

Women with Neandertal gene give birth to more children

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One in three women in Europe inherited the receptor for progesterone

from Neandertals—a gene variant associated with increased fertility, fewer bleedings during early pregnancy and fewer miscarriages. This is according to a study published in *Molecular Biology and Evolution* by researchers at the Max Planck Institute for Evolutionary Anthropology in Germany and Karolinska Institutet in Sweden.

"The progesterone receptor is an example of how favourable genetic variants that were introduced into [modern humans](#) by mixing with Neandertals can have effects in people living today," says Hugo Zeberg, researcher at the Department of Neuroscience at Karolinska Institutet and the Max Planck Institute for Evolutionary Anthropology, who performed the study with colleagues Janet Kelso and Svante Pääbo.

Progesterone is a hormone that plays an important role in the menstrual cycle and in pregnancy. Analyses of biobank data from more than 450,000 participants—among them 244,000 women—show that almost one in three women in Europe have inherited the [progesterone receptor](#) from Neandertals. 29 percent carry one copy of the Neandertal receptor and three percent have two copies.

"The proportion of women who inherited this gene is about ten times greater than for most Neandertal gene variants," says Hugo Zeberg. "These findings suggest that the Neandertal variant of the receptor has a favourable effect on fertility."

The study shows that women who carry the Neandertal variant of the receptor tend to have fewer bleedings during early pregnancy, fewer miscarriages, and give birth to more children. Molecular analyses revealed that these women produce more progesterone receptors in their cells, which may lead to increased sensitivity to progesterone and protection against early miscarriages and bleeding.

More information: Hugo Zeberg et al, The Neandertal Progesterone

Receptor, *Molecular Biology and Evolution* (2020). [DOI: 10.1093/molbev/msaa119](https://doi.org/10.1093/molbev/msaa119)

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