

Researchers find hormone that predicts premature death in kidney patients

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Researchers at the University of Colorado School of Medicine have found that high levels of a specific hormone can predict which kidney patients will develop heart problems, require dialysis or die prematurely.

"This discovery allows us to predict at-risk patients before they require dialysis," said lead investigator Michel Chonchol, MD, an associate professor of medicine specializing in nephrology. "That's critical because approximately 23 percent of patients on dialysis die in the first year."

The findings were published Friday in the *Journal of the American Society of Nephrology*.

Chonchol and fellow CU School of Medicine researcher Jessica Kendrick, MD, studied the [blood plasma](#) of patients with advanced kidney disease and found that levels of fibroblast growth factor-23, a hormone known as FGF-23, increased as the patient's kidney function decreased.

The hormone regulates phosphorous levels in the body. As the kidneys fail, they are unable to excrete phosphorous which raises FGF-23 levels. The higher the [hormone levels](#), the greater chance the patient will die.

"At this point we don't know how the hormone changes the body," Chonchol said.

By the time a patient is down to just 30 or 40 percent [kidney function](#), the levels of FGF-23 can predict who will die, have a cardiac event or end up on dialysis. Almost 50 percent of the deaths result from cardiovascular issues like heart attack.

Until now, doctors relied on measuring phosphorous to assess phosphate balance in patients with kidney disease.

"Prior to a patient going on dialysis the phosphorous levels shoot up," Chonchol said.

But he found that long before phosphorous levels jump, FGF-23 levels have already increased. Identifying this earlier will allow doctors to intervene with drugs that can lower phosphorous which would then lower the hormone level.

"This has provided us a critical marker to look for," Chonchol said, "A marker that could save lives."

Kidney disease currently afflicts 20 million Americans and is a growing problem as the nation gets increasingly obese and diabetes continues to rise.

"The best ways to prevent [kidney disease](#) is through blood pressure control, diet, exercise and maintaining a healthy body weight," Chonchol said.

Provided by University of Colorado Denver

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