Menopause cause? It may well be men, scientists say

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For decades, anthropologists and biologists have been puzzling over one of nature's great mysteries: Why do women go into menopause?

At first blush, menopause doesn't make much evolutionary sense. According to one widely accepted theory, the point of evolution is successful reproduction. After that, nature doesn't have much interest in keeping us alive, and so we die. Why, then, keep women kicking for decades after they can no longer make babies?

Rama Singh, a professor in the department of biology at McMaster University in Hamilton, Ontario, thinks he's figured it out. Menopause, the Canadian researcher argues, is men's fault.

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Controversial new research suggests that ancestral males' preference for younger women actually set the stage for the evolution of menopause.

In a paper published today in PLOS Computational Biology, Singh and two colleagues detail elaborate evolutionary computer models demonstrating that "male mating preference for younger females" leads to the development of a long menopausal period.

"I am saying what women have been saying all their lives," Singh told NBCNews.com. "Men are to blame."

Singh's argument relies on one key fact: "Sex is fun," he says.

In humans, sex isn't just about making babies, it's also about pleasure and bonding. Over time, he contends, men found that having that sex with younger women was more desirable than sex with older women, without regard to making babies.

As men began to prize younger women as sex partners, gene variants that led to infertility with advancing age were not eliminated. Menopause became built in, even as women lived longer and longer.

To demonstrate how this might work, Singh and his colleagues ran hundreds of simulations on fixed virtual populations exposed to various scenarios of mate preferences and genetic mutations. Models assumed that both genders started with fertility almost to the time of death, and that gene variants conferring longer lives accumulated in both sexes.

But as ancestral males began to prefer younger females, "female-specific mutations with a late age of onset … accumulated in the population" of women in most of their models, the scientists found. But, because males remained fertile into old age, mortality of both sexes kept being pushed back.

Singh said he understands this is a controversial finding.

"I do expect resistance from anthropologists" to this idea, he said, "and I sympathize with them because all their models are based on the idea that menopause is a deleterious trait and must be compensated for" with some evolutionary payoff. Singh believes there's none.

Singh may or may not be correct about that, but he's certainly correct that others will view his ideas with skepticism.

"I've never been overly fond of computer modeling the evolution of a trait, especially when the model's assumptions are highly questionable," said Barry X. Kuhle, an evolutionary psychologist at the University of Scranton. Kuhle said he does not think Singh's idea will gain much traction.

First, science hasn't decided yet whether human menopause is as unique as some, like Singh, suggest. The issue of menopause in monkeys, for example, is unresolved.

Second, there's a chicken-and-egg problem. There's strong evidence that men sense, and are attracted to, signs of fertility. Any male preference for younger women may be the result of menopause, not the cause of menopause.

Third, some experts prefer one or another version of what's called the "grandmother hypothesis," the idea that an infertile female can help assure the survival of babies born to young relatives.

In 2007, a team of British scientists tried to answer the menopause riddle by using data they hoped would most nearly replicate a "natural" state of human reproduction and survival – medical records

from two villages in The Gambia from the years 1950 to 1975. They found support for the grandmother hypothesis, but also concluded that it was by no means certain.

“Even the best evidence that grandmothers promote grandchild survival, enhance daughters’ fertility, and so on cannot confirm whether or not such benefits might actually explain the evolution of menopause.”

Kuhle thinks there’ll never be ironclad proof of one theory or another, but, chances are good we’ll get closer.

“Do I think with increases in empirical data (as opposed to contrived computer modeling) bearing on hypotheses we will settle on a hypothesis that best explains what we know? I do.”

Meanwhile, the argument, and the puzzle, will continue.

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