Here's How Diabetes Can Raise the Chance You'll Suffer a Heart Attack

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New research published in the Journal of the American College of Cardiology may help explain one reason why people with diabetes appear to have a much higher risk of suffering a heart attack than the general population. Turns out, untreated diabetes may be associated with the loss of small blood vessels around the heart, which in turn affects the health of the entire cardiac muscle, ScienceDaily reports.

For this study, cardiologists at the Technical University of Munich (TUM) first compared the blood vessels of several patients with and without diabetes who were undergoing heart transplants. They found that diabetics in the study group appeared to have significantly reduced numbers of blood vessels, or capillaries, around their hearts.

In the lab, researchers noted that elevated glucose levels in these participants' blood vessel samples appeared to cause the destruction of cells known as pericytes that form a protective layer around capillaries. Scientists believe that damage to these cells destabilizes blood vessels and ultimately causes them to crumble. Animal experiments conducted as part of the study also showed a steady reduction in capillary density around the heart when diabetes isn't treated.

"Diabetes often remains undetected in patients for years or even decades," said Rabea Hinkel, a cardiologist at TUM's Klinikum rechts der Isar Hospital. "Over that long period, massive damage can occur."

Coronary blood vessels are like a network of major and minor roadways that bring blood into and out of the heart. When enough blockages occur on small pathways, the entire system of blood vessels can be brought to a standstill, triggering a heart attack.

But this loss of capillaries and blood vessels is not irreversible. During their research on wild-type pigs with human type 1 diabetes, scientists found that the application of a genetic therapy to stimulate heart cells to increase the production of a certain protein also sparked the growth of pericytes. This action rebuilt lasting and functional capillary networks around the heart.

Although these findings are considered a big step forward in showing exactly how diabetes can damage the heart, researchers cautioned that it would be a while before this kind of therapy can be used in humans.

Click here to learn more about the links between heart disease and diabetes.

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