

## Long-term hormone therapy after menopause may damage kidneys, Tulane study says

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Long-term estrogen treatment after menopause may increase the risk of new kidney damage and negatively affect women who already have abnormal kidney function, according to a [study](#) by Tulane University School of Medicine researchers published in the *American Journal of Physiology—Renal Physiology*.

Estrogen seems to protect against high blood pressure, one cause of kidney damage. Since fewer premenopausal women have high blood pressure than men of the same age, the study focused on a breed of rats that mimic this gender-specific blood pressure difference to determine the effects of long-term estrogen therapy on women.

The research team studied three groups of middle-aged rats without ovaries, which simulates the low estrogen environment of menopause. One group (“short-term”) was given a short course of estrogen. A second group (“long-term”) received a longer regimen of estrogen. The estrogen groups were compared to a control group that did not receive hormones.

Researchers found that after the hormone treatments, the long-term group had more damage to the tiny tubes that collect and carry urine than the short-term and control groups. The rate at which the kidneys filtered blood decreased, and creatinine levels and protein in the urine (markers of impaired kidney function) increased in the rats receiving long-term estrogen. The long-term group showed more kidney damage in each marker than the short-term or control groups.

“With women now living 30 years or more after menopause, the big question is...how long is it ok to take estrogen?” says senior author Dr. Sarah Lindsey, assistant professor of pharmacology at Tulane School of Medicine. “Our study shows that estrogen has good effects for a while but could be damaging with prolonged use. Women who are concerned about the long-term impact of estrogen should ask their doctor to monitor their kidney health, especially if they have a history or family history of kidney disease.”

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Sarah Lindsey, senior study author