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# Diabetes Heart Treatments May Cause Harm

By [GINA KOLATA](#) – [NYTimes.com](#)

Three aggressive treatment strategies that doctors had expected would prevent heart attacks among people with [Type 2 diabetes](#) and some who are the verge of developing it have proven to be ineffective or even harmful, new studies show.

The results are surprising and disappointing, heart and [diabetes](#) experts say. An estimated 21 million Americans have Type 2 diabetes, the kind once known as adult-onset, and they are at enormous risk for heart disease. The only measures proven to reduce their chances — avoiding [cigarettes](#) and taking medication to lower bad [cholesterol](#) and [blood pressure](#) — still leave diabetics with a [heart attack](#) risk equivalent to that of a nondiabetic who already had a heart attack.

So doctors began trying other strategies they hoped would help: get blood pressure to a normal range; raise levels of good cholesterol and lower levels of dangerous [triglycerides](#); or modulate sharp upswings in blood sugar after a meal.

It is not known how many doctors have been encouraging patients to take these extra measures, but medical specialists say it seemed reasonable and tempting to do so.

“Doctors always want to improve the lives of their patients and that often leads to pressure to treat more and more,” said Dr. Henry N. Ginsberg, director of the Irving Institute for Clinical and Translational Research at [Columbia University](#). The new studies, he says, can save a lot of people from taking drugs that will not help them.

The papers were presented at an American College of Cardiology Meeting on Sunday, and are being published online by [The New England Journal of Medicine](#).

In Type 2 diabetes, the body is resistant to the hormone insulin, leading to abnormally high [blood sugar levels](#) that can cause eye, kidney and nerve disease. But heart disease is what kills most patients.

A quarter to a third of heart attack patients have diabetes, even though diabetics constitute just 9 percent of the population. Another 25 percent of heart attack patients are verging on diabetes with abnormally high blood sugar levels.

High blood sugar levels themselves increase heart disease risk, but it was discovered two years ago that rigorously controlling blood sugar did not prevent heart disease or deaths in people with Type 2 diabetes. Researchers said that failure was probably because most of these patients also have other problems that make their odds of heart disease soar, such as high levels of LDL cholesterol, low levels of [HDL cholesterol](#), high levels of triglycerides and [high blood pressure](#). And most are older and overweight.

Type 2 diabetes “captures all these risk factors in one patient,” said Dr. David Nathan, director of the diabetes center at [Massachusetts General Hospital](#).

It seemed logical to look at the other risk factors. One [large federal study](#) asked if getting high blood pressure down to a level considered normal, a systolic pressure of no more than 120, would help protect diabetics from heart disease and save lives.

This hypothesis was promising because studies that observed populations found that heart disease and [stroke](#) risk increase continuously as [systolic blood pressure](#) rises from 115 on up, said Dr. William C. Cushman, a study investigator and chief of the [preventive medicine](#) section at the Veterans Affairs Medical Center in Memphis.

To put the idea of a normal blood pressure to the test, half of the study’s 4,773 participants took drugs to get their systolic blood pressure to 120 or below. The rest had a blood pressure goal of less than 140.

But lower blood pressure did not prevent heart attacks or cardiovascular deaths, and those with lower blood pressure were more likely to suffer severe drug side effects like [high potassium](#) levels or dangerously low blood pressures. They also took an average of 3.4 blood pressure lowering drugs as compared to an average of 2 drugs for those with the higher pressure.

A second, less rigorous study, involving 6,400 patients with Type 2 diabetes and heart disease, asked whether getting systolic blood pressure lower than 130 was any better than getting it between 130 and 140. It found that patients actually were worse off — those with the lower blood pressure ended up with a 50 percent greater risk of strokes, heart attacks or deaths.

National blood pressure treatment guidelines call for a systolic pressure of 130 or lower. That was based on expert opinion and observational studies, Dr. Cushman said. Now, he said, it is likely to be reconsidered when the group that makes national treatment guidelines prepares a report later this year.

People with diabetes also tend to have low levels of HDL cholesterol and high levels of triglycerides, a combination known to increase heart disease risk. And in some studies, treating that combination with a type of drug, a fibrate, reduced risk in diabetics and nondiabetics who were not taking statins. So it made sense to see if fibrates also helped Type 2 diabetics who were taking statins.

It did not, [concluded another arm of the federal study](#) involving 5,518 people with Type 2 diabetes.

“It’s a disappointment,” said Dr. Ginsberg, a lead study investigator. “But it’s very, very important,” because it says most people will not be helped by taking the additional drug.

It means, said Dr. Denise Simons-Morton of the National Heart, Lung and Blood Institute, who was project officer for the federal study, that “doctors and patients now know that the inclination to do intensive treatment that people seemed to think would be better for cardiovascular risk reduction wasn’t better.”

A [final study](#) investigated a popular hypothesis — that rapid rises in blood glucose after a meal were dangerous and could be leading to heart disease. Many doctors were giving drugs assuming the hypothesis was correct, Dr. Nathan said.

“Every meeting you go to, some academic is talking about how postprandial hyperglycemia is really bad and that you should aim specifically to get it lower,” Dr. Nathan said. The study, he said, “is a direct test of that.”

It involved 9,300 patients at high risk for diabetes because their blood sugar was high and tested nateglinide, which enhances insulin secretion. It also tested a blood pressure drug. Neither decreased heart disease risk.

“Neither drug should be used in people with impaired glucose tolerance but not diabetes in order to prevent cardiovascular events unless there is another indication, like significant hypertension,” said Dr. Robert M. Califf, vice chancellor for clinical research at [Duke University](#) School of Medicine, and chairman of the study.

Dr. Nathan, who wrote an accompanying editorial in *The New England Journal of Medicine*, agreed. “It is a negative study,” he said.

Some, like Dr. Daniel Einhorn, president elect of the American Association of Clinical Endocrinologists, say the results of that study and the others would not necessarily dissuade him from taking such intensive measures with individual patients.

“It’s hard to make a case for a public health recommendation,” he said. “But that doesn’t mean there isn’t a benefit in an individual case.”

But no benefit has been shown, Dr. Nathan notes. The lesson for the future, he says, is that while making logical leaps to aggressively treat patients with type 2 diabetes is “totally understandable,” it also is dangerous.

“Lower is not necessarily better,” Dr. Nathan said.