grains. Our food would be more satisfying and healthier, and we'd be thinner.

WALTER WILLETT These high carbohydrate, low-fat diets actually make it more difficult to control your total caloric intake. One of the basic problems is, if you have this fat-free breakfast, for example, with a bagel and jam or jelly -- you know, fat-free -- you're going to be hungry by ten or eleven o'clock.

ALAN ALDA Right

WALTER WILLETT And then if you're running out for a snack, by the end of the day your total calories could actually be higher.

ALAN ALDA (NARRATION) The low-fat craze, fast-food and more sedentary lives have all contributed to a fatter America.

EDWARD SALTZMAN After you see the behavioral psychologist...

ALAN ALDA (NARRATION) On average, adults have become 10 pounds heavier over the last 20 years, but that's enough to push obesity rates from 15 to 30 percent. Increasing numbers of people are seeking help at obesity clinics like this. It's hard to lose weight and keep it off, and surgery is becoming more common.

EDWARD SALTZMAN If we took everyone who tried diets, exercise, even medications, you know we said the average weight loss is about ten percent. If we take people who have surgery, the average weight loss is about thirty-five percent of their body weight. The other difference between not-surgery and surgery is that you're more likely to keep it off when you have an operation.

KIMBERLY SMITH You hit a plateau, so your weight loss stops. You want to think about your negative thoughts and beliefs -- you had been losing weight and you stopped losing weight.

ALAN ALDA (NARRATION) Here the idea is to explore attitudes to food and weight loss, because they've found educated patients do better after surgery.

PATIENT 1 I can't stand myself.

PATIENT 2 Same old problem.

KIMBERLY SMITH Same old problem. Here we go. Naomi?

PATIENT 3 I'll never obtain my goal.

KIMBERLY SMITH So, a more positive belief.

PATIENT 3 I guess I need to change my eating pattern.

KIMBERLY SMITH OK. I've overcome so many challenges in the past. I can handle this. OK?

PATIENT 2 Have to make a better plan. You have to plan your meals ahead of time and be prepared to change the plan.

KIMBERLY SMITH OK.

ALAN ALDA (NARRATION) There's practical advice, too -- like how to break habitual "behavior chains" that lead to over-eating.

KIMBERLY SMITH Buy the cookies. Put them on the kitchen counter. Stay home on a Saturday afternoon when you know that's a vulnerable time for yourself. Sit on the couch. Start to feel lonely, and so forth. And so each of those events is a link in the chain. And the idea is that we can learn link breaking techniques for each link. So for example, buying the cookies, a link-breaking technique might be, shop from a list, have a partner shop for you. Let's say that that didn't happen, then we move on to the next link, which is put them on the kitchen counter. So to break that link it might be, freeze the cookies, or portion them out in small bags.

JEFFREY FRIEDMAN I don't think it was fully appreciated the extent to which this was a biological system...

ALAN ALDA (NARRATION) We'll get back to our weight loss people in a moment, but first we'll talk to the man who 10 years ago started a revolution in our understanding of how the body controls weight.

JEFFREY FRIEDMAN ...actually I've had requests for them...

ALAN ALDA (NARRATION) The revolution began with some very fat mice.

JEFFREY FRIEDMAN ...for grandchildren. They're actually, as you'll see, they're very docile animals, and they're gentle and they make a visual impression. So people thought they'd be a nice substitute for hamsters. So those are three obese ones huddled together.

ALAN ALDA (NARRATION) It turned out these obese mice had by chance acquired a genetic defect.

JEFFREY FRIEDMAN ...brothers and sisters of those animals. I think the difference among them is pretty obvious. These animals have been housed in exactly the same fashion -- all exposed to as much as this food as they care to eat, all confined to this cage up 'til now, and these animals weigh three times as much and have five times as much fat as those animals.

ALAN ALDA So what does this defective gene do to that animal that makes it obese?

JEFFREY FRIEDMAN In the case of these mutant animals, the brain never gets the signal that there are adequate fat stores, and these animals keep eating. And ironically, these animals are obese because they think they're starving.

ALAN ALDA (NARRATION) The genetic defect stops fat cells from producing a hormone which signals the brain that there's enough fat. Jeff Friedman called the hormone leptin, and there was great excitement when some obese people were found to be leptin deficient. For them leptin therapy is effective, but most obese people are not leptin deficient. The body's weight control system is more complex than that, as Jeff Friedman explained.

JEFFREY FRIEDMAN The way it appears to work is something like this. There's a region of your brain called the hypothalamus.

ALAN ALDA (NARRATION) The hypothalamus is constantly receiving hormone signals. Leptin signals how fat we are. Ghrelin signals about hunger and fullness in the stomach. And peptide YY sends signals about the state of the intestines.

ALAN ALDA So when all these signals gather together up here in the hypothalamus, is that where they get... that there's some kind of communication going on and one is suppressed and the other is given the go-ahead, or what?

JEFFREY FRIEDMAN There's some complex information processing there, the real details of which we don't understand yet. And to make it even more complicated, many other things go into this decision. Not only higher cognitive thoughts, emotional factors influence the likelihood you'll eat or not. Sensory factors certainly do. So somehow all these different factors get integrated and translated into an on-or-off response -- you either eat or you don't eat.

ALAN ALDA (NARRATION) The fact that different people have different tendencies toward obesity is evidence for the complexity of our eating control system. People like the Pima Indians who have the so-called "thrifty gene" are good at laying down fat in an environment of scarcity. But they get too fat when there's constant plenty. Now add another layer of complexity. The Pima's close

cousins who live across the border are not fat at all. But they are much more physically active, and while they have enough food, it's quite unlike the American diet that the Arizona Pima eat. The eating control system we get from our genes is constantly juggling and assessing how much food we have, what type, how we feel, and our activity levels. At the end of all that, we gain or lose weight, or stay the same. That's the complex system our group is seeking to influence, one way or another. I asked Jeff Friedman if he thought there are genetically determined barriers to what we were trying to do.

ALAN ALDA If you have somebody who's 100 or 200 pounds overweight, then the effect of a genetic defect might be much more powerful in that individual than willpower or environment. But if you have somebody who's twenty pounds overweight, thirty pounds overweight, even though they might find it hard to take it off and keep it off, would you think they'd be a candidate more for a genetic defect than the other two factors?

JEFFREY FRIEDMAN People can function comfortably in a fifteen, maybe twenty pound range. So that you can see weight fluctuations in that amount in just about anyone, and maybe someone has to work a little bit harder to be at the lower end versus the higher end of their range. But they won't go too far outside that range by and large over a very long term. I think once you start to think about reducing weight in amounts greater than that, it becomes increasingly difficult because, to a greater extent, as more weight has to be lost, the biological drives that resist that get more and more and more potent. And I think by the time someone has to lose 100 or 200 pounds, it's exceedingly difficult and may even be impossible for the vast majority of people.

ALAN ALDA (NARRATION) We're only beginning to understand how the body resists weight loss. Robin, one of our dieters, is having her resting metabolism measured. That's the energy she burns just keeping her body running, even if she's asleep. It's normal -- about 1700 calories a day. This number is fixed -- unless Robin exercises. Exercise not only consumes calories as you do it, it also increases muscle. And muscle -- unlike fat -- burns energy even at rest. Now look at the obese mice. Because they don't make leptin they think they're starving, and want to save energy. They can't reduce their resting metabolism, so their bodies cut back activity. In other words they're resisting weight loss -- just like the 85 percent of dieters who regain their weight within 5 years.

ALAN ALDA Everybody is told, eat less and exercise more. And then you're saying that if you eat less, to some extent you're not going to feel like exercising more.

JEFFREY FRIEDMAN Yeah. I mean, there could be some subconscious drive that actually would lead you to be less interested in exercise. But these

differences could be things like exercise, or could be sort of, unconscious movements, like how many calories do you burn if you're a little more rather than less twitchy or shaking your leg or not. I think there are very powerful forces that control how many calories we burn, and there's reasons to believe that these mechanisms are at least as powerful as those that control food intake.

ALAN ALDA (NARRATION) Our body's powerful forces that resist weight loss are arrayed against another powerful force, the diet industry, and neither side can claim total victory. At a typical Weight Watchers meeting, for example, some people are losing weight, and some aren't.

WEIGH IN AGENT Did good today. Very good. You did very good today. You're down 2.8. Good. Good, you stayed the same.

WOMAN 1 I stayed the same?

WEIGH IN AGENT You stayed the same.

WOMAN 1 I thought maybe I lost.

JEAN PROCACINI Why are you disappointed?

WOMAN 1 I can't lose weight.

JEAN PROCACINI Yes you can. You really...

WOMAN 1 I've been here since May.

JEAN PROCACINI You know what to do? We're going to talk in class. I'm going to help you. Good morning, good morning, and welcome. Nice to see everyone here this morning. You know what, when it's cold like this, it really tells me how bad people want to lose weight. You've been here before?

WOMAN 2 A few years ago.

JEAN PROCACINI A few years ago? So you're a repeat offender, huh? WOMAN 2 Yeah.

JEAN PROCACINI That's OK. That's all right. Anybody else? Is this your first time here or have you been here before? You've come back why? Why? Why did you come back?

WOMAN 3 I need to get healthy. For my kids.

JEAN PROCACINI You need to get healthy.

WOMAN 3 Yup.

JEAN PROCACINI Why don't you do it without coming to the group here?

WOMAN 3 I've been trying that for the last year-and-a-half...

JEAN PROCACINI And what happens? WOMAN 3 Keep going up.

JEAN PROCACINI If a person has never lost weight before, won't they tell you, Just stop eating, OK! Just lose weight, all right! Smarten up! Get some duct tape! Put it on your mouth. OK? Just do that, all right. But people that walk in our shoes, you know what they say? It's hard, but it's possible, it's doable. Isn't it? Brag about how much weight have you lost.

WOMAN 4 Nine-and-a-half pounds.

JEAN PROCACINI What?

WOMAN 4 Nine-and-a-half pounds.

JEAN PROCACINI Nine-and-a-half pounds! Tell them how much you've lost.

WOMAN 5 Ah, sixty-one-and-a-half.

JEAN PROCACINI Sixty-one-and-a-half!

MARCY It helps to laugh. It helps to share stuff. It helps to share the failures like she was talking about. Because I mean I'm only on week two, and it's pretty much a given that I'm going to lose weight at this point because I'm really motivated. Three months from now, you know, there's nothing that says that I'm not going to be up. We measure everything in Weight Watchers.

ALAN ALDA (NARRATION) Marcy can eat anything, so long as she stays within her daily points allowance. Take a frozen dessert, for example.

MARCY OK, say for instance these. This has one gram of fiber, fifty calories and half a gram of fat. So you take your handy dandy point finder. Fifty calories, one gram of fiber. Then you go over here to this column and you find your fat grams. So it's got half a gram of fat. It equals one point.

ALAN ALDA (NARRATION) The point system is designed to limit calories -- to about 1000 a day in Marcy's case -- while encouraging balanced nutrition. So vegetables, salad or fruit have low point value, while steak is high. Marcy's

husband, Tim, is also on Weight Watchers. Marcy's allowance is 22 to 27 points a day -- the same as mine.

MARCY'S DIARY I just got back from joining a gym, and this is no small thing, because I hate exercise, I hate it, I really hate it. I went to the gym three times and still come back with a gain. Just, you know, it's like, you just want to just quit. Fortunately I have a television camera in my office, so I have a little more motivation than normally I would at this point. Basically, what I did was drown my sorrows in cream cheese, which is actually a change of behavior for me. You know, normally it would be chocolate, although come to think of it, there was a little bit of that involved. Anyway, I decided to just give myself the day off, and then regroup tomorrow. I still have these little arm bat-wing things that I hate, but I have, for the first time in my life, I've got... See that mound, can you see that? I've got this muscle. I actually have quite a collection. Yes, I've made a number of attempts at this throughout my life. This represents my attempts at losing weight since 1987. I want to show you this bag of potatoes. This is a fifteen pound bag of potatoes. This is a ten pound bag of potatoes. Well, actually it's a little less than ten pounds because we ate three of them for dinner, but together with this fifteen pounds, and this ten pounds, this is twenty-five pounds of potatoes and I've lost twenty-six pounds as of today. I mean, it's like I had no idea I had this many potatoes on my body.

ALAN'S DIARY I'm paying attention to what I'm eating, and I had reached the point where I was just putting it away. And I really wasn't enjoying it. I'd eat a big plate of pasta and drink more wine than I'm drinking now and not really noticing. I really am noticing what I take in now and I really like it. The interesting part of course is going to be when I reach that final goal, and then see if I can maintain it for the next four months or six months or, what I hope, forever. Counting anything out about the food, whether it's calories or points, or portions, whatever it is, you would think that would make you enjoy your food less. It continues to make me enjoy my food more. I mean, I'm thrilled at every meal. I'm really paying attention to what I'm eating. Much more so than when I stuffed myself.

ALAN ALDA (NARRATION) Now let's see how John's doing with the Atkins diet. Many doctors are concerned that this high protein, low carbohydrate diet could increase heart disease, cancer and other problems. But there are no long-term studies, so we don't know for sure. We do know people who stick to it can lose weight fast, probably because they just eat less -- protein and fat are very satisfying.

JOHN'S DIARY Hi, how are you doing? End of the second week in the Atkins diet, which is supposed to be the end of phase one. But I had a little relapse on Saturday. Bread was the first thing that I had almost craved as I went down the bread aisle feverishly looking for low-carb or no-carb bread. And I just couldn't

find it. Next day, after work, I just went in and bought the bread and proceeded to make a few sandwiches and be happy. I was just gonna eat dinner with my mother who had just come back from Italy. And Italy is the land of pasta. So we went to the North End of Boston, which is the Italian section. And I had linguini with clam sauce. And I loved it. I actually was at home and I had the craving for pizza, my other favorite carb. And I held off for about an hour. And then I ordered one. I ordered one out. I consumed about half of it. Then I said, OK that's enough. But then about two hours later, I was eating the other half. So, that was the end of phase two.

ALAN ALDA (NARRATION) After a few weeks John abandoned his diet, having lost about 10 pounds. He then entered a diet study, was placed in the control group, and gained the weight back. Here's Wendy, making one of the Mediterranean-style dishes that she hopes will help her lose weight.

WENDY I put a little bit of tofu cheese in. Or I'll put a little bit of regular cheese in, which kind of, you know makes the fat content go up, but still very good. So basically, I just put this... I have jalapenos and regular red peppers and onions, lightly sautéed. A little bit of cilantro in there.

ALAN ALDA (NARRATION) If Wendy sticks to the diet and controls her portions she'll lose weight -- especially since she works out a lot. But there was something Wendy was not admitting -- even to herself at first.

WENDY'S DIARY I just quit smoking on Sunday, by hypnotism. And so far, so good. I'm a little edgy and actually want to eat more. You know what, I think in every entry I will give some kind of excuse as to why I have not lost weight. You know this is me, this is the truth, I apparently am not so great at this weight losing thing. What is wrong with me? Ahh! I get so frustrated. Why do I get so, you know. You get so frustrated with yourself. You want to do things, you don't want to do things. You want to do... You know, it's up and down, up and down. It... ahh! Drives me nuts!

ALAN ALDA (NARRATION) Here's Kathy logging on to her online diet service, where she can plan an entire week of meals for herself, Tom and the kids. For practicality, everyone's going to eat the same meals, although the two kids aren't dieting. Meal plans are aimed at balanced nutrition with limited calories. She modifies the system's suggestions.

KATHY Peanut butter and jelly sandwich is not going to go over big for dinner in this house, that I know, so we'll change that one. Look for something that everybody will eat. Lemon caper chicken breast -- we've had that before. They like that so we'll have that.

ALAN ALDA (NARRATION) She prints out the recipes and a shopping list to match. So a lot of tedious thinking and calculation are done for her.

KIMBERLEY'S DIARY There's no food in the house. There's nothing to eat.

PATRICK'S DIARY Why I did this is because my mom forced me to do it.. I just eat what they give me.

KIMBERLEY'S DIARY So I'm like, really hungry, and I'm, like, trying to get my friends to bring me food.

KATHY'S DIARY Tom's been sick with bronchitis, so, it's kind of put the whole family into a standstill for the week.

TOM'S DIARY Today I weighed one hundred and ninety three and a half pounds. That means no change over the past week. I'm not really surprised at that. Once again I've been sick for the week. Now, it's going to stop. Starting today, it's going to stop.

KIMBERLEY'S DIARY We haven't been doing the diet as much as we did in the beginning. I think that our enthusiasm is starting to wear off. We just went out to eat. My mom had a salad and my dad had a bowl of clam chowder and some fries and a deep fried fish, I think. Bad, very bad.

KATHY'S DIARY I haven't been exercising over the last few weeks. Two weeks, probably. And that's why my weight's pretty well stayed the same. I'm going to try and do the old, ah, put a picture of, on the refrigerator, of maybe a pig, I guess. I don't know. Something that I am going to put on the refrigerator to keep me out of it.

TOM'S DIARY I'm satisfied with the weight loss I have. Actually, that's not true. I'm stuck here. I'm down to about 191 pounds, which is making me feel a little bit better about myself. Unfortunately the fat content's gone up to about 23 percent, so again, I don't understand what's going on. Losing weight, fat content, going up. I don't get it.

KATHY'S DIARY I am back in size 10 pants. I don't know. They're fitting pretty good today. Here. I don't know if you can see me or not, but here. There they are -- size ten pants. They're better.

ALAN ALDA (NARRATION) In the fourth month, there was a big change for Tom. He left his office job to become a full-time archery coach. So his days became much more active. We'll see how the family did -- along with all our weight loss subjects -- at the end of the program. Here's Eric, with his new son Henry.

Having a lively and exhausting son in his future was the main reason Eric wanted to lose weight.

ERIC What's he doing? What's he doing?

ERIC'S DIARY I guess I've been fairly grumpy. That's what my wife and my friends tell me. I'm not drinking my favorite soft drinks. I'm not getting the caffeine and sugar that I usually get out of them. I'm starting to crave pizza, so I think I might have to break down and get a slice or two to put it out of my mind. Diets are pretty boring. Nothing happens really quickly. It's a little bit over a long amount of time. But... it seems to be working.

ALAN ALDA (NARRATION) Henry was born at the end of March -- week 13 of Eric's diet, which was still going well. We'll check in with Eric and Henry later. A few months after the start, we looked in on Robin -- who's using the Zone, a low carbohydrate diet

ROBIN These are my old ones. I can just like take them off without, without even trying.

ROBIN'S DIARY My mom broke her leg on Sunday night, this past week., and it's just been a nuts week, going back and forth. My eating has been off. I've probably had too much carbs at one point or another. So, it wasn't a great week. The big news for this week is that I passed 30 pounds. Which is cool. I mean I guess I'm going to be giving a lot of clothes away, which is fine with me.

ALAN ALDA (NARRATION) By summer Robin had met her goal of joining a softball team. Her diet requires fixed ratios of carbohydrate, proteins and fat at every meal -- an idea that's scientifically controversial. Nonetheless, something worked for Robin.

ROBIN I think I did surprise myself. You know, anytime you start a diet, you're really gung ho, and you're doing everything to the finite degree. And it just seemed like it wasn't that hard and yet the weight was dropping off.

ALAN ALDA (NARRATION) Amy's one of our two subjects who are heading for gastric bypass surgery.

AMY'S DIARY This week's been kind of rough. I got on the scale and I did gain a couple of pounds, which I was really discouraged about. And I think that's where that, "Oh, even though I have a surgery date" mentality comes in, that I allowed myself to eat the things that I shouldn't have. So now, you know, tighten up the belt again, and back to the grindstone. Now that it's only a few hours away, I'm feeling a little ... I'm not really anxious, I'm just... It's the unknown, I think.. It's just

a lot of emotions come out. Because you just think about everything. And, I don't know. It's time to go to bed, though. SCOTT SHIKORA You all set?

AMY I'm set. SCOTT SHIKORA Alright.

AMY Are you ready? SCOTT SHIKORA We are. You're seeing the A-Team today. MICHAEL TARNOFF See you when you wake up.

AMY Alright.

ALAN ALDA See you later, Amy. If seventy-five to eighty percent of the patients are successful at reducing their weight, what happens to the other twenty, twenty-five percent who have had a kind of severe operation. Can it be reversed?

SCOTT SHIKORA It can be reversed, but it's very difficult to reverse it. And if somebody fails, and gains their weight back, or never loses the weight they should lose, there's no reason to reverse it, because essentially they've behaviorally reversed it. Now what we're going to do is go through every layer of the abdominal wall. Everything you see yellow is usually fat.

ALAN ALDA How are you getting through those layers?

SCOTT SHIKORA This instrument has a little blade at the tip, and when you hit the trigger the blade juts out and it makes a little cut.

ALAN ALDA I see.

ALAN ALDA (NARRATION) The laparoscopic instruments are monitored with a fiber-optic TV camera.

SCOTT SHIKORA So that's called a linear stapler.

ALAN ALDA (NARRATION) The surgeons make a new, smaller stomach out of the top few inches of the natural one, using an instrument that staples and cuts at the same time.

SCOTT SHIKORA We're going to sculpture this little stomach chamber or pouch.

ALAN ALDA (NARRATION) Amy's new stomach will hold only about one ounce, whereas her natural one held half a gallon. The natural stomach will remain in place, to keep generating digestive fluids.

MICHAEL TARNOFF So this part here is going to be her new stomach.

SCOTT SHIKORA That's the first major portion of the operation is just getting that pouch created.

ALAN ALDA So now you have the esophagus naturally going into that new pouch.

SCOTT SHIKORA Correct.

ALAN ALDA And then you have a new connection from that pouch to the intestine.

SCOTT SHIKORA Correct.

ALAN ALDA (NARRATION) To connect the pouch to the intestine, the surgeons first cut the intestine below the stomach and make a new connection for the natural stomach lower down.

SCOTT SHIKORA So that's the completed closed connection. So we're down to the last major step which is connecting the intestine up to that one ounce stomach chamber.

ALAN ALDA (NARRATION) Finally, the intestine that had been cut below the natural stomach is brought up and connected to the new, small stomach.

MICHAEL TARNOFF There we go. Look under here. OK.

SCOTT SHIKORA OK?

MICHAEL TARNOFF Yeah.

ALAN ALDA (NARRATION) The procedure takes about 90 minutes total.

SCOTT SHIKORA So the bulk of the operation is done. We'll throw an extra stitch or two in a few places and then we close.

AMY'S DIARY I got home and laid on the couch and just relaxed for a while, and my husband made dinner for my, you know my family. I smelled baked potato, and I said, "Oh, I would love to have a baked potato." But it's not that I'm hungry, it's I remember how it tastes in my mind. You can see my collarbone when you couldn't see it before. And I notice it a lot in my legs and my ankles. My ankles look so thin to me.

ALAN ALDA (NARRATION) In a few months, Amy was going up the stairs without pausing for breath.

AMY That's 3 ounces. It's not a lot. You know, three ounces before would be like, Oh, that's all you're going to have on your sandwich? And now, it's like, I have to eat that much? Sometimes my brain will say, It's been a while since you've eaten, you probably should eat something. But I don't have that pit in my stomach like, Oh my Gosh, I'm so hungry, I need to eat. Nothing like what it used to be. Nothing at all. I never thought anybody could feel this, but I definitely do.

ALAN ALDA (NARRATION) Four months after surgery, Amy achieved her goal of shopping in a regular -- not a plus-size -- store.

AMY I would never wear a cocktail dress, because I wouldn't want that much of my body showing. I mean I still have a long way to go, but I'm at a point now that I can wear a cocktail dress and get away with it and not be like, everybody looking at you like, What in the world do you think you're doing? I don't like it. It's too big. It's like way too big in here. I like this dress. It's longer. It covers more. I like it.

RODNEY It's March today, right? So in the middle of summer I'll be in my Speedo bathing suit.

ALAN ALDA (NARRATION) Rodney was up and about soon after his surgery.

RODNEY Hi ya. How ya doing?

ALAN ALDA Oh you look great -- walking around. When did you have your operation?

RODNEY Yesterday.

ALAN ALDA Yesterday and you're already around walking?

RODNEY I was walking at three o'clock this morning.

ALAN ALDA Really?

RODNEY Yeah. It felt good to walk.

ALAN ALDA Are you in any discomfort?

RODNEY No, just a little. You know, you know that somebody's done something. Before I came here, I was like a very closed person, I didn't talk to anybody. Now they can't shut me up . When I come here I talk to everybody, you know.

ALAN ALDA So what's the relationship between being more open and getting your diet more...

RODNEY I don't know I feel comfortable with the people and I know they're going through the same thing I'm going through. So it's not like we're trying to, you know hide anything from anyone.

ALAN ALDA So does that mean that you're more honest with yourself about what you're eating?

RODNEY Yes, yes, yes.

ALAN ALDA That's interesting. Being closed off from other people in a way is a way of being closed off from yourself.

RODNEY Exactly.

RODNEY'S DIARY I've already lost 10 pounds since I left the hospital. It feels good to have everything loose. I mean, everything is already a size too big for me. It's better than hitting the lottery, you know? Because if I'd have hit the lottery, I'd just probably gone out and bought a dozen cheesecakes and eat them. I haven't even craved a sweet. Before I used to walk into a room, you know, all my friends, nobody would say anything, but I'd always be wondering what they thought, you know. Now they all come up, "Boy you look good." "How do you feel?" "You look great." "You look twenty years younger." You hear all of this stuff. And it makes you feel good. It makes you want to go on and keep this thing up.

RODNEY This is my attire before I had my operation. Now I can fit another person in here. I wasn't able to button this shirt. Now I got a little room. Actually, I've gone down a size. This is the shirt. Towards the end there these buttons would be like this, before my operation.

ALAN ALDA (NARRATION) Rodney discovered a new, positive outlook on life. He's now full of energy, walking several miles a day. He could barely walk before.

RODNEY Two weeks before I went into the surgery, I was questioning myself a lot. I was thinking, I really love food. Am I gonna be able to live like this without the food, you know? I mean, I used to like the breads, the cakes, the pastries, the ice cream, the puddings, all that stuff. Am I really gonna be able to do this? And then I said, Well, let me try it. I'm four months out from my surgery. I don't miss it at all.

RODNEY (AT SUPPORT GROUP) Before I entered the program I was 375 pounds. This morning, I weighed 224 and I had the operation six months ago. No matter what I did I was uncomfortable. When I first come and I sat in those chairs I was uncomfortable. They didn't make them wide enough. Get on an airplane -- I used to travel to Washington, D.C. a lot -- I'd always get the extensions. And it was getting so the extension wasn't long enough. I always had to get the big cars. My pickup truck had to be extra king size, you know, like you get the piggy size at McDonald's? I would get the biggest size pickup truck. Now I own a little Mazda. I haven't come to one of these support groups that I haven't walked out of here with a tool. And I'll never forget my very first one I came to. There was a lady talking about how she controlled what she ate. And she always would say, she would get a napkin and put it over half of her plate, and only eat what was exposed. I told my wife about it, and just the other day, we were eating, and she noticed that I was eating a little bit more. She grabbed a napkin and put it over half the plate.

ALAN'S DIARY It's not a line you cross. There's no finish line. I can see that pretty clearly now. You're always running the race. But it's fun to run.

ALAN ALDA (NARRATION) Eight months after we'd started, the "Losing It" weight loss group got together for a farewell dinner -- calorie controlled and nutritionally balanced of course. We'd had one drop out from the group, but Eric's new son Henry made a good substitute. Unfortunately, Eric's diet collapsed when Henry was born. Life got too hectic to think about dieting, and he's now gaining back weight.

ALAN ALDA As I remember a big thing in your, the change in the way you ate, was that you stopped drinking so much soda.

ERIC Yeah.

ALAN ALDA Soft drinks.

ERIC Yeah. I've kept that...

ALAN ALDA You still...

ERIC Yeah, I've still kept to the diet soda and water and that kind of thing. So I've kept on that. But, as far as the rest of the diet goes, it's gone. I've gained about 13 pounds of the 27 that I lost, back. But, I've got bigger fish to fry now. I've got a new look on life.

ALAN ALDA (NARRATION) Marcy, to her surprise, found she liked exercising -- she thinks the TV show helped. She lost half what she'd hoped to lose, but she's still going.

ALAN ALDA Have you noticed any change in your health?

MARCY Oh yeah.

ALAN ALDA Like what?

MARCY Well, my cholesterol's way down. It like went down 20 points. I noticed a big difference -- just, we have 13 steps in our house and I'm going up and down them all the time.

ALAN ALDA And you don't feel winded.

MARCY No.

ALAN ALDA You know I have a change in my health and I didn't tell the video camera about it. I'll tell you now. I... my blood pressure went down, and I had been on a blood pressure pill and I'm off it now.

ALAN ALDA (NARRATION) I discovered just how much effort it takes to lose weight. You have to think about it all day, every day. After all that I really don't want to get the weight back. I'm sticking with it. Amy's and Rodney's surgeries were both successful, and they both lost weight rapidly. They're both full of new energy and getting healthier.

ALAN ALDA Do you just eat now in a utilitarian way? Or do you enjoy your food?

AMY I eat because now I have to nourish my body, you know what I mean? And I concentrate on the protein, because that's what they want you to get -- 65 to 80 grams of protein a day.

ALAN ALDA And is it hard to get that down?

AMY Oh, it's wicked hard.

ALAN ALDA Really?

AMY Yes. Because you're not hungry so you have to remind yourself to eat.

ALAN ALDA Is it harder to remind yourself to eat than it used to be to remind yourself to eat less?

AMY Yeah.

ALAN ALDA It is?

AMY Uhuh.

ALAN ALDA So, is this really good?

AMY Yeah.

RODNEY It is good.

AMY It is. It really is.

RODNEY Like Amy says, we're never hungry.

ALAN ALDA Is this something you would recommend?

RODNEY If I'd have kept going the way I was going, there was a danger that I wasn't gonna live another year...

ALAN ALDA Yeah.

RODNEY You know because I was headed for a stroke.

ALAN ALDA (NARRATION) Wendy failed in her diet, but she discovered how to confront her life-long binge eating. She thinks the TV show helped her do that.

WENDY Pretty much everything that I said that I was going to do within these next few months, I didn't do. But I'm okay with it, because, it took a lot to actually come back here tonight and film this last part because I was embarrassed, you know. But then I realized I really don't have anything to be embarrassed about.

ALAN ALDA What do you think you'll do now?

WENDY Therapy, is the main thing. You know because that is unwinding a lot of things. And I take the steps as it goes, and I'm fine with that, you know. I'm happy.

ALAN ALDA (NARRATION) Kathy and Tom each lost about 20 pounds -- less than planned. They hope the kids learned new, healthier eating habits -- although I wasn't sure Dad had learned the lesson himself. KIMBERLEY He goes through a bag of chips in one day.

ALAN ALDA You go through a bag of chips in one day?

TOM When I binge I do.

ALAN ALDA When you binge. Now have you binged much during these eight months? TOM No. No.

KIMBERLEY Did too. When we were at...

ALAN ALDA Is she the binge police? KATHY Yeah, she is. TOM She's the police, period. KIMBERLEY If they don't feed me chips, how come he gets some? KATHY Total denial is what it is, I guess. KIMBERLEY He tries to hide it in the trash. Then we come home, and you can hear it crinkling in the trash.

ALAN ALDA You here it crinkling and the bag starts to like open up...

ALAN ALDA (NARRATION) Robin was the most successful of our 8 dieters, losing 45 pounds. She plans to keep going and lose another 50.

ALAN ALDA Do you have any health issues that have gone away since you...

ROBIN Just fat.

ALAN ALDA (NARRATION) If they are like most people, the five of our dieters who succeeded in losing weight will have quite a struggle keeping their weight off. It won't be impossible, but it will be tough. Our two gastric surgery patients are still losing weight, and given their program's success rate, neither would expect to regain weight within five years. Of course, our program has not been a controlled experiment. On the Frontiers web site -- at pbs.org -- you can see how dieters do in scientific studies, and find out the latest on all our weight loss people.

© 1990-2004 The Chedd-Angier Production Company, Inc. All rights reserved.