

Fertility study finds hormone that could support early pregnancy

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The hormone helps prime cells for implantation, a vital stage in early pregnancy when a fertilised egg attaches to the womb lining, the study suggests.

The discovery - made by testing tissue from [women](#) aged in their forties - could help scientists develop ways to improve fertility.

Each month, as part of the [menstrual cycle](#), hormones send chemical signals to [cells](#) in the womb lining to create conditions to support pregnancy. Fertilised eggs are extremely sensitive to changes in the womb lining, but the exact environment needed for healthy implantation is unknown.

Researchers at the University of Edinburgh tested the effects of a [hormone](#) known as DHEA on healthy tissue donated by women undergoing unrelated surgery.

They found that treating [womb](#) lining cells with DHEA in a dish doubled the level of key proteins associated with healthy implantation in the tissue.

DHEA treatment also increased the production of active androgens - hormones found in high levels in men - suggesting that these could underlie the improvement.

The study also suggests that levels of DHEA - which are known to

decline significantly with age - could play a role in infertility in later life, researchers say.

They caution that it is too early to say if treatments could help women with fertility issues.

The study, published in the journal *Fertility and Sterility*, was funded by the Medical Research Council (MRC).

Lead author Dr Douglas Gibson, from the MRC Centre for Inflammation Research at the University of Edinburgh, said: "A fertilised egg will implant only if the conditions are just right and we were excited to see that DHEA and androgens might help improve this environment in cells. The findings will help us develop studies for potential therapies but more research is needed before we can tell if this approach could be used to help women who are struggling to conceive."

Dr Stephen Meader, Programme Manager for Reproductive Health at the MRC, said: "This study is important in learning more about what's required for a successful implantation and healthy pregnancy. This research may be in its early stages, but it's worthwhile because it lays the groundwork to uncovering potential treatments down the road to help women trying to conceive."

More information: Douglas A. Gibson et al, Dehydroepiandrosterone enhances decidualization in women of advanced reproductive age, *Fertility and Sterility* (2018). [DOI: 10.1016/j.fertnstert.2017.12.024](https://doi.org/10.1016/j.fertnstert.2017.12.024)

Provided by University of Edinburgh

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