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Hypertension plus prediabetes a dangerous duo for the heart

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High blood pressure and prediabetes together may do more harm to the

body than either one alone.

The first study of its type looking into the association between slightly elevated blood sugar levels and high blood pressure found that prediabetes didn't increase cardiovascular risk by itself. But when researchers looked at prediabetes paired with high blood pressure, they found a significant increase in coronary artery disease severity and cardiovascular events.

The study's senior author Dr. Jian-Jun Li, director and professor at the National Center for Cardiovascular Diseases, Chinese Academy of Medical Sciences and Peking Union Medical College in Beijing, provided a scenario to explain how the conditions' coexistence can make matters much worse.

"For example, when there is a crack on the road, the combination of a heavy rainstorm and rolling of vehicles will make it bigger more rapidly than either one alone," she said.

People should take the conditions seriously. Prediabetes and high blood pressure, also known as hypertension, affect blood vessel integrity. Both conditions could lead to stroke, the second-leading cause of death in the world and a leading cause of disability.

A systolic blood pressure of 120-129 with a diastolic of less than 80 is consider elevated. High blood pressure is defined as a systolic pressure of 130 or above, or a diastolic pressure of 80 or above. Prediabetes is considered to be present when blood sugar or hemoglobin A1c readings are above normal range but not yet in the range of diabetes.

Prediabetes increases the odds of a person developing Type 2 diabetes and its many complications. Diabetes alone is projected to grow by 41 percent worldwide, from 422 million cases in 2014 to 642 million cases

in 2040.

That's in part because prediabetes and diabetes are associated with the growing obesity rate worldwide, which has been called a "global epidemic" by the World Health Organization. Health care costs related to obesity are expected to cost more than $150 billion each year in the United States.

China is also following the trend, said Li. Researchers decided to look at the two chronic diseases "because of the increasing number of either obese or hypertensive people, especially in China."

The results showed hypertension and prediabetes together elevate cardiovascular risks, which could have implications for most of the U.S. population. About half of all Americans have hypertension and more than a third have prediabetes. (Ninety percent of them don't even know it, according to the Centers for Disease Control and Prevention.)

The study authors said that special attention should be paid to patients who have both issues.

Dr. Robert Eckel, an endocrinologist and physician-scientist at the University of Colorado Anschutz Medical Campus who wasn't involved in the study, said its results raise concern. But Eckel, a past president of the American Heart Association, cautions that guidelines for the American College of Cardiology/AHA cardiovascular disease risk estimator use diabetes as a component not prediabetes.

The study was published Wednesday in the journal *Hypertension.*

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