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## Diabetic Heart Attack Survivors Benefit From Intensive Insulin Therapy



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Diabetic patients who received intensified insulin treatment following a heart attack survived for two years longer than patients treated with standard therapy to lower glucose, in a study conducted by researchers at Sweden's Karolinska Institute in Stockholm.

Diabetes commonly occurs with cardiovascular complications. Heart attack and stroke are major threats for diabetic patients, as are kidney failure, lower-limb amputations and fatally high blood sugar levels. While these conditions have declined in the past two decades, diabetes prevalence has increased significantly, with nearly three times as many Americans affected in 2000 (20 million) compared to 1990 (6.5 million).

### The DIGAMI 1 Trial

The investigation, which began in 1990 and continued for 20 years, followed 620 patients in the Diabetes Mellitus Insulin Glucose Infusion in Acute Myocardial Infarction (DIGAMI 1) study. The goal was to understand whether long-term patient mortality was affected by treatment type.

Heart attack patients received one of two therapies as part of the trial. Some participants were administered a standard treatment to lower glucose levels, rarely receiving insulin. The patients who had intensive insulin treatment first received an infusion of insulin and glucose, which lasted 24 hours, with follow-up insulin injections four times per day for a minimum of three months.

### Treatment Type Affects Long-Term Mortality - For Some

The study found that survival improved by two to three years for the patients who received the intensive insulin therapy, from 6.9 years to 9.4 years after their heart attack. The greatest benefit was seen in those participants who were younger than 70 years old at the start of the trial, and who had no history of cardiovascular trouble or insulin use.

Despite the nearly 50 percent improvement in survival for those who received the intensive insulin treatment, the effect was not uniform across participants. Patients classified as having a high cardiovascular risk, defined as being older than 70 and having previously experienced a heart attack, did not benefit from the intensified insulin treatment.

### New Medical Advances Must Be Considered

Since the DIGAMI 1 trial began in 1990, several interventions have become widely available to diabetic patients with cardiac issues. For example, cholesterol-lowering statins can control high lipid levels, and ACE inhibitors are effective at reducing blood pressure.

Therefore, the benefit of the intensive insulin treatment prescribed to heart attack patients in the DIGAMI 1 trial might not be as pronounced if the study were rerun beginning today. Many diabetic patients already benefit from popular therapies that monitor the dangers of high blood pressure and cholesterol, important factors for long-term survival.

The research results were published in *The Lancet Diabetes & Endocrinology*.

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