

# Global study shows diabetes and heart disease can be a deadly combination

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The combination of type 2 diabetes and coronary artery disease can be deadly.

New research from a global study led by a physician from UConn Health has found that patients with Type 2 [diabetes](#) admitted into the hospital for congestive [heart failure](#) face a one in four chance of dying over the next 18 months.

The results were presented on June 11 at the American Diabetes Association's (ADA) annual meeting in New Orleans and published online in the ADA journal *Diabetes Care*. The findings paint a much grimmer picture of the outcome for [diabetes patients](#) with severe [heart disease](#) than was previously known.

"Type 2 diabetes accompanied by an acute coronary syndrome needs much more attention, especially in order to prevent yet another major cardiac event," says Principal Investigator Dr. William B. White, a professor in the Pat and Jim Calhoun Cardiology Center at UConn Health.

Patients with type 2 diabetes have two to three

times the [heart disease risk](#) of the general population. This is partly because obesity and other illnesses such as hypertension and elevated cholesterol contribute to both diseases, but there are concerns that some of the medications that help control blood sugar may also damage the heart. Even insulin, a hormone that healthy people make naturally but some patients with type 2 diabetes often need as a medication, can contribute to heart disease.

Because of the diabetes-heart disease link, all new diabetes drugs are now required by the U.S. Food and Drug Administration to undergo formal testing for their impact on heart and stroke outcomes.

White, along with colleagues at 898 medical institutions around the world who were investigators in the EXAMINE trial, were testing the diabetes drug alogliptin (Nesina) which is a member of the family of medications known as DPP-4 inhibitors. The researchers recruited 5,380 patients with type 2 diabetes after the patient had a major but nonfatal [acute coronary syndrome](#) such as a heart attack, or hospitalization for unstable angina. The researchers randomly assigned the patients to take either alogliptin or a placebo, and then followed their progress for up to three years. The primary findings of the study reported in the *New England Journal of Medicine* in 2013, showed no differences for alogliptin versus placebo patients in the major endpoint of cardiovascular death, heart attack or stroke.

Now, the researchers provide new insights on mortality in the EXAMINE trial from a series of new analyses. People with type 2 diabetes admitted to the hospital for heart failure faced a 24 to 28 percent chance of death during the remainder of the trial, on alogliptin or placebo respectively. That's more than 5 times the risk of death seen in the patients who had no additional non-fatal cardiovascular event while in the study.

"It's a very dramatic result," says White. "A person with type 2 diabetes requiring hospitalization for heart failure in the EXAMINE trial was a harbinger of a very poor outcome."

The researchers are now trying to discover other new insights from data taken during the study. White and co-researchers from the EXAMINE study have teamed up with collaborators from Harvard Medical School and Brigham and Women's hospital to find patterns of proteins known as biomarkers in the blood that might provide early signals for elevated risk of a second cardiovascular event, including heart failure and death.

White emphasizes that [congestive heart failure](#) is by no means inevitable for people with type 2 diabetes but the problem should be receiving a great deal more attention. According to White, in all future studies of type 2 diabetes and heart disease, heart failure outcomes should receive the same amount of scrutiny as stroke, [heart attack](#) and unstable angina.

Provided by University of Connecticut

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