

DIABETES & DEPRESSION

A Twin Threat To Women's Hearts

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Occupation

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Professional Focus

Cardiovascular disease
and diabetes

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When it comes to heart health, women are thought to have an advantage over men because women tend to have better cholesterol profiles, with higher HDL (“good”) cholesterol and lower LDL (“bad”) cholesterol.

Unfortunately, diabetes is an equalizer. It raises the risk of heart disease in both genders, but more so in women. In fact, a woman with diabetes has a higher risk of developing heart disease than a man who has diabetes.

“Diabetes is the only condition in which the risk flip-flops,” says

Depression may compound heart risk in women with diabetes by affecting their self-care and damaging their arteries, says Julie Ann Wagner, PhD.

PHOTOGRAPH BY AMY ETTRA

Julie Ann Wagner, PhD, assistant professor in the Department of Behavioral Sciences and Community Health at the University of Connecticut Health Center in Farmington, Conn. “There’s something about being a woman that fosters the risk.”

Wagner believes that “something” could be depression, itself a risk factor for heart disease. Overall, people with diabetes have a higher risk of developing depression than those without diabetes. But in both the general population and the population with diabetes, the occurrence of depression is greater in women. Combined with diabetes, depression could compound a woman’s heart risk.

To test her theory, Wagner is using funds from an American Diabetes Association Clinical Research Award to compare heart disease risk among two groups of women with type 2 diabetes. One group will have a history of depression, the other will not.

Predicting Risk

Wagner’s study will involve 226 women with type 2. The research team will determine the mental health history of all participants through face-to-face interviews.

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The questions the team will ask are standard among mental health professionals for establishing a clear picture of a person’s past and present mental health. The researchers will also ask the women if they’ve ever been treated for depression.

Next the team will assess the women’s risk of heart disease. They’ll be able to calculate risk by measuring how arteries in the women’s arms respond to a temporary lack of blood supply. They’ll inflate a blood pressure cuff on each woman’s arm so that it cuts off blood flow for 5 minutes. The team will take ultrasound pictures of the arteries before the cuff is inflated and again after the cuff is deflated.

“A healthy blood vessel will dilate, opening up after the blood supply is restored. A poorly functioning blood vessel won’t dilate as much, and some that are particularly unhealthy even constrict,” Wagner says.

She adds that poor dilation and constriction indicate damage to the endothelium, the lining of the artery’s walls. That’s a bad omen for the heart. “Endothelial dysfunction is an early marker for heart disease,” Wagner says. “This test can reliably predict who will go on to have heart disease and cardiac events [such as heart attack].”

Finally, the team will review the results of the mental health interviews and the artery tests to see if poorly functioning arteries are more common among women who have ever had depression.

They will also see if women whose depression was treated have healthier arteries than those who had untreated depression.

“If so, then there may be a case for treating depression not only to help the depression, but to reduce the risk of heart disease as well,” says Wagner.

If Wagner’s results indicate that depression compounds the risk of heart disease in women with diabetes over and above diabetes alone, the next question will be how, specifically, it does so.

“Do women with depression have a greater risk for heart disease because their self-care suffers while they are depressed, or is there a direct physiological effect? The answer is probably both,” she says. “Depression can interfere with a healthy lifestyle. But stress hormones related to depression, like cortisol, may also damage the endothelium in blood vessels. Another possibility is that depression, heart disease, and diabetes may all share a common cause, like a genetic variation.”

She notes that this is still a matter of speculation and that more studies need to be done. For now, she encourages women not to feel stigmatized if their doctors or therapists diagnose them with depression.

“Depression is very treatable. Talk therapy and medication have been shown time and time again to be effective,” she says. “We know that depression can have an adverse effect on the body [as well as the mind], so don’t be afraid to get treatment.”