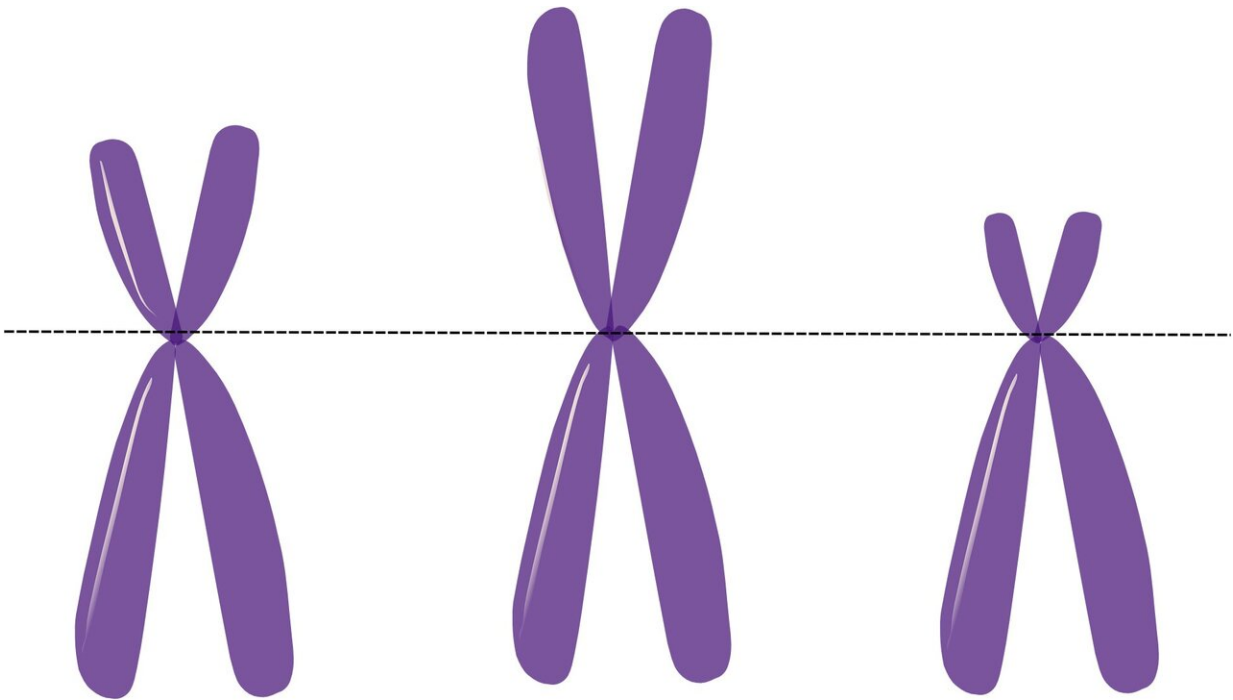


# Researchers find lagging chromosomes to be among the causes of infertility

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Why do women over 35 have more difficulty getting pregnant? After discovering one of the causes of age-related female infertility, researchers at the University of Montreal Hospital Research Centre (CRCHUM) suggest that it will be possible in the future to improve the quality of the eggs of older patients by intervening on the cell cycle level.

In a study published in the journal *Developmental Cell*, CRCHUM researcher Greg FitzHarris and Aleksandar Mihajlovic, a postdoctoral fellow in his lab and first author of the study, reveal in aged mouse eggs (oocytes) that some chromosomes are slower to move during meiosis, a crucial phase of cell division.

These laggards contribute to an uneven chromosomal distribution and therefore to the formation of [cells](#) with an abnormal number of chromosomes. This abnormality, called aneuploidy, is one of the major causes of infertility, and explains in part why [older women](#) have difficulty becoming pregnant and carrying a pregnancy to term.

"To give the slowest chromosomes time to reach their destination, we artificially prolonged meiosis with a chemical. Using [high-definition](#) imaging techniques, we found that this slowing down before [cell division](#) limited aneuploidy," says Greg FitzHarris, a professor at Université de Montréal.

In the medium term, this discovery, which is still in the basic research stage and conducted in the laboratory on mice, could be used in the clinic to increase the performance of eggs used during in vitro fertilization. Extensive efficacy, safety and security testing will be required before such an approach is adopted.

Almost one in six Canadian couples is affected by [infertility](#). This number has doubled since the 1980s.

**More information:** Aleksandar I. Mihajlović et al, Distinct classes of lagging chromosome underpin age-related oocyte aneuploidy in mouse, *Developmental Cell* (2021). [DOI: 10.1016/j.devcel.2021.07.022](https://doi.org/10.1016/j.devcel.2021.07.022)

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