

## From the doctors

# Weight loss the Monarch way

## The science behind the transformation

**W**eight loss ought to be easy. After all, you just have to eat fewer calories than you use every day. So why is weight loss so hard? And losing just fat, even harder?

Because your body doesn't want to lose weight, and it especially doesn't want to lose fat.

Why? Because weight loss, to your body, is a sign of imminent starvation. For thousands of years starvation was a real danger, so your ancestors' genes developed an insurance policy: fat storage. Their genes also developed mechanisms to protect fat from being used for as long as possible. This means fat is not your body's first choice for fuel when it faces a calorie shortage. In fact, it's not even your body's second choice.

Your genes are still in the Stone Age. They don't know there's all-night pizza delivery and a convenience store on every corner. They also don't know when you want to deliberately lose weight. Think of it as a communication problem: you cut calories to lose weight, but your body interprets that as starvation, a potentially life-threatening event. You want to lose fat, but your body wants to keep it. The body thinks fat is good, useful, valuable stuff, which it is in reasonable amounts. If you really were starving, it would help keep you alive.

To lose fat, you have to "speak" your body's language and send it the right signals at the right time, so your body doesn't think you're starving. The truth is that the body's hunger control mechanisms, like its fat storage and release systems, aren't yet fully understood. But based on established and evolving science, the doctors at Monarch Medical Weight Loss Center have created a program that "speaks" your body's language.

Using smart nutrition and frequent small meals, Monarch's program sends the signal that food is plentiful, encouraging your body to release fat for use as fuel. This approach takes advantage of your body's physiology to maximize weight loss.

As every dieter knows, to lose weight you must eat fewer calories than your body requires every day, creating a prolonged calorie or energy shortage in your body. This deficit is met by "burning" stored calories and thereby losing weight.

But not all calories are treated the same. When you cut calories, your body turns to the three macronutrients — carbohydrate, protein and fat — for fuel, in that order. In nature, protecting fat reserves can mean the difference between survival and death. Consequently, the body has excellent mechanisms for storing fat and lousy mechanisms for losing it.

How does this affect you? If you want to lose weight, you have to send the right signals to your body. Monarch's programs use the three principles of weight loss — frequent meals, sufficient protein and calorie restriction — to tell your body to use its stored fat for fuel.

## Fueling for fat loss

Just as you have favorite flavors of ice cream, your body also has its favorite sources of energy, and carbohydrates top the list. This is important to your weight loss because if carbohydrates are available, your body will use them for fuel, not fat.

The body prefers carbohydrate, also known as sugar and starch, because it can be rapidly converted to glucose and used as energy. The body also has a small store of carbohydrate in the liver and muscle, called glycogen. When you create a calorie shortage, the body first burns the available glucose, then glycogen, which is quickly used up.

Once carbohydrates are converted to glucose, they're ready to be used for energy by the cells that make up all body tissues. But glucose can't enter the cell without insulin. The hormone insulin acts as a cellular key that unlocks the cell. It's no surprise, then, that insulin is intimately related to the blood level of glucose. A rapid rise in blood glucose levels stimulates a corresponding rise or spike of insulin. As insulin unlocks the cells so glucose can enter, there is a rapid decline in the blood glucose levels. This is important to understand, because a rapid drop in blood glucose is followed by something that can doom your diet: gnawing hunger pangs and carbohydrate cravings.

For this and other reasons, it's a good idea to minimize the rapid rise and fall of both glucose and insulin in the bloodstream. How do you get off the rollercoaster? By eating small amounts of balanced protein and carbohydrate in small meals throughout the day. These small meals, or mini-meals, spaced 2 to 3 hours apart, help avoid the rollercoaster rise and fall of glucose and insulin and prod the relatively weak mechanisms of selective fat loss into action.

The key is sufficient protein, which is the body's second choice for fuel. Because it is not converted to glucose as quickly as carbohydrate, protein doesn't cause rapid changes in blood glucose or insulin levels. Where

does the body get protein? From food, and if that's not available, then from your muscles. Your body would rather destroy muscle tissue than tap into its fat stores, its insurance against starvation. You don't want to lose muscle mass, for three good reasons:

- First, muscle tissue is metabolically very active, meaning the more muscle you have, the more calories you can burn without effort.
- Second, lean body mass, which is predominantly muscle, is important in establishing a "set point" for weight maintenance, a new weight that the body tries to maintain. Our ultimate goal is a new lower "set point."
- Third, weight loss that results in a depleted lean muscle mass causes you to increase eating when you're no longer actively dieting. This increase in food consumption does not stop when the original fat stores are replenished; it continues until the muscle mass has been restored. This can lead to regaining of all the lost fat stores, plus more — up to 160 percent! The regained weight helps explain another familiar problem: a new, higher weight set point. This is partly why yo-yo dieting leads to escalating weight.

How do you protect your muscle mass from being used as fuel? By eating sufficient protein and strength training. Your nutrition prescription is tailored to your body's protein needs to help ensure that your body burns primarily the fuel you want it to: fat.

## Calories count

Our two most popular diet plans, JumpStart and New Beginnings, are both low-calorie diets (LCD) with daily intakes above 850 calories per day. To prescribe a LCD, our staff uses a scale and a computer algorithm to estimate the patient's current resting calorie requirements, taking into account the patient's current weight and physical activity level. This caloric value is an estimate of what the patient is currently eating, and if continued, would result in maintenance of their current weight. As weight loss progresses and approaches the maintenance phase, a more precise measurement can be made based on oxygen consumption to help fine tune your caloric requirement.

A restricted calorie diet creates a daily shortage in calories so that the body will use its stored fuel, preferably fat, to meet its energy needs. In the strict thermodynamic sense, a pound of fat contains 3,500 calories. Cutting 1,000 calories a day for a week creates an energy shortage of 7,000 calories — or two pounds a week. However, weight loss does not always appear to follow the laws of thermodynamics. An individual's unique physiology can strongly affect the rate of weight loss.

To lose fat, look beyond the calorie count on the label. Yes, calories count, but so does the nutrition in your food. After meeting your first personal goal, our staff will show you the five easy steps to making the perfect mini-meal. For now, we recommend small frequent meals with prescription meal replacement products, because they have been shown to increase weight loss. Prepackaged, prescription protein-fortified foods remove poor nutrition choices from your plate, and help you adapt to a more appropriate portion size. As you gradually increase the percentage of grocery store foods in your meals, the Center's staff will teach you how to eat the correct ratio of protein to carbohydrates (1:1) in appropriate portions.

## Feel full on less

You know hunger. It's that growling in the pit of your stomach — the physical signal to eat. Scientists are still trying to fully understand the complex anatomic, neurologic, psychologic and endocrine mechanisms of hunger and satisfaction, or satiety. Part of our strategy for your nutrition plan is to help you minimize hunger, thus helping you reduce calories and create an energy shortage. One tactic is to eat frequently, every two to three hours, so you are never far from a meal. Another way to minimize hunger is to maximize satiety, that comfortable feeling you have when your appetite is fully satisfied.

- Important to satiety is a food's composition — its mix of protein, carbohydrate and fat.
- Protein has a satiety value beyond its nutritive content. In other words, you get more satisfaction from protein than you would expect. A relatively high percentage of protein in a meal helps keep you feeling full longer.
- Carbohydrate, on the other hand, causes a rapid rise and fall of glucose and insulin levels — which makes you feel hungry sooner than you would expect.

## The effective diet

The ideal fat-burning diet does three things:

- It avoids the wild glucose and insulin rollercoaster ride that soon makes you tired and hungry.
- It contains enough protein to maintain lean body mass and makes you feel full longer.
- It reduces calories so your body burns more than you eat.

Monarch Medical Weight Loss Center's three principles of weight loss do all of these and form the basis of all our prescription nutrition programs.

