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Diabetes: A battle for control

Without a doubt, many patients require insulin. But some who have Type 2 disease resolve to change their lives instead.

By Mami Jameson

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Simply put, diabetes is a contest between people and their blood. For people whose bodies don't produce enough insulin to manage their blood sugar, the goal is a normal blood score, achieved through a balancing act of lifestyle and medication.

"Eventually most patients will follow a course of lifestyle, medications, then insulin," said Dr. Enrico Cagliero, referring to people diagnosed with the most common form of diabetes, known as Type 2. He's an endocrinologist at Massachusetts General Hospital and associate professor of medicine at Harvard Medical School. "Overall about 30% of all diabetics are on insulin, but, given the progressive nature of the disease, close to 60% can expect to be on it eventually."

To buck that trend, some of these diabetics, with the help of physicians who share their mission, are adopting rigorous diet and exercise regimens to get off insulin, or never have to go on it. Unlike Type 1 diabetics, who have no choice but to take insulin, Type 2 diabetics still produce some of the hormone -- and more than a few are determined to make the most of it.

Dr. Wei-An "Andy" Lee, an endocrinologist and assistant professor at USC's Keck School of Medicine, is a firm supporter of this approach. He's among a handful of physicians using radical lifestyle changes to get insulin-dependent patients off insulin.

"I wish more doctors and patients would not assume insulin injections are their only option," he said. "I don't see why more don't give lifestyle a try. It's better for the patient, costs less than medications or surgery, and is better for the country."

Newer non-insulin medications, specifically ones that boost incretins (hormones found in the digestive tract), along with strict diets can help patients actually reverse their disease and ditch the insulin, he says. Lee presented two such case studies to the Endocrine Society in Washington, D.C., last summer, and points to dozens of individual success stories.

He prescribes incretin medications and a very low-calorie diet (600 to 800 calories a day). Once off insulin and stabilized, patients can maintain normal blood levels through lifestyle alone, he says: a low-calorie diet (1,000 to 1,200 calories a day), weight loss, moderate daily exercise and regular eating and sleeping schedules.

Other doctors say this approach misses the point.

They agree that controlling blood sugar is crucial. Not doing so can lead to blindness, kidney failure, loss of limbs, heart disease and stroke. And they agree that lifestyle changes are the first and best line of defense against Type 2 diabetes.

But avoiding or getting off insulin shouldn't be the focus, said Dr. David Nathan, director of the diabetes center at Massachusetts General Hospital, and editor of the Harvard Medical School Special Health Report on Type 2 diabetes. Maintaining glucose levels that in the long-term will prevent kidney and eye disease should be the focus instead, he insists. "If you can achieve good numbers without medication, you have my blessing," Nathan says. "But if you need insulin, you'll be much healthier with it than without it."

Still, many patients don't want to be on insulin. Apart from being inconvenient, the drug contributes to weight gain, which exacerbates diabetes. Patients have a lot of psychological resistance to insulin, Cagliero adds. "Doctors sometimes use insulin as a scare tactic and tell patients that if they don't lose weight and get their lifestyles under control, they will have to go on insulin. So people associate insulin with guilt," he says. "They feel like a failure, as if they didn't do their job."

Lee's approach "is a little on the odd side," he says. "I worry that these people will have wonderful reversals initially, then slide back and feel like failures."

Further, controlling diabetes, even with insulin and even for the most committed patient, can be difficult.

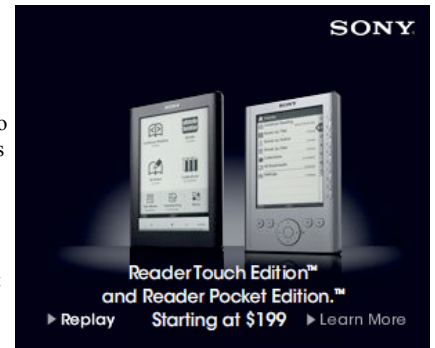
Richard Jackson, an endocrinologist, founder and medical director of the Joslin Diabetes Center's Outpatient Intensive Treatment program and an assistant professor of medicine at Harvard Medical School, puts it more vehemently and bluntly:

"Telling people who have diabetes that their goal is to get off medications is the dumbest thing you can do. Putting patients on a low-calorie diet is among the least successful approaches for the long term. It's not a new idea. You can take almost anyone with Type 2 diabetes and fast them, and in one day they will have a normal blood sugar. The goal shouldn't be to get people with Type 2 diabetes off medications, but to get their [glucose] and other numbers, specifically blood pressure and blood lipids, in a healthy range. Our goal is to help people live a long healthy life, not a life with the fewest medications."

What no one disputes is the positive effect of a controlled diet, weight loss and regular exercise on diabetes.

Though not everyone with Type 2 diabetes is overweight, and many obese people never get diabetes, 95% of people who have Type 2 diabetes are overweight or obese. Most experts believe that obesity combined with a genetic predisposition triggers Type 2 diabetes. If you have the genes, never becoming overweight is your best defense.

Not only do fat cells secrete adipokines (proteins that regulate insulin sensitivity), but excess body fat also disrupts hormonal balances, says Dr. Judith Korner, assistant



professor of endocrinology and metabolism at Columbia University. She's received funding from the National Institutes of Health to study weight loss and diabetes.

"Losing weight helps reduce the visceral fat in the abdomen. The fat encases the organs, including the liver, making it more difficult for the organs to respond to insulin." Even losing as little as 5% to 10% of one's body weight can produce a noticeable decline in blood sugar and decrease the need for medication.

Regular activity also helps diabetics reduce the need for insulin and other medications. Growing evidence suggests that moderate-intensity activity -- even if it doesn't bring weight loss -- can improve insulin sensitivity.

Several long-term studies demonstrated that diabetics who engaged in 30 to 60 minutes of moderately aerobic activity three to four times a week lowered their average blood sugar levels by 10% to 20%. The most insulin-resistant saw the most benefit. Regular exercise also helps lower blood pressure, raise HDL ("good" cholesterol) and lower triglycerides, all problems that accompany diabetes.

One federally funded, long-term study, the Look AHEAD trial, is tracking more than 5,000 people who have Type 2 diabetes. Researchers assigned half the participants to an intensive lifestyle intervention (calorie-restricted diet, moderate-intensity exercise of 175 minutes a week and weekly support sessions); the other had standard diabetes support and education. One year after the trial began, according to a report published in 2007 in *Diabetes Care*, members of the intervention group had lost an average of 8.6% of their body weight, compared with only 0.7% for the control group. And their blood sugar scores improved more dramatically.

A so-called A1C blood test indicates a person's average blood sugar over 90 days. Anything over 6.5 is too high. The average A1C in the intervention group fell from 7.3 to 6.6; in the control group it only went from 7.3 to 7.2. Weight loss also brought lower cholesterol and blood pressure, and a reduced need for medication to control all those factors.

"If you're one of the lucky patients who can keep your blood sugar under control with just lifestyle, that's great," Cagliero says. "But however patients with high blood sugar get it under control, most doctors say, what matters most is that they do, not how."

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