

# Researchers find new fertility drug to be more effective than one used for past 40 years

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A fertility drug used for more than four decades could soon be replaced with another drug that is 30 percent more effective in helping women become pregnant, according to a study with University of Florida ties.

In a study recently published in *The New England Journal of Medicine*, researchers at seven different academic centers recruited 750 couples to compare the long-used fertility drug clomiphene citrate, commonly called clomid, to letrozole, a drug initially developed to prevent recurrence of breast cancer in women.

Of the 376 women who were given clomid, 72 became pregnant and gave birth. Of the 374 women who took letrozole, 103 gave birth.

"Letrozole works better, has about the same cost, has fewer side effects and has a slightly lower twin rate than clomid," said Dr. Gregory Christman, director of the division of reproductive endocrinology and infertility at UF. "Clomid has been available for [fertility treatment](#) for more than 40 years, but with this new information, we may soon have to reconsider its role in the treatment of infertility due to anovulation in women with polycystic ovarian disorder."

Clomid is often prescribed to women with [polycystic ovary syndrome](#) as a first step in their treatment—and that population accounts for about a third of women who seek fertility treatment, Christman said. About 1 in

20 women of childbearing age have the disorder, according to the Office on Women's Health within the U.S. Department of Health and Human Services. Women with the condition typically have fewer periods—seven cycles per year fewer than women without the condition – and therefore have fewer opportunities to become pregnant.

Christman oversaw one of the trial's sites as one of the principal investigators at the University of Michigan. There, he recruited 75 of the 750 couples for the study. Women in the study, who were an average of 29 years old, were randomly assigned to take either clomid or letrozole. Because the drugs were administered in the same way—both were given for a five-day period at the beginning of a woman's cycle—the study was double-blinded. Neither the doctor nor the patient knew which drug the patient was receiving.

Clomid works by traveling to the brain, where it partially blocks estrogen receptors. This triggers the brain to send a signal to the ovaries to produce more estrogen, which causes ovulation. Letrozole is prescribed to prevent recurrence of [breast cancer](#) in women by shutting off an enzyme that converts circulating testosterone to estrogen. It works primarily in fat or adipose tissue throughout the body, causing estrogen levels in a woman's bloodstream to fall. The brain sees this drop in estrogen and tells the ovaries to make more estrogen, which triggers ovulation, Christman said.

The study also found that letrozole results in fewer twins. Approximately 10 percent of women who are treated with clomid give birth to twins. The rate drops to between 3 to 4 percent in women who take letrozole.

"It always makes you smile when you hear someone is expecting twins, but because of the increased risks of a multiple pregnancy it would be better and safer if people conceived one baby at a time," Christman said.

Dr. David S. Guzick, UF senior vice president for health affairs and president of UF Health, helped oversee the study, which was conducted through the Reproductive Medicine Trial Network and funded by the National Institute of Child Health and Human Development branch of the National Institutes of Health. The network is now in its fourth cycle, with each cycle consisting of five years. Guzick was involved in the network's first cycle and now chairs the advisory board that oversees new reproductive medicine trials.

"This study indicates that there is a safe and effective medical treatment to help infertility patients with [polycystic ovarian syndrome](#), which is one of the most common conditions causing infertility," Guzick said.

Generic versions of both medications are available, making treatment with either drug affordable.

Provided by University of Florida

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