

Naturally occurring hormone induces egg maturation

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The naturally occurring hormone kisspeptin effectively induces egg maturation during infertility treatment, according to a clinical in vitro fertilization (IVF) study. The results were presented Monday at The Endocrine Society's 95th Annual Meeting in San Francisco.

Aptly named after the popular chocolate Hershey's kiss candy, kisspeptin was discovered in Hershey, PA, in 1996. Released by the brain in both [males and females](#), the hormone triggers the development of [secondary sexual characteristics](#) and other changes of puberty.

Each year, thousands of women seek IVF treatment for infertility. The treatment is readily available and often successful, but, like all [medical interventions](#), still has some risks. One of the most serious is a condition called ovarian hyperstimulation syndrome. This condition results when the hormones used to stimulate egg maturation overstimulate the ovaries, which can then become painfully swollen. Often cases are mild and improve without treatment in one to two weeks. However, approximately 10 percent of cases are severe ones causing life-threatening complications, including shortness of breath, blood clots and [kidney failure](#).

In contrast, kisspeptin stimulates the ovaries to release levels of reproductive hormones that are similar to those produced naturally by women with normal [menstrual cycles](#). Because of this, fertility researchers are interested in the hormone's potential to safely induce egg maturation in IVF.

Results from this study funded by the Medical Research Council UK and the National Institute for Health Research indicate that the hormone kisspeptin effectively induces egg maturation when used during IVF treatment. In 21 of 22 women who participated in the study, egg maturation occurred after kisspeptin injections. Embryos developed in 20 women. Twelve hours after kisspeptin injections, luteinizing [hormone levels](#) increased eightfold. During the normal [reproductive cycle](#), luteinizing hormone increases to trigger ovulation.

"We have shown that kisspeptin can be used effectively in patients undergoing IVF treatment to more naturally stimulate the release of reproductive hormones and result in a healthy baby," said study lead author Waljit Dhillon, M.D., Ph.D., Professor of Endocrinology at Imperial College London, United Kingdom. "The use of a hormone that stimulates the release of [reproductive hormones](#) during IVF treatment as occurs in normal women could prevent ovarian hyperstimulation syndrome. Kisspeptin may, therefore, offer an entirely novel therapeutic option for fertility treatment."

Study participants included 22 women who received IVF treatment with kisspeptin in place of the customary hormone, human chorionic gonadotropin, used to induce egg maturation during IVF. Thirty-six hours after kisspeptin injection, investigators obtained the mature eggs, which they then artificially inseminated. After embryo development occurred, investigators transferred one to two embryos to the uterus.

While it is still too early to assess all of the pregnancy data, early data are very encouraging, showing that eight of 19 participants were pregnant 12 days after receiving an embryo transfer. One woman has already given birth to a healthy baby boy. The next step, according to Dhillon, is to determine whether kisspeptin can prevent ovarian hyperstimulation syndrome in women who are healthy, but infertile.

The Medical Research Council UK and the National Institute for Health Research funded the study.

Provided by The Endocrine Society

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